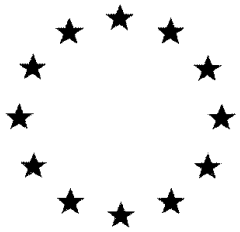
European Commission

Peer Review Programme



ECCO Peer Review Meetings

Full Report on
PYRACLOSTROBIN

- Reports of the meetings
- Comments on the draft assessment report
- Other documents considered at the meetings

ECCO-Team, at: Pesticides Safety Directorate, York
11.10.2002

ECCO PEER REVIEW PROGRAMME

FULL REPORT ON **PYRACLOSTROBIN**

CONTENTS

PART 1: REPORTS

PART 2: COMMENTS AND OTHER DOCUMENTS

DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Identity, Phys. Chem. Properties, Methods of Analysis (ECCO 122)

1. List of end points (not included in Full Report)

Date	Supplier	File name
1 August 2001	Germany	Pyraclostrobin 122 2endpoints

2. Comments

Date	Supplier	File name
21 January 2002	BASF	Pyraclostrobin 122 com01 BASF
25 January 2002	France	Pyraclostrobin 122 com02 FR
11 February 2002	United Kingdom	Pyraclostrobin 122 com03 UK

3. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name

4. Documents tabled at the meeting

Date	Supplier	Content	File name

5. Addenda (not included in Full Report)

Date	Supplier	File name

BASF

BASF Aktiengesellschaft · 67114 Limburgerhof, Deutschland

Biologische Bundesanstalt für Land- und Forstwirtschaft, Abt. Pflanzenschutzmittel und Anwendungstechnik
Messeweg 11/12

38104 Braunschweig

January 21, 2002-my
APD/RC, Li 556
Dr. H. Regenstein
Tel.: ++49(621)60-27413
Fax: ++49(621)60-27604
e-mail: henning.regenstein@basf-ag.de

Pyraclostrobin
AP - WNL 004929-00-00

Pyraclostrobin is scheduled for ECCO 122 in February 2002 with the meeting subject "PhysChem Properties".

We would like to inform you that we do not have a comment on the respective parts of the draft assessment report with regard to the meeting subject.

However, we want to draw your attention to a typing error: Volume 1, page 56 (list of endpoints)
Solubility in water (g/l)

it should read: 0.0019 ± 0.00017

(see also Volume 3, Annex B, section B.2.1.6).

Kind regards

BASF Aktiengesellschaft
Agricultural Products
Global Product Safety & Registration

Dr. Regenstein

cc: ECCO

BASF Aktiengesellschaft
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Agrarzentrum
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Girokonto 54 507 300 (BLZ 545 000 00)
Sitz der Gesellschaft:
67056 Ludwigshafen, Deutschland
Registergericht: Amtsgericht Ludwigshafen,
Eintragungsnummer: HRB 3000

Aufsichtsratsvorsitzender: Berthold Leibinger
Vorstand: Jürgen Strube, Vorsitzender;
Max Dietrich Kley, stellv. Vorsitzender;
Helmut Becks; John Feldmann;
Jürgen Hambrecht; Stefan Marcinowski;
Peter Oakley; Volker Trautz;
Eggert Voscherau

MINISTERE de l'EDUCATION NATIONALE et de la RECHERCHE et de la TECHNOLOGIE
MINISTERE de l'AGRICULTURE et de la PÊCHE

DGAL

S. S. M.
STRUCTURE SCIENTIFIQUE MIXTE

Date: 8-11-01

Competent Authority :
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From
Expert :
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INRA – GMPV – Route de Saint-Cyr – F
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To **Ecco team (PSD)**
e.mail : p.s.d.ecco@psd.defra.gsi.gov.uk

cc **Rapporteur member state : GERMANY.**

Objet : comments from France - ECCO 122

Please find attached our comments on Germany's draft Assessment Report for the new active substance PYROCLOSTROBIN for consideration in ECCO 122.

Yours sincerely,

Annick Venant

Comments on sections
"Identity, Physical and Chemical properties and Methods of analysis"
of the monograph : PYRACLOSTROBIN

Volume C

- As the 5-batch analysis was performed on pilot technical compound, an other 5-batch analysis is required using commercial compound. Specifications must be in accordance with the new results.
- The certified value for the active substance is ≥ 95 %. This value is too low in regards with the 5-batch analysis.

PHYSICAL AND CHEMICAL PROPERTIES
Active substance :
No comment

Plant protection product :
Point B.2.2.2.1. and B.2.2.2.2. : The test on explosive properties and oxidising properties was not conducted and a justification is given. The comment is :" Test not conducted because of the chemical structure of the test substance ". This justification is not acceptable as the composition of the plant protection product is not only active substance.

METHODS OF ANALYSIS
- In plants :
  - Applicability of a multi-residue method is required.
  - In the monograph, it is not clear to understand if the ILV was performed by an other laboratory or not.

- In air :
  - The results of the confirmatory method are required.

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Mr H Köpp
Biologische Bundesanstalt für Land-und Forstwirtschaft
Abteilung für Pflanzenschutz mittel und Anwendungstechnik (AP)
Messeweg 11-12
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Braunschweig
GERMANY

Our ref: ASY 247

11 February 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN RAPPORTEUR:- GERMANY

ECCO 122 - MEETING TO DISCUSS PHYSICAL AND CHEMICAL PROPERTIES

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 122 in February 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: Ms M Cooper, ECCO Team – PSD

pyraclostrobin_122_com03_UK

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

Methods of analysis

B.5.4 Analytical methods (residue) for body fluids and tissues (Annex IIA 4.2.5; Annex IIIA 5.2)

The draft assessment report concludes that analytical methods for the determination of residues in body fluids have not been submitted and because the active substance is classified as 'toxic' the lack of an appropriate method is considered as an essential data gap to be addressed prior to Annex I inclusion.

The UK has recently evaluated an application for approval of a product containing this active substance. The UK concluded that pyraclostrobin was classifiable as 'Harmful by inhalation' and as a skin irritant. A second inhalation study was conducted as it was considered that the severity of results seen in the first inhalation toxicity study (which resulted in pyraclostrobin being classified as 'Toxic by inhalation') were due largely to the vehicle which was acetone (which is known to cause acute inflammation of the lungs). In the second inhalation study, using Solvesso as the vehicle the classification was determined as 'Harmful'.

In comparison to the inhalation route, pyraclostrobin was of low toxicity to rats *via* the oral route. The low acute oral toxicity (not classifiable under PPPR) is considered to be a result of oral administration using a water based vehicle. Where a solvent based vehicle/formulation was used, the acute oral toxicity of the test material was increased. In the *in vivo* mouse micronucleus test and the formulation studies evaluated, rats and mice gavaged with solvent vehicles were in the region of 10 times more sensitive than rats gavaged with a water based vehicle. The solvent or formulation constituents were not considered in themselves to be acutely toxic.

The UK understands that the new inhalation study may also have been submitted to the Rapporteur and suggests that this should be evaluated as it is important to classify accurately. Should the classification of the active substance be revised to 'Harmful' then there will be no need for an analytical method for body fluids.

DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Mammalian Toxicology (ECCO 123)

1. List of end points (not included in Full Report)

Date	Supplier	File name

2. Comments

Date	Supplier	File name
5 February 2002	France	Pyraclostrobin 123 com01 FR
8 February 2002	BASF AG	Pyraclostrobin 123 com02 BASF
12 February 2002	United Kingdom	Pyraclostrobin 123 com03 UK
28 February 2002	The Netherlands	Pyraclostrobin 123 com04 NL
20 December 2001	Belgium	Pyraclostrobin 123 com05 BE

3. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name
25 January 2002	Denmark	Pyraclostrobin 123 com06 DK

4. Documents tabled at the meeting

Date	Supplier	Content	File name

5. Addenda (not included in Full Report)

Date	Supplier	File name

6. Other Documents (not included in Full Report)

Date	Supplier	File name
11 March 2002	ECCO 122	Comments from ECCO 122 for ECCO 123, contained in the reporting table of the concise outline report of ECCO 122 'Rep_1(ECCO122)_8pyraclostrobin.doc'

MINISTERE de l'EDUCATION NATIONALE et de la RECHERCHE et de la TECHNOLOGIE
MINISTERE de l'AGRICULTURE et de la PÊCHE

DGAL

S. S. M.
Structure Scientifique Mixte

Date: 2002.02.05

FROM:

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Reviewer of the draft monograph : R. Maximilien

To Ecco team (PSD)
e.mail : p.s.d.ecco@psd.defra.gsi.gov.uk

cc Rapporteur member state : Germany

Objet : comments from France - ECCO - 123

Please find attached our comments on mammalian toxicology section of Germany's draft Assessment Report for the new active substance pyraclostrobine for consideration in ECCO 123.

Yours sincerely,

1. Specification of the active substance used in toxicological studies

The specification of purity of the active substance is proposed as ≥ 950 k/kg (see B.1.1.9). Most of toxicological studies were conducted using various test material batches exhibiting higher purity

- ***acute studies*** : 98.5% (oral), 98.2% (percutaneous, inhalation, skin and eye irritation) 99% (sensitisation)
- ***short term studies*** : 94-99% (2 batches??? for the 28 d-oral-rat), 98.5% (90d-oral-rat), 99% (28d-dermal-rat), 98.5% (90d-oral-mouse), 97.09% (90d-oral-dog), 98.7% (1y-oral-dog)
- ***genotoxicity*** : 98.2% (all tests)
- ***long term toxicity*** : 97.09% (chronic-rat, carcinogenicity-rat, carcinogenicity-mouse)
- ***reproductive toxicity*** : 98.7% (multi-generation-rat), 98.9% (development-rat, development-rabbit)
- ***neurotoxicity*** : 99% (acute-rat), 97.09% (subchronic-rat)

The specification should be revised

2. Sub-acute toxicity

No NOAEL was obtained in the 90 d-oral toxicity study in the mouse and the NOAEL was calculated using the results (body weight changes) of the 2 y – oral toxicity study in the same strain. It is unclear whether all toxicological endpoints determined in the 90d study were also taken into consideration from the 2 y toxicity study (particularly the clinico-chemical parameters such as blood urea…)

3. Further toxicological studies

Additional studies such as short term toxicity assays should be performed on the 3 metabolites occurring in water

BASF

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 123

Dear Mr. Flynn:

Pyraclostrobin is scheduled for ECCO 123 in March 2002 with the meeting subject "toxicology".

Please find our respective comments below:

Point B.6.2.3

BASF still disagrees with the classification and labelling proposed from the actue inhalation study described in the monograph (T, R23) see BASF's statement from March 29, 2001 (DocID 2001/1006169, sent to RMS on 30.03.2001) and the inhalation study report (DocID 2001/1010625, sent to RMS on 22.06.2001).

An agreement to BASF's evaluation will influence respective chapters in Volume 1 (point 2.3.1.2 and 2.8.3.3) and will lift the reason for the proposal to postpone the decision for inclusion in Annex I (points 3.2; 3.3 and 4.1: data gap for a method for body fluids).

Point B.6.3.2.1

Furthermore, BASF disagrees with the statement that a NOAEL was not achieved in the mouse oral 90 day study in male mice (B.6.3.2.1). Historical control data from mouse feeding studies (see BASF DocID:2001/1001013, sent to RMS on 16.01.2001) demonstrate that the range of mean values for male animals after 3 months is 28.8 – 35.4 grams. The mean body weight of male animals at day 91 in the current control group was 36.0 grams and is, therefore higher than the historical control.

/page 2

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Registergericht: Amtsgericht Ludwigshafen,
Eintragungsnummer: HRB 3000

Aufsichtsratsvorsitzender: Berthold Leibinger
Vorstand: Jürgen Strube, Vorsitzender;
Max Dietrich Kley, stellv. Vorsitzender;
Helmut Becks; John Feldmann;
Jürgen Hambrecht; Stefan Marcinowski;
Peter Oakley; Volker Trautz;
Eggert Voscherau

Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 123

The mean body weight of male mice treated with Pyraclostrobin at the dose level of 50 ppm was 33.5 grams after 91 days and is, therefore within the historical control range. Consequently, the NOAEL for male mice is 50 ppm (9.2 mg/kg bw/d).
In the Monograph, the NOAEL for 90 days was derived from the carcinogenicity study in mice, day 91 (B.6.5.3). However, when converting ppm into mg/kg, a difference should be considered between a 90 day study and a 18 month study. The conversion of 30 ppm at 91 days in the carcinogenicity study does not correspond to 4 mg/kg but to 5 mg/kg.

Yours sincerely

BASF Aktiengesellschaft
Agricultural Products
Global Product Safety & Registration

Dr. Regenstein

cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00)

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Mr H Köpp
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Abteilung für Pflanzenschutz mittel und Anwendungstechnik (AP)
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GERMANY

Our ref: ASY 247

12 February 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN RAPPORTEUR:- GERMANY

ECCO 123 - MEETING TO DISCUSS MAMMALIAN TOXICOLOGY

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 123 in March 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: Ms M Cooper, ECCO Team – PSD

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

Volume 3

B.6.2 Acute toxicity including irritancy and skin sensitisation (Annex IIA 5.2)

B.6.2.3 Inhalation

The draft assessment report concludes that pyraclostrobin should be classified as 'Toxic by inhalation' (page 86).

The UK has recently evaluated an application for approval of a product containing this active substance. The UK concluded that pyraclostrobin was classifiable as 'Harmful by inhalation' and as a skin irritant. A second inhalation study was conducted as it was considered that the severity of results seen in the first inhalation toxicity study (which resulted in pyraclostrobin initially being classified as 'Toxic by inhalation') were due largely to the vehicle which was acetone (which is known to cause acute inflammation of the lungs). In the second inhalation study, using Solvesso as the vehicle the classification was determined as 'Harmful'.

In comparison to the inhalation route, pyraclostrobin was of low toxicity to rats *via* the oral route. The low acute oral toxicity (not classifiable under PPPR) is considered to be a result of oral administration using a water based vehicle. Where a solvent based vehicle/formulation was used, the acute oral toxicity of the test material was increased. In the *in vivo* mouse micronucleus test and the formulation studies evaluated, rats and mice gavaged with solvent vehicles were in the region of 10 times more sensitive than rats gavaged with a water based vehicle. The solvent or formulation constituents are not considered in themselves to be acutely toxic.

The UK understands that the new inhalation study may also have been submitted to the Rapporteur and suggests that this should be evaluated as it is important to classify accurately.

B.6.4 Genotoxicity (Annex IIA 5.4)

B.6.4.1.2 Gene mutation in mammalian cells

The draft assessment report concludes that under the experimental conditions of this assay, pyraclostrobin did not induce forward mutations *in vitro* in the CHO/HPRT mutation assay (page 113).

In the UK assessment, it was noted that an equivocal positive result was obtained in the mammalian cell mutation assay in the absence of metabolic activation (it was considered that no conclusion could be drawn from data obtained in the presence of metabolic activation). Despite this apparent positive result it was considered that a further *in vivo* genotoxicity study was not required and it was concluded that pyraclostrobin possessed no genotoxic potential that would result in an *in vivo* hazard.

However as genotoxicity is a crucial area this point should be discussed further.

B.6.6 Reproductive toxicity (Annex IIA 5.6)

A further rabbit study was required by the Rapporteur to establish a clear NOAEL for maternal toxicity (page 125).

It is not clear why a new study was required. A clear NOAEL for reproductive effects was already available. The UK considers that a further study would not affect the reference doses or provide significant new information on the toxicology of the material, and therefore would not justify the use of further animals. A worst case NOAEL could be determined from the rabbit teratology study.

B.6.14.3 Worker exposure

The conditions of use considered in the estimate (8 applications at varying rates) do not appear to be in line with the use of the product summarised in Section B.3.3 (3 applications at a maximum individual dose of 0.16 kg a.s./ha) or those presented in Section B.3.2.4.

Board for the authorisation of pesticides, Stadsbrink 5, NL-6707 AA, Wageningen, P.O. Box 217, phone +31 317 471810, Fax +31 317 471899

To: ECCO-Team PSD en RMS DE
From: CTB
Date: February 28, 2002

Subject: Comments of the Netherlands on **pyraclostrobin – ECCO 123**

Toxicology and Metabolism

Volume 1, Level 2 and 4

2.4 Impact on human health
No comments.

Volume 3, Annex B

B.4 Proposals for the classification and labelling
No comments.

B.6 Toxicology and metabolism
No comments.

B.6.1 to B.6.9
No comments.

B.6.10.2.2 Acute Reference Dose (ArfD)
The need for the derivation of an ArfD is questionable. There are no acute effects and the teratogenicity studies show no developmental effects in the absence of maternal toxicity.

B.6.14 Exposure data

Summary of the exposure analyses
- The described formulation of this fungicide is EC.
- For the estimation of exposure of operators, the national authority of Germany uses the UK and the German model.
- For bystanders, relevant exposure is not estimated.
- For workers, an exposure estimation is made using the BBA model.
- Some experimental data on dermal absorption are available. A dermal absorption of 1% is used in calculations.

Criticisms on the presented exposure assessment
- The EUROPOEM and Dutch models for mixer/loaders and applicators are not used.
- The German model uses the GM, which is no relevant measure for the risk assessment.
- It seems appropriate to use the available European model EUROPOEM for the

operators. For the Dutch approach see the annex.
- For bystanders the results of the reasoning are convincing, but should have been estimated quantitatively.
- For workers, the exposure estimations using PPE without further details on hand protection should be discarded.

Recommendation
- The exposure analysis as such has a reasonable standard, although it could be improved as argued above.
- The effect of PPE on exposure reduction for operators as used by the German model is much higher than accepted for the EUROPOEM model. For the German model, penetration of gloves and standard protective garment are taken as 1% and 5% respectively. EUROPOEM assumes 10%.

Endpoints
- The endpoint description is acceptable when UK and German model are taken as the standard for operators.
- For workers, hand exposure without gloves should be taken into account. The resulting exposure is well described in the endpoints.
- For bystanders, no quantitative estimate has been made. However, bystander exposure will be lower than operator exposure. Thus, the endpoint description is acceptable.

Board for the authorisation of pesticides, Stadsbrink 5, NL-6707 AA, Wageningen, P.O. Box 217, phone +31 317 471810, Fax +31 317 471899

CRITICAL ENDPOINT LIST

Impact on Human and Animal Health

Absorption, distribution, excretion and metabolism in mammals (Annex IIA, point 5.1)

Rate and extent of absorption	About 50% (based on urinary and biliary excretion within 5 d)
Distribution	Widely, highest concentrations in the liver
Potential for accumulation	None
Rate and extent of excretion	Complete within 5 d; mainly via faeces (80-90%, biliary excretion amounting to 35%), via urine 11-15%
Metabolism in animals	Extensive (>95%) with nearly 50 metabolites occurring Main metabolic pathways included N-demethoxylation, hydroxylation, cleavage of ester bond and further oxidation of the resulting molecule parts, conjugation with glucoronic acid or sulphate
Toxicologically significant compounds (animals, plants and environment)	Parent compound and metabolites

Acute toxicity (Annex IIA, point 5.2)

Rat LD_{50} oral	> 5000 mg/kg bw (Mouse: mortality at doses ≥ 300 mg/kg bw)	
Rat LD_{50} dermal	> 2000 mg/kg bw	
Rat LC_{50} inhalation	0.69 mg/l	**T, R 23**
Skin irritation	Irritating	**Xi, R 38**
Eye irritation	Not irritating	
Skin sensitization (test method used and result)	Not sensitizing (M&K maximization test)	

Short term toxicity (Annex IIA, point 5.3)

Target / critical effect	Reduced body weight, gastrointestinal tract, red blood cells; diarrhoea (dog); hepatocellular hypertrophy (rats); white blood cells and lymphatic organs (mice)
Lowest relevant oral NOAEL / NOEL	90 day mouse[1]: 30 ppm (4 mg/kg bw/d)
Lowest relevant dermal NOAEL / NOEL	4wk rat: ≥ 250 mg/kg bw/d (systemic)
Lowest relevant inhalation NOAEL / NOEL	No data - not required (because of physical and chemical properties)

Genotoxicity (Annex IIA, point 5.4)

No genotoxic potential

[1] based on effects on body weight after 90 days in the carcinogenicity study in male mice

Long term toxicity and carcinogenicity (Annex IIA, point 5.5)

Target / critical effect	Reduced body weight; liver cell necrosis (rats)
Lowest relevant NOAEL / NOEL	2yr rat / mouse: 75 / 30 ppm (4 mg/kg bw/d)
Carcinogenicity	No carcinogenic potential

Reproductive toxicity (Annex IIA, point 5.6)

Reproduction target / critical effect	Reduced pup body weight gain in the presence of parental toxicity
Lowest relevant reproductive NOAEL / NOEL	75 ppm (8.2 mg/kg bw/d)
Developmental target / critical effect	Developmental effects in rats and embryotoxicity in rabbits at maternally toxic doses
Lowest relevant developmental NOAEL / NOEL	5 mg/kg bw/d (rabbit)

Neurotoxicity / Delayed neurotoxicity (Annex IIA, point 5.7)

No neurotoxic potential (rat, acute and 13wk studies)

Other toxicological studies (Annex IIA, point 5.8)

Three water metabolites (BF500-11, 500-13, 500-14) proved negative in the Ames test

Medical data (Annex IIA, point 5.9)

Limited data (new compound); no human health problems expected

Summary (Annex IIA, point 5.10)

	Value	Study	Safety factor
ADI	0.04 mg/kg bw	2yr rat / mouse	100
AOEL systemic	0.02 mg/kg bw	90 day mouse (bioavailability: 50%)	100
Drinking water limit	Not considered by ECCO	-	-
ARfD (acute reference dose)	0.04 mg/kg bw	90 day mouse	100

Dermal absorption (Annex IIIA, point 7.3)

2.6% (rat, *in vivo*); *in vitro* data suggest much lower permeability of human skin; 1% used for calculation

Acceptable exposure scenarios (including method of calculation)

Operator	Intended use acceptable (Exposure < syst. AOEL, without PPE; German model, UK-POEM)
Workers	Intended use acceptable
Bystanders	Intended use acceptable

Classification and proposed labelling (Annex IIA, point 10)

with regard to toxicological data	T, R 23; Xi, R 38

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-Louis Pasteur-

Division Toxicology

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Contact person: Dr. M. DUVERGER
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ECCO meeting 123

your letter dated
your references

our references
date 20/12/2001

annex(es)

PYRACLOSTROBIN: Belgian comments on draft monograph part B.6, Toxicology and Metabolism prepared by GERMANY for discussion in ECCO 123:

B.6.6.2.2 Developmental rabbit study:

On request of RMS a second prenatal developmental rabbit study was performed at lower doses than those used in the initial study.
We consider that the NOAEL maternal toxicity is not 3-mg/kg bw/d as proposed by the RMS. This dose is associated with clear toxicity and is therefore not a NOAEL.
At 1 mg/kg bw/d, some effects are still apparent such as body weight change which is reduced of 59% (d 7-9).
There is no clear NOAEL for maternal toxicity in this study.

B.6.10 summary of mammalian toxicology and proposal for ADI, AOEL and ArfD:

ADI:

The RMS proposes to use an overall NOAEL of 4-mg/kg bw/d for establishing of ADI. However, we believe that the NOAEL chronic mice is 10 ppm (1.4 mg/kg bw/d) and not 30 ppm (4.1 mg/kg bw/d) as proposed by the RMS. Body weight and body weight changes are significantly reduced on days 455-546. Therefore, this value should be used.
This gives an ADI = 0.014 mg/kg bw/d.

AOEL:

RMS proposes to use an overall value of 4-mg/kg bw/d. It seems that there is a new trend to use an overall NOAEL and no more the lowest NOAEL from the chronic studies. While this approach seems to be acceptable, it should be noted that not all member states apply this procedure and that according to directive 91/414/EEC, the AOEL should be based on the NOAEL in the most sensitive relevant animal species, which is in this case, the mouse study. The 90 day mouse study has a NOAEL < 9.2 mg/kg bw/d. RMS propose to use the 91 day data from the mouse carcinogenicity study. We can agree with this proposal although no clinical chemistry was performed and we therefore don't know if urea concentration for ex. was affected.
Oral absorption is less than 50% (between 35 and 42%). We agree with an overall correction of 50%.

M.Duverger van Bogaert

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Public Health
And Environment

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Danish Environmental Protection Agency
Danish Ministry of the Environment

ECCO Team
PSD

Pesticide Division
In your reply, please refer to File No.
File no. M: 7042-0261
Ref.: SHO/11

Date January 25, 2002

Regarding ECCO 123: Pyraclostrobin

Danish comments on the monograph on Pyraclostrobin prepared by Germany to the European Commission.

"Toxicology and metabolism"

Dermal absorption
Regarding the *in vivo* study.
The monograph should present the excretion data, i.e. how much was excreted in the urine at the different time points.
Also, the monograph should present the data on residues in the skin. Thus, the conclusion reached in the monograph concerning reduction of skin residues during the post-observation period should be substantiated by presenting the actual data.

Yours Sincerely

Susanne Hougaard
sho@mst.dk

c.c. Rapporteur Member State: Mr. Lundehn, j.r.lundehn@bba.de

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DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Fate and Behaviour (ECCO 124)

1. List of end points (not included in Full Report)

Date	Supplier	File name

2. Comments

Date	Supplier	File name
6 March 2002	United Kingdom	Pyraclostrobin 124 com01 UK
8 March 2002	BASF	Pyraclostrobin 124 com02 BASF
8 March 2002	BASF	Pyraclostrobin 124 com02att BASF
11 March 2002	France	Pyraclostrobin 124 com03 FR
28 March 2002	The Netherlands	Pyraclostrobin 124 com04 NL

3. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name

4. Documents tabled at the meeting

Date	Supplier	Content	File name

5. Addenda (not included in Full Report)

Date	Supplier	File name

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Mr H Köpp
Biologische Bundesanstalt für Land-und
Forstwirtschaft
Abteilung für Pflanzenschutz mittel und
Anwendungstechnik (AP)
Messeweg 11-12
D-38104
Braunschweig
GERMANY

Our ref: ASY 247

6 March 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN
RAPPORTEUR:- GERMANY

ECCO 124 - MEETING TO DISCUSS ENVIRONMENTAL FATE AND BEHAVIOUR

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 124 in April 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: Ms M Cooper, ECCO Team – PSD

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

Volume 3

B.8.1.2.2 Field conditions

The RMS has concluded that DT50 of 34.4days can be considered as a reasonable worst case value for further calculations (e.g. PEC)'

The UK calculated a longer DT50 at HUS/02/98 of 55 days, it appears by the same method as the rapporteur. We consider that this should be raised at the ECCO meeting as being a worst case DT50 for calculation of soil PEC.

B.8.3 Predicted environmental concentrations in soil

PEC_s vineyard/turf scenario - we agree with the scenario, although we differ in the worst case DT50.

B.8.4.1.3.2 Water /Sediment study

The DT50 figure of 8.7 days given in the DAR appears to be from a standard dark study and is associated with a very low r^2 value of 0.8166. The UK questions the use of this value as the active substance is photolysed rapidly and there is an illuminated study which appeared to be acceptable. The UK has taken the dissipation rates from the illuminated study to be used in aquatic PEC calculation. The RMS appears not to have taken the DT50 value from the illuminated study into account because the dark study is a standard study. No other reason appears to have been given.

B.8.6.2.2 Rapporteur's PECsw calculations

Vineyard and turf scenarios - we agree with the scenario, although we differ in the worst case DT50.

B.8.6.3 Predicted environmental concentrations in sediment PECsed

The UK does not agree with the 1cm sediment depth used in the PECsed calculation. The approach of using a different sediment depth, presumably linked to different Koc values, has consistently been rejected during the ECCO process, and the PECsed must be recalculated using a depth of 5cm. This is a MS consideration and this sediment depth must not be used for PECsed calculation for Annex I consideration.

Comments on Endpoints

Route of degradation (aerobic) in soil

It would be useful to insert that the mineralisation and non-extractable residues values are at 87 – 91 days.

Anaerobic degradation

The maximum amount of metabolite BF 500-3 was 96% AR after 14 days

Field studies

According to the Timme & Frehse 1st order method, the worst case DT50 (excluding the highest value which is associated with a low r^2 value) should be 55 days, and the worst case DT90 180 days.

Soil adsorption/desorption

It would be useful to also include the mean Koc value and mean and range of 1/n for the parent. The Koc and 1/n values (mean and range) for the major soil metabolites should also be given.

Degradation in water/sediment systems under natural light

The DT50 in water must be amended to 5 days.

PECsw

We suggest that the DT50 from the illuminated sediment/water study should be used.

PECsed

PECsed must be recalculated using a 5cm sediment depth.

BASF Aktiengesellschaft · 67114 Limburgerhof, Germany

Mr. D. J. Flynn
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March 08, 2002-my
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Pyraclostrobin
EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 124

Dear Mr. Flynn:

Pyraclostrobin is scheduled for ECCO 124 in April 2002 with the meeting subject "Fate and Behaviour". Please find our respective comments below:

Volume 1

Point 1.5.1 - Field of use

The Monograph reads: Pyraclostrobin will be used as a fungicide in viticulture and on turf.

Notifier's comment: The words "and on turf" are to be deleted.

Reasoning:
It is not BASF's intention to use BAS 500 00 F in turf. The EU-Dossier for the Annex I listing of pyraclostrobin included an Annex III Dossier for the representative formulation BAS 500 00 F for the use in viticulture (see Doc. A, Doc. M-II, 3.3, 3.4, Doc. M-III, 3)

In Doc. D-1 we informed that the new active ingredient pyraclostrobin will be developed in a great variety of crops and not only for grapes and not only as solo product. These mixtures and a selection of additional crops were listed up. The project BAS 500 00 F/turf is terminated in the meantime. According to this the use "turf" is not to be considered here and "turf" is to be deleted from the monograph. Please see

- Volume 1, point 2.8.3.1
- Volume 3, B.3 (several times).

Point 2.8.3.5 - Fate and behaviour in the environment: route and rate of degradation in water

As a consequence of our statement to B.8.4.1 and B.8.6.2 this part was changed. The proposed change is attached there.

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Pyraclostrobin
EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 124

Volume 3, Annex B
Point B.8.4.1 and B.8.6.2 - PECsurface water calculations:

1) Representativity of water /sediment studies performed in the dark and under irradiated conditions

Two water/sediment studies were performed with the active ingredient BAS 500 F:
a) in the dark
b) under irradiated conditions since BAS 500 F proved to be very susceptible to UV-light

In the Monograph the Rapporteur wrote:
For the parent compound DT50 values in water were recalculated by the Rapporteur using the Timme and Frehse Model. The results are presented in Table

Calculation of DT50 values for pyraclostrobin in the water phase of the water/sediment systems using Timme/Frehse Model

System A

Labeling position	*best fit*			*1st order*		
	DT50 (d)	*DT90 (d)*	*r²*	*DT50 (d)*	*DT90 (d)*	*r²*
^{14}C-chlorophenyl	*2.1*	*23.3*	*0.9818*	***8.7***	*28.9*	*0.8166*
^{14}C-tolyl	*2.6*	*28.7*	*0.9938*	*13.9*	*46.3*	*0.6887*

...
Data were taken from the water/sediment study in the dark, although it could be shown that light has a considerable influence on the degradation behaviour of BAS 500 F in water.

Response of the Notifier:
a) The recalculation of the half-life of BAS 500 F in the water phase of a dark water/sediment study (data from Staudenmaier 1999, (BASF DocID 1999/11241) with the Timme&Frehse-approach leads to an unacceptable fit of the measured data (see figure 1).

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 124

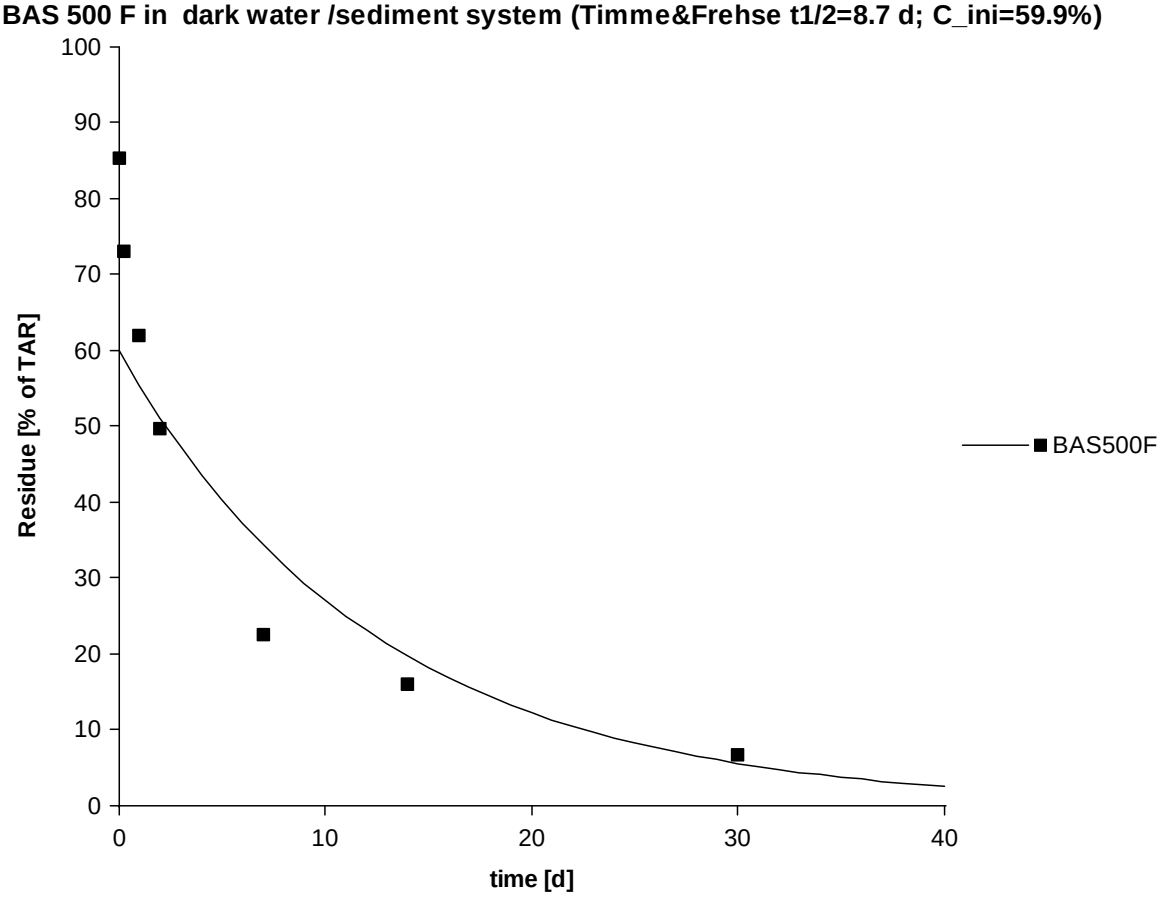

Figure 1 Inappropriate fit of the measured data using the Timme&Frehse approach

It is obvious that the fitted dissipation rate is too low to describe the measured dissipation rate, and the initial concentration (Rmod at t = 0.0 d in the Timme&Frehse program) is also fitted inappropriately (measured 85.3 %, fitted 59.9 %).

b) Furthermore, the dark water/sediment test system is a basic experiment on the first tier level for risk assessment. It is seen as not being fully representative to determine the aquatic dissipation rate of BAS 500 F under outdoor conditions because light plays an important role for degradation fo BAS 500 F in surface waters.
Therefore, it is proposed to use the data of the irradiated water/sediment study (Ebert 1999, BASF DocId 1999/11791) which is much more representative for real field conditions than the study performed in the dark. This study showed an excellent fitted first order half life of 4.6 days; $r^2 > 0.99$, see Figure 2.

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EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 124

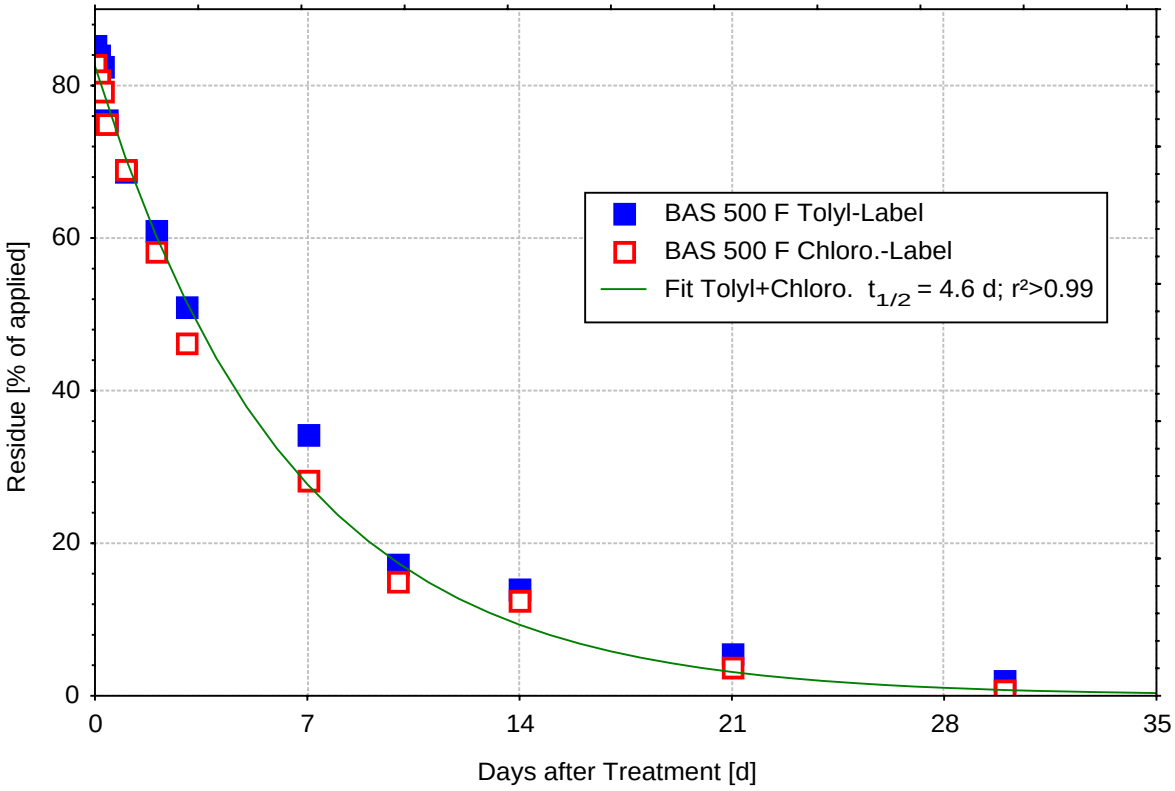

Figure 2 Fit of measured data in the irradiated water/sediment system

c) To prove that the half-life obtained with the water/sediment study under irradiated conditions represents the expected half-life in the field, the PEC simulated with this half-life can be compared with the actual measured data obtained in a mesocosm study (1m water layer, sediment with low organic carbon and high sand content) (Dohmen 2000, BASF DocId 2000/1000011) This mesocom study is the most realistic experiment (highest tier) available to assess the aquatic fate of BAS 500 F.

In Figure 3 and Figure 4, the BAS 500 F concentrations in the water phase are simulated with a DT50 of 8.7 d (Rapporteur's recommendation) and a DT50 of 4.6 d (notifier's recommendation), respectively, and compared to the measured concentrations.

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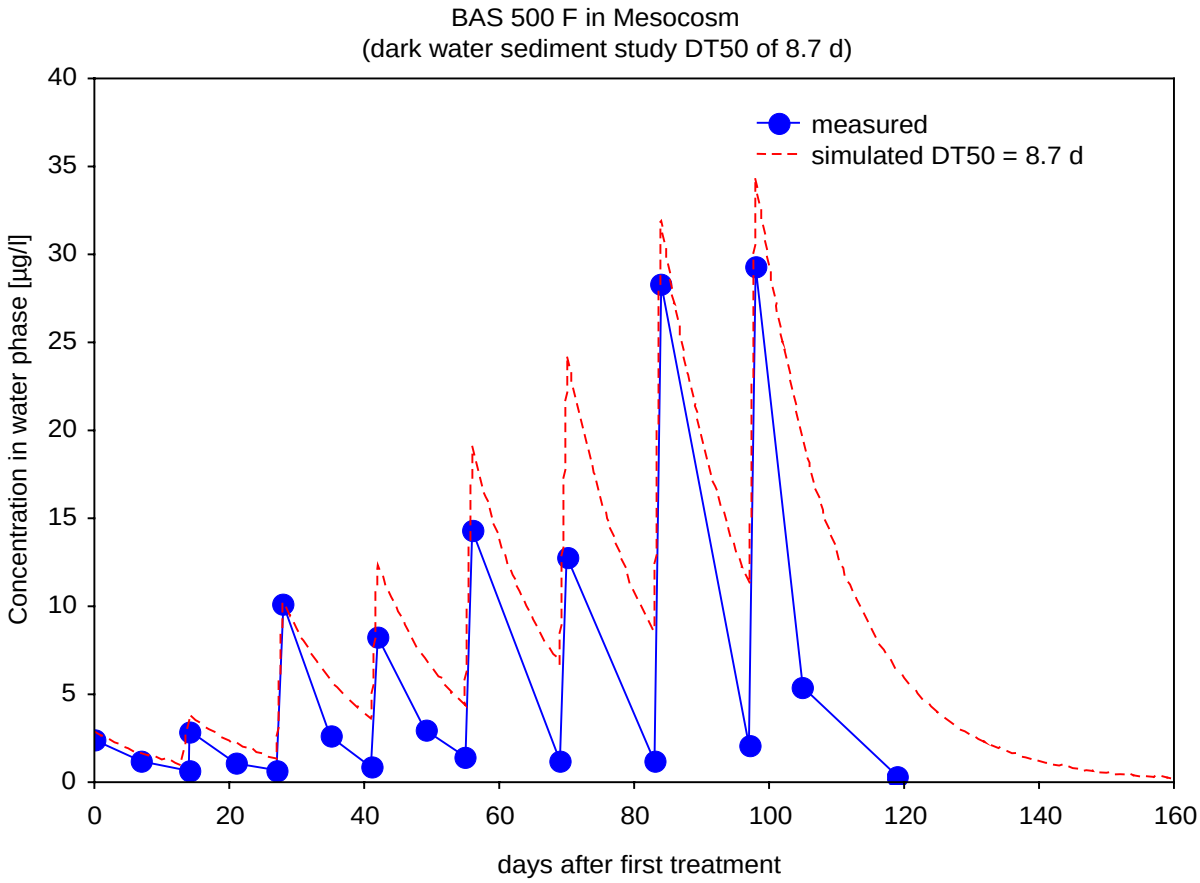

Figure 3 **Dissipation of BAS 500 F in the water phase of the mesocosm study after 8 applications - measured and simulated with a half-life of 8.7 d**

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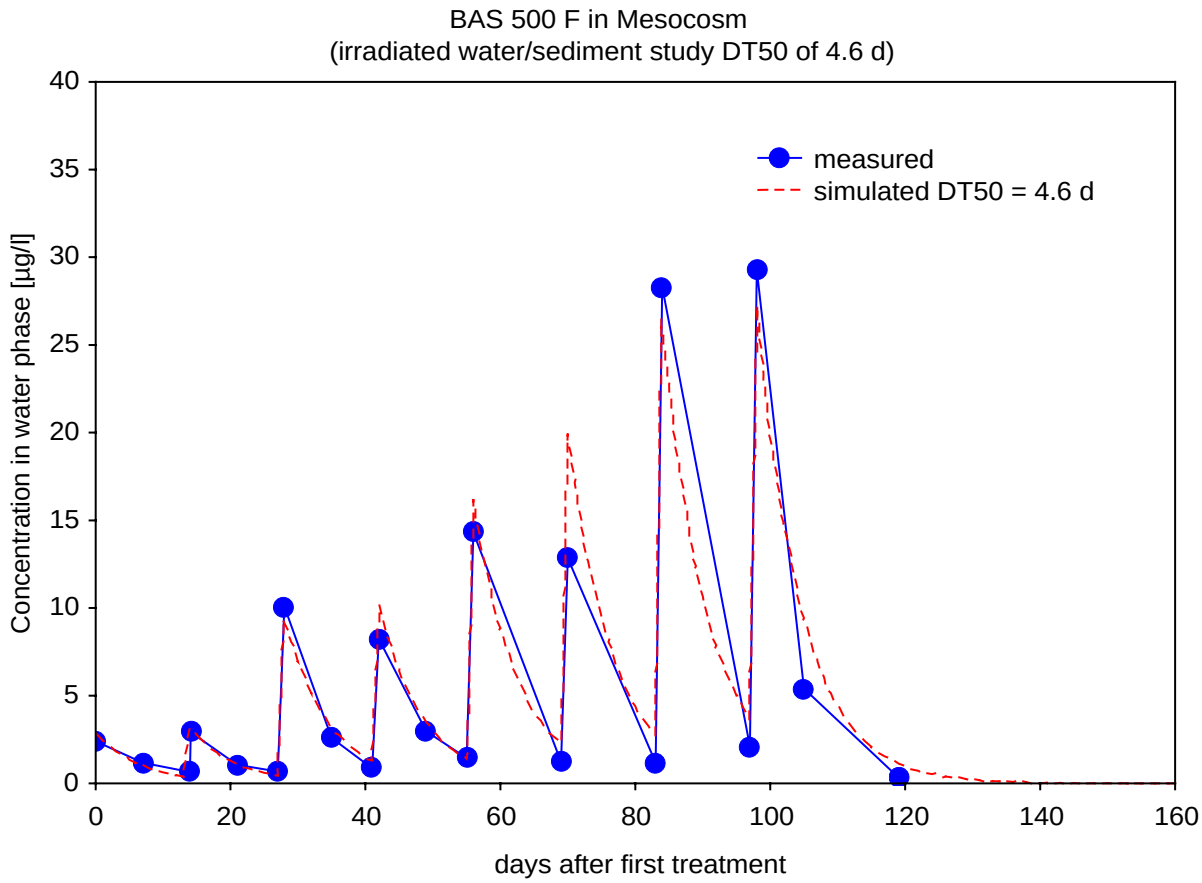

Figure 4 **Dissipation of BAS 500 F in the water phase of the mesocosm study after 8 applications - measured and simulated with a half-life of 4.6 d**

It is obvious that with a half-life of 8.7 days the aquatic dissipation behaviour of BAS 500 F in the mesocosm can not be simulated appropriately. The lower half-life of 4.6 days which is proposed by the notifier is confirmed by the dissipation rate in the highest tier mesocosm study (DT_{50} < 5 d)

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Pyraclostrobin

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According to the notifier's opinion the following conclusions can be made:

1. **In the list of endpoints only the best fit DT50-values should be listed for the dark water/sediment study. The DT50 (first order kinetics) calculated with Timme&Frehse should be eliminated.**

2. **For the irradiated water/sediment study the DT50-values (first order) calculated with ModelMaker should be listed In the list of endpoints. The DT50 (first order kinetics) calculated with Timme&Frehse should be eliminated.**

3. **A half-life of 4.6 days should be used to calculate the PECsw-values for BAS 500 F. The list of endpoints should be changed accordingly (see attachment).**

2) Drift percentages

The PECsw-values in the monograph are calculated using the 95th percentile drift values of Ganzelmeier.

Based on current EU guidance it is proposed to recalculate the PECsw-values based on the 90th percentile drift values by Rautmann et al. (2000) as given in the EU Aquatic guidance document (SANCO/3261/2001).

The PECsw- and PECsed-values for the crop 'grapevine' (which is the only intended use for the product BAS 500 00 F) should be calculated using a half-life of 4.6 days. Calculations should be made for multiple and for single application considering the overall 90th percentile drift values (proposal see attachment).

/page 8

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EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 124

3) Slow moving water body

It is found inappropriate that the PECsw-values for a slow moving water body are not considered in the aquatic risk assessment, which is definitely a more suitable habitat for the most sensitive species ('trout') than a static 30cm deep ditch. The non-consideration is seen to be in clear contrast to the point (iv) of the introduction to section 10 of Annex III which states that "*the final PEC estimations are to be adapted according to the different groups of organisms taking in particular into consideration the biology of the most sensitive species*". In the EU Aquatic guidance document it is recommended that "*the ECCO group "Ecotoxicology" when conducting the risk assessment for aquatic organisms should*
made sure that the final PECs are appropriate in terms of the biology and ecology of the most sensitive group of organisms identified."

It is proposed that the PECsw-values for a slow moving water body are considered in the aquatic risk assessment.

If there are any additional data/information you need, do not hesitate to contact me, please.

Yours sincerely

BASF Aktiengesellschaft
Agricultural Products
Global Product Safety & Registration

Dr. Regenstein

Attachment

cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00)
Mrs. Dr. Ebert
Dr. Gottesbüren

pyraclostrobin_124_com02_BASF

Attachment to "Statement to BAS 500 F PECsw calculations

Proposal for changes in Pyraclostrobin Monograph Appendix 3 - List of Endpoints

Route and rate of degradation in water (Annex IIA, point 7.2.1)

Hydrolysis of active substance and major metabolites (DT_{50}) (state pH and temperature)	pH 5: at 25°C, no hydrolysis through 30 days
	pH 7: at 25°C, no hydrolysis through 30 days
	pH 9: at 25°C, very slow hydrolysis through 30 days
Photolytic degradation of active substance and major metabolites	DT_{50} parent : <2 hours; CO_2: after 25 days 22% with chlorophenyl-label, about 4% with tolyl-label; 33 minor metabolites (<10%); 5 major metabolites: BF 500-11: max. 45% after 21 days, DT_{50} see higher tier study BF 500-13: max. 17% after 6 days, DT_{50} 31 days BF 500-14: max. 21% after 3 hours, DT_{50} about7 hours BF 500-15: max. 27% after 1 day, DT_{50} 5 days 500M58: max. 23% after 1 day, DT_{50} 9 days
Readily biodegradable (yes/no)	no
Degradation in water/sediment - DT_{50} water - DT_{90} water - DT_{50} sediment - DT_{90} sediment	**Best fit** pond system: 3 days; river system: 1 day pond system: 41 days; river system: 9 days pond system: 33 days; river system: 9 days pond system: 105 days; river system: no calc.possible
~~Degradation in water/sediment - DT_{50} water - DT_{90} water~~ ~~- DT_{50} entire system - DT_{90} entire system~~	~~**1st-order (Timme and Frehse)** pond system: 8.7 days; river system: 1 day pond system: 28.9 days; river system: not extrap. pond system: 26.8 days; river system: 29 days+ pond system: 89 days; river system: 96 days+ + = low r^2 value (0.5593)~~
Mineralisation	about 5 % after 100 days
Non-extractable residues	pond system 62%; river system 54% after 100 days

Distribution in water / sediment systems (active substance)	pond system: sediment max. 53% after 14 days, decreasing to 7% after 100 days river system: sediment max. 62% after 2 days, decreasing to 10% after 100 days
Distribution in water / sediment systems (metabolites)	BF 500-3: in water: max. 2%, in sediment: max. 12% (pond system) after 100 days; max. 66% (river system) after 14 days, decreasing to 29% after 100 days BF 500-6: (only in pond system) in sediment max. 7% after 61 days BF 500-7: (only in pond system) in sediment max. 6% after 61 days

Degradation in water/sediment under **natural light** and temperature conditions DT_{50} water DT_{50} sediment	**4.6** days (first order) 4 days
Mineralisation	(calculated from balance difference) about 23% after 62 days (chlorophenyl-label) about 7% after 62 days (tolyl-label)
Non-extractable residues	28% after 62 days (chlorophenyl-label) 26% after 62 days (tolyl-label)
Distribution in water / sediment system (active substance)	water: <1% after 62 days sediment: max. 18% after 7 days, decreasing to 0.3% after 62 days
Distribution in water / sediment system (metabolites >10%)	in water: BF 500-11: max. 11% after 21 days, DT_{50} 20 days BF 500-13: max. 16% after 62 days, DT_{50} see aqueous photolysis study BF 500-14: max. 11% after 10 days, DT_{50} 14 days in sediment: BF 500-3: max. 16-17% after 30 days, DT_{50} 99 days

PEC (surface water) (Annex IIIA, point 9.2.3)

~~Method of calculation~~	~~95.percentile spray drift values, overspray and 5 m distance to sw;~~ ~~DT50 water: 8.7 d, 1st Order calculation~~
~~Application rate~~	~~**Turf**, 2 x 250 g a.s./ha, interval of 14 d, 30 cm water layer, static water body~~
~~Main routes of entry and type of water body~~	~~Spray drift~~

~~**Turf**~~

~~**PEC**(sw)~~	~~Multiple application Actual [µg/L]~~	~~Multiple application Time weighted average [µg/L]~~	~~Multiple application Actual [µg/L]~~	~~Multiple application Time weighted average [µg/L]~~
~~Distance to sw (m)~~	~~Overspray (0 m)~~		~~5 m buffer zone~~	
~~Initial~~	~~110.6~~			
~~Short term~~ ~~24h~~ ~~2d~~ ~~4d~~	 ~~102.1~~ ~~94.3~~ ~~80.4~~	 ~~106.3~~ ~~102.2~~ ~~94.7~~	 ~~0.6~~ ~~0.6~~ ~~0.5~~	 ~~0.6~~ ~~0.6~~ ~~0.56~~
~~Long term7d~~ ~~14d~~ ~~21d~~ ~~28d~~ ~~42d~~	 ~~63.3~~ ~~36.3~~ ~~20.7~~ ~~11.8~~ ~~3.9~~	 ~~84.8~~ ~~66.7~~ ~~53.7~~ ~~44.3~~ ~~31.9~~	 ~~0.4~~ ~~0.2~~ ~~0.1~~ ~~0.07~~ ~~0.02~~	 ~~0.51~~ ~~0.40~~ ~~0.32~~ ~~0.27~~ ~~0.19~~

Method of calculation	90.percentile spray drift values (overall), overspray and 5 m distance to sw, DT50 water: 4.6 d, 1st Order calculation
Application rate	Vine, 3 x 100 g a.s./ha, interval of 12 d, 30 cm water layer, static water body
Main routes of entry and type of water body	Spray drift single application: 5 m -> 3.62 % drift (90th pct.) multiple application (overall 90th pct.): 5 m -> 3.07 % drift per application (77th pct.)

Vine

PEC(sw)	Single application Actual [µg/L]	Single application Time weighted average [µg/L]	Single application Actual [µg/L]	Single application Time weighted average [µg/L]
Distance to sw (m)	Overspray (0 m)		5 m	
Initial	33.33		1.21	
Short term				
24h	28.67	30.94	1.04	1.12
2d	24.66	28.78	0.89	1.04
3d	21.21	26.82	0.77	0.97
4d	18.24	25.04	0.66	0.91
Long term				
7d	11.61	20.60	0.42	0.75
14d	4.04	13.88	0.15	0.50
21d	1.41	10.09	0.05	0.37
28d	0.49	7.78	0.02	0.28
42d	0.06	5.26	0.00	0.19
50d	0.02	4.42	0.00	0.16
100d	0.00	2.21	0.00	0.08

PEC(sw)	Multiple application Actual [µg/L]	Multiple application Time weighted average [µg/L]	Multiple application Actual [µg/L]	Multiple application Time weighted average [µg/L]
Distance to sw (m)	Overspray (0 m)		5 m	
Distance to sw (m)	Overspray (0 m)		5 m	
Initial	39.69		1.22	
Short term				
24h	34.14	36.85	1.05	1.13
2d	29.37	34.27	0.90	1.05
3d	25.26	31.93	0.78	0.98
4d	21.73	29.81	0.67	0.92
Long term				
7d	13.82	24.53	0.42	0.75
14d	4.81	16.53	0.15	0.51
21d	1.68	12.01	0.05	0.37
28d	0.58	9.27	0.02	0.28
42d	0.07	6.26	0.00	0.19
50d	0.02	5.27	0.00	0.16
100d	0.00	2.63	0.00	0.08

PEC (sediment)

Method of calculation	Maximum concentration of 17.9 % a.s. after 7 days in water/sediment study, $PEC_{ini\ in\ water}$ = after the last application
	Scenarios, in 5, 10, 20 and 50 m distances with 3.07, 1.02, 0.34 and 0.08 % drift 77th pct. Drift values to achieve overall 90th pct. 1 cm sed.-layer, bulk dens. of wet sediment:1.3 g/cm³

Distance (m)	0	5	10	20	50
~~turf~~					
~~$PEC_{ini.,act.}$ in water (µg/L)~~	~~110.6~~	~~0.66~~	~~0.44~~	~~0.11~~	-
~~PEC_{sed} (µg/g)~~	~~0.46~~	~~0.003~~	~~0.002~~	~~0.001~~	-
vine					
$PEC_{ini,\ act.}$ in water (µg/L)	39.7	1.22	0.40	0.13	0.03
PEC_{sed} (µg/g)	0.164	0.005	0.002	0.001	<0.001

MINISTERE de l'EDUCATION NATIONALE et de la RECHERCHE et de la TECHNOLOGIE
MINISTERE de l'AGRICULTURE et de la PÊCHE

DGAL

S. S. M.
Structure Scientifique Mixte

Date: 11 March 2002

From

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Reviewer of the draft monogragh : **Agnès Hubert**

To **Ecco team PSD *ECCO meeting 124***
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cc **Rapporteur member state Germany**
e.mail : j.r.lundehn@bba.de

Suject : Comments from France - ECCO 124 ENVIRONMENTAL FATE AND BEHAVIOUR.

Please find attached comments (2 pages) from France on the draft Assessment Report for the new active substance pyraclostrobin for consideration in ECCO 124 Environmental Fate and Behaviour.

Yours sincerely,

Paul Gaillardon

February 2002	Pyraclostrobin	RMS : Germany

EU Review program on active substances in Plant Protection Products

Comments of France on PYRACLOSTROBIN draft monograph

Section : Environment

Document : monograph 01 August 2001	Comment
Vol. 3, B 8.1.1.1 : Route of degradation in the soil	Metabolite BF 500-6 is a major metabolite, as its amount is 11.6 or 15.9 (for tolyl-label and chlorophenyl-label, respectively), at 180 d.
Vol. 3, B.8.1.2. Rate of degradation, 1- laboratory conditions 2- field conditions	1- according to table B.8.1-10, metabolites BF 500-6 and BF 500-7 must be considered as major metabolites 2- At the end of paragraph, it is stated that « 34.4 d can therefore be considered as reasonable worst case ». Why ?
Vol. 3, B.8.1.2.3 storage stability of soil residues.	In the summary of this paragraph, a mean value of 26.1 d (1^{st} order) is proposed for DT50 under outdoor field conditions ; according to table B.8.1-17, it should be 36 d.
Vol. 3, table B.8.2-5	BF 500-6 instead of BF 5000-6
Vol.3, B.8.6.2 PEC sw	In annex B-3 : data on application and further information, it is advised to increase the application rate by up to 25% if vine is growing in steep locations (cf. B.3.2.4). Why ? What are the consequences for concentration of surface water ?
Vol. 3, B.8.6.2.1	First line of this paragraph : B.8.6.1 instead of B.8.6.4
Volume 3, B.8.6.2.2 PECsw rapporteur's calculations	To calculate PECsw, run-off should be considered in the case of vine, as this crop is frequently on steep locations.
Volume 3, .8.9 and table B.8.9-1 definition of the residue.	Informations on the lower ecotoxicity of the metabolites should be confirmed by ecotoxicologists.

List of endpoints
Level 2 - Appendix 3 - 1 August 2001

Rate of degradation in soil :
- method of calculation : field studies ; instead of 26.1 d, mean value of DT50 should be 21.5d (table B.8.1-16 of the monograph), or 36 d if calculated values are considered (table B.8.1-17)
- DT50 of major metabolites, BF 500-6 and BF 500-7, should be reported (from table B.8.1-12 of the monograph)

Degradation in water/sediment
- the values of DT_{50} and DT_{90} entire system are not presented in the monograph ; which method to calculate them ?

PECsw
Runoff-erosion is another route of entry, in the case of vine.

PECgw
Scenarios (european level) which were used could be reported

Board for the authorisation of pesticides, Stadsbrink 5, NL-6707 AA, Wageningen, P.O. Box 217, phone +31 317 471810, Fax +31 317 471899

To: ECCO-Team PSD en RMS DE
From: CTB
Date: March 28, 2002

Subject: Comments of the Netherlands on **pyraclostrobin – ECCO 124**

Fate and behaviour

Volume 1

Level 2, Reasoned statement of the overall conclusions

Definition of the residues to the environment

Mention all the major metabolites.
Soil: BF500-6, BF500-7, are observed in concentrations > 10% of parent compound.
Water: BF500-11, BF500-13 and BF500-14 are observed in concentrations > 10% of parent compound.
Sediment: BF500-3 is observed in concentrations > 10% of parent compound.

In ECCO-ecotoxicology the relevance of these metabolites should be discussed. Based on the outcome of that discussion the non-relevant metabolites can be excluded from the definition of the residues. (In B.8.9.1 Soil the statements that “Ecotoxicity studies showed that the metabolites do not have any effect on earthworms or the microbial activity is soil. Furthermore both metabolites are not biologically active.” are not supported by the preceeding evaluations in section B8.)

Rate of degradation in soil (lab)

1. The route study is useful for calculation of DT50-values. Tolyl label DT50=17.8 days (r^2=0.97), Cl-phenyl label DT50 =19.0 (r^2 =0.94). These DT50 can be reported in a remarks section which is added by the RMS to the summary of the study.
2. The anaerobic degradation rate should be added. DT50 2.1 days (r^2=0.99) tolyl label and DT50 5.3 days (r^2=0.99) Cl-phenyl label.
3. DT50s in Bruch West soil have probably been calculated without fixing the plateau at 0, resulting in underestimation of DT50s. DT90 values do not correspond with the DT50 values (assuming first order exponontial degradation kinetics. Regression coefficients should be reported as well as the kinetic model and methods used.
4. Results summarised in the paragraph “summary and conclusions” should have been reported in the summary of the study. The results of Lufa 2.2 with different temperatures and moisture contents (Table B.8.1.-11) are new and not traceable, so it should be mentioned in the conclusion
5. DT50 from metabolites should be explained; calculation method, kinetic model used, regression coeffcients, which data-points have been used. The results should also be mentioned in the remarks of the study summary.
6. Recalculated DT50s see table below.

   Recalculated DT50 of Table B.8.1.-11 using non-linear regression of first order exponential decay results in the following DT50s:

DOC #	Soil	^{14}C-position	DT50	r^2

BOD2000-636 BOD2000-637	Bruch West Bruch West	tolyl Cl-phenyl	18 19	0.97 0.94
BOD2000-638	Lufa 2.2 Li35b US 771-15 Canadian	tolyl tolyl tolyl tolyl	95 60 58 96	0.96 0.93 0.91 0.96
	Lufa 2.2, var. Temp and moisture	tolyl	raw data not available for recalculation	
BOD2000-641	Bruch West	tolyl	2	0.99 9
BOD2000-642	Bruch West	Cl-phenyl	5	0.99 9

Rate of degradation in soil (field)

1. Are the recalculations of the degradation rate in the field really done using Timme &Frehse model and first order kinetics? The DT50 of Spain ALO/01/98 mentioned could not be reproduced, applying first order exponential decay kinetics with Graphpad Prism. Recalculation of ALO/01/98 results in DT50=8 days, r^2 =0.95. The same could be true for the other field degradationrates. These DT50s could not be recalculated, because the underlying data are not included in the summary.
2. In ALO01 and ALO02 the conversion from DT50 to DT90 is not according to first order kinetics. According to the DT50s given, the D90 in ALO/01/98 should be 26 days and the DT90 in ALO/02/98 should be 6.6 days.
3. It is confusing to have the values of the notifier and the values recalculated by the RMS in the endpointlist. Only the recalculated values should be included in the endpointlist.
4. The mean DT50 of 6 locations is 36 days, using the Timme and Frehse values. For the calculation of the mean of 26 days Spain ALO/01/98 was not included. Is there a reason for the exclusion of that datapoint?
5. For the evaluation of the relevance of a field study information about appplication time and meteorological conditions are required. Average temperature and total precipitation during the field experiment should be reported in the summary.

Soil adsorption and desorption

1. The range, the average and the 1/n should be included in the endpointlist.
2. Adsorption coefficients with a Freundlich exponent <0.7 (Table B.8.2.-4) are considered not reliable and should not be used for the overall conclusions. The Kd 660 ml/g for BF500-3 should not be included in the endpointlist.
3. BOD2000-653: Considering the low solubility of BF 500-6 what **was** the test concentration?
4. BOD2000-654: Considering the low solubility of BF 500-7 what **was** the test concentration?

Predicted environmental concentrations in soil

1. The DT50 for cooler regions seems to be derived from the DT50 of 34.4 days with the Arrhenius equation, assuming a temperature difference of 5°C. This should be mentioned explicitly. The DT50 of 34.4 is not acceptable, because it is not calculated correctly.

Route and rate of degradation in water (photolysis)

1. Half-lives have been calculated with ModelMaker. More information is required to assess the validity of the curve fitting procedure. Was it a sequential or simultanuous fit? Was the (right) reaction scheme implemented in the fitting procedure? What was the performance of the curve fitting procedure (r^2)?

Route and rate of degradation in water (water/sediment)

The result of parameter estimation with the ModelMaker program seems not useful, because no DT50 was generated. Consequently the corresponding r^2 is not relevant.
The DT50 can be recalculated with simple first order exponential equations resulting for system A in a DT50 for pyraclostrobin in water of 4 days (r^2= 0.96) and a DT50 in the sediment of 28 days (r^2 is 0.99). For sediment only time from 14 days on have been used. For system B a DT50 of 1 days (water) and 8 days(sediment) were calculated with respective r^2 of 0.97 and 0.90.

It is unlikely that Modelmaker can determine the DT50s of metabolites whereas it can **not** determine the DT50s of pyraclostrobin in water and sediment. It raises doubts about the reliability of the DT50s of the metabolites. More information is required to assess the validity if the curve fitting procedure.

In table 8.4-12 best fits are mentioned. This is meaningless without mentioning the corresponding kinetic model. Timme/Frehse itself is a sequence of models that are subsequently being fitted until the best fit has been obtained. It is strange that first order can not be calculated by Timme/Frehse, whereas it can be calculated directly with a regular non-linear first order curve fitting procedure. DT50s can not be recalculated for the two different labels because underlying data are not included in the summary.

From the graphical interpretation and our recalculations the DT50 of pyraclostrobin in water should be approximately 4 days for PEC calculations.

PEC surface water

- There is no surface water model that is validated on the community level yet. Which model or method did the rapporteur use for the calculation of PEC_{sw}? PEC calculations should also be made for environmentally relevant metabolites.
- Average DT50 of 2 water-sediment studies is 16.5 days.
- Despite the high adsorption coefficients , adsorption was neglected in the PEC sw calculations.
- Apparently drift percentages of 4.9, 1.6, 0.4, and 0.2% have been used. According to the Ganzelmeier table this corresponds to distances of 3,5,10 and 15 m distance and not to 5, 10, 20 and 50 m as mentioned in the tables 8.6-4, 8.6-5 and 8.6-6.

PEC sediment

This calculation is too specific for the water-sedimentstudy. PEC_{sed} can be derived from PEC_{sw} by applying equilibrium partitioning. The bulk density is quite high for a sediment. It should be clear on which K_{oc} and DT50 the calculations have been based.

Level 3, Proposed decision

3.3 Rational for the postponement

Dependent on the ecotoxicological relevance of the major metabolites additional studies should be provided.

Level 4, Further information

Dependent on the ecotoxicological relevance of the major metabolites additional studies should be provided.

Pyraclostrobin – list of endpoints

Fate and Behaviour in the Environment

Route of degradation (aerobic) in soil (Annex IIA, point 7.1.1.1.1)

Mineralization after 100 days	approx. 5%
Non-extractable residues after 100 days	approx. 55%
Relevant metabolites - name and/or code, % of applied (range and maximum)	BF500-6 max. **11.6 - 30.9%** (5 soil types) BF500-7 max. 1.3 - **12.5%** (5 soil types)

Route of degradation in soil - Supplemental studies (Annex IIA, point 7.1.1.1.2)

		Cl-phenyl label	Tolyl label
Anaerobic degradation	pyraclostrobin (120 d)	0 %	0%
	BF500-3	max. **79.9%**	**95.8%**
	BF500-4	max. 7.0%	**11.1%**
	500M75	max. 3.9%	**11.4%**
	BF500-5	max 7.5%	
	500M74	max 7.3%.	5.4%
	Bound residue (120 d)	37.4%	60.8%
	CO_2 (120 d)	max 0%	2.1%
Soil photolysis	pyraclostrobin (15 d)	63.6%	74.4%
	BF500-3	max 8%	4.2%
	Bound residues (15 d)	12.3%	12.2%
	CO_2 (15 d)	1.8%	1.3%

Rate of degradation in soil (Annex IIA, point 7.1.1.2, Annex IIIA, point 9.1.1)

Method of calculation	First-order exponential decay (non-linear regression)
Laboratory studies (range or median, with n value, with r^2 value)	DT_{50lab} (20°C, aerobic):19 d (r^2= 0.95, n=11), 58 d (r^2= 0.91, n=8), 60 d (r^2= 0.93, n=8), 95 d (r^2= 0.96, n=8), 96 d (r^2= 0.96, n=8). Average DT50 is 66 days.
	DT_{90lab} (20°C, aerobic): 63-319 days
	DT_{50lab} (10°C, aerobic):not available
	DT_{50lab} (20°C, anaerobic): 3.6 days (r^2=0.96, n=11)
	degradation in the saturated zone: not available
Field studies (state location, range or median with n value)	DT_{50f}: Spain, 8 days (r^2= 0.95, n=6) One other Spanish soil, 3 German soils and 1 Swedish soil need to be recalculated with a first-order exponential equation. Indicative values (2-37 days using the compartment model): Spain 2 and 8 days, Sweden 31 days, Germany 25, 26 and 37 days.
	DT_{90f}: Spain 27 days Indicative values 7-123 days
Soil accumulation and plateau concentration	No accumulation

Soil adsorption/desorption (Annex IIA, point 7.1.2)

	Soils: 3 German, 2 US, 1 Canadian
K_f /K_{oc}	**Active substance:** Koc avg 9304 l/kg, range 6000-16000 l/kg
K_d	Kd avg 160 l/kg, range 30-368 l/kg
	BF500-3:
pH dependence (yes / no) (if yes type of dependence)	Koc avg 10330 l/kg, range 6750-12000 l/kg Kd avg 161 l/kg, range 47-354 l/kg
	BF500-6:
	Koc avg 48115 l/kg, range 3360-126800 l/kg Kd avg 385 l/kg, range 84-634 l/kg
	BF500-7:
	Koc avg 62278 l/kg, range 4020-149900 l/kg Kd avg 468 l/kg, range 101-750 l/kg

Mobility in soil (Annex IIA, point 7.1.3, Annex IIIA, point 9.1.2)

Column leaching	0% ar in leachate, 94-100% ar in 0-6 cm layer, 1.8-8% ar in 6-12 cm layer. No radioactivity in deeper layers. (4 German soils)
Aged residues leaching	90.9% in 0-6 cm layer, 2.2% in 6-12 cm layer. . No radioactivity in deeper layers. (1 German soil)
Lysimeter/ field leaching studies	Not available.

PEC (soil) (Annex IIIA, point 9.1.3)

Method of calculation	Vineyard scenario, First order decay with DT50=21.5 days
Application rate	Dosage 0.1 kg/ha, 3 times, interval 12 days, F_{soil}= 0.6/0.4/0.1 , soil depth 5 cm, bulk density 1500 kg/m^3

PEC$_{(s)}$ (mg/kg)		Single application Actual	Single application Time weighted average	Multiple application Actual	Multiple application Time weighted average*
Initial		0.08	0.04	0.086	0.079
Short term	24h	0.077	0.079	0.084	0.080
	2d	0.075	0.077	0.081	0.079
	4d	0.070	0.075	0.076	0.079
Long term	7d	0.064	0.072	0.069	0.079
	28d			0.035	0.067
	50d			0.017	0.055
	100d			0.003	0.036

*Time after last application

Method of calculation	Turf scenario, First order decay with DT50=21.5 days
Application rate	Dosage 0.25 kg/ha, 2 times, interval 14 days, F_{soil} = 0.5, soil depth 5 cm, bulk density 1500 kg/m^3

PEC$_{(s)}$ (mg/kg)		Single application Actual	Single application Time weighted average	Multiple application Actual	Multiple application Time weighted average*
Initial		0.167	0.167	0.273	0.145
Short term	24h	0.161	0.164	0.264	0.153
	2d	0.156	0.161	0.256	0.159
	4d	0.147	0.156	0.240	0.168
Long term	7d	0.133	0.149	0.218	0.176
	28d			0.111	0.166
	50d			0.054	0.136
	100d			0.011	0.088

*Time after last application

Route and rate of degradation in water (Annex IIA, point 7.2.1)

Hydrolysis of active substance and relevant metabolites (DT_{50}) (state pH and temperature)	pH 5: at 25°C, no hydrolysis through 30 days
	pH 7: at 25°C, no hydrolysis through 30 days
	pH 9: at 25°C, very slow hydrolysis, 22% in 30 days pH 9: at 50°C, 13.3% BF500-5, 4.3% BF500-6 and 12.8% BF500-7 have been formed within 5 days.
Photolytic degradation of active substance and relevant metabolites	pyraclostrobin 0.06 days, 0% after 15 days BF500-14 DT50 0.28 days, max 20.7% 500-M58 DT50 8.6 days, max 23.4% BF 500-13 DT50 30 days, max 16.8% BF 500-11 no DT50, max. 44.5%

Readily biodegradable (yes/no)	no
Degradation in water/sediment (dark) - DT_{50} water - DT_{90} water - DT_{50} whole system - DT_{90} whole system	 pond 4 days (r^2 =0.96), river 3 days (r^2 = 0.98) average DT90 12 days pond 26 days (r^2=0.97), river 7 days (r^2=0.97) DT90 resp. 86 days and 25 days
Mineralization	4.6% after 100 days
Non-extractable residues	54-62% after 100 days
Distribution in water / sediment systems (active substance)	pond: sediment max. 53% after 14 days decreasing to 7% after 100 days river: sediment max. 62% after 2 days, decreasing to 10% after 100 days
Distribution in water / sediment systems (metabolites)	**BF500-3:** in water max. 2%, in sediment max 12% (pond) after 100 days; max 66% (river) after 14 days, decreasing to 29% after 100 days **BF500-6:** only in pond, in sediment max 7% after 61 d. **BF500-7**: only in pond, in sediment max. 6% after 61 d.
Degradation in water/sediment under **natural light conditions** - DT_{50} water - DT_{90} water - DT_{50} whole system - DT_{90} whole system	 5 days (r^2 =0.99) average DT90 15 days 7 days (r^2=0.99) 25 days
Mineralization	not measured
Non-extractable residues	28% after 62 days
Distribution in water / sediment systems (active substance)	river: sediment max. 18.3% after 7 days, decreasing to 0.3% after 100 days
Distribution in water / sediment systems (metabolites)	**BF500-3:** in water max. 5%, in sediment max 17% after 30 days **BF500-14:** in sediment max 0.7% after 3-62 d., in water max 11.4% after 14 days **BF500-11**: in sediment max. 0.6% after 62 d., in water max. 11.4% after 21 days

PEC (surface water) (Annex IIIA, point 9.2.3)

Method of calculation	USES 3.0 (TOXSWA), Vine scenario
Application rate	3 times 0.1 kg/ha, interval 10 days, DT50 = 16.5 days
Main routes of entry	Drift

$PEC_{(sw)}$ Multiple application TWA (µg/l)	0 m drift 100%	3m drift 2.49%	5m drift 1.04%	10m drift 0.32%
Initial	45.7	1.14	0.48	0.15
4d	74.9	1.86	0.78	0.24
21d	57.5	1.43	0.60	0.18
28d	52.4	11.30	0.55	0.17

Peak conc.	85.6	2.13	0.89	0.27

Method of calculation	USES 3.0 (TOXSWA), Turf scenario
Application rate	2 times 0.25 kg/ha, interval 10 days, DT50 = 16.5 days
Main routes of entry	Drift

PEC$_{(sw)}$ Multiple application TWA (µg/l)	0 m drift 100%	1 m drift 2.01%	5m drift 0.41 %	10m drift 0,2 %
Initial	114	2.30	0.47	0.23
4d	151	3.04	0.62	0.30
21d	105	2.11	0.43	0.21
28d	99	1.99	0.41	0.19
Peak conc.	175	3.52	0.72	0.35

PEC (sediment)

Method of calculation	USES 3.0 (TOXSWA), Vine scenario
Application rate	3 times 0.1 kg/ha, interval 10 days, DT50 = 16.5 days, Koc =9304 l/kg

PEC$_{(sed)}$ TWA (mg/kg)	0 m drift 100%	3m drift 2.49%	5m drift 1.04%	10m drift 0.32%
Peak	89	2.21	0.924	0.316
7d	63	1.57	0.654	0.236
28d	54	1.35	0.566	0.21
10+2 years	889	22.1	9.24	3.16

PEC (sediment)

Method of calculation	USES 3.0 (TOXSWA), Vine scenario
Application rate	3 times 0.1 kg/ha, interval 10 days, DT50 = 16.5 days, Koc =9304 l/kg

PEC$_{(sed)}$ TWA (mg/kg)	0 m drift 100%	3m drift 2.49%	5m drift 1.04%	10m drift 0.32%
Peak	182	3.65	0.74	0.363
7d	117	2.36	0.48	0.235
28d	103	2.06	0.42	0.205
10+2 years	1820	36.5	7.44	3.63

PEC (ground water) (Annex IIIA, point 9.2.1)

Method of calculation and type of study (*e.g.* modelling, monitoring, lysimeter)	FOCUS PEARL 1.1.1. Standard Focus runs
Application rate	• 3 times 0.1 kg/ha on May 25, June 6 and June 18, annually, crop interception 0.7, 0.7, 0.85 resp. Vines scenario in Hamburg, Chateaudun, Piacenza, Porto and Sevilla. • 2 times 0.25 kg/ha on April 15 and April 19 annually, grass in all EU scenarios.

PEC$_{(gw)}$

Maximum concentration	<0.001 µg/l
Average annual concentration	<0.001µg/l

Fate and behaviour in air (Annex IIA, point 7.2.2, Annex III, point 9.3)

Direct photolysis in air	< 2h
Quantum yield of direct phototransformation	$2.17*10^{-1}$
Photochemical oxidative degradation in air	<2 hours
Volatilization	from plant surfaces: 3% in 24 hours
	from soil: <1% in 24 hours

PEC (air)

Method of calculation	not done due to low volatility and rapid photochemical oxidative degradation

PEC$_{(a)}$

Maximum concentration	not calculated

Definition of the Residue (Annex IIA, point 7.3)

Relevant to the environment	in soil: BF500-6, BF500-7, BF500-4 and 500M75 are observed in concentrations > 10% of parent compound. in sediment: BF500-3 in water:, BF500-11, BF500-13 and BF500-14

Monitoring data, if available (Annex IIA, point 7.4)

Soil (indicate location and type of study)	none
Surface water (indicate location and type of study)	none
Ground water (indicate location and type of study)	none
Air (indicate location and type of study)	none

Classification and proposed labelling (Annex IIA, point 10)

with regard to fate and behaviour data	

DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Residues (ECCO 125)

1. List of end points (not included in Full Report)

Date	Supplier	File name

2. Comments

Date	Supplier	File name
17 April 2002	BASF	Pyraclostrobin 125 com01 BASF
18 April 2002	United Kingdom	Pyraclostrobin 125 com02 UK
26 April 2002	Netherlands	Pyraclostrobin 125 com03 NL

3. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name

4. Documents tabled at the meeting

Date	Supplier	Content	File name
21 May 2002	France	Comments on Pyraclostrobin	Pyraclostrobin 125 com04 FR

5. Addenda (not included in Full Report)

Date	Supplier	File name

BASF

BASF Aktiengesellschaft · 67114 Limburgerhof, Germany

Mr. D. J. Flynn
ECCO Team (PSD), Room 208
Pesticides Safety Directorate
Mallard House, King's Pool
3 Peasholme Green

UK-YORK Y01 7PX

per e-mail on: April 17, 2002
April 17, 2002-my
APD/RC, Li 556
Dr. H. Regenstein
Tel.: +49(621)60-27413
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Pyraclostrobin
EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 125

Dear Mr. Flynn:

Pyraclostrobin is scheduled for ECCO 125 in May 2002 with the meeting subject "residues". Please find our respective comments below:

Volume 1
Point 4.2, page 86

- Further processing studies with wheat (germ) are requested on MS level. For your information: this study is ongoing in 2002.
  The same issue is mentioned under B.7.7.2.3, page 301

- Further residue trials with barley from southern Europe are requested von MS level.
  The same issue is mentioned unter B.7.6.4.1, page 244 and B.7.16.3, page 330, 331.

  These residue trials have been performed in the meantime. The results are summarized in the enclosed paper BASF DocID 2002/1004106 (residue report: BASF DocID 2002/1004077). Based on these results we propose to change the proposed MRL for barley from 0.2 mg/kg to 0.5 mg/kg.
  In analysing the residue samples out of these trials another residue method was used than that one submitted/evaluated with the original dossier. This further method (BASF DocID 2000/1012405) is also described in the above mentioned paper.

Volume 2, Annex A
Point A.7

The reference list shows under AII A-6.3 residue reports for other crops than cereals, grapes or bananas. All these reports were submitted to RMS for the purpose of evaluating and proposing import tolerances for these crops.

/page 2

Pyraclostrobin
EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 125

Volume 3, Annex B
Point B.5.4, page 61: analytical method for body fluids

Based on the Dossier and the proposed classification (which is opposed in the toxicological section) a data gap was noticed. The respective analytical method is available and enclosed for review (BASF DocID 2001/1009037). This method is an adaption of a method which we submitted under MII-4.2.1.2 and was evaluated by RMS in point B.5.2.2. It contains also a validation.

The same issue is mentioned under
- B.5.5.2, page 63
- Vol.1, point 3.2, 3.3 and 4.1

Point B.5.6, page 64

- Delete the entry for AII A-4.2.1 for study BASF DocID 1999/5179 and "Data protection" N. The same study is mentioned just above that entry with "Data protection" Y.
  See also Vol.2, Annex A, page 9.

- Delete the entry for AII A-4.2.1 for study BASF DocID 1999/5184 and "Data protection" N. The same study is mentioned just below that entry with "Data protection" Y.
  See also Vol.2, Annex A, page 10.

Point B.7.17, page 335

- Change in column "Data protection" N to Y for study 1999/5157. See also Vol. 2 Annex A, page 21.

These three studies were submitted to RMS on 01.09.2000 together with other residue reports for proposing MRLs for further crops.

Point B.7.13.1, page 321, 322

We propose to insert under "Material and Methods" after .....collected separately: "The application was a simulated aerial application". Reason: This gives partly an explanation, why the residues are below LOD at day 0.

/page 3

Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 125

Point B.7.17, page 333, 334

Change in column "Data protection" N to Y for studies
BASF DocID 1999/11138
BASF DocID 1999/11700
BASF DocID 2000/1000001.
See also Vol.2, Annex A, pages 23, 25.

These three studies were submitted to RMS on 16.01.2001 as enclosure to our comments to the "yellow draft".

Yours sincerely

BASF Aktiengesellschaft
Agricultural Products
Global Product Safety & Registration

Dr. Regenstein

Attachments

cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00) per Post

BASF Aktiengesellschaft · 67114 Limburgerhof, Germany

Attachment-list (BBA)

BASF DocID 2000/1012405 Final Report: Validation of BASF Method No. 445/0; Determination of BAS 500 F and BF 500-3 in various plant matrices
A. Benz, C. Mackenroth, March 05, 2001
4 copies

BASF DocID 2001/1009037 Final Report: Validation of BASF Method No. 439/0; The determination of BAS 500 F in body fluids (blood)
F. Grosshans, M. Gruetzmacher, May 02, 2001
4 copies

BASF DocID 2002/1004077 Residue study in Barley following treatments with the preparation BAS 500 01 F under field conditions in southern France in 2002
A. Perny, April 08, 2002
4 copies

BASF DocID 2002/1004106 Supplementary Document to the residue section of the Annex 2 dossier of BAS 500 F; summary of residue data in barley including MRL proposal
M. Bross, April 17, 2002
6 copies

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Mr H Köpp
Biologische Bundesanstalt für Land-und
Forstwirtschaft
Abteilung für Pflanzenschutz mittel und
Anwendungstechnik (AP)
Messeweg 11-12
D-38104
Braunschweig
GERMANY

Our ref: ASY 247

18 April 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN
RAPPORTEUR:- GERMANY

ECCO 125 - MEETING TO DISCUSS RESIDUES

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 125 in May 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: ECCO Team – PSD

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

B.7.2 Metabolism, distribution and expression of residues in livestock

The RMS has indicated a residues definition in animal products for risk assessment based on the levels seen in the poultry assessment. The UK assessment concluded such data did not require analysis based on predicted intakes.

B.7.13 Proposed EU import tolerances

The RMS has proposed that the import tolerance for bananas should be set at the l.o.d (0.02 mg/kg*). The UK suggests that 0.05* mg/kg would allow for cost-effective monitoring (and this would be in line with the standard approach taken).

B.7.16.4 MRLs – animal origin

The RMS proposes an MRL of 0.01* mg/kg for milk and 0.05* mg/kg for other products of animal origin. From cereal uses only, the UK considered MRLs for animal products to be unnecessary as the low residues found were from greatly exaggerated rates. Therefore at GAP residues in animal products are unlikely to be detectable.

Board for the authorisation of pesticides, Stadsbrink 5, NL-6707 AA, Wageningen, P.O. Box 217, phone +31 317 471810, Fax +31 317 471899

To: ECCO-Team PSD en RMS: DE
From: CTB
Date: April 26, 2002

Subject: Comments of **the Netherlands** on EU-monograph **pyraclostrobin**

Residues

Metabolism in plants (Annex IIA, point 6.1 and 6.7, Annex IIIA, point 8.1 and 8.6)

Plant groups covered	wheat (cereals), grapes (fruit), potatoes (root and tuber vegetable)
Rotational crops	radish, lettuce, wheat
Plant residue definition for monitoring	Pyraclostrobin
Plant residue definition for risk assessment	Pyraclostrobin
Conversion factor (monitoring to risk assessment)	none

Metabolism in livestock (Annex IIA, point 6.2 and 6.7, Annex IIIA, point 8.1 and 8.6)

Animals covered	lactating goat, laying hen
Animal residue definition for monitoring	Pyraclostrobin
Animal residue definition for risk assessment	~~liver (except poultry liver) and milk fat only: Pyraclostrobin and its metabolites analysed as the hydroxy pyrazoles BF 500-5 and BF 500-8, sum expressed as Pyraclostrobin~~ Pyraclostrobin (see remark B.7.3)
Conversion factor (monitoring to risk assessment)	(see remark B.7.3.)
Metabolism in rat and ruminant similar (yes/no)	Yes
Fat soluble residue: (yes/no)	yes (Log Po/w 3.99)

Analytical methods for residues (Annex IIA, point 4.2)

Food/feed of plant origin (principle of method and LOQ for methods for monitoring purposes)	LC-MS-MS 0.02 mg/kg (wheat, grapes, peanut, orange) HPLC-UV
Food/feed of animal origin (principle of method and LOQ for methods for monitoring purposes)	HPLC-UV 0.01 mg/kg (milk) 0.05 mg/kg (muscle, liver, kidney, fat, egg) (See remark B.5.2)

Residues in succeeding crops (Annex IIA, point 6.6, Annex IIIA, point 8.5)

30, 120, 365 days plant back interval after application of 0.9 kg as/ha: TRR in the edible parts for human consumption are very low (radish roots, lettuce: < 0.040 mg/kg; wheat grain: < 0.089 mg/kg). No accumulation of Pyraclostrobin or its degradation products [radish, lettuce < 0.0106 mg/kg; wheat straw < 0.0147 mg/kg; wheat grain: not detectable]

Stability of residues (Annex IIA, point 6 introduction, Annex IIIA, point 8 introduction)

Food of animal origin: Pyraclostrobin stable for 8 month Metabolite BAS 500-10 (model compound) with slow degradation but stable enough to evaluate the submitted feeding study (analysed within 6 month). Plant (peanut nutmeat, peanut oil, wheat grain, wheat straw, sugarbeet tops, sugarbeet roots, tomatoes, grape juice): Pyraclostrobin, metabolite BAS 500-3 stable for 18 month

Residues from livestock feeding studies (Annex IIA, point 6.4, Annex IIIA, point 8.3)

Intakes by livestock ≥ 0.1 mg/kg diet/day:	Ruminant: yes/~~no~~	Poultry: yes/~~no~~	Pig: yes/~~no~~ see remark B.7.15
Muscle	< 0.05	< 0.05	< 0.05
Liver	< 0.05	< 0.05	< 0.05
Kidney	< 0.05	< 0.05	< 0.05
Fat	< 0.05	< 0.05	< 0.05
Milk	< 0.01	not applicable	not applicable
Eggs	not applicable	< 0.05	not applicable

Consumer risk assessment (Annex IIA, point 6.9, Annex IIIA, point 8.8)

ADI	0.04 mg/kg bw/d
TMDI (European Diet) (% ADI)	~~0.0055 mg/kg bw/d (13.8 %)~~ 0.0630 mg/person/day (2.6%) See remarks to B.7.12 and B.7.15
NEDI (% ADI)	Not calculated
Factors included in NEDI	-
ArfD	0.04 mg/kg bw
Acute exposure NESTI (% ArfD)	Grapes: ~~UK-toddler 0.0392 mg/kg bw (98.1 %)~~ ~~UK-adult 0.0098 mg/kg bw (24.4 %)~~ Calculation not valid in view of lack of cGAP-conform residue data for grapes (see remarks to B.7.12 and B.7.15).

Processing factors (Annex IIA, point 6.5, Annex IIIA, point 8.4)

See remark to B.7.7

Crop/processed crop	Number of studies	Transfer factor	% Transference *
grapes / must, juice, wine	4 trials	0.03	
grapes / wet pomace	4 trials	3.9	
grapes / rasins	1 (2 trials)	2.7	
barley/pot barley	1 trial	0.7	
barley/pearling dust	1 trial	11	
barley/malt	4 trials	1.2	
barley/malt germs	1 trial	2.3	

barley/spent grain	1 trial	10	
barley/trubs (flocs)	1 trial	0.7	
barley/beer yeast	1 trial	0.7	
barley/beer	4 trials	0.7	
wheat/flour, middlings, shorts	1	0.06	
wheat/ germ	1	0.8	

* Calculated on the basis of distribution in the different portions, parts or products as determined through balance studies

Proposed MRLs (Annex IIA, point 6.7, Annex IIIA, point 8.6)

wheat, rye, triticale	~~0.1 mg/kg~~ (see remark B.7.12)
barley, oats	~~0.2 mg/kg~~ (see remark B.7.12)
Grapes	~~2 mg/kg~~ (see remark B.7.12)
banana (import tolerance)	~~0.02* mg/kg~~ (see remark B.7.12)
	(see remark B.7.12 with respect to products on animal origin)

REMARKS:

Volume 1
Comments made to Volume 3 also apply to Volume 1.

Volume 3, Annex B

B.5 Methods of analysis

B.5.2 Analytical methods for the determination of residues in food and feed
It is noted that the origin of the animal tissues (ruminant or poultry?) for which the analytical methods are validated are not specified.

B.5.5 Evaluation and assessment
B.5.5.2 Residue analyses
It is noted that an MRL for other products of plant origin of 0.05 mg/kg is mentioned, while an LOQ and MRL of 0.02 mg/kg appears feasible and is used in the risk assessment.

B.7 Residue data

B.7.1 Metabolism, distribution and expression of residues in plants

Primary crops
No comment

Succeeding or rotational crops
No comment

B.7.2 Metabolism, distribution and expression of residues in livestock
No comment

B.7.3 Definition of the residue

Definition of the residue for plant products
No comment

Definition of the residue for animal products
It is noted that the rapporteur proposed inclusion of metabolites in the residue definition for risk assessment. This is however not used in the risk assessment. In view of the low residue levels anticipated, the reviewer questions the need for inclusion of metabolites and proposes to limit the residue definition for risk assessment to the parent compound only.

B.7.4 Use pattern
It is noted that conflicting information on the intended use pattern is provided in the monograph:

In Volume 1, level 2, app. 3:
P 57: grapes and turf
P 64: wheat, barley, grapes (and banana import)
P 65: MRL proposals for wheat, rey, triticale, barley, oats, grapes, banana
B.3, intended uses: grape vines and turf
B.7.4, text: grapes, cereals (and other vegetable and fruit crops planned);
B.7.4, table: grapes, cereals, and turf.

It is further questioned whether edible (food and/or feed) commodities may be relevant with

respect to the intended use on turf and whether residue data are needed in that respect.

B.7.5 Identification of critical GAP's
According to the information in the monograph, the cGAP rate for grapes in NMS should be 3 applications at 0.16 kg as/ha instead at 0.04 - 0.16 kg as/ha. For cereals, the cGAP rate might be 0.25 kg as/ha for both NMS (Fr. UK, Ireland)) and SMS (Fr?). The cGAP PHI for NMS should be 30 days (Belgium). It is further noted that no cGAP for the application on turf is proposed.

B.7.6 Residues resulting from supervised trials

Methods of analysis applied in the supervised residue trials
No comment

Supervised residue trials
See remarks to section B.7.12.

Stability of residues prior to analysis
No comment

B.7.7 Effects of industrial processing and/or household preparation

Effects on the nature of the residue
It is noted that studies were limited to aqueous conditions. This is not addressed by the rapporteur in a perspective to the intended applications.

Effects on residue levels
With respect to the rapporteurs request for additional processing data for wheat germ oil, the reviewer questions the need for such studies in view of the low residue levels present (<10% ADI). Furthermore, in contrast to the rapporteurs statement, the reviewer does not assume relevant accumulation of pyraclostrobin in lipophilic matrixes, as the level of residues is only similar or slightly lower in germ when compared to grain.

B.7.8 Livestock feeding studies
No comment

B.7.9 Residues in succeeding crops or rotational crops
No comment

B.7.10 Proposed pre-harvest intervals for envisaged uses, or withholding periods, in the case of post harvest uses
See remark to B.7.4.

B.7.11 Community MRLs and MRLs in EU Member States
No comment

B.7.12 Proposed MRLs and justification for the acceptability of those residues
The reviewer cannot confirm the MRL calculation as performed by the rapporteur. It is noted that many non-cGAP conform residue data are included in the calculations:

Grapes: all residue trials were conducted with 8 applications instead of 3. In view of the slow degradation of residues (or initially even an increase), residues remaining from the first 5 applications will add up significantly to the total residue levels.

Barley, oats, wheat, rey, triticale: residue data from studies with spray intervals ranging from 8 days to over 1 month were included, while approximately 20 days is

listed as (c)GAP. Besides, the residue level at 42 days is frequently used in the calculations, while the residue level often is higher around 33-35 days and the cGAP PHI is 30 days.

It is further noted that no MRLs are proposed by the rapporteur for products of animal origin.
Furthermore, it is noted that conflicting information is given regarding the intended uses and no information is given on possible crops relevant in view of the use on turf (see also B.7.4 and B.7.5).

B.7.13 Proposed EU Import tolerances and justification for the acceptability of those residues

With respect to the proposed import tolerance for bananas, it is noted that the results of residue trails could not be evaluated in a perspective to the abroad (c)GAP in view of the lack on information on the latter. As a result, the validity of the proposed import tolerance cannot be confirmed.

B.7.14 Basis for differences, if any, in conclusion reached having regard to established or proposed Codex MRLs

No comment

B.7.15 Estimates of potential and actual dietary exposure through diet and other means

Calculations performed in this section may have to be reevaluated following the evaluation of the comments made to Section B.7.12 (MRL proposals) and to this section (comments below).
Furthermore, the safety margin estimated in the consumers risk assessment (comparison of the TMDI, EDI and/or NESTI with respectively the ADI and the ARfD) may be subject to adjustments depending on the finally established ADI/ARfD.

Intakes by domestic animals

It is noted that the rapporteur did not present an intake calculation for pigs.

Intakes by humans

It is noted that a residue level of 0.02 mg/kg was used in the calculations for all commodities for which no MRL has been proposed. Particularly in view of the limited number of intended applications, this leads to an unrealistically high intake. The margin of safety in relation to the ADI may therefore be expected to be higher than assumed on the basis of the calculation performed by the rapporteur.
Recalculation of the TMDI based on the WHO EURODiet by the reviewer, using MRLs proposed by the rapporteur supplemented with MRLs for products of animal origin (0.01 mg/kg for milk and 0.05 mg/kg for other commodities), resulted in a TMDI of 0.0630 mg/person/day (2.6% of ADI).

Calculation of an acute intake is not considered valid in view of lack of cGAP-conform residue data for grapes (see remarks to B.7.12).

B.7.16 Summary and evaluation of residue behaviour

Comments to the other sections of B.7 also apply to this section. No additional comments.

ESTIMATE OF THE POTENTIAL AND ACTUAL DIETARY EXPOSURE OF HUMANS, BASED ON THE DUTCH TMDI MODEL (RIKILT-DLO model, The Netherlands):

A NTMDI calculation was performed using a Dutch dietary consumption figure (Dutch TMDI model, RIKILT-DLO, The Netherlands). The calculation was based on the MRL proposals made by the Rapporteur Member State in Section B.7.12, supplemented with MRLs for products of animal origin.

The Dutch NTMDI calculation may have to be reevaluated following the evaluation of the comments made to Section B.7.12 (MRL proposals). In addition, the safety margin estimated in the consumers risk assessment (comparison of the TMDI, EDI and NESTI with respectively the ADI and the ARfD) may be subject to adjustments depending on the finally established ADI/ARfD.

Consumer risk assessment:
Based on Dutch TMDI model:
(RIKILT-DLO model, The Netherlands)

ADI:	0.04 mg/kg bw/day
NTMDI (% ADI):	General population: 0.13886 mg/person/day (5.5%) Children (1-6y): 0.04418 mg/person/day (6.5%)
NEDI (%ADI):	Not needed
factors included in NEDI:	Not applicable
Acute reference dose (ArfD)	0.04 mg/kg bw/day
Acute exposure (NESTI) (% ArfD)	Calculation not valid in view of lack of cGAP-conform residue data for grapes

Based on the NTMDI as calculated using the Dutch TMDI model, it can be concluded that a sufficient safety margin exists for consumers at the applied Dutch dietary consumption figure. When taking into account an additional theoretical intake via drinking water of 0.2 µg per person (based on a maximum level in drinking water of 0.1 µg/l and an arbitrary consumption assumption of 2 l), a sufficient safety margin still exists. Exposure to residues through drinking water should further account for no more than 10% of the ADI. If it is assumed that the average daily consumption of water amounts to 2 litre per person of 63 kg, 10% of the ADI would not be exceeded with drinking water residue levels at or below 0.13 mg/l.

PYRACLOSTROBIN ADI 0,03 mg/kg/day

Metabolism in plants
Grapes, potatoes and cereals

Metabolism in animals
Pyraclostrobin remains the main metabolite in milk, meat, fat, liver and kidney

Residues in grapes
Rate of application 0,16 kg/ha with 8 applications 35 days of PHI. We have some troubles with the number of applications taking into account the persistence of the product.

Residues in barley no comments
Residues in wheat no comments
Residues on bananas the GAP was not clearly explained

Livestock studies proposal for milk, meat, fat but we have no proposal for liver and kidney

PYRACLOSTROBIN ADI 0,03 mg/kg/day

Metabolism in plants
Grapes, potatoes and cereals

Metabolism in animals
Pyraclostrobin remains the main metabolite in milk, meat, fat, liver and kidney

Residues in grapes
Rate of application 0,16 kg/ha with 8 applications 35 days of PHI. We have some troubles with the number of applications taking into account the persistence of the product.

Residues in barley no comments
Residues in wheat no comments
Residues on bananas the GAP was not clearly explained

Livestock studies proposal for milk, meat, fat but we have no proposal for liver and kidney

DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Ecotoxicology (ECCO 126)

1. List of end points (not included in Full Report)

Date	Supplier	File name

2. Comments

Date	Supplier	File name
24 April 2002	France	Pyraclostrobin 126 com01 FR
13 May 2002	The Netherlands	Pyraclostrobin 126 com02 NL
14 May 2002	United Kingdom	Pyraclostrobin 126 com03 UK
16 May 2002	BASF	Pyraclostrobin 126 com04 BASF
21 May 2002	BASF	Pyraclostrobin 126 com05 BASF

3. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name

4. Documents tabled at the meeting

Date	Supplier	Content	File name

5. Addenda (not included in Full Report)

Date	Supplier	File name

MINISTERE de l'EDUCATION NATIONALE et de la RECHERCHE et de la TECHNOLOGIE
MINISTERE de l'AGRICULTURE et de la PÊCHE

DGAL

S. S. M.
Structure Scientifique Mixte

Date: 24 april 2002

FROM:

Competent Authority : Sylvie Malézieux
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To : **p.s.d.ecco@psd.defra.gsi.gov.uk**
Cc : **Rapporteur member state : Germany**
j.r.lundehn@bba.de
Objet : comments from France - ECCO - 126

Please find attached our comments on ecotoxicology section of Germany's draft Assessment Report for the active substance pyraclostrobin for consideration in ECCO 126.

Yours sincerely,

EU Review program on active substances in Plant Protection Products

Comments of France on PYRACLOSTROBIN draft monograph

Section : Ecotoxicology

Monograph	Comment
Volume 1, 2.6.1 : Effects on terrestrial vertebrates	(a) TER should be calculated according to Hoerger and Kenaga. Also, more justification on the use of actual residue values should be provided.
Volume 1, 2.6.2 : Effects on aquatic species	(a) The formulated product is slightly more toxic to fish when compared to the active substance and should be used for risk assessment (List of endpoints, 2.8.3.6). (b) TER for aquatic organisms were not calculated for the worst case which is turf (2 x 0.250 kg as/ha) and not grapes (3 x 0.100 kg as/ha ; see Table B.3.3 Annex B). (c) It is not posible to conclude on acceptable risk on the basis of 20 m buffer zones. Acute TER should be calculated assuming buffer zones higher than 20 m (List of endpoints, 2.8.3.6). The relevance and importance of additional studies should be assessed more in–depth to conclude on acceptable effects.
Volume 1, 2.6.3.2 : Effects on other arthropod species	(a) Some lethal effects were observed in laboratory tests (2.8.3.6 Appendix III.6). Extended laboratory tests did not prove the acceptability on *C. septempunctata* as the dose tested was 0.064 kg as/ha, lower than the maximum application rate (0.250 kg as/ha ; see Table B.9.5-1)
Volume 1, 2.6.4 : Effects on earthworms and other soils organisms	(a) The long-term TER for earthworms is not above the relevant Annex VI trigger value (List of endpoints, 2.8.3.6).

Board for the authorisation of pesticides, Stadsbrink 5, NL-6707 AA, Wageningen, P.O. Box 217, phone +31 317 471810, Fax +31 317 471899

To: ECCO-team and RMS
From: CTB
Date: 13th May 2002

Subject: Comments of the Netherlands on monograph Pyroclostrobin. Ecotoxicology

General comments	The summaries are in general very concise. As a result the reliable and the usefulness can not always be determined. For a number of studies the LC50 values is given as < and > than a certain value. The RMS should explain why not a more accurate value can be given. For most of the other studies no information is provided about the method of calculating the effect values. Are the values recalculated by the RMS? In NL additional information is available on the toxicity of algae, bees, earthworms and non-target arthropods (see comments on Annex B) with effect values lower than given the EU-monograph.
Volume 1 – Level 1	
Volume 1 – Level 2	
2.6.1 Birds and Mammals	Although no risk is expected, a risk assessment for indirect exposure via consumption of contaminated surface water, fish and earthworms should be included.
2.6.2 Aquatic organisms	<u>Risk assessment aquatic organisms</u> The TERs for aquatic organisms are calculated by using an application rate of 3*0.100 kg a.s/ha. According to the reviewer the highest application rate in the EU is 3*0.16 kg a.s/ha in Germany, with an interval of 12 days (see the list of uses in the concept EU-monograph). Besides, an application rate of 2*0.25 kg a.s./ha for turf is mentioned giving higher PEC values, which result in higher $TER_{sw\ initial}$. According to the NL, the DT50 is 16.5 days instead of 8.5 days. The TERS should be recalculated by using the appropriate LC50 value, the PECs belonging to the worst-case scenario, and the appropriate DT50 value. PEC calculations for the application without a buffer zone should be included. <u>Risk assessment for sediment-dwelling organisms</u> The risk assessment for sediment-dwelling organisms should be included. In the water/sediment BF 500-3 was formed in the sediment up to 65%. In principle the applicant should test the toxicity of this metabolite for sediment-dwelling organisms. Possibly, this high percentage was present in toxicity test for Chironomus or in the mesocosm study. In that case additional test are not compulsory. However this point has to be addressed. <u>Bioconcentration</u> As the average BCF of pyraclostrobin is calculated to be 443 and pyraclostrobin is reported as being not readily biodegradable, a refined risk assessment should be assessed, taking the risk upon direct and indirect exposure to pyraclostrobin into account.
2.6.3 Bees and other non-target arthropods	<u>Risk assessment non-target arthropods</u> Based on these additional studies we agree with the RMS that for ground dwelling predators and predatory mites the risk is acceptable. NL, however, considers the risk for foliage dwelling

	predators, based on the effect on fertility (*Chrysoperla carnea)* and >30% mortality (*Coccinella septempunctata*) as unacceptable. The extended lab test give effectpercentages which are to high (C. carnea), or the dosage is to low (C. septempunctata). However the field studies with T. pyri covers the risk for these two species. Therefore additional studies are not considered necessary.
2.6.4 earthworms	The reviewer calculates for two application of 0.25 kg as/ha with a time interval of 14 days and a DT50 value of 66 days on turf with a intercept of 50% a PEC initial of 0.307 mg as /kg values, which is higher than the values given in table B.9.6-9 and the list of endpoints
2.6.5 micro-organisms	
2.6.7	
Endpointlist	
LEVEL 3	
LEVEL 4	The applicant should submit a toxicity study of BF 500-3 for sediment-dwelling organisms. This test is however not necessary in case the applicant can show that high percentage of this metabolite was present in toxicity test for Chironomus or in the mesocosm study submitted.

Volume 3

Ecotoxicology

B.9.2.9 Aquatic organisms

Acute toxicity data

- The applicant has submitted a new toxicity study with the formulation BAS 500 01 F for algae for application in the Netherlands. The ErC50 value in this study was calculated to be 0.69 mg/l, which is lower than the lowest value reported in the concept EU-monograph. According to the reviewer, the RMS should include this study in the risk assessment. The summary of this is mentioned below:

Substance	Species	Method	T [°C]	pH	Duration [h]	Criterion	Value [mg/l]	Value [mg as/l]
BAS 500 01 F	*Pseudokirchneriella subcapitata*	static	22-23	8.0	72	ErC50	0.69	0.69

Reference: [7]

Description

The effects of BAS 500 01 F on the growth of the green alga *Pseudokirchneriella subcapitata* (Korshikov) Hindák was determined according to OECD-guideline 201. Nominal concentrations of 0.03, 0.06, 0.12, 0.24, 0.48 and 0.96 mg/l were used. Each treatment consisted of 5 replicates, 10 for the control. Initial cell densities of 10^4 cells/mL were used. Analytical verification of the test substance concentrations was carried out in each concentration at the beginning and the end of the test. ErC50, ErC10, EbC50 and EbC10 values were calculated using probit calculations.

Results

Average measured values were 88.4% of nominal at the beginning and 93.5% at the end of the test. The results are based on nominal concentrations. The ErC50 was 0.69 mg/l (95% confidence limits: 055-0.87 mg/l), the ErC10 was 0.11 mg/L (0.09-0.14), the EbC50 was 0.27 mg/L (0.19-0.42), the EbC10 value was 0.05 mg/L (0.02-0.08).

Remarks

The ErC50 value of 0.69 mg/L was used for the risk assessment.

Chronic toxicity data

In the concept EU-monograph only the PNEC value for fish is used in calculating the TERs. However, the chronic risk for crustacea (4µg/l) should also be included.

B.9.4 Effects on bees (Annex IIA 8.3.1; Annex IIIA 10.4)

B.9.4.1 Acute toxicity

According to the reviewer it is not possible to calculate an LD50 value when only one dose is applied. Therefore, the LD50 values of 73.1 µg/bee and 69.1 µg/bee are not valid, and should not be used in the risk assessment.

B.9.4.2 Summary and risk assessment

Toxicity data

The applicant has determined the toxicity of BAS 500 01 F for bees for the NL application. The LD50 values reported in this study are lower than those which are reported in the concept EU-monograph. Therefore, these values should be used in the risk assessment. The summary of the study that is submitted is reported below:

Toxicity (bumble)bees

Substance	Species	Method	Duration [h]	Criterion	Value [µg/bee]	Value [µg as/bee]	Ri
BAS 500 01 F	*Apis mellifera*	oral	48	LD_{50}	298	74.5	2
BAS 500 01 F	*Apis mellifera*	contact	48	LD_{50}	336	84.0	2

Reference: {Sack D. 1999 #10}

Description

An acute oral and contact toxicity test with the honeybee with BAS 500 01 F (25% as) in accordance with OECD Guidelines 213 and 214 and the OEPP/EPPO Bulletin 22, No. 170. Tests were performed in cages (10 x 5.5 x 8.5 cm w,d,h) with three replicates each consisting of ten bees.
A range finding test with eight dosages ranging from 0.78 to 100 µg/bee was performed initially. In the main contact toxicity test working bees were exposed to a range of six concentrations (50 - 100 µg as/bee dissolved in aceton). The slightly anaesthetised bees (with CO_2) received 1.0 µl droplets of the appropriate concentration on the ventral thorax. In the oral test the six calculated doses delivered to each single bee were in the range of 3.125 to100 µg tests substance dissolved in 20 µl sugar syrup solution.
A positive control, the toxic standard dimethoate was included with six concentrations ranging from 0.12 to 0.6 µg/bee in the oral test and from 0.1 to 0.5 µg/bee in the contact test. In the contact toxicity test controls with acetone and deionized water were included. In the oral toxicity test a control with sugar solution was included in the experiments.
Mortality and behaviour changes were recorded at 3, 24, 48 and 72 hours after test initiation. Number of dead bees was recorded after 4, 24 and 48 h. Test was performed in a well ventilated place at temperatures between 21.1 and 23.9 ^{o}C.

Results

Mortality in the control tests was 0%. An LD_{50} (48 h, contact) of 73,4 µg a.s./bee – 95% C.I. 68.9-78.3 and an LD_{50} (48h, oral) of 84.2 µg a.s./bee – 95% C.I. 65.8-107.7 were calculated by the author. The $HQ_{contact}$ was determined at 3.4 and the HQ_{oral} was determined at 3.0

Remarks

Age of the bees was not documented. Temperature was rather low. Relative humidity was not documented. LC_{50} for contact toxicity to the honeybee was recalculated according to Trimmed Spearman-Kärber method, based on Hamilton et al. (1977/1978), using data from the author, resulting in a 48-hours nominal LC_{50} of 74.5 µg a.s./bee, 95% C.I. 70.4-78.8 µg a.s./bee. LC_{50} for oral toxicity to the honeybee was recalculated according to Trimmed Spearman-Kärber method, based on Hamilton et al. (1977/1978), using data from the author, resulting in a 48-hours nominal LC_{50} of 84.0 µg a.s./bee, 95% C.I. –58.1-121.6 µg a.s/bee. The results, a contact LC_{50} of 74.5 µg a.s./bee and an oral LC_{50} of 84.0 µg a.s./bee are used for the RIVM conclusions.

Risk assessment

In the following table the new HQ values are presented. The valus are still below the treshold value of 50, which indicates a low risk for honeybees.

Table B.9.4.2-1. The acute contact and oral toxicity of … to bees.

Species	Test type	LD_{50} [µg/bee]	Test guideline	Reference
Apis mellifera	oral	74,5	OECD	Sack, 1999
Apis mellifera	Contact	84	OECD	Sack, 1999

Table B.9.4.2-3. Hazard quotients for bees, from use of … at the highest single application doses.

Species	Product	Max single dose [g as/ha]	Hazard Quotients oral	contact
Apis mellifera	BAS 500 01 F	250	3.35	2.98

B.9.5 Effects on other arthropod species (Anex IIA 8.3.2; Annex IIIA 10.5)

B.9.5.1 Study descriptions and results

The RMS has not documented whether the values for lethal and sublethal effects were recalculated or not. The set of studies conducted with BAS 500 00 F and evaluated by the RMS, has also been conducted with BAS 500 01 F by the same authors. This set of studies is part of the dossier, in which BAS 500 01 F, with pyraclostrobin as the active ingredient, has been submitted for registration in the Netherlands. Since all these studies were considered reliable and the values for lethal and sublethal effects were correct after recalculation, they can also be included in the EU-monograph.

B.9.5.2 Summary and assessment

The applicant has submitted for registration in the Netherlands a number of studies performed with BAS 500 01 F (0.25 kg as/L), which are not included in the EU-monograph. These studies are carried out with higher application concentrations than those that are reported in the EU monograph. The studies are summarised in the following table.

Table B.9.5.2-1 Summary of the toxicity studies with BAS 500 01 F on non-target arthropods.

Species	Substrate and duration	Application dose [kg as/ha]	Effects	Risk classification	Reference
Predatory mites					
Aphidius rhopalosiphi	residu on glass 16 days on plants	0.5	100 % mortality -3.3% benificial capacity		
Polyphagous predators					
Chrysoperla carnea	residu on glass	0.5	100 % mortality		
Aphid specific predators					
Coccinella septempunctata	residu in glass	0,5	100% mortality		
	residu on plants	0.25 2*0.25	35% mortality 56% mortality		
Aphid parasitoids					
Typhlodromus pyri	residue on glass	0.25	99% mortality		
	residue on plants	0.125	19% mortality -42% reproduction -59% benificial capacity		
		0.25	54% mortality -97% reproduction -99% benificial capacity		
Ground dwelling predators					
Pardosa spp.	sand	0.5	0% mortality	low	
Poecilius cupreus	sand	0.5	0% mortality	low	

B.9.6 Effects on earthworms (Annex IIA 8.4; Annex IIIA 10.6.1)

B.9.6.3 Summary and risk assessment

Data used for calculation of the NOEC are not included in the summaries. A chronic study for the Dutch registration yield the same result as the study included; so including this study will not change the risk assessment.

It is unclear how the initial PEC is calculated. The reviewer calculates for two application of 0.25 kg as/ha on turf with a intercept of 50% a PEC initial of 0.245 mg as /kg values, which is higher than the values given in table B.9.6-9.

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Our ref: ASY 247

14 May 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN
RAPPORTEUR:- GERMANY

ECCO 126 - MEETING TO DISCUSS ECOTOXICOLOGY

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 126 in June 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: ECCO Team – PSD

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

General

Use on cereals potentially represents the major use of this compound in EU Member States. However, cereal use was not incorporated into the draft assessment report (DAR). It would be useful if the Rapporteur could explain this further.

B.9.1.5 Risk assessment for birds and B.9.3 Risk assessment for mammals

The turf and grape assessments have only been based on one application rather than total dose (ie. this assumes no accumulation between applications), although it is noted that the assessment in the DAR does use actual residues data on grapes and cereals, which will have included multiple doses. However, particularly with the use of cereals as a surrogate for turf, it is not clear whether the initial residues data were gathered from freshly treated young cereal shoots (as would be grazed by birds). The residues tables at 7.6.4 would appear to indicate not. Further discussion at ECCO would be helpful.

B.9.2.9 Risk assessment for aquatic organisms

In the absence of a cereal assessment it would be useful if the Rapporteur could include PECs and TERs for the turf use as well.

Endpoints

<u>Risk to terrestrial vertebrates other than birds</u>

The UK considered use of a reproductive NOEC from the mammalian toxicology package to derive a TER for long-term/reproductive risk to mammals, during evaluation of an application for approval. It was agreed that the choice of a relevant endpoint was a generic issue that should be raised for discussion in Europe. Latest EU guidance suggests that the overall effect on reproductive performance and fertility is usually more ecologically relevant for wild mammal assessments. However, this may warrant further discussion in relation to pyraclostrobin.

<u>Toxicity data for aquatic species (p75)</u>

The UK assessment used a different approach regarding the risk to fish and considered acute effects and mortality to be most relevant. The DAR focuses on the chronic NOEC rather than the acute LC50. This, and the choice of trigger value, could be discussed further at ECCO.

BASF Aktiengesellschaft

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 126

Dear Mr. Flynn:

Pyraclostrobin is scheduled for ECCO 126 in June 2002 with the meeting subject "eco toxicology". Please find our respective comments below:

Comments on the aquatic risk assessment within the RMS Monograph on Pyraclostrobin

Pyraclostrobin is a highly effective fungicide. However, it is also toxic to aquatic organisms, in particular to fish. The RMS concludes that risk mitigation measures are required. However, the risk assessment within the RMS monograph is based on of a few parameters, which do not adequately address the complex data package that has been elaborated in support of the registration of this fungicide.
In particular, the RMS uses a standard fish ELS study conducted under flow-through conditions as relevant endpoint and compares this to initial PEC values. (Moreover, the PEC-values used by the RMS do not reflect the aquatic dissipation of pyraclostrobin under outdoor conditions e.g. in the mesocosm study and are highly over-conservative, which has been more thoroughly addressed by comments provided by B. Gottesbueren.) A higher tier fish ELS study has been classified as not valid because of high control mortality. We do not agree to this assessment for the following reasons:
The statement about high control mortality in the higher tier ELS study is not correct. Higher control mortality was observed in the standard ELS study why a second control group has been used for this study. A relatively low fertilisation rate has been observed in the higher tier study, which was due to the time of study initiation. This was overcome, however, by adding higher number of eggs thus providing a sufficient number of embryos, which are in line with the validity criteria of the respective guidelines.
We thus consider this study to be fully valid. In addition, the results of this study are completely in line with further standard and higher tier studies. The NOEC quoted of 5 µg/L is already a very conservative value for chronic or repeated contamination with Pyraclostrobin. In general, a comparison of a chronic flow-through study with PECini values does not appear to provide a realistic risk assessment,
in particular if higher tier studies are available. If the PEC of the standard ELS study should be used, than it should be compared to PECtwa-values. However, with respect to the mode of toxicity of this compound (in principal only acutely toxic) we consider it more relevant to use the higher tier ELS study and compare the results with PECini values.

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 126

The RMS doubts whether the correct fish species have been tested for species sensitivity distributions. However, the species cover a relevant spectrum of fish species. In particular the tested Cyprinidae are certainly more relevant species for static shallow water bodies than rainbow trout.

Being aware of the inherent toxicity of Pyraclostrobin to fish we have performed a very complex set of studies to address the potential risk. The following gives a brief summary of the risk assessment of BAS 500 F (Pyraclostrobin) to fish (a more detailed evaluation has been provided by Dohmen, 2000, BASF DocID 2000/1014917):

BAS 500 F shows a very steep concentration/effect relationship with NOEC values approximately a factor of two (or less) below the LC_{50} values. In addition, there is a very narrow acute/chronic ratio; NOEC values from acute tests are in the same range as those from chronic studies. This means, effects, should they occur, would be obvious immediately and no sublethal damages are to be expected. Accordingly, the chronic risk is comparatively low and necessary TER-values are reached even using standard worst case assumptions.

To assess species sensitivity differences between fish species, a total of seven species has been tested. LC_{50} values ranging from 6.2 – 56.9 µg/L were found. Applying a reduced safety factor of 10 to the lowest observed LC_{50}, concentrations of < 0.62 µg/L BAS 500 F are considered to be of low risk to fish. In addition to this empirical assessment, the data can be used to evaluate the sensitivity distribution and derive 95% (or 99%) protection levels. Depending on the model used, the lowest 95% and 99% protection levels for BAS 500 F contaminations are 5.9 µg/L and 2.9 µg/L, respectively. The according values based on NOEC data were calculated to be 4.2 µg/L, respectively 2.4 µg/L. This means concentrations of $\leq$ 2.4 µg/L BAS 500 F present practically a negligible risk (99% protection) to fish.

To investigate the potential risk in moving water bodies with rather short-term exposures, a "time to death" study has been performed using the most sensitive fish species. It has shown, that short term exposure, such that might be encountered in plumes of moving water bodies, will be tolerated at much higher levels than constant concentrations over 96 hours. For exposure times of approximately 0.5 h, simulating moving water bodies at $\geq$ 0.17 m/s, LC_{50}/LC_0 values of > 27 µg/L were found. In a slow moving stream, generating exposure times of not more than 2 hours, concentrations of 18 µg/L are tolerated (in contrast to the standard 96 h LC_{50} value of 6.2 µg/L).

Following applications on arable sites with rates of up to 250 g ai/ha, maximum initial concentrations of 2.3 µg/L can be expected at 1 m distance for 30 cm shallow, static surface water (2.77% drift). The corresponding PEC_{twa} (96 h) would be 1.7 µg/L. Compared to the 99% protection level of 2.4 µg/L the 95% worst case contamination at 1 m distance will constitute only low risk to fish populations. In more relevant, 1 m deep, fish carrying static water bodies the PEC_{twa} (96 h) would be 0.51 µg/L at 1 m distance to a field application.

/page 3

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 126

The assessments are made using worst case assumptions. However, under realistic conditions, risk will be lower for several reasons. For example, the most sensitive species is a cold water fish used to low temperatures and requiring high oxygen concentrations, conditions that are usually found in larger lakes or mainly in fast running surface waters. The less sensitive species are warm water fish adapted to higher temperatures and accordingly often lower oxygen concentrations; such species might also be encountered in rather shallow, lotic or slow moving surface waters. The standard PEC calculations assume static, shallow surface water. Thus, if fish would be exposed, only the less sensitive species could potentially encounter the worst case concentrations. However, fish habitats usually constitute deeper lentic systems or, if shallow, then it would be running water. In both cases, this would result in significantly lower concentrations.

BAS 500 F is toxic to fish and overspray of small surface waters must be avoided. However, the data demonstrate that there is only low risk to fish for arable applications of BAS 500 F applied 1 m (or more) from shallow, static surface water, respectively 3 m from applications next to vineyards. Under more realistic field situations such as moving water or deeper static surface water, the risk to fish is accordingly even less.

Yours sincerely

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Dr. Regenstein

cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00) per Post

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 126

Dear Mr. Flynn:

Further to our letter of May 16, 2002, regarding B.9.2.9, page 441, we would like to send you some additional comments:

Volume 3 Annex B

Point B.3.6, page 41 (All A-3.9)

- Change in column "data protection claimed" N to Y. Data were submitted with the original dossier (see also Vol.2 Annex A, page 7).

Point B.9.11, page 477 (All A-8.2.2.1)

- Change in column "data protection claimed" N to Y for 12F0494/965190 (BASF DocID 2000/1014919).
  This study was submitted to RMS on 6.11.2000 together with others, which were requested by UK-PSD (see also Vol. 2, Annex A, page 42).

Yours sincerely

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cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00) per Post

DOCUMENTS ON PYRACLOSTROBIN DRAFT ASSESSMENT REPORT

Section: Overview Meeting (ECCO 127)

1. Evaluation table (not included in Full Report)

Date	Supplier	File name
11 September 2002	Germany	Pyraclostrobin Eval Tab 0-1

2. List of end points

Date	Supplier	File name
9 August 2002	Italy	Pyraclostrobin 127 2endpoints

3. Comments

Date	Supplier	File name
15 August 2002	United Kingdom	Pyraclostrobin 127 com01 UK
22 August 2002	BASF	Pyraclostrobin 127 com02 BASF
9 September 2002	Denmark	Pyraclostrobin 127 com03 DK

4. Comments received but not discussed (because deadline of submission was not met)

Date	Supplier	File name

5. Documents tabled at the meeting

Date	File name
16 September 2002`	Pyraclostrobin Active Report
16 September 2002	Pyraclostrobin Areas of Concern

6. Addenda (not included in Full Report)

Date	Supplier	File name

7. Other documents

Date	Supplier	Content	File name

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Our ref: ASY 247

15 August 2002

Dear Mr Köpp,

EC REVIEW DRAFT ASSESSMENT REPORT FOR PYRACLOSTROBIN
RAPPORTEUR:- GERMANY

ECCO 127 – OVERVIEW MEETING

On behalf of the Pesticides Safety Directorate of the Department for Environment, Food and Rural Affairs, please find attached our comments on the draft assessment report for pyraclostrobin. We are submitting these comments for your information as rapporteur and for discussion at ECCO 127 in September 2002.

Yours sincerely

S J Godson

Sarah Godson
Approvals Committee Branch

cc: ECCO Team – PSD

The Pesticides Safety Directorate agrees with the technical evaluation given in the draft assessment report **except** in the areas detailed below:

Volume 3

B.7.13 Proposed EU import tolerances

The RMS has proposed that the import tolerance for bananas should be set at the l.o.d (0.02 mg/kg*). The UK again suggests that 0.05* mg/kg would allow for more cost-effective monitoring (and this would be in line with the standard approach taken), unless the RMS has identified consumer exposure concerns for this use.

B.8.4.1.3.2 Water /Sediment study

Previously for ECCO 124 (environmental fate and behaviour) the UK provided the following comment on this part of the DAR:

''The DT50 figure of 8.7 days given in the DAR appears to be from a standard dark study and is associated with a very low r^2 value of 0.8166. The UK questions the use of this value as the active substance is photolysed rapidly and there is an illuminated study which appeared to be acceptable. The UK has taken the dissipation rates from the illuminated study to be used in aquatic PEC calculation. The RMS appears not to have taken the DT50 value from the illuminated study into account because the dark study is a standard study. No other reason appears to have been given.''

At ECCO 124 the meeting agreed that information on the light study should be deleted from the endpoints list, as the standard data requirement is performed in the dark. In addition there was no mention of use of the DT50 value from the illuminated study.

The UK considers that the endpoints from the illuminated study should be taken into consideration for the following reasons:

(i) It is clear from the aqueous photolysis studies that light catalysed reactions may be an important route of degradation of the active substance in natural surface waters;
(ii) Novel metabolites are formed under illuminated conditions;
(iii) The water and sediment depths of the illuminated study were closer to the dimensions assumed for the PEC calculations;
(iv) Whilst dissipation rates were slower in the illuminated study compared to the dark study (which can almost certainly be accounted for by the greater depth of the water column), the metabolite profile seems to be strongly influenced by light.

The UK considers that it is this final point which is most important, and consideration of only the dark study ignores the different metabolite profile. Whilst it is recognised that the treatment of photolytic effects is still one of the most challenging areas for environmental exposure assessments within the EU, the UK believes that the decision of the meeting was contrary to the spirit of deliberations within the context of ECCO 108, as follows:

> "The experts discussed whether DT_{50} values obtained from microcosm/mesocosm studies can be used for the PEC_{sw} calculations instead of DT_{50} values derived from water sediment studies. It was a concern that the mesocosm studies are designed to address mainly ecotoxicological aspects and therefore the quality of the data for fate and behaviour assessment is not sufficient.

> Generally the assessment of the behaviour in an aquatic system, the identification of metabolites as well as the PEC-calculation should be based on the water/sediment study."
>
> [The UK understands that the group agreed to use DT_{50} values from the microcosm studies for PEC_{sw} calculation only if the study was well designed and the results can be assessed as reliable].

Whilst accepting that caution is needed in the treatment of illuminated studies such as mesocosms, the UK considers that the illuminated sediment/water study conducted in this case was well designed and conducted and the results can be considered reliable. In addition it is judged to be a better reflection of reality than the dark study in this particular case and a suitable basis for the aquatic exposure assessment.

<u>End point table - Operator exposure</u>

The statement in the endpoint table suggesting that the UK POEM indicates an acceptable use without PPE is not considered to be correct (gloves are required when handling the concentrate to give a systemic exposure < AOEL of 0.015 mg/kg bw/day and this PPE (as proposed by the applicant) is also justified on the basis of the hazard classification of the formulation.

The statement that worker exposure is acceptable seems questionable as the estimated level of systemic worker exposure (0.02 mg/kg bw/day) exceeds the revised AOEL.

BASF

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Pyraclostrobin

EU-Directive 91/414/EC, Annex I inclusion of a new active ingredient – ECCO Round 127

Dear Mr. Flynn:

Pyraclostrobin is scheduled for ECCO 127 in September 2002 with the meeting subject "overview".

Please find our comments to report ECCO 123 (toxicity), point XIII, ARfD:

> BASF argues the use of a NOAEL of 3 mg/kgbw/d for maternal toxicity in the rabbit developmental study as being appropriate for the determination of the acute reference dose. In rabbit developmental studies the route of application is by gavage which is not suitable to be taken as the basis for an acute reference dose since the bolus like administration is not considered to adequately reflect the condition of exposure for consumers.
> In order to corroborate this statement BASF will perform a short-term test (7days) in three different animal species (rat, mouse, and rabbit) with administration of the test substance via feed and gavage. Results will be available before the overview meeting.

Yours sincerely

BASF Aktiengesellschaft
Agricultural Products
Global Product Safety & Registration

Dr. Regenstein

cc: BBA (Ihr Zeichen: AP-WNL-004929-00/00)

pyraclostrobin_127_com02 BASF

Danish Environmental Protection Agency
Danish Ministry of the Environment

ECCO BBA

pesticides
In your reply, please refer to File No.
File no. M: 7042-0261
Ref.: hl/11

Date September 9, 2002

Danish comments regarding Pyraclostrobin, section toxicology, dermal absorption

Denmark does not agree to the conclusion from the 123 ECCO Peer review meeting concerning the dermal absorption. It is correct that the absorption after dermal application *in vivo* in the rat is measured at up to 72 hours. The absorption at 72 hours (measured in urin) however is the highest measured over time. Also the residues in the skin show no clear indication of reaching a point of no further absorption. Therefore we feel the residue in the skin at the end of the measuring (72 hours) should also be included in the dermal absorption figure for *in vivo* absorption. This is between 5 and 16 % for the 3 different doses tested.

Yours sincerely

Christina Ihlemann

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ANNEX 3 TO CONCISE OUTLINE REPORT OF ECCO 127 PEER REVIEW MEETING

Specific comments from the **Overview Meeting** on the active substances are listed below. The conclusions of the meeting were as follows:

PYRACLOSTROBIN

Rapporteur Member State: Germany

1a. Comments received and discussed:

Date	Supplier	File Name
15 August 2002	United Kingdom	Pyraclostrobin 127 com01 UK
22 August 2002	BASF	Pyraclostrobin 127 com02 BASF
9 September 2002	Denmark	Pyraclostrobin 127 com03 DK

1b. Comments received but not discussed (because deadline of submission was not met): none.

1c. Documents tabled at the meeting:

Date	File Name
16 September 2002`	Pyraclostrobin Active Report
16 September 2002	Pyraclostrobin Areas of Concern

1d. Addenda: none.

1e. Miscellaneous: none.

1 Physical and chemical properties, Methods of analysis section

- The meeting noted that only pilot plant information had been submitted to support provisional authorisation. The RMS indicated that information from commercial production was available. The Commission asked the RMS to consider this information on behalf of the other MS.

2 Environmental fate and behaviour section

- Although MS agreed with the Applicant that the natural light study should not be deleted from the endpoint section, since the presence of light is important in the behaviour of the active substance, following further discussions, it was agreed that that the natural light study should be removed from the list of endpoints and the information for the dark study should be used to conduct the Ecotoxicology assessment.

3 Ecotoxicology section

- The meeting was informed that information to address the risk to birds and mammals from the consumption of contaminated water, fish or earthworms were available. These data are essential for Annex I inclusion and the Commission requested that the Applicant provided the information as soon as possible and the RMS evaluate it as quickly as possible. Conclusions to appear in addendum to Draft Assessment Report (DAR).

4 Mammalian toxicology section

- The meeting agreed that, as information on the plant-scale active substance technical specification was still to be evaluated, the risk assessment could not be finalised until the RMS confirmed that the data previously submitted were also sufficient to support the new technical specification.

- The meeting agreed that that the ECB at Ispra should consider the oral and inhalation toxicity of the active substance.

- The Applicant considered that the ARfD was conservatively set at 0.03 mg/kg bw/day. The meeting agreed that it was set at an appropriate level but if the Applicant had further data they could submit these and request that the ARfD be amended. These additional data were not considered essential for Annex I inclusion and should not therefore delay decision making on Annex I inclusion.

5 Residues section

- Following discussions between MS, it was agreed that the Applicant should address the risk to consumers from the consumption of table grapes. This is essential for Annex I inclusion.

6 Recommendations

The Commission requested that any outstanding data were submitted by the end of November 2002. The RMS was requested to evaluate these data as quickly as possible. The Commission intended that the active substance would be considered at a WG (E) meeting during the second quarter of 2003.

Appendix 1: Revised evaluation table rev. 0-2 (including complete list of data requirements): pyraclostrobin

Classification criteria for data requirements were discussed at the meeting. The group agreed on having three criteria:

- Data requirements essential for unconditional Annex I inclusion;
- Data requirements to be dealt with at Member State level; and
- Data requirements fulfilled.

Appendix 2: Complete list of end points: pyraclostrobin

Appendix 3: Suggested classification and labelling: pyraclostrobin

Appendix 1

1. Physical and chemical properties

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
				Section: 1 Data requirements: 2 Open points: 2
1.1	If during scale-up the specification of purity and impurities is changed, this information must be provided (together with batch analysis data supporting the proposed change) (IIA 1.11) **MS**	A further 5-batch analysis with samples from the production site will be finished by November 2002	2002-07-23 acceptable	Overview Meeting (17.-18.09.2002): Data requirement to be dealt with at Member State level. Data available soon, will be evaluated by the RMS for all MS.
1.2	Applicant to justify why the minimum purity of 95% is required given the batch analysis results.	the values of the specification will be re-assessed when the analyses of the 5 batches from the production site will be available	2002-07-23 acceptable	Overview Meeting (17.-18.09.2002): Data requirement to be dealt with at Member State level. Data available soon, will be evaluated by the RMS for all MS.
	Open point 1.2: RMS to check the solubility in water and amend end point sheet.	endpoint sheet should read: deionized water: 0.0019 ±0.00017g/l, 20°C, 99.8%	2002-07-23 End points have been amended accordingly.	Overview Meeting (17.-18.09.2002): Open point fulfilled
	Open point 1.3: RMS to clarify whether the justification is for the active or rapporteur DE	Explosive properties Neither the A.I. Pyraclostrobin nor any of the formulants have a potential for	2002-07-23 acceptable	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	the product. (for the explosive and oxidising properties) *continued* RMS to clarify whether the justification is for the active or the product. (for the explosive and oxidising properties)	explosivity. The molecules contain no moiety which is inherently explosive (cf. UN Manual on Transport of Dangerous Goods, Appendix 6, Table 6.1). Oxidizing properties Neither the A.I. Pyraclostrobin nor any of the formulants have an oxidizing potential. The molecules contain no moiety which is of oxidizing nature (cf. UN Manual on Transport of Dangerous Goods, Appendix 6, Chapter 6.1.1).		

2. Environmental fate and behaviour

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
				Section: 2 Data requirements: 1 Open points: 16
	Open point 2.1: RMS to include details of timescales used in the route of degradation (aerobic) in soil (mineralisation and non-extractable residues) studies, in the end points list, along with information about the label position for the non-extractable residues study.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 2.2: RMS to include additional information on the route of degradation (aerobic) in soil (major metabolites) studies (such as range and number of soil types) in the end points list		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.3: RMS to amend the maximum value for metabolite BF 500-3 to 95.8% in the Route of degradation (aerobic) in soil - anaerobic degradation section of the end points list.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 2.4: RMS to indicate which calculations on the rate of degradation in soil were performed by the Applicant and which by the RMS. In addition the RMS is to explain that 85 days has not been used to derive the average DT_{50f} value and to indicate that the DT_{50f} in Southern Europe may be lower than 34.4 days because of the difference in temperature. $DT_{50\ lab}$ and field values for all the metabolites in soil are to be included in the end points list. The RMS is also to consider whether the DT_{50f} mean value of 26.1 should be 36.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.5: RMS to include 1/n values for both the parent compound and the major soil metabolites in the soil adsorption/desorption section of the end points list. Also, to explain that the currently reported values are for the chlorophenol ring label.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 2.6: RMS to include an explanation in the end points list about where the interception values for the PEC soil originates.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.7: RMS to delete the current information on metabolite BF 500-11 from the photolytic degradation section of the end points list and explain that the amount of metabolite was still rising at the end of the study. In addition, the RMS is to consider whether a DT_{50} should be presented for metabolite BF 500-11.	09.07.02 Data based on MS-analysis revealed that besides the active ingredient itself, several minor metabolites (summarized as "sum of minor peaks identified" in the respective Dossier table and in report of Scharf, BASF DocID# 1999/11286) are potential precursors of BF 500-11 in the degradation pathway. Since these minor metabolites occured only in negligible amounts at the limit of quantification, they were not presented in the overview on the proposed route of photolytical degradation of BAS 500 F. Although it is true that BF 500-11 increased in the photolysis study with sterilized buffer, it clearly could be shown that BF 500-11 degraded during the irradiated water/sediment study (DT50 = 20 days). See also explanation given under Open point 2.8.	2002-07-15 Agreement. See new amended end points list. Agreement.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.8: RMS to delete information on the natural light study from the end points section on degradation in water/sediment	09.07.02 The information on the natural light study should not be deleted from the endpoint section. This study contains very important information for the complete understanding of the behavior of BAS 500 F in natural water bodies and should not be ommitted just because no guideline exists. The study was very carefully designed and carried out in a climatic chamber to meet as close as possible average European conditions. In Southern countries with higher average light intensities, the extent of photolytical processes will even be higher. The presence of light and sediment is the essential combination of environmental factors which influence the water/sediment partitioning, formation of bound residues and degradation pathway of BAS 500 F and its metabolites in water. The dark water/ sediment study alone does not completely represent the environmental factors influencing the degradation of BAS 500 F in water. This should also be reflected in the end point list. Without the information on the irradiated study, the endpoint list does not contain the complete data set to explain the fate of BAS 500 F in the environment.	2002-07-19 This study will remain deleted from the end points list. (But this study is considered as valid and is reported in Vol.3 of DAR) The information given in this study confirms the different degradation route in water under irradiation conditions showing formation of degradation products already former identified in a sterile photolysis study. This information was useful for the discussion on the relevance of degradation products formed during photolysis in water. Therefore all photodegradation products were considered during the meeting as **potentially** relevant. Concerning the degradation rate of the parent compound in the water phase the irradiated study shows even slower degradation in comparison with the “dark” study. The meeting concluded that since the light conditions are officially not defined, only the standard “dark”study will be considered for the exposure assessment.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.9: RMS to delete information on turf from the PEC surface water section of the end points list and amend the 95% percentile to 90th. The overspray calculation is to be deleted and replaced with a 3m calculation for single and multiple application. The RMS is to check with the ecotoxicologists about the appropriate distance for safe use.		2002-07-19 See new amended end points list	Overview Meeting (17.-18.09.2002): Open point fulfilled.
2.1	Information is required on the contribution run-off and spray drift makes towards surface water PEC. Scenarios will be required for both Mediterranean and Central EU situations, in order to assist in the identification of safe/critical uses. ES is to advise the RMS on the critical parameters for the Mediterranean conditions. (**A**)	09.07.02 New calculations with the overall 90th percentile drift values for single and triple application were conducted. As the FOCUS surface water concept is not finalized at current date, calculations with worst case assumptions for run-off were performed for Northern and Southern Europe. Reports are available.	2002-07-19 New calculation was provisionally done. See new amended end points list. Reports needs to be submitted and evaluated.	Overview Meeting (17.-18.09.2002): Data requirement essential for Annex I inclusion.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.10: RMS to delete information on turf from the PEC sediment section of the end points list. Also, to include PEC sediment information for both 1cm and 5cm depth.	09.07.02 PECsed calculations were conducted. Report available.	2002-07-15 See new amended end points list. The report has to be submitted	Overview Meeting (17.-18.09.2002): Open point still open.
	Open point 2.11: RMS to recalculate the PEC groundwater using the scenario of 3* 100 g as/ha and verify that groundwater contamination is not an issue for this compound.	09.07.02 Calculations were conducted. Report available.	2002-07-15 See new amended end points list. The report has to be submitted	Overview Meeting (17.-18.09.2002): Open point still open.
	Open point 2.12: RMS to note that the data on DT_{50} in the Fate and Behaviour in air section of the end points list were derived via an Atkinson calculation		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.13: RMS to revise the definition of the residue to reflect the major metabolites (including those which were potentially relevant) in the different environmental compartments.	09.07.02 The definition of the residues relevant to the environment listed on first page, point 2. of the Reporting Table 124 is not consistent with the endpoint list. Under point 2 it is listed: Soil: parent, BF500-6, BF500-7 Water: parent, BF500-3, BF500-6, BF500-7 It is true that BF 500-6 and BF 500-7 exceed 10% of applied in one or several laboratory soil studies. They were found in field studies only sporadically close to the LOQ. Furthermore, it could be shown that they do not possess any biological or ecotoxicological activity or leaching potential. BF500-6 and BF500-7 should therefore considered as non-relevant to soil. Any relevance of BF500-3, -6, and- 7 for water can be excluded. BF500-6 and –7 were never found in water in any of the studies, which can be explained by the almost complete insolubility of these compounds in water. BF500-3 was detected in water only in amounts <5% and proved to has a high Koc, low water solubility and furthermore no effect on sediment dwelling organisms. It also can be considered as non-relevant to water.	2002-07-19 Agreed. The inconsistency results from the fact, that during the F&B meeting all **potentially** relevant metabolites should be recognised and listed. The assessment concerning their relevance is expected to be done in other sections (Ecotox, Humantox). Therefore the definition of the residues relevant to the environment will be corrected according to the ECCO-meeting and will include also **all potentially** relevant metabolites in the different environmental compartments. See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 2.14: RMS to amend the list of end points in accordance with the discussion of ECCO 124.		2002-07-15 See new amended end points list	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 2.15: RMS to ensure that all the agreed suggestions from the other MS's and Applicant are incorporated into the end points list.		2002-07-15 See new amended end points list.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 2.16: RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.		2002-07-15 All studies were cited.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

3. Ecotoxicology

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
				Section: 3 Date requirements: 3 Open points: 5
3.1	The Applicant must address the risk to birds and mammals from the consumption of contaminated water, fish or earthworms. (An II 10.1) **A**	Concerning the potential risk to birds and mammls from the consumption of contaminated water, fish or earthworms, the applicant provides a detailed risk assessment in BASF DocID 2002/1006178 (available upon request). It demonstrates very low risk for birds and mammals: the worst case comprising risk from drinking fresh spray solutions results in TER > 60; TER for fish eating birds are > 10 000 and TER for earthworm eating vertebrates are > 100 000.	2002-07-18 The conclusion seems plausible, however the detailed risk assessment of the applicant should be submitted.	Overview Meeting (17.-18.09.2002): Data requirement essential for Annex I inclusion.
	Open point 3.1: The RMS to update the end points sheet with respect to the bird/mammal long term risk assessments.		2002-07-18 End points have been amended accordingly.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
3.2	The Applicant must provide information to address the risk to sediment dwelling invertebrates from the metabolite BF 500-3 (An II 8.2.7) **A**.	Information about the risk to sediment dwelling invertebrates has been addressed in: 1. A study with the sediment dwelling *Chironomus riparius* using radio-labelled test substance (A-II, 8.2.7). Next to standard parameters, also the presence of the metabolite BF 500-3 in water and sediment has been determined. Concentrations of up to 48% of TRR were observed in the sediment (similarly, the water sediment study showed a max. TRR of 66% after 14 days which decreased thereafter again). Thus the study can be used for an assessment of the risk of the metabolite to sediment dwelling organisms. 2. The most relevant information can be derived from a complex mesocosm study which includes the assessment of sediment dwelling species following multiple applications of BAS 500 F. This long-term investigation covers all possible impacts of the test substance and its relevant degradation products. It could be demonstrated that no adverse effects are found at concentrations of 8 µg/L or less (equivalent to more than double the maximum concentration after three vineyard applications with 100 g/ha at 3 m distance). In conclusion, the available data	2002-07-18 The information provided by the applicant is considered sufficient to address a potential risk which might arise from metabolite BF 500-3. Within the water/sediment study, the maximum amount of BF 500-3 in the sediment was reached after 7 days with 21 %. Hence, it can be assumed that the metabolite was present in the 28-day *Chironomus* study and therefore is included in the risk assessment for the parent.	Overview Meeting (17.-18.09.2002): Data requirement fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
		demonstrate that the metabolite BAS 500-3 does not constitute a significant risk to sediment dwelling organisms.		

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 3.2: The RMS to amend the aquatic section of the endpoint sheet in light of revised GAP and PECs.	CONSIDERING THE DISCUSSIONS AND RMS COMMENTS IN THE "AQUATIC LIFE" SECTION, WE FEAR THAT THE RISK ASSESSMENT DOES NOT ADEQUATELY ADDRESS THE COMPLEX DATA PACKAGE THAT HAS BEEN ELABORATED IN SUPPORT OF THE REGISTRATION OF THIS FUNGICIDE. DESPITE THE SIGNIFICANT REDUCTION OF UNCERTAINTY WITH A LARGE NUMBER OF ADDITIONAL HIGHER TIER STUDIES, ONLY STANDARD TER-VALUES ARE APPLIED TO CONCLUDE ON A RECOMMENDATION FOR USE CONDITIONS. A higher tier fish ELS study has been classified as not valid because of high control mortality. This statement is not correct. We thus consider this study to be fully valid. In addition, the results of this study are completely in line with further standard and higher tier studies. Being aware of the inherent toxicity of Pyraclostrobin to fish we have performed a very complex set of studies to address the potential risk. A detailed evaluation has been provided by Dohmen, 2000, BASF DocID 2000/1014917) We thus concluded that the lowest endpoint for riks assessment would be 2.4 µg/L. No harmful effects are to be	2002-07-18 End points have been amended accordingly. The 97 d-ELS study with *O. mykiss* is considered not valid due to several drawbacks as described in the draft assessment report. The intended uses of pyraclostrobin are connected with a high risk for aquatic organisms when reaching surface waters. Therfore adequate risk mitigation measures to protect aquatic ecosystems are necessary. Further information might be considered at MS-level when authorising plant protection products with pyraclostrobin as active ingredient. 2002-07-18 This so far has not been communicated officially by the applicant to the RMS.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
		expected at this or lower concentrations. Additional safety factors are not indicated due to the use of still worst case assumptions and the large reduction of uncertainties. Accordinlgy, BAS 500 F can safely be applied in grape at 5 m distance to surface water. Turf is not a crop for the Annex I listing (see ECCO 124 reporting table, General).		
	Open point 3.3: The RMS to amend the bee section of the end point sheet so that the LD50 values from the limit tests are more than (i.e. >) and not equal to (i.e. =) 73.1 and 69.1 µg/bee.		2002-07-18 End points have been amended accordingly.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
3.3	The Applicant must address the in-crop risk to non-target arthropod species *C carnea* and *C. septempunctata* (An III 10.5)	Application rates have been calculated acc. to Barrett et al 1994 (dose rate x 0.4 = 0.064 g (to account for 3-dimensional structure for foliage dwellers a.i./ha). Based on ext. lab. data *C. septempunctata* in crop risk is safe up to 1 x rate. Based on 2 ext. lab. *C. carnea* in crop risk is safe up to 1-x rate. Multiple applications are addressed via: A) accumulation of effects by stage specific tests; B) accumulation of product by field studies with T. pyri (in crop risk focusses on relevant species; C. c. and C. s. are of minor relevance for vine / turf) Degradation of BAS 500 F on vegetation is fast (T1/2 = 5 - 11 days). Possible in-crop effects will – if observed	2002-07-18 RMS does not agree with the opinion of the applicant, that *C. carnea* and *C. septem-punctata* are of minor relevance for vine / turf, as both are representatives of the guild of plant dwelling non-target arthropods. However, based on the available data, the potential for recovery of affected populations within one season is sufficiently addressed, as lethal effects in-crop are low, degradation of pyraclostrobin on plants is fast and risk for off-crop populations is low.	Overview Meeting (17.-18.09.2002): Data requirement fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
		at all - be short termed and acceptable due to quick recovery.		
	Open point 3.4: The RMS to amend the earthworm section of the end points sheet using the correct PEC for use on turf of 0.307 mg/kg.	Turf is not a crop for the Annex I listing (see ECCO 124 reporting table, General).	2002-07-18 End points have been amended accordingly.	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	OPEN POINT 3.5: THE RMS TO ADD AVAILABLE DATA FOR THE EFFECTS OF THE METABOLITES ON SOIL MICROBIAL PROCESSES TO THE END POINTS SHEET.		2002-07-18 End points have been amended accordingly.	Overview Meeting (17.-18.09.2002): Open point fulfilled.

4. Mammalian Toxicology

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
				Section:4 Date requirements: 2 Open points: 0
4.1	Notifier to supply specification details of production batches and justify the relevance of the toxicological database. **A**	Minium purity of the tox batches was 98.1% (BASF DocID 1999/11853, Doc. JII). Results of quality control of production samples show the same purity. A new 5-batch analysis will be available by November 2002.	2002-08-19 The comment of the notifier is considered acceptable. It is proposed that the point should be regarded as fulfilled as soon as the results of the new 5-batch analysis allow a reassessment of the toxicologicla data confirming their relevance.	Overview Meeting (17.-18.09.2002): Data requirement essential for Annex I inclusion. Point remains open pending the new 5-batch analysis data.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
4.2	Notifier to address the greater sensitivity of the mouse in acute toxicity studies. (IIA 5.2)	Different oral LD50 values were obtained for rats and mice since the chemical was administered in different vehicles (rat: aqueous CMC; mouse: olive oil) resulting in different resorption and bioavailability. However, there is no difference in sensitivity between rats and mice if similar vehicles (organic solvents) are used. The choice of aqueous CMC, however, mimics human dietary exposure in the best way. Therefore, the acute toxicity determined in rats after test substance administration in an aqueous vehicle should be considered valid for human risk assessment purposes (BSF DocID 2001/1009152, available upon request). Inhalation: We still disagree with R23.	2002-08-19 The comment of the notifier, that there is no difference in sensitivity between rats and mice after oral administration if similar vehicles (organic solvents) are used, is not considered acceptable without presenting appropriate data. Concerning the contrasting findings of the two acute inhalation toxicity studies the RMS is still supporting the statement of the ECCO meeting. At the meeting it was recognised that the vehicles used in these studies (acetone and Solvesso respectively) may have influenced toxicity. It was also noted that particle size in the first study was lower. It was therefore concluded that classification with R23 was appropriate.	Overview Meeting (17.-18.09.2002): Data requirement fulfilled. The LD50 is irrelevant to human dietary risk assessment; it is for hazard classification. As the notifier has stated that rat and mice are of similar sensitivity, the values for the mouse with corn oil should be used for classification. Both the oral toxicity and inhalation toxicity classifications should be referred to the ECB at Ispra.

5. Residues

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
				Section 5 Data requirements: 3 Open points: 7
	Message to other Meeting 5.1 - message to overview meeting (ECCO 127): it is noted that whilst there may be risk assessment concerns for grape, an almost complete residues package is available for cereals (which has been assessed by the RMS and considered by ECCO 125), and there are no expected risk assessment concerns for this use.	The applicant wants to confirm again that the submission for Annex I listing was for grapes only and not for turf, too. See letter of Regenstein (8.3.2002) to ECCO 124.		Overview Meeting (17.-18.09.2002): Consider Annex 1 notification for use on grapes only, but note that there may be risk assessment concerns.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Message to other Meeting 5.2 - message to overview meeting (ECCO 127) in response to request from ECCO 123 (toxicology) to clarify the metabolite profile in edible crops : pyraclostrobin was the main component. A number of metabolites were identified, the major ones being metabolite 500M07 and metabolite 500M54. For full details refer to Section 7.1 of the DAR.			Overview Meeting (17.-18.09.2002): Possible further discussion on the toxicological significance of metabolites and the residue definitions.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 5.1: RMS to define/name the metabolites that are included in the residue definition (for risk assessment) for animal products (ruminants), and to add in a conversion factor.	The applicant agrees to the residue definition in animal proposed by ECCO: • For monitoring and for risk assessment in all matrices except milk and ruminant liver: Pyracolstrobin (parent only) • For risk assessment in milk and liver: Pyraclostrobin and its metabolites containing the 1-(4-chlorophenyl)-1H-pyrazole - or the 1-(4-chloro-2-hydroxyphenyl)-1H-pyrazole moiety, sum expressed as Pyraclostrobin. For the analysis of milk and liver a common moiety method was submitted which covers besides parent BAS 500 F the following metabolites: 500M07 (synonym: BF 500-3), 500M04 (BF 500-4), 500M05, 500M64, 500M67, 500M85 (BF 500-8) The structural formulas of the metabolites are shown in BASF Doc ID 2000/1014971.	2002-08-13 residue definition confirmed conversion factors see list of endpoints Note: According to the study reports Metabolite 500M04 is synonym with BF500-5 (not BF500-4)!	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 5.2: RMS to evaluate the new barley residues trials data (end points sheet to reflect that the cereal use is not intended for A1 listing)		2002-08-13 new trials evaluated, results included in list of endpoints New MRL proposal: 0.3 mg/kg barley, oats	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
5.1	Additional residues trials data (or bridging data as appropriate) to support the GAP using the correct number of applications. **A** (Annex point 6.3).	In total, 5 bridging trials are available reflecting the use pattern of 3 x 160 g BAS 500 F/ha (PHI = 35 days). The study is ongoing and will be finalised in autumn 2002. According to the preliminary results available (upon request see BASF Doc ID 2002/1004119) the residue levels are comparable for both study designs (3 x 160 g as/ha compared with 8 x 60 to 160 g as/ha). The MRL calculation results in 2 mg/kg for grapes.	2002-08-13 Waiting for results	Overview Meeting (17.-18.09.2002): Data may be evaluated once completely and submitted, and MRL proposal considered: note potential consumer exposure concerns. Data requirement essential for Annex I inclusion.
	Open point 5.3: RMS to check the consumer risk assessment (chronic and acute) after the evaluation of the barley trials.		2002-08-13 new assessment included in list of endpoints	Overview Meeting (17.-18.09.2002): Open point fulfilled.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
5.2	Notifier to address the exceedance of the ARfD for toddlers. (Message to other Meeting 5.4- message to overview meeting (ECCO 127): potential concern for UK consumers for table grapes. Advice sought from overview meeting on possible options/data requirements:- amend GAP, only use trials that are in stricter accordance with GAP, probabilistic modelling; restrict use to wine grapes only; generation of data for individual grape bunches (unit assessment) to allow the risk assessment to be refined.) (This message has been changed into a data requirement by the Overview Meeting.)	In 2000 and 2001, ECPA has performed variability studies in individual grape bunches and head lettuce (see BASF Doc Ids 2002/1007077 and 2002/ 1007078, reports available upon request). In the course of these studies, five different crop protection products (systemic and non-systemic) were applied at four locations. Sampling was performed 7 days after application. 120 samples from each site and crop were analysed for all active ingredients tested. The results clearly indicate that the variability factors for grapes and lettuce ranged between 2 - 3. Using a variability factor of 3, the calculation leads to % acute reference dose utilisation clearly below 100% for UK toddler. From these data it can be concluded that the use of BAS 500 F in table grapes is safe.	2002-08-13 The results of the ECPA project will be discussed at the next JMPR meeting. The use of a variability factor of 3 would result the following NESTI-values for table grapes (UK-Toddlers): South EU HR 0.72 mg/kg, NESTI 78 % of ARfD (0.03 mg/kg bw) North EU HR 0.89 mg/kg, NESTI 97 % of ARfD If a new variability factor of 3 will be agreed at JMPR 2002 the argumentation of the notifier is acceptable	Overview Meeting (17.-18.09.2002): Data requirement essential for Annex I inclusion.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
5.3	RMS to clarify with applicant whether the processing study in wine, recorded the fraction weights to provide estimation of % transference for addition to the end points sheet. (This former open point 5.4 has been changed into a data requirement by the Overview Meeting).	During the processing part of the BAS 500 F study in wine, no fraction weights were recorded. Standard values from the processing lab (Neustadt) are available for wine. This fact does not have any impact on the final conclusion of this study: In the consumer product wine, no accumulation of BAS 500 F residues were observed.	2002-08-13 Estimation of %-transference should be done by the notifier on basis of standard values	Overview Meeting (17.-18.09.2002): Data requirement essential for Annex I inclusion.
	Open point 5.5: For cereals (wheat and barley), RMS to update end points sheet to add bran processing factor and to correct the value for flour, middlings and shorts.		2002-08-13 see list of endpoints	Overview Meeting (17.-18.09.2002): Open point still open.
	Open point 5.6: RMS to review the barley MRL following evaluation of the new trials data.		2002-08-13 new trials evaluated, results included in list of endpoints New MRL proposal: 0.3 mg/kg barley, oats	Overview Meeting (17.-18.09.2002): Open point fulfilled.
	Open point 5.7: RMS to update the end points list in accordance with the outcome of the discussion at ECCO 125.		2002-08-13 see list of endpoints	Overview Meeting (17.-18.09.2002): Open point still open.

No.	Column A Conclusions of the ECCO-Peer Review Meeting	Column B Comments from the main data submitter / applicant on the ECCO-Review conclusion	Column C Rapporteur Member State comments on main data submitter / applicant comments	Column D Recommendations ECCO-Overview Meeting / Conclusions of the evaluation group
	Open point 5.8: RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.	For the list of studies submitted during the evaluation process: see letter of H. Regenstein (dated: Jan 17, 2002) to Mr. D. J. Flynn (copy to RMS)	2002-08-13 new studies included in Appendix III prepared for the overview meeting	Overview Meeting (17.-18.09.2002): Open point fulfilled.

Areas of concern:

Section 1: purity of the production material (5-batch analysis).
Section 2: PEC calculations to be evaluated.
Section 3: Possible risk to birds/mammals from the consumption of contaminated water/fish/earthworms.
Section 4: purity of the production material.
Section 5: potential concerns regarding acute consumer exposure risk assessment for grapes.

Overview-Meeting (17. - 18.09.2002):

- The first provisional authorisation was granted in Germany on 23 October 2001.
- NOT to clarify the list of uses supported by available data and submit the list to ECCO-BBA within a week after the meeting.
- RMS to amend the list of end points.

List of uses supported by available data

Crop and/ or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (l)	Remarks: (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	number min max (k)	interval between applications (min)	kg as/hL min max	water L/ha min max	kg as/ha min max		
Grapes	France	BAS 500 00 F	F	p+d mildew	EC	250	row, SP	09-85	3	12	0.01	1000	0.100	35	
Grapes	Germany	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	11-81	3	12	0.01	400-1600	0.04-0.16	35	
Grapes	Italy	BAS 500 00 F	F	p+d mildew	EC	250	row, SP	60-80	3	12	0.01	1000	0.100	35	
Grapes	Portugal	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	16-71	3	12	0.01	1000	0.100	35	
Grapes	Spain	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	65-81	3	12	0.01	1000	0.100	35	
~~Turf~~	~~all EU MS~~	~~BAS 500 00 F~~	~~F~~	~~mold~~	~~EC~~	~~250~~	~~overall,SP~~		~~2~~	~~14~~	~~0.025 0.05~~	~~500 1000~~	~~0.250~~		

(a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (*e.g.* fumigation of a structure)
(b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
(c) *e.g.* biting and suckling insects, soil born insects, foliar fungi, weeds
(d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(e) GCPF Codes - GIFAP Technical Monograph No 2, 1989
(f) All abbreviations used must be explained
(g) Method, *e.g.* high volume spraying, low volume spraying, spreading, dusting,
(h) Kind, *e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plant - type of equipment used must be indicated
(i) g/kg or g/L
(j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
(k) Indicate the minimum and maximum number of application possible under practical conditions of use
(l) PHI - minimum pre-harvest interval
(m) Remarks may include: Extent of use/economic importance/restrictions

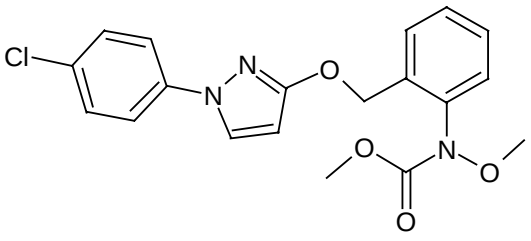
Appendix 2 - COMPLETE LIST OF END POINTS: PYRACLOSTROBIN

1 Physical chemical properties section

Identity, physical and chemical properties, details of uses, further information, classification and labelling

Active substance (ISO Common Name)	Pyraclostrobin (ISO, proposed)
Function (*e.g.* fungicide)	Fungicide
Rapporteur Member State	Germany

Identity (Annex IIA, point 1)

Chemical name (IUPAC)	methyl N-(2-{[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxymethyl}phenyl) N-methoxy carbamate
Chemical name (CA)	carbamic acid, [2-[[[1-(4-chlorophenyl)-1H-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester
CIPAC No	657
CAS No	175013-18-0
EEC No (EINECS or ELINCS)	not assigned
FAO Specification (including year of publication)	not applicable, new active substance
Minimum purity of the active substance as manufactured (g/kg)	*open point*
Identity of relevant impurities (of toxicological, environmental and/or other significance) in the active substance as manufactured (g/kg)	none
Molecular formula	$C_{19}H_{18}ClN_3O_4$
Molecular mass	387.82 g/mol
Structural formula	

Physical-chemical properties (Annex IIA, point 2)

Melting point (state purity)	63.7-65.2 °C (99.8 %)	
Boiling point (state purity)	no boiling point up to decomposition at 200°C, 99.8 %	
Temperature of decomposition	200°C, 99.8 %	
Appearance (state purity)	white to light beige cristalline solid (99.8 %)	
Relative density (state purity)	1.367 g/cm^3 (99.8 %, 20 °C)	
Surface tension	71.8 mN/m at 0.5 % (w/w) (20 °C) 71.5 mN/m at 2.0 % (w/w) (20 °C) (98.5 %)	
Vapour pressure (in Pa, state temperature)	2.6 x 10^{-8}, 20°C	
Henry's law constant (Pa m^3 mol^{-1})	5.307 x 10^{-6}	
Solubility in water (g/L , 20 °C)	19 ± 1.7 g/L at 20 °C in deionised water (pH of 5.8) There is no dissociation in water therefore pH dependence on solubility is not applicable.	
Solubility in organic solvents (in g/L 20 °C)	n-heptane	3.7
	2-propanol	30.0
	octanol	24.2
	olive oil	28.0
	methanol	100.8
	acetone	>500
	ethyl acetate	>500
	acetonitrile	>500
	dichloromethane	>500
	toluene	>500
Partition co-efficient (log P_{OW})	3.99 (20 °C, 99.8 %) Effect of pH was not investigated since there is no dissociation in water.	
Hydrolytic stability (DT_{50}) (state pH and temperature)	pH 5: stable	
	pH 7: stable	
	pH 9: stable (very slow degradation observed)	
Dissociation constant	not applicable. No indication of dissociation in water.	
UV/VIS absorption (max.) (if absorption > 290 nm state ε at wavelength)	2.5 x 10^4 L mol^{-1} cm^{-1} at 205 nm 2.4 x 10^4 L mol^{-1} cm^{-1} at 275 nm (22°C, 99.8 %)	
Photostability (DT_{50}) (aqueous, sunlight, state pH)	DT50 < 2 h (mean value of tolyl- and chlorophenyl-label) at 22°C	
Quantum yield of direct phototransformation in water at λ > 290 nm	2.17 x 10^{-1}	
Flammability	not considered highly flammable	
Explosive properties	no potential for explosivity as evident from the structural formula	

List of uses supported by available data

Crop and/ or situation (a)	Member State or Country	Product name	F G or I (b)	Pests or Group of pests controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (l)	Remarks: (m)
					Type (d-f)	Conc. of as (i)	method kind (f-h)	growth stage & season (j)	number min max (k)	interval between applications (min)	kg as/hL min max	water L/ha min max	kg as/ha min max		
Grapes	**France**	BAS 500 00 F	F	p+d mildew	EC	250	row, SP	09-85	3	12	0.01	1000	0.100	35	
Grapes	**Germany**	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	11-81	3	12	0.01	400-1600	0.04-0.16	35	
Grapes	**Italy**	BAS 500 00 F	F	p+d mildew	EC	250	row, SP	60-80	3	12	0.01	1000	0.100	35	
Grapes	**Portugal**	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	16-71	3	12	0.01	1000	0.100	35	
Grapes	**Spain**	BAS 500 00 F	F	p+d mildew	EC	250	row,SP	65-81	3	12	0.01	1000	0.100	35	
~~**Turf**~~	~~**all EU MS**~~	~~BAS 500 00 F~~	~~F~~	~~mold~~	~~EC~~	~~250~~	~~overall,SP~~		~~2~~	~~14~~	~~0.025-0.05~~	~~500-1000~~	~~0.250~~		

(a) For crops, the EU and Codex classifications (both) should be used; where relevant, the use situation should be described (*e.g.* fumigation of a structure)
(b) Outdoor or field use (F), glasshouse application (G) or indoor application (I)
(c) *e.g.* biting and suckling insects, soil born insects, foliar fungi, weeds
(d) *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(e) GCPF Codes - GIFAP Technical Monograph No 2, 1989
(f) All abbreviations used must be explained
(g) Method, *e.g.* high volume spraying, low volume spraying, spreading, dusting, drench
(h) Kind, *e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plant - type of equipment used must be indicated
(i) g/kg or g/L
(j) Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
(k) Indicate the minimum and maximum number of application possible under practical conditions of use
(l) PHI - minimum pre-harvest interval
(m) Remarks may include: Extent of use/economic importance/restrictions

Classification and proposed labelling (Annex IIA, point 10)

with regard to physical/chemical data	None
with regard to toxicological data	T, R 23; Xi, R 38
with regard to fate and behaviour data	None
with regard to ecotoxicological data	N R50/R53

Methods of analysis

Analytical methods for the active substance (Annex IIA, point 4.1)

Technical as (principle of method)	HPLC-UV; reversed phase column
Impurities in technical as (principle of method)	HPLC-UV; reversed phase column. GC-FID
Plant protection product (principle of method)	HPLC-UV; reversed phase column

Analytical methods for residues (Annex IIA, point 4.2)

Food/feed of plant origin (principle of method and LOQ for methods for monitoring purposes)	LC-MS-MS 0.02 mg/kg (wheat, grapes, peanut, HPLC-UV orange)
Food/feed of animal origin (principle of method and LOQ for methods for monitoring purposes)	HPLC-UV 0.01 mg/kg (milk) 0.05 mg/kg (muscle, liver, kidney, fat, egg)
Soil (principle of method and LOQ)	LC-MS-MS 0.01 mg/kg HPLV-UV
Water (principle of method and LOQ)	LC-MS-MS 0.05 µg/L (drinking and surface water)
Air (principle of method and LOQ)	HPLC-UV 0.3 µg/m^3
Body fluids and tissues (principle of method and LOQ)	HPLC-UV 0.05 mg/kg (liver, kidney) Body fluids: no method submitted

2 Fate and behaviour section

Fate and behaviour in the environment

Route of degradation (aerobic) in soil (Annex IIA, point 7.1.1.1.1)

Mineralisation after 100 days	4 % after 87 d (tolyl-label, route study) 5 % after 91 d (chlorophenyl-label, route study)
Non-extractable residues after 100 days	54.3 % after 87 d (tolyl-label, route study) 56.1 % after 91 d (chlorophenyl-label, route study)
Major metabolites - name and/or code, % of applied (range and maximum)	BF 500-6, max. 31% after 120 days (rate studies) BF 500-7, max. 13% after 62 days (rate studies)

Route of degradation in soil - Supplemental studies (Annex IIA, point 7.1.1.1.2)

Anaerobic degradation	no parent after 120 days, bound residues: 61% (tolyl-label), 37% (chlorophenyl-label). Major metabolite BF 500-3: max 95.8 % after 14 d (tolyl-label), 80 % after 14 d (chlorophenyl-label)
Soil photolysis	after 15 days: 64-74% parent, 12% bound residues, 2% CO_2, no major metabolites (>10%)

Rate of degradation in soil (Annex IIA, point 7.1.1.2, Annex IIIA, point 9.1.1)

Method of calculation (**Notifier**)	ModelMaker 3.0.3/3.0.4 (Cherwell Scientific Publishing Limited)
Laboratory studies (range or median, with n value, with r^2 value)	DT_{50lab} **a.i.** (20°C, aerobic): 12-101 days (5 soils) DT_{50lab} BF 500-6 (tolyl-label, route study): 129 d DT_{50lab} BF 500-6 (chlorphenyl-label, route study): 166 d DT_{50lab} BF 500-7 (tolyl-label, route study): 112 d DT_{50lab} BF 500-7 (chlorphenyl-label, route study): 159 d
	DT_{90lab} **a.i.** (20°C, aerobic): 143-163 days (5 soils) DT_{90lab} BF 500-6 (tolyl-label, route study): 428 d DT_{90lab} BF 500-6 (chlorphenyl-label, route study): 552 d DT_{90lab} BF 500-7 (tolyl-label, route study): 372 d DT_{90lab} BF 500-7 (chlorphenyl-label, route study): 529 d
	DT_{50lab} (5°C, aerobic): > 120 days
	DT_{50lab} (20°C, anaerobic): 3 days

	degradation in the saturated zone: not relevant
Field studies (state location, range or median with n value)	DT_{50f} : 2 – 37 days, 6 locations (3 Germany, 2 Spain, 1 Sweden)
	DT_{90f} : 83-230 days
Method of calculation (**Rapporteur**)	Timme and Frehse, 1st order kinetics
Field studies (state location, range or median with n value)	DT_{50f} : 14 - 85 days, 6 locations (3 Germany, 2 Spain, 1 Sweden). Mean of 26.1 d (85 d value excluded as calculation outliner). DT50 in southern Europe shorter than mean value. DT50 of 34.4 d considered as realistic worst case and used for PEC_{soil} calculations Metabolites not found in amounts above the limit of quantification.. BF 500-6 found sporadically.
	DT_{90f} : 49 - 114 days

Soil adsorption/desorption (Annex IIA, point 7.1.2)

	Active substance
K_f /K_{oc}	(^{14}C-Chlorphenol-ring)
	soils: 3 German, 2 US, 1 Canadian
K_d	Koc 6000 – 16000 (no average value calculated because of extremely high range)
	Kd 30 – 368
	1/n = 0.861 – 1.025
pH dependence (yes / no) (if yes type of dependence)	No
	BF 500-3
	Koc = 4240 – 11800 (n=6)
	1/n = 0.773 – 0.942
	BF 500-6
	Koc = 3360 – 126800
	1/n not available.Due to low water solubility only one concentration considered.
	BF 500-7
	Koc = 4020 – 149900
	1/n not available.Due to low water solubility only one concentration considered.

Mobility in soil (Annex IIA, point 7.1.3, Annex IIIA, point 9.1.2)

Column leaching	0% in leachate, all radioactivity in top soil layer
Aged residues leaching	0% in leachate, all radioactivity in top soil layer
Lysimeter/ field leaching studies	based on K_{oc} and DT_{50} values, no leaching expected Studies not available, not required.

PEC (soil) (Annex IIIA, point 9.1.3)

Method of calculation	first order kinetics, multiple application
Application rate	3 x 100 g in **vine***, 12 d interval, DT50 of 34.4 d, plant interception 70%, 70 % and 85 % (interception according to FOCUS GW-Report)

$PEC_{(s)}$	Single application Actual [mg/kg]	Single application Time weighted average [mg/kg]	Multiple application Actual [mg/kg]	Multiple application Time weighted average [mg/kg]
Short term 24h	n.a.	n.a.	0.075	0.075
2d			0.073	0.075
4d			0.070	0.073
Long term 7d	n.a.	n.a.	0.066	0.071
28d			0.043	0.058
50d			0.028	0.048
100d			0.010	0.033

*= worst case among supported uses concerning soil accumulation

Route and rate of degradation in water (Annex IIA, point 7.2.1)

Hydrolysis of active substance and major metabolites (DT_{50}) (state pH and temperature)	pH 5: at 25°C, no hydrolysis through 30 days
	pH 7: at 25°C, no hydrolysis through 30 days
	pH 9: at 25°C, very slow hydrolysis through 30 days

Photolytic degradation of active substance and major metabolites	DT_{50} parent : <2 hours; CO_2: after 25 days 22% with chlorophenyl-label, about 4% with tolyl-label; 33 minor metabolites (<10%); 5 major metabolites: BF 500-11:max. 45% after 21 days, DT_{50} calculation not possible due to constantly occuring formation/degradation and stable amounts during 25 d period experiment BF 500-13:max. 17% after 6 days, DT_{50} 31 days BF 500-14:max. 21% after 3 hours, DT_{50} about7 hours BF 500-15:max. 27% after 1 day, DT_{50} 5 days 500M58:max. 23% after 1 day, DT_{50} 9 days
Readily biodegradable (yes/no)	no
	Best fit
Degradation in - DT_{50} water	pond system: 3 days; river system: 1 day
water/sediment - DT_{90} water	pond system: 41 days; river system: 9 days
- DT_{50} sediment	pond system: 33 days; river system: 9 days
- DT_{90} sediment	pond system: 105 days; river system: no calc.possible
	1st-order (Timme and Frehse)
Degradation in - DT_{50} water	pond system: 8.7 days; river system: 1 day
water/sediment - DT_{90} water	pond system: 28.9 days; river system: not extrap.
- DT_{50} entire system	pond system: 26.8 days; river system: 29 days**
- DT_{90} entire system	pond system: 89 days; river system: 96 days** ** = low r^2 value (0.5593)
Mineralisation	about 5 % after 100 days
Non-extractable residues	pond system 62%; river system 54% after 100 days

Distribution in water / sediment systems (active substance)	pond system: sediment max. 53% after 14 days, decreasing to 7% after 100 days river system: sediment max. 62% after 2 days, decreasing to 10% after 100 days
Distribution in water / sediment systems (metabolites)	BF 500-3:in water: max. 2%, in sediment:max. 12% (pond system) after 100 days; max. 66% (river system) after 14 days, decreasing to 29% after 100 days BF 500-6: (only in pond system) in sediment max. 7% after 61 days BF 500-7: (only in pond system) in sediment max. 6% after 61 days

PEC (surface water) (Annex IIIA, point 9.2.3)

Vine

Method of calculation	**90.percentil overal** spray drift values DT50 water: 8.7 d, 1st order calculation
Application rate	Vine, 3 x 100 g a.s./ha, interval of 12 d
Main routes of entry and type of water body	**Spray drift**, 30 cm water layer, static water body

	Time [d]	3 m buffer		5 m buffer		10 m buffer		15 m buffer		20 m buffer	
		$PEC_{sw,act}$ [µg/L]	$PEC_{sw,twa}$ [µg/L]	$PEC_{sw,act}$ [µg/L]	$PEC_{sw,twa}$ [µg/L]	$PEC_{sw,act}$ [µg/L]	$PEC_{sw,twa}$ [µg/L]	$PEC_{sw,act}$ [µg/L]	$PEC_{sw,twa}$ [µg/L]	$PEC_{sw,act}$ [µg/L]	$PEC_{sw,twa}$ [µg/L]
Initial	0	3.524		1.568		0.521		0.276		0.174	
Short-	1	3.254	3.387	1.448	1.507	0.481	0.501	0.255	0.265	0.160	0.167
term:	2	3.005	3.258	1.337	1.450	0.444	0.482	0.235	0.255	0.148	0.161
	3	2.775	3.135	1.235	1.395	0.410	0.463	0.217	0.245	0.137	0.154
	4	2.562	3.018	1.140	1.343	0.379	0.446	0.201	0.236	0.126	0.149
Long-	7	2.018	2.702	0.898	1.202	0.298	0.399	0.158	0.211	0.099	0.133
term:	14	1.155	2.236	0.514	0.995	0.171	0.330	0.090	0.175	0.057	0.110
	21	0.661	2.249	0.294	1.001	0.098	0.332	0.052	0.176	0.033	0.111
	28	0.379	2.013	0.168	0.896	0.056	0.298	0.030	0.158	0.019	0.099
	42	0.124	1.810	0.055	0.806	0.018	0.268	0.010	0.142	0.006	0.089
	100	0.001	0.865	0.001	0.385	0.000	0.128	0.000	0.068	0.000	0.043

Entry route: runoff

Method of calculation	Plant interception: 70 %, 70 %, 85 % (FOCUS) Runoff: 0.5 % in Northern Europe, 3 % in Southern Eurpe DT_{50} soil: 26.1 d (average value) Runoff event starts 3 d after last application Dilution factor in the water body: 0.5 Volume of water (sum of water body and runoff water): 130000 L DT50 water: 8.7 d, 1st Order calculation
Application rate	Vine, 3 x 100 g a.s./ha, interval of 12 d
Main routes of entry and type of water body	**Runoff**, 30 cm water layer, static water body

$PEC_{sw, ini, runoff}$

1st step calculation **(without considering partitioning between water and eroded soil)**

0.933 µg/l (Northern Europe)

5.597 µg/l (Southern Europe)

$PEC_{sw,ini, runoff}$

2nd step calculation **(considering partitioning between water and eroded soil, Koc = 6000)**

0.067 µg/l (Northern Europe)

0.400µg/l (Southern Europe)

PEC (sediment)

Method of calculation	Maximum concentration of 17.9 % a.s. after 7 days in water/sediment study, $PEC_{ini\ in\ water}$ = after the last application
	Scenarios, see above PEC_{sw} 1 cm sed.-layer and 5 cm sed.-layer, bulk dens. of wet sediment:1.3 g/cm³

	$PEC_{sed,drift}$ [mg/kg]				
Buffer distance:	3 m	5 m	10 m	15 m	20 m
Spray drift value:	6.90%	3.07%	1.02%	0.54%	0.34%
1 cm depth of sediment	0.057	0.025	0.008	0.004	0.003
5 cm depth of sediment	0.011	0.005	0.002	0.001	0.001

PEC (ground water) (Annex IIIA, point 9.2.1)

Method of calculation and type of study (*e.g.* modelling, monitoring, lysimeter)	FOCUS-PELMO 2.2.2 Scenarios: Chateaudum (irrigated), Hamburg, Kremsmünster, Piscenza (irrigated), Porto, Sevilla (irrigated), Thiva DT50: BAS 500 F: 26.1 d BF 500-3: 65 d BF 500-6: 166 d BF 500-7: 159 d Koc: BAS 500 F: 6000 (1/n = 0.9) BF 500-3: 4240 (1/n = 0.88 BF 500-6: 3160 (1/n = 1.0) BF 500-7: 3920 (1/n = 1.0)
Application rate	Vine, 3 applications x 0.1 kg a.i./ha, interception: 70 %, 70 %, 85 % Application every year

$PEC_{(gw)}$

80th percentil leaching (according to FOCUS) for active substance and metabolites	< 0.001 µg/L

Fate and behaviour in air (Annex IIA, point 7.2.2, Annex III, point 9.3)

Direct photolysis in air	see photochemical oxidative degradation
Quantum yield of direct phototransformation	2.17×10^{-1}
Photochemical oxidative degradation in air (DT_{50})	< 2 hours (According to Atkinson, AOP)

Volatilisation	from plant surfaces: about 3% in 24 hours
	from soil: <1% in 24 hours

PEC (air)

Method of calculation	not done due to low volatility and rapid photochemical oxidative degradation

$PEC_{(a)}$

Maximum concentration	not calculated

Definition of the Residue (Annex IIA, point 7.3)

Relevant to the environment	**Potentially** relevant: **Soil**: parent, BF500-6, BF500-7, BF500-3 (anaerob) **Groundwater**: parent, BF500-6, BF500-7, BF500-3 **Surface water**: parent, BF500-11, BF5000-13, BF500-14 (according to the water/sediment irradiated study) **Surface water**: parent only (according to the water/sediment "dark" study) **Sediment**: parent, BF500-3

Monitoring data, if available (Annex IIA, point 7.4)

Soil (indicate location and type of study)	none
Surface water (indicate location and type of study)	none
Ground water (indicate location and type of study)	none
Air (indicate location and type of study)	none

3 Ecotoxicology section

Effects on non-target species

Effects on terrestrial vertebrates (Annex IIA, point 8.1, Annex IIIA, points 10.1 and 10.3)

Acute toxicity to mammals	LD50 >5000 mg/kg bw (rat)
Long-term toxicity to mammals	NOAEL 75 ppm (rat multi-generation study)
Acute toxicity to birds	LD50 >2000 mg/kg bw (bobwhite quail)
Dietary toxicity to birds	LC50 >5000 ppm (bobwhite quail and mallard duck)
Reproductive toxicity to birds	NOEL 1000 ppm (bobwhite quail and mallard duck)

Toxicity/exposure ratios for terrestrial vertebrates (Annex IIIA, points 10.1 and 10.3)

residues: insects 7.3 mg/kg (estimated); grass 35 mg/kg (initial, estimated), 10.5 mg/kg (twa, estimated); assumed food intake rates: 40 % of body weight (insectivorous birds), 25 % (herbivorous mammals, birds)

Application rate (kg as/ha)	Crop	Category (*e.g.* insectivorous bird)	Time-scale	TER	Annex VI Trigger
0.25	Turf	Insectivorous bird	acute	>690	10
0.25	Turf	Insectivorous bird	short-term	>690	10
0.25	Turf	Insectivorous bird	long-term	136	5
0.25	Turf	Herbivorous bird	acute	>228	10
0.25	Turf	Herbivorous bird	short-term	>142	10
0.25	Turf	Herbivorous bird	long-term	95	5
0.25	Turf	Herbivorous mammal	short-term	>570	10
0.25	Turf	Herbivorous mammal	long-term	7.1	5

Toxicity data for aquatic species (most sensitive species of each group)
(Annex IIA, point 8.2, Annex IIIA, point 10.2)

Group	Test substance	Time-scale	Endpoint	Toxicity (mg as/L)
Laboratory tests				
O. mykiss	BAS 500 F (pyraclostrobin)	static - 96 h	LC_{50}	0.00616[1)]
L. macrochirus		static - 96 h	LC_{50}	> 0.0196 < 0.0335[1)]
C. carpio		static - 96 h	LC_{50}	> 0.0121 < 0.0258[1)]
O. mykiss		flow-through - 28 d	NOEC	0.00464[3)]*
O. mykiss		ELS - 98 d	NOEC	0.0023[3)]
D. magna		static – 48 h	EC_{50}	0.0157*
D. magna		semi-static – 21 d	NOEC	0.0112*
C. riparius		static – 28 d	NOEC	0.040
P. subcapitata		static – 96 h	E_rC_{50}	> 0.843[4)]
Activated sludge		Static – 0.5 h	EC_{20}	> 1000
O. mykiss	BAS 500 00 F (formulated product)	Static - 96 h	LC_{50}	0.0042
L. macrochirus		Static - 96 h	LC_{50}	>0.0146 <0.0299
C. carpio		Static - 96 h	LC_{50}	>0.0209 <0.0497
O. latipes		Static - 96 h	LC_{50}	>0.0325 <0.0885
P. promelas		Static - 96 h	LC_{50}	>0.012 <0.0235
B. rerio		Static - 96 h	LC_{50}	>0.0417 <0.0887
L. idus		Static - 96 h	LC_{50}	>0.0135 <0.027
D. magna		Static - 48 h	EC_{50}	0.0152[2)]
P. subcapitata		Static - 72 h	E_rC_{50}	0.788[2)]
O. mykiss	BF 500-11 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*
S. subspicatus		Static – 72 h	E_rC_{50}	> 100[4)] *
O. mykiss	BF 500-13 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*
S. subspicatus		Static – 72 h	E_rC_{50}	> 100[4)] *
O. mykiss	BF 500-14 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*

Group	Test substance	Time-scale	Endpoint	Toxicity (mg as/L)
S. subspicatus		Static – 72 h	E_rC_{50}	> 100 [4] *

Microcosm or mesocosm tests
A mesocosm study was conducted with the formulated product BAS 500 00 F. Four concentration levels ranging from 0.9 µg as/L to 24 µg as/L simulating a vineyard situation with 8 applications in 14 d intervals were investigated. Approximately 260 different taxa of aquatic invertebrates were determined in the study. In most cases only insignifcant transient effects were observed. Affected populations usually recovered until the end of the study. For the mollusc species *Bithynia tentaculata* and *Valvata* spec and the mussel species *Dreissena polymorpha* treatment related effects were observed in the highest treatment level. The overall NOEC was determined to be 8 µg as/L.

[1] LC_{50} (1+96 h) [2] NOEC (1 + 98 h) [3] NOAEC, [4] = growth rate; [5] = E_rC_{10} ; * measured values confirmed nominal values.

Toxicity/exposure ratios for the most sensitive aquatic organisms (Annex IIIA, point 10.2)

Application rate (kg as/ha)	Crop	Organism	Time-scale	Distance (m)	TER	Annex VI Trigger
3 x 0.16	grapevines	*O. mykiss*	acute	3	**0,076**	100
				5	**1,1**	100
				10	**2,5**	100
				15	**7,5**	100
				20	**14,1**	100
				30	**22,4**	100
				40	**42,3**	100
				50	**69,2**	100
3 x 0.16	grapevines	*O. mykiss*	chronic	3	**0.4**	10
				5	**0.9**	10
				10	**2.8**	10
				15	**5.3**	10
				20	**8.4**	10
				30	15.8	10

Bioconcentration

Bioconcentration factor (BCF)	675 (whole fish, chlorophenyl label) 736 (whole fish tolyl label)
Annex VI Trigger for the bioconcentration factor	> 100 for non readily biodegradeable substances
Clearance time (CT_{50}) (CT_{90})	< 1 d 2.3 – 3.2 d
Level of residues (%) in organisms after the 14 day depuration phase	

Effects on honeybees (Annex IIA, point 8.3.1, Annex IIIA, point 10.4)

Acute oral toxicity	(as)	LD_{50} > 73.1 µg/bee
Acute contact toxicity	(as)	LD_{50} > 100 µg/bee

Multiple Dose Test

Acute oral toxicity	(formulation)	LD_{50} = 76.9 µg as/ bee
Acute contact toxicity	(formulation)	LD_{50} > 100 µg as/bee

Hazard quotients for honey bees (Annex IIIA, point 10.4)

Application rate (kg as/ha)	Crop	Route	Hazard quotient	Annex VI Trigger
Laboratory tests (multiple dose test)				
0.25	Turf	oral	3.2	50
0.25	Turf	contact	2.5	50
Field or semi-field tests				
Not required				

Effects on other arthropod species (Annex IIA, point 8.3.2, Annex IIIA, point 10.5)

Species	Stage	Test Substance	Dose (kg as/ha)	Endpoint	Effect %	Annex VI Trigger %
Laboratory tests						
T. pyri	Protonymphs	BAS 500 00 F	0.320	Mortality Fertility	47.3 98.5	30 30
A. rhopalosiphi	Adults	BAS 500 00 F	0.320	Mortality Fertility	30 80	30 30
C. carnea	Larvae	BAS 500 00 F	0.320	Mortality Fertility	78.6 0	30 30
C. septem-punctata	Larvae	BAS 500 00 F	0.320	Mortality	100	30
P. cupreus	Adults	BAS 500 00 F	0.320	Mortality Food uptake	0 10.7	30 30
Pardosa spp	Adults	BAS 500 00 F	0.320	Mortality Food uptake	0 9.9	30 30
Extended laboratory tests						
A. rhopalosiphi	Adults	BAS 500 00 F	0.320	Mortality Fertility	0 0	acceptable
C. carnea	Adult/LC	BAS 500 00 F	0.160	Mortality Fertility	27.3 79.9	acceptable
C. septem-punctata	Adults/LC	BAS 500 00 F	0.064	Mortality Fertility	0 3.1	acceptable

Field tests with BAS 500 00 F

Predatory mites

Species	Details of uses	Dosage per application	Total dosage	Effects
T. pyri	8 applications	0.16-0.4 kg product/ha	2.64 kg product/ha/year	0.0 / 0.0
T. pyri	8 applications	0.16-0.6 kg product/ha	3.14 kg product/ha/year	0.0 / 12
T. pyri	8 applications	0.24-0.6 kg product/ha	3.12 kg product/ha/year	58.1/ 0.0

Summary:

Three field tests with *T. pyri* clearly demonstrated low acute effects and recovery of affected populations.

Effects on earthworms (Annex IIA, point 8.4, Annex IIIA, point 10.6)

Acute toxicity	LC50 = 281.8 mg form./kg (corrected 35.2 mg as/kg)
Reproductive toxicity	NOEC = 1 L product/ha (corresponds to 0.443 mg as/kg)

Field tests with BAS 500 00 F and BAS 500 01 F

Two field tests were conducted with BAS 500 00 F 0.03 and 0.06 kg as/ha. In one field test there was no adverse effect on number and biomass of earthworms, on feeding activity (bait-lamina) and on overall abundance of collembola. In the second field test a slight effect with the full application rate was observed, but is regarded acceptable. One field test was conducted with BAS 500 01 F with an application rata of 2 x 0.25 kg as/ha. No long lasting effects on earthworm populations were observed.

Toxicity/exposure ratios for earthworms (Annex IIIA, point 10.6)

Application rate (kg as/ha)	Crop	Time-scale	TER	Annex VI Trigger
0.250 x 2	cereals	acute	115	10
0.250 x 2	cereals	longterm	1.4	5
0.160 x 3	grapevines	acute	124	10
0.160 x 3	Grapevines	chronic	1.6	5

Effects on soil micro-organisms (Annex IIA, point 8.5, Annex IIIA, point 10.7)

Nitrogen mineralisation	No effects up to 10 L product/ha (respective 2.5 kg as/ha)
	BAS 500-6: No effect up to 750 g/ha BAS 500-7: No effect up to 375 g/ha
Carbon mineralisation	No effects up to 10 L product/ha (respective 2.5 kg as/ha)
	BAS 500-6: No effect up to 750 g/ha BAS 500-7: No effect up to 375 g/ha

4 Mammalian toxicology section

Impact on human and animal health

Absorption, distribution, excretion and metabolism in mammals (Annex IIA, point 5.1)

Rate and extent of absorption	About 50% (based on urinary and biliary excretion within 5 d)
Distribution	Widely, highest concentrations in the liver
Potential for accumulation	None
Rate and extent of excretion	Complete within 5 d; mainly via faeces (80-90%, biliary excretion amounting to 35%), via urine 11-15%
Metabolism in animals	Extensive (>95%) with nearly 50 metabolites occurring Main metabolic pathways included N-demethoxylation, hydroxylation, cleavage of ester bond and further oxidation of the resulting molecule parts, conjugation with glucoronic acid or sulphate
Toxicologically significant compounds (animals, plants and environment)	Parent compound and metabolites

Acute toxicity (Annex IIA, point 5.2)

Rat LD_{50} oral	> 5000 mg/kg bw (Mouse: mortality at doses ≥ 300 mg/kg bw)	
Rat LD_{50} dermal	> 2000 mg/kg bw	
Rat LC_{50} inhalation	0.69 mg/l	**T, R 23**
Skin irritation	Irritating	**Xi, R 38**
Eye irritation	Not irritating	
Skin sensitization (test method used and result)	Not sensitizing (M&K maximization test)	

Short term toxicity (Annex IIA, point 5.3)

Target / critical effect	Reduced body weight, gastrointestinal tract, red blood cells; diarrhoea (dog); hepatocellular hypertrophy (rats); white blood cells and lymphatic organs (mice)
Lowest relevant oral NOAEL / NOEL	90 day mouse[1]: 30 ppm (4 mg/kg bw/d)
Lowest relevant dermal NOAEL / NOEL	4wk rat: ≥ 250 mg/kg bw/d (systemic)
Lowest relevant inhalation NOAEL / NOEL	No data - not required (because of physical and chemical properties)

Genotoxicity (Annex IIA, point 5.4)

No genotoxic potential

Long term toxicity and carcinogenicity (Annex IIA, point 5.5)

Target / critical effect	Reduced body weight; liver cell necrosis (rats)
Lowest relevant NOAEL / NOEL	2yr rat / mouse: 75 / 30 ppm (4 mg/kg bw/d)
Carcinogenicity	No carcinogenic potential

Reproductive toxicity (Annex IIA, point 5.6)

[1] based on effects on body weight after 90 days in the carcinogenicity study in male mice

Reproduction target / critical effect	Reduced pup body weight gain in the presence of parental toxicity
Lowest relevant reproductive NOAEL / NOEL	75 ppm (8.2 mg/kg bw/d)
Developmental target / critical effect	Developmental effects in rats and embryotoxicity in rabbits at maternally toxic doses
Lowest relevant developmental NOAEL / NOEL	5 mg/kg bw/d (rabbit)

Neurotoxicity / Delayed neurotoxicity (Annex IIA, point 5.7)

No neurotoxic potential (rat, acute and 13wk studies)

Other toxicological studies (Annex IIA, point 5.8)

Three water metabolites (BF500-11, 500-13, 500-14) proved negative in the Ames test

Medical data (Annex IIA, point 5.9)

Limited data (new compound); no human health problems expected

Summary (Annex IIA, point 5.10)

	Value	Study	Safety factor
ADI	0.04 mg/kg bw	2yr rat / mouse	100
AOEL systemic	0.02 mg/kg bw	90 day mouse (bioavailability: 50%)	100
Drinking water limit	Not considered by ECCO	-	-
ARfD (acute reference dose)	0.04 mg/kg bw	90 day mouse	100

Dermal absorption (Annex IIIA, point 7.3)

2.6% (rat, *in vivo*); *in vitro* data suggest much lower permeability of human skin; 1% used for calculation

Acceptable exposure scenarios (including method of calculation)

Operator	Intended use acceptable (Exposure < syst. AOEL, without PPE; German model, UK-POEM)
Workers	Intended use acceptable
Bystanders	Intended use acceptable

5 Residues section

Residues

Metabolism in plants (Annex IIA, point 6.1 and 6.7, Annex IIIA, point 8.1 and 8.6)

Plant groups covered	wheat (cereals), grapes (fruit), potatoes (root and tuber vegetable)
Rotational crops	radish, lettuce, wheat
Plant residue definition for monitoring	Pyraclostrobin
Plant residue definition for risk assessment	Pyraclostrobin
Conversion factor (monitoring to risk assessment)	none

Metabolism in livestock (Annex IIA, point 6.2 and 6.7, Annex IIIA, point 8.1 and 8.6)

Animals covered	lactating goat, laying hen
Animal residue definition for monitoring	Pyraclostrobin
Animal residue definition for risk assessment	liver (except poultry liver) and milk fat only: Pyraclostrobin and its metabolites analysed as the hydroxy pyrazoles BF 500-5 and BF 500-8, sum expressed as Pyraclostrobin
Conversion factor (monitoring to risk assessment)	
Metabolism in rat and ruminant similar (yes/no)	yes
Fat soluble residue: (yes/no)	yes (Log Po/w 3.99)

Residues in succeeding crops (Annex IIA, point 6.6, Annex IIIA, point 8.5)

30, 120, 365 days plant back interval after application of 0.9 kg as/ha: TRR in the edible parts for human consumption are very low (radish roots, lettuce: < 0.040 mg/kg; wheat grain: < 0.089 mg/kg). No accumulation of Pyraclostrobin or its degradation products [radish, lettuce < 0.0106 mg/kg; wheat straw < 0.0147 mg/kg; wheat grain: not detectable]

Stability of residues (Annex IIA, point 6 introduction, Annex IIIA, point 8 introduction)

Food of animal origin: Pyraclostrobin stable for 8 month Metabolite BAS 500-10 (model compound) with slow degradation but stable enough to evaluate the submitted feeding study (analysed within 6 month). Plant (peanut nutmeat, peanut oil, wheat grain, wheat straw, sugarbeet tops, sugarbeet roots, tomatoes, grape juice): Pyraclostrobin, metabolite BAS 500-3 stable for 18 month

Residues from livestock feeding studies (Annex IIA, point 6.4, Annex IIIA, point 8.3)

Intakes by livestock ≥ 0.1 mg/kg diet/day:	Ruminant: yes/~~no~~	Poultry: yes/~~no~~	Pig: yes/~~no~~
Muscle	< 0.05	< 0.05	< 0.05
Liver	< 0.05	< 0.05	< 0.05
Kidney	< 0.05	< 0.05	< 0.05
Fat	< 0.05	< 0.05	< 0.05
Milk	< 0.01	not applicable	not applicable
Eggs	not applicable	< 0.05	not applicable

Summary of critical residues data (Annex IIA, point 6.3, Annex IIIA, point 8.2)

Crop	Northern or Mediterranean Region	Trials results relevant to the critical GAP (a)	Recommendation/comments	MRL	STMR (b)
wheat	N	17 results: 11 x < 0.02, 0.02, 0.03, 0.04, 0.04, 0.05, 0.05		0.1 mg/kg	0.02 mg/kg
	S	11 results: 11 x <0.02			
barley	N	21 results: <0.02, <0.02, <0.02, <0.02, 0.03, 0.03, 0.03, 0.03, 0.04, 0.04, 0.04, 0.05, 0.05, 0.07, 0.07, 0.07, 0.07, 0.09, 0.10, 0.12, 0.29		0.2 mg/kg	0.05 mg/kg
	S	3 results: 0.02, 0.03, 0.05			
grapes	N	8 results: 0.19, 0.25, 0.48, 0.57, 0.78, 0.82, 0.84, 0.89		2 mg/kg	0.68 mg/kg
	S	8 results: 0.18, 0.20, 0.21, 0.34, 0.38, 0.48, 0.59, 0.72			
banana	Import	12 x < 0.02	PHI in trials 0 days, fruits not covered with plastic, analysis with peel	0.02 * mg/kg	< 0.02 mg/kg

(a) Numbers of trials in which particular residue levels were reported *e.g.* 3 x <0.01, 1 x 0.01, 6 x 0.02, 1 x 0.04, 1 x 0.08, 2 x 0.1, 2 x 0.15, 1 x 0.17
(b) Supervised Trials Median Residue *i.e.* the median residue level estimated on the basis of supervised trials relating to the critical GAP

Consumer risk assessment (Annex IIA, point 6.9, Annex IIIA, point 8.8)

ADI	0.04 mg/kg bw/d	
TMDI (European Diet) (% ADI)	0.0055 mg/kg bw/d (13.8 %)	
NEDI (% ADI)	not calculated	
Factors included in NEDI	-	
ARfD	0.04 mg/kg bw	
Acute exposure NESTI (% ARfD)	grapes: UK-toddler	0.0392 mg/kg bw (98.1 %)
	UK-adult	0.0098 mg/kg bw (24.4 %)

Processing factors (Annex IIA, point 6.5, Annex IIIA, point 8.4)

Crop/processed crop	Number of studies	Transfer factor	% Transference *
grapes / must, juice, wine	4 trials	0.03	
grapes / wet pomace	4 trials	3.9	
grapes / rasins	1 (2 trials)	2.7	
barley/pot barley	1 trial	0.7	
barley/pearling dust	1 trial	11	
barley/malt	4 trials	1.2	
barley/malt germs	1 trial	2.3	
barley/spent grain	1 trial	10	
barley/trubs (flocs)	1 trial	0.7	
barley/beer yeast	1 trial	0.7	
barley/beer	4 trials	0.7	
wheat/flour, middlings, shorts	1	0.06	
wheat/ germ	1	0.8	

* Calculated on the basis of distribution in the different portions, parts or products as determined through balance studies

Proposed MRLs (Annex IIA, point 6.7, Annex IIIA, point 8.6)

wheat, rye, triticale	0.1 mg/kg
barley, oats	0.2 mg/kg
grapes	2 mg/kg
banana (import tolerance)	0.02* mg/kg

Appendix 3

SUGGESTED CLASSIFICATION AND LABELLING: **PYRACLOSTROBIN**

1 Physical chemical properties section

None.

2 Fate and behaviour section

Not discussed by ECCO 124.

3 Ecotoxicology

Hazard symbol	**N**	Dangerous for the environment.
Risk phrase	**R 50/53**	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrase	**S 60 + 61**	Avoid release to the environment. Refer to special instructions/safety data sheet. This material and its container must be disposed of as hazardous waste.

4 Mammalian toxicology section

The experts provisionally proposed classification with R23 (Toxic by inhalation), however it was recognised that final decisions on classification and labelling issues would be made by the ECB. The RMS proposals for classification are detailed below.

Hazard symbol	**T**	**TOXIC**
Risk phrase	**R38**	Irritating to skin
	R23	Toxic by inhalation

5 Residues section

None

ANNEX 8 TO CONCISE OUTLINE REPORT OF ECCO 122 PEER REVIEW MEETING

PYRACLOSTROBIN

Rapporteur Member State: Germany

Specific comments on the active substance in the section **Identity, Physical and chemical properties, Details of uses and further information, Methods of analysis** are listed below. The conclusions of the meeting were as follows:

1a. Comments received and discussed:

Date	**Supplier**	**File Name**
xx Month xxxx	Name	

1b. Comments received but not discussed (because deadline of submission was not met):

Date	**Supplier**	**File Name**
xx Month xxxx	Name	

1c. Documents tabled at the meeting:

Date	**Supplier**	**File Name**
xx Month xxxx	Name	

2. **Data on preparations:** XXX.

3. **Classification and labelling:** XXX.

4. **Claims for data protection:** not considered since pyraclostrobin is a new active substance.

5. **Recommended restrictions/conditions for use:** XXX.

Areas of concern: XXX.

Appendix 1: ECCO 122 reporting table: pyraclostrobin

Appendix 2: List of end points: pyraclostrobin

Appendix 3: List of studies which were submitted during the evaluation process and were not cited in the draft assessment report: pyraclostrobin

Appendix 4: Suggested classification and labelling: pyraclostrobin

Appendix 1: ECCO 122 reporting table Pyraclostrobin (Fu)

1. Identity, Physical and chemical properties, Details of uses and further information, Methods of analysis

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
			Section 1 Data requirements: XXX Open points: XXX
(i)			
(ii)			
(iii)			
(iv)			
(v)			
(vi)			
(vii)			
(viii)			
(ix)			
(x)			
(xi)			
(xii)			
(xiii)			
(xiv)			
(xv			
(xvi)			
(xvii)			

Appendix 2

LIST OF END POINTS: **PYRACLOSTROBIN**

1 Physical chemical properties section

XXX List of end points to be inserted here

Appendix 3

LIST OF STUDIES WHICH WERE SUBMITTED DURING THE EVALUATION PROCESS AND WERE NOT CITED IN THE DRAFT ASSESSMENT REPORT: **PYRACLOSTROBIN**

1 Physical chemical properties section

XXX Study list to be inserted here.

Appendix 4

SUGGESTED CLASSIFICATION AND LABELLING: **PYRACLOSTROBIN**

1 Physical chemical properties section

Hazard symbol	**Xn**	Harmful
	Xn	Harmful
Risk phrase	**R 53**	May cause long-term adverse effects in the aquatic environment
	R 53	May cause long-term adverse effects in the aquatic environment
Safety phrase	**S36**	Wear protective clothing.
	S36	Wear protective clothing.

XXX Examples to be replaced by conclusions of the meeting.

ANNEX 8 TO CONCISE OUTLINE REPORT OF ECCO 124 PEER REVIEW MEETING

PYRACLOSTROBIN

Rapporteur Member State: Germany

Specific comments on the active substances in the section **Fate and Behaviour** are listed below. The conclusions of the meeting were as follows:

1a. Comments received and discussed:

Date	**Supplier**	**File Name**
6 March 2002	United Kingdom	Pyraclostrobin 124 com01 UK
8 March 2002	BASF	Pyraclostrobin 124 com02 BASF
8 March 2002	BASF	Pyraclostrobin 124 com02att BASF
11 March 2002	France	Pyraclostrobin 124 com03 FR
28 March 2002	The Netherlands	Pyraclostrobin 124 com04 NL

1b. Comments received but not discussed (because deadline of submission was not met):

Date	**Supplier**	**File Name**
None.		

1c. Documents tabled at the meeting:

Date	**Supplier**	**File Name**
None.		

2. **Definition of the residues relevant to the environment:**
   Soil: Parent compound, BF 500-6, BF 500-7
   Water: Parent compound, BF 500-3, BF 500-6, BF 500-7
   Air: Parent compound

3. **Data on preparations:** The data set was considered incomplete.

4. **Classification and labelling:** Not discussed at the meeting.

5. **Claims for data protection:** Not considered since pyraclostrobin is a new active substance.

6. **Recommended restrictions/conditions for use:** None.

Areas of concern: None.

Appendix 1: ECCO 124 reporting table: pyraclostrobin

Appendix 2: List of end points: pyraclostrobin

Appendix 3: List of studies which were submitted during the evaluation process and were not cited in the draft assessment report: pyraclostrobin

Appendix 4: Suggested classification and labelling: pyraclostrobin

Appendix 1: ECCO 124 reporting table Pyraclostrobin (Fu)

2. Environmental Fate and Behaviour

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
			Section 2 Data requirements: 1 Open points: 16 Message to other Meeting: 0
	General	The RMS advised that the end points list had been prepared for both turf and vine. However, it had since become apparent that only vine was to be considered for Annex I listing.	-
(i)	Route of degradation (aerobic) in soil - Mineralisation and non-extractable residues	The Meeting agreed with the UK's written comment suggesting that timescales should be added to the end points list for mineralisation and non-extractable residues. In addition, agreement was reached that information on the label position should be provided for the non-extractable residues study.	Open point 2.1: RMS to include details of timescales used in the route of degradation (aerobic) in soil (mineralisation and non-extractable residues) studies, in the end points list, along with information about the label position for the non-extractable residues study.
(ii)	Route of degradation (aerobic) in soil - Major metabolites	NL had submitted a written comment suggesting that additional information such as range and number of soil types should be added to the end points list. The RMS agreed to action this.	Open point 2.2: RMS to include additional information on the route of degradation (aerobic) in soil (major metabolites) studies (such as range and number of soil types) in the end points list

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(iii)	Route of degradation in soil – Supplementary studies - Anaerobic degradation	The RMS stated that the maximum value for metabolite BF 500-3 would be corrected to 95.8%. The Meeting was informed that the majority of the parent compound degrades to metabolite BF 500-3 under anaerobic conditions, which is different to the situation for aerobic degradation. NL had submitted a written comment suggesting that the other metabolites formed under anaerobic conditions should be specified. However, the Meeting concluded that this was not required.	Open point 2.3: RMS to amend the maximum value for metabolite BF 500-3 to 95.8% in the route of degradation (aerobic) in soil -anaerobic degradation section of the end points list.
(iv)	Route of degradation in soil – Supplementary studies - Soil photolysis	NL submitted a written comment suggesting that the soil phytolosis data should be reported in a different way. The Meeting agreed that the RMS did not need to action this request.	-
(v)	Rate of degradation in soil	The RMS noted that the rate of laboratory degradation in soil calculations submitted by the Applicant had been performed using an early version of Model Maker. As the DT_{50} derived from Model Maker (using first order kinetics) had exceeded the trigger, the Applicant had generated field data. The RMS had also performed alternative field data calculations using the Timme and Frehse model and first order kinetics, which were detailed separately on the end points list. The RMS was asked to clarify which calculations had been performed by the Applicant and which by the RMS. The RMS had concluded the DT_{50f} of 34.4 days derived from the Timme and Frehse calculation, was the realistic worst case (because it had the best r^2 value) and this value had been used to calculate the PEC soil. The RMS explained that the DT_{50f} value of 85 days had not been used to derive the average DT_{50f} because it was considered to be an outlier. The RMS suggested that the value had arisen because of the data manipulation required to generate the first order calculation. The Meeting was concerned that the DT_{50f} of 85 days was to be ignored, as the data indicated rapid degradation in Southern Europe. However, following a detailed discussion, the Meeting agreed with the RMS's proposals and concluded that 34.4 days was a realistic worst case, for PEC soil calculation. The RMS was asked to include an explanation in the end points list about the fact 85 days had been excluded and to indicate that the DT_{50f} in Southern Europe may be lower than 34.4 days because of the difference in pH and temperature. The RMS was also asked to include DT_{50} lab and field values for all the metabolites. FR had submitted a written comment suggesting that the DT_{50f} mean value of 26.1 should actually be 36. The RMS agreed to consider this point.	Open point 2.4: RMS to indicate which calculations on the rate of degradation in soil were performed by the Applicant and which by the RMS. In addition the RMS is to explain that 85 days has not been used to derive the average DT_{50f} value and to indicate that the DT_{50f} in Southern Europe may be lower than 34.4 days because of the difference in temperature. $DT_{50\ lab}$ and field values for all the metabolites in soil are to be included in the end points list. The RMS is also to consider whether the DT_{50f} mean value of 26.1 should be 36.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(vi)	Soil adsorption/desorption	The NL had submitted a written comment suggesting that an average or median value should be specified for soil adsorption/desorption. The Meeting agreed that this was not required, because all the values were above 1000, indicating that the active substance was very absorptive. The RMS advised that the currently reported values were for the chlorophenol ring label, but that there were other results in the same range. An explanation would therefore be added to the end points list on this issue. The RMS is also to include a 1/n value for both the parent compound and the major soil metabolites. Overall, the Meeting concluded that leaching was not an issue for the parent compound or metabolites.	Open point 2.5: RMS to include 1/n values for both the parent compound and the major soil metabolites in the soil adsorption/desorption section of the end points list. Also, to explain that the currently reported values are for the chlorophenol ring label.
(vii)	Mobility in soil - Lysimeter/field leaching studies	No study is required because the high Koc value indicates leaching is not expected.	-
(viii)	PEC soil	The plant interception value of 70% corresponds with the factors in the FOCUS groundwater report. The RMS is to include an explanation to this effect on the end points list. The NL had submitted a written comment stating that a DT_{50} of 21.5 days should be used, however, Meeting agreed the RMS's proposal of 34.4 days was acceptable. The NL's written comment had also suggested using different interception factors. The Meeting agreed that the current interception values would be acceptable, providing the RMS explained why the values had been chosen.	Open point 2.6: RMS to include an explanation in the end points list about where the interception values for the PEC soil originates.
(ix)	Route and rate of degradation in water - Hydrolysis of active substance and major metabolites	The NL submitted a written comment suggesting that possible metabolites should be included in the end points list because metabolites had been recorded in a study at 50 °C. The Meeting agreed that this was not necessary because the study at 50 °C was not a requirement of the Directive. It was also noted that the 50 °C study was performed at an unusual pH.	-

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(x)	Route and rate of degradation in water - Photolytic degradation of active substance and major metabolites	Around 33 minor metabolites and 5 major metabolites were formed in the photolytic degradation study. The RMS stated that the amount of metabolite BF 500-11 was still increasing at end of study, and that a note to this effect would be included in the end points list instead of the current information. The Meeting was unsure why the amount of that metabolite was still increasing at the end of the study and concluded that the degradation scheme was possibly more complex than suggested. The NL had submitted a written comment presenting the end points in a different way. However, the Meeting concluded that the RMS's original information was acceptable. The RMS volunteered to establish why no DT_{50} had been presented for metabolite BF 500-11.	Open point 2.7: RMS to delete the current information on metabolite BF 500-11 from the photolytic degradation section of the end points list and explain that the amount of metabolite was still rising at the end of the study. In addition, the RMS is to consider whether a DT_{50} should be presented for metabolite BF 500-11.
(xi)	Route and rate of degradation in water - Readily biodegradable	No study has been performed and none is required.	-
(xii)	Degradation in water/sediment	Degradation in water/sediment studies performed in both the dark (normal guideline) and natural light have been reported in the end points list. The RMS noted that they had performed a first order calculation using Timme and Frehse for the dark study because the best fit DT_{50} calculated by the Applicant did not reflect the whole degradation curve. During a wide ranging discussion it was noted that the effect of light in laboratory photolysis had resulted in rapid degradation, which was not exhibited in the water sediment studies. Ultimately, agreement was reached that information on the light study should be deleted from the end points list, as the standard data requirement is performed in the dark.	Open point 2.8: RMS to delete information on the natural light study from the end points section on degradation in water/sediment
(xiii)	Distribution in water/sediment systems Active substance and metabolites	Metabolite BF 500-3 was considered to be potentially relevant to sediment. The RMS noted that the metabolites observed in the dark study were different to those found in the light.	-

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xiv)	PEC surface water	The RMS indicated that information on turf would be deleted, as this was not a supported use. In addition the 95% percentile would be corrected to 90. Agreement was reached that the overspray calculation should be deleted and replace with a 3m calculation for single and multiple application. The suggestion was put forward that the RMS should check with the ecotoxicologists about the appropriate distance for safe use. FR had submitted a written comment suggesting that an explanation should be included in the end points list about why 25% more product had been used for the vine calculation. The RMS stated that this would not be required, as the additional 25% would be deleted. The Meeting concluded that entry via run-off should be taken into consideration when deriving the PEC surface water, but noted that no agreed EU scenario was available. The Applicant will therefore be asked to consider the contribution run-off makes towards surface water PEC in addition to spray drift. Scenarios will be required for both Mediterranean and Central EU situations, in order to assist in the identification of safe/critical uses. ES agreed to advise the RMS on the critical parameters for the Mediterranean conditions.	Open point 2.9: RMS to delete information on turf from the PEC surface water section of the end points list and amend the 95% percentile to 90th. The overspray calculation is to be deleted and replaced with a 3m calculation for single and multiple application. The RMS is to check with the ecotoxicologists about the appropriate distance for safe use. Data requirement 2.1: Information is required on the contribution run-off and spray drift makes towards surface water PEC. Scenarios will be required for both Mediterranean and Central EU situations, in order to assist in the identification of safe/critical uses. ES is to advise the RMS on the critical parameters for the Mediterranean conditions. (**A**)
(xv)	PEC sediment	The RMS stated that information on turf would be deleted. The Meeting was advised that different PEC sediment values have been derived for different distances. It was noted that no standard guidance is available on the appropriate sediment depths to be used for PEC calculations. The Meeting therefore agreed that information should be reported for both 1 and 5 cm depths. 5cm was suggested because there is biological activity in the sediment and consequently information on 5cm depth is required for chironomid studies.	Open point 2.10: RMS to delete information on turf from the PEC sediment section of the end points list. Also, to include PEC sediment information for both 1cm and 5cm depth.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xvi)	PEC ground water	The RMS agreed to re-calculate the PEC ground water using the new scenario of 3* 100g as/ha reaching the soil. However, it was noted that the conclusions for PEC ground water were not expected to change because of the high Koc values. The Meeting agreed that groundwater contamination was unlikely, but asked the RMS to verify this point.	Open point 2.11: RMS to recalculate the PEC groundwater using the scenario of 3* 100 g as/ha and verify that groundwater contamination is not an issue for this compound.
(xvii)	Fate and behaviour in air	The RMS was asked to explain that the value for DT_{50} was derived via an Atkinson calculation. The Meeting concluded that the active substance was unlikely to volatilize.	Open point 2.12: RMS to note that the data on DT_{50} in the Fate and Behaviour in air section of the end points list were derived via an Atkinson calculation
(xviii)	Definition of the residue	The RMS is to revise the definition of the residue to reflect the major metabolites (including those which were potentially relevant) in the different environmental compartments. The existing text is to be deleted.	Open point 2.13: RMS to revise the definition of the residue to reflect the major metabolites (including those which were potentially relevant) in the different environmental compartments.
(xix)	List of end points	The RMS was asked to amend the list of end points in accordance with the discussion of the Meeting.	Open point 2.14: RMS to amend the list of end points in accordance with the discussion of ECCO 124.
(xx)	Written comments from other MS's and the Applicant.	The written comments from the Applicant, FR, NL and UK were taken into consideration during the discussions for each end point. The RMS was asked to re-visit the comments again when revising the end points list. The RMS advised that the Applicant had submitted PEC data for a slow moving water body which the Applicant felt was more appropriate to the aquatic risk assessment than a PEC for a static water body. The Meeting agreed that the data and approach suggested by the Applicant should not be used, as no agreed guidance was currently available on this issue.	Open point 2.15: RMS to ensure that all the agreed suggestions from the other MS's and Applicant are incorporated into the end points list.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xxi)	Data List	The RMS was asked to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.	Open point 2.16: RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.

Appendix 2

LIST OF END POINTS: PYRACLOSTROBIN

3 Fate and behaviour section

2.8.3.5 Appendix III.5: Chapter 5 (fate and behaviour in the environment)

Route of degradation (aerobic) in soil (Annex IIA, point 7.1.1.1.1)

Mineralisation after 100 days	4 % after 87 d (tolyl-label, route study) 5 % after 91 d (chlorophenyl-label, route study)
Non-extractable residues after 100 days	54.3 % after 87 d (tolyl-label, route study) 56.1 % after 91 d (chlorophenyl-label, route study)
Major metabolites - name and/or code, % of applied (range and maximum)	BF 500-6, max. 31% after 120 days (rate studies) BF 500-7, max. 13% after 62 days (rate studies)

Route of degradation in soil - Supplemental studies (Annex IIA, point 7.1.1.1.2)

Anaerobic degradation	no parent after 120 days, bound residues: 61% (tolyl-label), 37% (chlorophenyl-label). Major metabolite BF 500-3: max 95.8 % after 14 d (tolyl-label), 80 % after 14 d (chlorophenyl-label)
Soil photolysis	after 15 days: 64-74% parent, 12% bound residues, 2% CO_2, no major metabolites (>10%)

Rate of degradation in soil (Annex IIA, point 7.1.1.2, Annex IIIA, point 9.1.1)

Method of calculation	ModelMaker 3.0.3/3.0.4 (Cherwell Scientific Publishing Limited)
Laboratory studies (range or median, with n value, with r^2 value)	DT_{50lab} **a.i.** (20°C, aerobic): 12-101 days (5 soils) DT_{50lab} BF 500-6 (tolyl-label, route study): 129 d DT_{50lab} BF 500-6 (chlorphenyl-label, route study): 166 d DT_{50lab} BF 500-7 (tolyl-label, route study): 112 d DT_{50lab} BF 500-7 (chlorphenyl-label, route study): 159 d
	DT_{90lab} **a.i.** (20°C, aerobic): 143-163 days (5 soils) DT_{90lab} BF 500-6 (tolyl-label, route study): 428 d DT_{90lab} BF 500-6 (chlorphenyl-label, route study): 552 d DT_{90lab} BF 500-7 (tolyl-label, route study): 372 d DT_{90lab} BF 500-7 (chlorphenyl-label, route study): 529 d
	DT_{50lab} (5°C, aerobic): > 120 days
	DT_{50lab} (20°C, anaerobic): 3 days
	degradation in the saturated zone: not relevant
Field studies (state location, range or median with n value)	DT_{50f} : 2 – 37 days, 6 locations (3 Germany, 2 Spain, 1 Sweden)
	DT_{90f} : 83-230 days
Method of calculation	Timme and Frehse, 1st order kinetics
Field studies (state location, range or median with n value)	DT_{50f} : 14 - 85 days, 6 locations (3 Germany, 2 Spain, 1 Sweden). Mean of 26.1 d (85 d value excluded as calculation outliner). DT50 in southern Europe shorter than mean value.

	DT50 of 34.4 d considered as realistic worst case and used for PEC_{soil} calculations Metabolites not found in amounts above the limit of quantification.. BF 500-6 found sporadically.
	DT_{90f} : 49 - 114 days

Soil adsorption/desorption (Annex IIA, point 7.1.2)

	Active substance soils: 3 German, 2 US, 1 Canadian
K_f /K_{oc}	Koc 6000 – 16000 (no average value calculated because of extremely high range)
K_d	Kd 30 – 368 1/n = 0.861 – 1.025
pH dependence (yes / no) (if yes type of dependence)	No
	BF 500-3 Koc = 4240 – 11800 (n=6) 1/n = 0.773 – 0.942
	BF 500-6 Koc = 3360 – 126800 1/n not available.Due to low water solubility only one concentration considered.
	BF 500-7 Koc = 4020 – 149900 1/n not available.Due to low water solubility only one concentration considered.

Mobility in soil (Annex IIA, point 7.1.3, Annex IIIA, point 9.1.2)

Column leaching	0% in leachate, all radioactivity in top soil layer
Aged residues leaching	0% in leachate, all radioactivity in top soil layer
Lysimeter/ field leaching studies	based on K_{oc} and DT_{50} values, no leaching expected Studies not available, required.

PEC (soil) (Annex IIIA, point 9.1.3)

Method of calculation	first order kinetics, multiple application
Application rate	3 x 100 g in **vine***, 12 d interval, DT50 of 34.4 d, plant interception 70%, 70 % and 85 % (interception according to FOCUS GW-Report)

PEC$_{(s)}$		Single application Actual [mg/kg]	Single application Time weighted average [mg/kg]	Multiple application Actual [mg/kg]	Multiple application Time weighted average [mg/kg]
Short term	24h	n.a.	n.a.	0.075	0.075
	2d			0.073	0.075
	4d			0.070	0.073
Long term	7d	n.a.	n.a.	0.066	0.071
	28d			0.043	0.058
	50d			0.028	0.048
	100d			0.010	0.033

*= worst case among supported uses concerning soil accumulation

Route and rate of degradation in water (Annex IIA, point 7.2.1)

Hydrolysis of active substance and major metabolites (DT_{50}) (state pH and temperature)	pH 5: at 25°C, no hydrolysis through 30 days
	pH 7: at 25°C, no hydrolysis through 30 days
	pH 9: at 25°C, very slow hydrolysis through 30 days
Photolytic degradation of active substance and major metabolites	DT_{50} parent : <2 hours; CO_2: after 25 days 22% with chlorophenyl-label, about 4% with tolyl-label; 33 minor metabolites (<10%); 5 major metabolites: BF 500-11:max. 45% after 21 days, DT_{50} calculation not possible due to constantly occurring formation/degradation and stable amounts during 25 d period experiment BF 500-13:max. 17% after 6 days, DT_{50} 31 days BF 500-14:max. 21% after 3 hours, DT_{50} about7 hours BF 500-15:max. 27% after 1 day, DT_{50} 5 days 500M58:max. 23% after 1 day, DT_{50} 9 days
Readily biodegradable (yes/no)	no
	Best fit
Degradation in water/sediment - DT_{50} water	pond system: 3 days; river system: 1 day
- DT_{90} water	pond system: 41 days; river system: 9 days
- DT_{50} sediment	pond system: 33 days; river system: 9 days
- DT_{90} sediment	pond system: 105 days; river system: no calc.possible
	1st-order (Timme and Frehse)
Degradation in water/sediment - DT_{50} water	pond system: 8.7 days; river system: 1 day
- DT_{90} water	pond system: 28.9 days; river system: not extrap.

- DT_{50} entire system	pond system: 26.8 days; river system: 29 days**
- DT_{90} entire system	pond system: 89 days; river system: 96 days**
	** = low r^2 value (0.5593)
Mineralisation	about 5 % after 100 days
Non-extractable residues	pond system 62%; river system 54% after 100 days

Distribution in water / sediment systems (active substance)	pond system: sediment max. 53% after 14 days, decreasing to 7% after 100 days river system: sediment max. 62% after 2 days, decreasing to 10% after 100 days
Distribution in water / sediment systems (metabolites)	BF 500-3: in water: max. 2%, in sediment:max. 12% (pond system) after 100 days; max. 66% (river system) after 14 days, decreasing to 29% after 100 days BF 500-6: (only in pond system) in sediment max. 7% after 61 days BF 500-7: (only in pond system) in sediment max. 6% after 61 days

PEC (surface water) (Annex IIIA, point 9.2.3)

Vine

Method of calculation	**90.percentil overall** spray drift values DT50 water: 8.7 d, 1st order calculation
Application rate	Vine, 3 x 100 g a.s./ha, interval of 12 d
Main routes of entry and type of water body	**Spray drift**, 30 cm water layer, static water body

	Time [d]	3 m buffer		5 m buffer		10 m buffer		15 m buffer		20 m buffer	
		$PEC_{sw, act}$ [µg/L]	$PEC_{sw, twa}$ [µg/L]	$PEC_{sw, act}$ [µg/L]	$PEC_{sw, twa}$ [µg/L]	$PEC_{sw, act}$ [µg/L]	$PEC_{sw, twa}$ [µg/L]	$PEC_{sw, act}$ [µg/L]	$PEC_{sw, twa}$ [µg/L]	$PEC_{sw, act}$ [µg/L]	$PEC_{sw, twa}$ [µg/L]
Initial	0	3.524		1.568		0.521		0.276		0.174	
Short-	1	3.254	3.387	1.448	1.507	0.481	0.501	0.255	0.265	0.160	0.167
term:	2	3.005	3.258	1.337	1.450	0.444	0.482	0.235	0.255	0.148	0.161
	3	2.775	3.135	1.235	1.395	0.410	0.463	0.217	0.245	0.137	0.154
	4	2.562	3.018	1.140	1.343	0.379	0.446	0.201	0.236	0.126	0.149
Long-	7	2.018	2.702	0.898	1.202	0.298	0.399	0.158	0.211	0.099	0.133
term:	14	1.155	2.236	0.514	0.995	0.171	0.330	0.090	0.175	0.057	0.110
	21	0.661	2.249	0.294	1.001	0.098	0.332	0.052	0.176	0.033	0.111
	28	0.379	2.013	0.168	0.896	0.056	0.298	0.030	0.158	0.019	0.099
	42	0.124	1.810	0.055	0.806	0.018	0.268	0.010	0.142	0.006	0.089
	100	0.001	0.865	0.001	0.385	0.000	0.128	0.000	0.068	0.000	0.043

Entry route: runoff

Method of calculation	Plant interception: 70 %, 70 %, 85 % Runoff: 0.5 % in Northern Europe, 3 % in Southern Europe DT_{50} soil: 26.1 d (average value) Runoff event starts 3 d after last application Dilution factor in the water body: 0.5 Volume of water (sum of water body and runoff water): 130000 L DT50 water: 8.7 d, 1st Order calculation
Application rate	Vine, 3 x 100 g a.s./ha, interval of 12 d
Main routes of entry and type of water body	**Runoff**, 30 cm water layer, static water body

$PEC_{sw, ini, runoff}$

1st step calculation **(without considering partitioning between water and eroded soil)**

0.933 µg/l (Northern Europe)

5.597 µg/l (Southern Europe)

$PEC_{sw,ini, runoff}$

2nd step calculation **(considering partitioning between water and eroded soil, Koc = 6000)**

0.067 µg/l (Northern Europe)

0.400µg/l (Southern Europe)

PEC (sediment)

Method of calculation	Maximum concentration of 17.9 % a.s. after 7 days in water/sediment study, $PEC_{ini\ in\ water}$ = after the last application
	Scenarios, see above PEC_{sw} 1 cm sed.-layer and 5 cm sed.-layer, bulk dens. of wet sediment:1.3 g/cm³

	$PEC_{sed,drift}$ [mg/kg]				
Buffer distance:	3 m	5 m	10 m	15 m	20 m
Spray drift value:	6.90%	3.07%	1.02%	0.54%	0.34%
1 cm depth of sediment	0.057	0.025	0.008	0.004	0.003
5 cm depth of sediment	0.011	0.005	0.002	0.001	0.001

PEC (ground water) (Annex IIIA, point 9.2.1)

Method of calculation and type of study (*e.g.* modelling, monitoring, lysimeter)	FOCUS-PELMO 2.2.2 Scenarios: Chateaudum (irrigated), Hamburg, Kremsmünster, Piscenza (irrigated), Porto, Sevilla (irrigated), Thiva DT50: BAS 500 F: 26.1 d BF 500-3: 65 d BF 500-6: 166 d BF 500-7: 159 d Koc: BAS 500 F: 6000 (1/n = 0.9) BF 500-3: 4240 (1/n = 0.88 BF 500-6: 3160 (1/n = 1.0) BF 500-7: 3920 (1/n = 1.0)
Application rate	Vine, 3 applications x 0.1 kg a.i./ha, interception: 70 %, 70 %, 85 % Application every year

$PEC_{(gw)}$

80^{th} percentil leaching (according to FOCUS) for active substance and metabolites	< 0.001 µg/L

Fate and behaviour in air (Annex IIA, point 7.2.2, Annex III, point 9.3)

Direct photolysis in air	see photochemical oxidative degradation
Quantum yield of direct phototransformation	2.17×10^{-1}
Photochemical oxidative degradation in air (DT_{50})	< 2 hours (According to Atkinson, AOP)
Volatilisation	from plant surfaces: about 3% in 24 hours
	from soil: <1% in 24 hours

PEC (air)

Method of calculation	not done due to low volatility and rapid photochemical oxidative degradation

$PEC_{(a)}$

Maximum concentration	not calculated

Definition of the Residue (Annex IIA, point 7.3)

Relevant to the environment	The active substance is the relevant residue in all environmental matrices.

Monitoring data, if available (Annex IIA, point 7.4)

Soil (indicate location and type of study)	none
Surface water (indicate location and type of study)	none
Ground water (indicate location and type of study)	none
Air (indicate location and type of study)	none

Appendix 3

LIST OF STUDIES WHICH WERE SUBMITTED DURING THE EVALUATION PROCESS AND WERE NOT CITED IN THE DRAFT ASSESSMENT REPORT: PYRACLOSTROBIN

3 Fate and behaviour section

RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the draft assessment report.

Appendix 4

SUGGESTED CLASSIFICATION AND LABELLING: PYRACLOSTROBIN

3 Fate and behaviour section

Not discussed by ECCO 124.

ANNEX 8 TO CONCISE OUTLINE REPORT OF ECCO 126 PEER REVIEW MEETING

PYRACLOSTROBIN

Rapporteur Member State: Germany

Specific comments on the active substances in the section **Ecotoxicology** are listed below. The conclusions of the meeting were as follows:

1a. Comments received and discussed:

Date	Supplier	File name
24 April 2002	France	Pyraclostrobin 126 com01 FR
13 May 2002	The Netherlands	Pyraclostrobin 126 com02 NL
14 May 2002	United Kingdom	Pyraclostrobin 126 com03 UK
16 May 2002	BASF	Pyraclostrobin 126 com04 BASF
21 May 2002	BASF	Pyraclostrobin 126 com05 BASF

1b. Comments received but not discussed (because deadline of submission was not met):

None.

1c. Documents tabled at the meeting:

None.

2. **Definition of the residues of ecotoxicological relevance:** Soil and water active only.

3. **Data on preparations:** Dossier incomplete.

4. **Classification and labelling:** N, R50/53.

5. **Claims for data protection:** not considered since pyraclostrobin is a new active substance.

6. **Recommended restrictions/conditions for use:** 30 metre buffer zone for grape and 15m buffer zone for turf.

Areas of concern: Possible risk to birds/mammals from the consumption of contaminated water/fish/earthworms. Possible risk to sediment dwelling invertebrates from the metabolite BF 500-3. High risk to fish requires use of risk mitigation (buffer zones). Possible in-crop risk to various non target arthropods.

Appendix 1: ECCO 126 reporting table: pyraclostrobin

Appendix 2: List of end points: pyraclostrobin

Appendix 3: List of studies which were submitted during the evaluation process and were not cited in the draft assessment report: pyraclostrobin

Appendix 4: Suggested classification and labelling: pyraclostrobin

Appendix 1: ECCO 126 reporting table Pyraclostrobin (Fu)

3. Ecotoxicology

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
			Section 3 Data requirements: 3 Open points: 5
	GAP	Pyraclostrobin is a fungicide (strobilurine) which is proposed for use in grapes against powdery mildew and downy mildew and in turf against mould (not clear if the Applicant still wants turf). The formulated product BAS 500 00 F is an EC containing 250 g as/L. Max recommended rate: grapes 3 x 160 g as/ha turf 2 x 250 g as/ha It was noted that the Fate Meeting (EECO 124) had considered 3 x 100 g as/ha in grapes only.	
(i)	Birds/Mammals	Pyraclostrobin was considered to be of low toxicity to both birds and mammals. The risk assessment scenario used was turf at 250 g as/ha. It was agreed that it posed a low risk to birds and mammals. There was concern that the measured residue levels for herbivorous vertebrates were inappropriate – straw was not considered to be representative. If Hoerger and Kenaga figures are used further refinement is needed to meet the long term TER for mammals. The refinement is as follows: Standard residue for short grass is 112 mg/kg related to 1 kg/ha. Application rate for turf is 0.25 kg/ha thus 112 x 0.25 gives 28 mg/kg (initial residue, single application). Multiple application factor (MAF) for 2 applications is 1.25 (this is based on a DT50 of 7 days, the typical DT50 from the cereal trials is 4-7 days; although if the absolute residue level cannot be transferred from cereal to turf the DT50 should be about the same). The initial residue after two applications at 28 x 1.25 gives 35 mg/kg. The long term exposure – time weighted average over 21 days with a DT50 of 7 days gives a residues of 10.5 mg/kg. The long term TER for birds and mammals are as follows 1000/10.5 i.e. 95 and 75/10.5 i.e. 7.1 respectively. This revised risk assessment indicates that the long term TERs are both greater than appropriate	3.1 The Applicant must address the risk to birds and mammals from the consumption of contaminated water, fish or earthworms. (An II 10.1) **A** Open point 3.1. The RMS to update the end points sheet with respect to the bird/mammal long term risk assessments.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
		trigger value. The RMS has an open point to update the end points sheet with respect to the long term risk assessments. The Meeting concluded that the risk to birds and mammals was acceptable. Comments were received from the UK regarding the choice of the long term end point. The RMS outlined that 75ppm had been chosen as an initial starting point for long term risk assessment. Using this figure did not raise concerns and it was agreed that there was no need to revisit the toxicological data further. NL had a concern regarding the risk from the consumption of contaminated water/fish/earthworms. The Meeting agreed that a statement to address this issue must be requested from the Applicant – data requirement.	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(ii)	Aquatic life	Complete data package: Acute and long term studies. Two long term ELS studies on fish were considered acceptable however the RMS considered the third long term study a 97day ELS to be invalid. Pyraclostrobin is acutely toxic to all fish therefore the Applicant has submitted further acute studies using formulated product. *D magna* studies (active and formulation) showed the active substance is acutely toxic to aquatic invertebrates (acute and chronic). Pyraclostrobin is also toxic to Chironomids. Algae are slightly less sensitive. It was noted that LC50 values were difficult to ascertain in some cases as in some studies there was no effect at one level then at next level in the range 100% mortality was seen (threshold effect). Metabolites were also tested and these studies indicated that they were of low toxicity. A mesocosm study which lasted one year had been submitted using formulated product. In the main insignificant transient effects were seen on some invertebrates however, some mollusc species showed treatment related effects at the highest level of 24 µg as/l. The mesocosm study showed that in natural conditions the risk to invertebrates/algae is more acceptable than acute studies indicated. The Meeting agreed that 8 µg/l was the appropriate NOEC for use in the risk assessment. Due to the high risk to fish, the RMS has taken the acute and chronic data together (as the acute to chronic ratio was almost one) and selected the lowest NOEC for rainbow trout of 2.3 µg/litre from the 98-day ELS study. Due to the acute effects of this compound, as well as considering the mode of action (inhibitor of mitochondrial respiration, threshold effect), the endpoint was compared to the PEC initial. The resulting TER was compared to a trigger value of 10. Considering the grape vine GAP (3 x 160 g as/ha) as the worst case scenario acceptable TERs are only achieved above the trigger when a 30 m buffer zone used. Safe use for turf requires a 15 metre buffer zone. Three metabolites were all considered to pose a lower risk to aquatic organisms than the active. Comments were received from FR, NL and UK. FR was concerned that the formulated product was more toxic than the active substance. The RMS stated that the endpoint from the 98 day ELS study had been used in the risk assessment and that this was lower than the acute end points. Therefore, the risk was considered to have been addressed. FR was also concerned that turf was the worst case. However, the RMS stated that grape use represented the worst case. The Meeting agreed that grape use was the worst case scenario	3.2 The Applicant must provide information to address the risk to sediment dwelling invertebrates from the metabolite BF 500-3 (An II 8.2.7) **A**. Open point 3.2. The RMS to amend the aquatic section of the endpoint sheet in light of revised GAP and PECs.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
		France also had concerns regarding the buffer zone. It was agreed that the 30m buffer zone proposed was acceptable. NL were concerned that the value of 160 g as/ha should be used. This has now been done. NL also requested tests on the effects of metabolite BF 500-3 on sediment dwelling organisms. The RMS stated that the Fate Meeting (ECCO 124) had advised that this metabolite only occurred under anaerobic conditions. However turbulence may make the metabolite available to organisms but it is questionable whether it will be present in water due to it having a high Koc value. The mesocosm study may have covered this issue but it is difficult to know. The Meeting agreed that the Applicant should address the risk to sediment dwelling invertebrates from the metabolite BF 500-3. The Applicant proposed an endpoint of 2.4 ug/l, the group had agreed on an endpoint of 2.3 ug/l and using this endpoint along with standard risk assessment assumptions had identified safe uses. The Applicant had proposed a risk assessment scenario using slow moving water, however the Fate Meeting did not consider this to be appropriate. Open point: RMS to amend end points sheet. A bioconcentration factor of 675 for whole fish for the chlorphenyl label and of 736 for whole fish for tolyl label were reported. Bioaccumulation is considered to be of low concern. NL noted concern regarding the consumption of fish by birds and mammals (see Data Requirement 3.1). The NL raised a concern regarding the use of data from a different formulation to that proposed (ErC50 value for *P subcapitata*). The Meeting agreed that this did not need to be considered further as it is not relevant to the final risk assessment.	
(iii)	Honeybees	Low toxicity to bees was shown with hazard quotients all below 50 therefore no further data are required. Low risk is expected to bees from the proposed use. The NL had concerns regarding the use of only one dose to calculate the LD50. The RMS states that an error on the end points sheet should be amended to state that the LD50 values from the limit tests are more than (i.e. >) and not equal to (i.e. =) 73.1 and 69.1 µg/bee. However, reliable data from multiple dose tests are also available. Open point for the RMS to amend the end points sheet.	Open point 3.3. The RMS to amend the bee section of the end point sheet so that the LD50 values from the limit tests are more than (i.e. >) and not equal to (i.e. =) 73.1 and 69.1 µg/bee.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(iv)	Non target arthropods	A complete data package submitted including two sensitive species and four relevant species. Severe effects on *T pyri, Aphidius*, *Crysoperla carnae* and *Coccinella septempunctata* were noted. Extended lab tests showed acceptable results with respect to Annex VI triggers for *A rhopalosiphi* at 2N and *Coccinella septempunctata*. For *C carnea* treated at the application rate produced 27.3% effect on mortality and 79.9% effect on fertility. The RMS proposed that the risk to this species was covered by the field data on *T pyri*. Three field studies on *T pyri* showed low acute effects and recovery of affected populations thus the risk to *T pyri* was considered to have been addressed. The Meeting agreed that there is a low risk to non-target arthropods expected from the proposed uses. Comments were received from FR and NL. NL agreed with the RMS that the data for *T pyri* addressed the risk to non target arthropods. FR had a concern that the dose used in the *C. septempunctata* test was lower than the maximum recommended rate. However the RMS stated that the off-crop risk is addressed by the dose used. UK questioned the RMS argument that the data on *T pyri* addresses the risk to *C carnea* and *C septempunctata* as it was not clearly the most sensitive species. Therefore, they proposed that *Coccinella* and *Chrysoperla* had not been addressed in higher tier studies. The Meeting agreed that further data should be submitted to address the risk in-crop to these species. Data requirement - Applicant to address the risk in crop to *C carnea* and *C. septempunctata*.	3.3 The Applicant must address the in-crop risk to non-target arthropod species *C carnea* and *C. septempunctata* (An III 10.5)

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(v)	Earthworms	Acute and reproductive data for the active substance had been submitted along with 3 field tests with 2 formulations. Acute toxicity is moderate and for the cereal use the acute risk is considered acceptable as the trigger is not breached. However the chronic earthworm TER of 4.4 breaches the trigger of 5. The 3 field trials show no adverse effects on earthworm biomass or number and it was therefore concluded that there is low risk to earthworms from the proposed use based on the field data. Comments received from FR and NL. FR noted that the long term TER was below the trigger. The RMS stated that this had been addressed as the trigger was only slightly exceeded and because the field trials showed very little effect on earthworm biomass and number. NL comment that the PEC value used should have been 0.307 mg/kg for use on turf is noted and the endpoint sheet will be amended appropriately. (It should be noted that the risk assessment will remain the same as the risk assessment is reliant upon the field trial data.) Open point: RMS to amend end points sheet.	Open point 3.4. The RMS to amend the earthworm section of the end points sheet using the correct PEC for use on turf of 0.307 mg/kg.
(vi)	Soil macro-organisms	A bait lamina test had been submitted and had been integrated into the earthworm field study. No adverse effect on soil macro-organisms was demonstrated. No significant reduction in *Collembola* numbers was seen between plots. As no adverse effects were seen in the studies submitted it is considered that there is low risk to soil macro-organisms.	
(vii)	Soil microbial processes	No effects were seen up to 10 litre product/ha for either C or N mineralization. It was therefore concluded that there is low risk to soil microbial processes. Open point – add data on metabolites to end points sheet.	Open point 3.5. The RMS to add available data for the effects of the metabolites on soil microbial processes to the end points sheet.
(viii)	Non target flora and fauna	The risk assessment shows that the available data indicate no risk to non-target plants.	
(ix)	Sewage	The OECD 209 test showed no significant inhibition up to 1g/litre. This data requirement is therefore considered to have been fulfilled.	
(x)	Classification	N, R50/53.	
(xi)	Residue definition	Soil – active substance only Water – active substance only	
(xii)	Data protection	NAS therefore all valid studies to be protected.	

Appendix 2

LIST OF END POINTS: PYRACLOSTROBIN

3 Ecotoxicology

Appendix III.6: Chapter 6 (effects on non-target species)

Effects on terrestrial vertebrates (Annex IIA, point 8.1, Annex IIIA, points 10.1 and 10.3)

Acute toxicity to mammals	LD50 >5000 mg/kg bw (rat)
Long-term toxicity to mammals	NOAEL 75 ppm (rat multi-generation study)
Acute toxicity to birds	LD50 >2000 mg/kg bw (bobwhite quail)
Dietary toxicity to birds	LC50 >5000 ppm (bobwhite quail and mallard duck)
Reproductive toxicity to birds	NOEL 1000 ppm (bobwhite quail and mallard duck)

Toxicity/exposure ratios for terrestrial vertebrates (Annex IIIA, points 10.1 and 10.3)

residues: insects 7.3 mg/kg (estimated), grass 15 mg/kg (max. measured); no degradation
assumed food intake rates: 40 % of body weight (insectivorous birds), 25 % (herbivorous mammals, birds)

Application rate (kg as/ha)	Crop	Category (*e.g.* insectivorous bird)	Time-scale	TER	Annex VI Trigger
0.25	Turf	Insectivorous bird	acute	>690	10
0.25	Turf	Insectivorous bird	short-term	>690	10
0.25	Turf	Insectivorous bird	long-term	136	5
0.25	Turf	Herbivorous bird	acute	>530	10
0.25	Turf	Herbivorous bird	short-term	>330	10
0.25	Turf	Herbivorous bird	long-term	67	5
0.25	Turf	Herbivorous mammal	short-term	>1300	10
0.25	Turf	Herbivorous mammal	long-term	5.4	5

Toxicity data for aquatic species (most sensitive species of each group)
(Annex IIA, point 8.2, Annex IIIA, point 10.2)

Group	Test substance	Time-scale	Endpoint	Toxicity (mg as/L)
Laboratory tests				
O. mykiss	BAS 500 F (pyraclostrobin)	static - 96 h	LC_{50}	0.00616[1)]
L. macrochirus		static - 96 h	LC_{50}	> 0.0196 < 0.0335[1)]
C. carpio		static - 96 h	LC_{50}	> 0.0121 < 0.0258[1)]
O. mykiss		flow-through - 28 d	NOEC	0.00464[3)]*
O. mykiss		ELS – 98 d	NOEC	0.0023[3)]
D. magna		static – 48 h	EC_{50}	0.0157*
D. magna		semi-static – 21 d	NOEC	0.0112*
C. riparius		static – 28 d	NOEC	0.040
P. subcapitata		static – 96 h	E_rC_{50}	> 0.843[4)]
O. mykiss	BAS 500 00 F (formulated product)	Static - 96 h	LC_{50}	0.0042
L. macrochirus		Static - 96 h	LC_{50}	>0.0146 <0.0299
C. carpio		Static - 96 h	LC_{50}	>0.0209 <0.0497
O. latipes		Static - 96 h	LC_{50}	>0.0325 <0.0885
P. promelas		Static - 96 h	LC_{50}	>0.012 <0.0235
B. rerio		Static - 96 h	LC_{50}	>0.0417 <0.0887
L. idus		Static - 96 h	LC_{50}	>0.0135 <0.027
D. magna		Static - 48 h	EC_{50}	0.0152[2)]
P. subcapitata		Static - 72 h	E_rC_{50}	0.788[2)]
O. mykiss	BF 500-11 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*
S. subspicatus		Static – 72 h	E_rC_{50}	> 100[4)] *
O. mykiss	BF 500-13 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*
S. subspicatus		Static – 72 h	E_rC_{50}	> 100[4)] *
O. mykiss	BF 500-14 (metabolite)	Static - 96 h	LC_{50}	100[1)]
D. magna		Static – 48 h	EC_{50}	> 100*
S. subspicatus		Static – 72 h	E_rC_{50}	> 100[4)] *
Microcosm or mesocosm tests				
A mesocosm study was conducted with the formulated product BAS 500 00 F. Four concentration levels				

Group	Test substance	Time-scale	Endpoint	Toxicity (mg as/L)
Laboratory tests				
ranging from 0.9 µg as/L to 24 µg as/L simulating a vineyard situation with 8 applications in 14 d intervals were investigated. Approximately 260 different taxa of aquatic invertebrates were determined in the study. In most cases only insignifcant transient effects were observed. Affected populations usually recovered until the end of the study. For the mollusc species *Bithynia tentaculata* and *Valvata* spec and the mussel species *Dreissena polymorpha* treatment related effects were observed in the highest treatment level. The EAC (ecologically acceptable concentration) was determined to be > 8 µg as/L.				

[1)] LC_{50} (1+96 h)
[2)] NOEC (1 + 98 h)
[3)] NOAEC,
[4)] = growth rate;
[5)] = E_rC_{10} ;
* measured values confirmed nominal values.

Toxicity/exposure ratios for the most sensitive aquatic organisms (Annex IIIA, point 10.2)

Application rate (kg as/ha)	Crop	Organism	Time-scale	Distance (m)	TER	Annex VI Trigger
3 x 0.1	grapevines	*O. mykiss*	Acute	3	**1.6**	100
				5	**2.4**	100
				10	**8.1**	100
				15	**15.1**	100
				20	**30.2**	100
3 x 0.1	grapevines	*O. mykiss*	Acute/chronic	3	**0.6**	10
				5	**0.9**	10
				10	**3.0**	10
				15	**5.6**	10
				20	11.2	10

Bioconcentration

Bioconcentration factor (BCF)	675 (whole fish, chlorophenyl label) 736 (whole fish tolyl label)
Annex VI Trigger for the bioconcentration factor	> 100 for non readily biodegradeable substances
Clearance time (CT_{50}) (CT_{90})	< 1 d 2.3 – 3.2 d
Level of residues (%) in organisms after the 14 day depuration phase	

Effects on honeybees (Annex IIA, point 8.3.1, Annex IIIA, point 10.4)

Acute oral toxicity	(as)	LD_{50} = 73.1 µg/bee
Acute contact toxicity	(a.s)	LD_{50} > 100 µg/bee

Limit test

Acute oral toxicity	(formulation)	LD_{50} = 69.1 µg as/bee
Acute contact toxicity	(formulation)	$LD_{50} \geq$ 100 µg as/bee

Multiple Dose Test

Acute oral toxicity	(formulation)	LD_{50} = 79.9 µg as/ bee
Acute contact toxicity	(formulation)	LD_{50} > 100 µg as/bee

Hazard quotients for honey bees (Annex IIIA, point 10.4)

Application rate (kg as/ha)	Crop	Route	Hazard quotient	Annex VI Trigger
Laboratory tests (limit test)				
0.25	Turf	oral	3.6	50
0.25	Turf	contact	2.5	50
Laboratory tests (multiple dose test)				
0.25	Turf	oral	3.2	50
0.25	Turf	contact	2.5	50

Field or semi-field tests
Not required

Effects on other arthropod species (Annex IIA, point 8.3.2, Annex IIIA, point 10.5)

Species	Stage	Test Substance	Dose (kg as/ha)	Endpoint	Effect %	Annex VI Trigger %
Laboratory tests						
T. pyri	Protonymphs	BAS 500 00 F	0.320	Mortality Fertility	47.3 98.5	30 30
A. rhopalosiphi	Adults	BAS 500 00 F	0.320	Mortality Fertility	30 80	30 30
C. carnea	Larvae	BAS 500 00 F	0.320	Mortality Fertility	78.6 0	30 30
C. septem-punctata	Larvae	BAS 500 00 F	0.320	Mortality	100	30
P. cupreus	Adults	BAS 500 00 F	0.320	Mortality Food uptake	0 10.7	30 30
Pardosa spp	Adults	BAS 500 00 F	0.320	Mortality Food uptake	0 9.9	30 30
Extended laboratory tests						
A. rhopasiphi	Adults	BAS 500 00 F	0.320	Mortality Fertility	0 0	acceptable
C. carnea	Adult/LC	BAS 500 00 F	0.160	Mortality Fertility	27.3 79.9	acceptable
C. septem-punctata	Adults/LC	BAS 500 00 F	0.064	Mortality Fertility	0 3.1	acceptable

Field tests with BAS 500 00 F

Predatory mites

Species	Details of uses		Effects
T. pyri	8 applications	0.16-0.4 kg product/ha2.64 kg product/ha/year	0.0 / 0.0
T. pyri	8 applications	0.16-0.6 kg product/ha3.14 kg product/ha/year	0.0 / 12
T. pyri	8 applications	0.24-0.6 kg product/ha3.12 kg product/ha/year	58.1/ 0.0

Summary:

Three field tests with *T. pyri* clearly demonstrated low acute effects and recovery of affected populations.

Effects on earthworms (Annex IIA, point 8.4, Annex IIIA, point 10.6)

Acute toxicity	LC50 281.8 mg form./kg (corrected 35.2 mg as/kg)
Reproductive toxicity	NOEC 1 L product/ha (corresponds to 0.443 mg as/kg)

Field tests with BAS 500 00 F and BAS 500 01 F

Two field tests were conducted with BAS 500 00 F 0.03 and 0.06 kg as/ha. In one field test there was no adverse effect on number and biomass of earthworms, on feeding activity (bait-lamina) and on overall abundance of collembola. In the second field test a slight effect with the full application rate was observed, but is regarded acceptable. One field test was conducted with BAS 500 01 F with an application rata of 2 x 0.25 kg as/ha. No long lasting effects on earthworm populations were observed.

Toxicity/exposure ratios for earthworms (Annex IIIA, point 10.6)

Application rate (kg as/ha)	Crop	Time-scale	TER	Annex VI Trigger
0.250 x 2	cereals	acute	352	10
0.250 x 2	cereals	longterm	4.4	5

Effects on soil micro-organisms (Annex IIA, point 8.5, Annex IIIA, point 10.7)

Nitrogen mineralisation	No effects up to 10 L product/ha (respective 2.5 kg as/ha)
Carbon mineralisation	No effects up to 10 L product/ha (respective 2.5 kg as/ha)

Appendix 3

LIST OF STUDIES WHICH WERE SUBMITTED DURING THE EVALUATION PROCESS AND WERE NOT CITED IN THE DRAFT ASSESSMENT REPORT: PYRACLOSTROBIN

3 Ecotoxicology

RMS to confirm whether any studies which were submitted during the evaluation process, were not cited in the draft assessment report

Appendix 4

SUGGESTED CLASSIFICATION AND LABELLING: PYRACLOSTROBIN

3 Ecotoxicology

Hazard symbol	**N**	Dangerous for the environment.
Risk phrase	**R 50/53**	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrase	**S 60 + 61**	Avoid release to the environment. Refer to special instructions/safety data sheet. This material and its container must be disposed of as hazardous waste.

ANNEX 8 TO CONCISE OUTLINE REPORT OF ECCO 123 PEER REVIEW MEETING

PYRACLOSTROBIN

Rapporteur Member State: GERMANY

Specific comments on the active substances in the section **Mammalian toxicology** are listed below. The conclusions of the meeting were as follows:

1a. Comments received and discussed:

Date	**Supplier**	**File Name**
5 February 2002	France	Pyraclostrobin 123 com01 FR
8 February 2002	BASF AG	Pyraclostrobin 123 com02 BASF
12 February 2002	United Kingdom	Pyraclostrobin 123 com03 UK
28 February 2002	The Netherlands	Pyraclostrobin 123 com04 NL
20 December 2001	Belgium	Pyraclostrobin 123 com05 BE

1b. Comments received but not discussed (because deadline of submission was not met):

Date	**Supplier**	**File Name**
-	-	-

1c. Documents tabled at the meeting:

Date	**Supplier**	**File Name**
25 January 2002	Denmark	Pyraclostrobin 123 com06 DK

2. **Residues relevant to worker safety:** Preliminary estimates indicate acceptable uses.

3. **Data on preparations:** The data package submitted for 'BAS 500 00F' was considered to be complete.

4. **Classification and labelling:** The experts provisionally proposed classification with R23 (Toxic by inhalation).

5. **Claims for data protection:** not considered since pyraclostrobin is a new active substance.

6. **Recommended restrictions/conditions for use:** None.

Areas of concern: Purity of the production material.

Appendix 1: ECCO 123 reporting table: PYRACLOSTROBIN

Appendix 2: List of end points: PYRACLOSTROBIN

Appendix 3: List of studies which were submitted during the evaluation process and were not cited in the draft assessment report: PYRACLOSTROBIN

Appendix 4: Suggested classification and labelling: PYRACLOSTROBIN

Appendix 1: ECCO 123 reporting table Pyraclostrobin (Fu)

2. Mammalian toxicology

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
			Section 1 Data requirements: - Open points: 2
(i)	Purity	Comments received from ECCO 122 regarding the purity and impurity profile of the material used in toxicity studies were noted. The meeting agreed that the relevance of the toxicological database would need to be reassessed when specification details of the production batches were available.	Open Point 4.1: Notifier to supply specification details of production batches and justify the relevance of the toxicological database.
(ii)	Potential for accumulation	The meeting noted that comparatively high levels in fat were reported in one study, however it was noted that total tissue residues were low in all studies. It was concluded that there was no evidence for accumulation.	
(iii)	Toxicologically significant compounds	ECCO 125 were requested to clarify the metabolite profile in edible crops.	Note to ECCO 125 to clarify the metabolite profile in edible crops.
(iv)	Acute toxicity	The meeting noted that the results of the acute toxicity studies indicated that mice were considerably more sensitive than rats. Further information was requested from the notifier to address the significance of this finding. The meeting discussed the contrasting findings of the two acute inhalation toxicity studies and comments received from the UK. While it was recognised that the vehicles used in these studies (acetone and Solvesso respectively) may have influenced toxicity, it was also noted that particle size in the first study was lower. It was therefore concluded that classification with R23 was appropriate.	Open Point 4.2: Notifier to address the greater sensitivity of the mouse in acute toxicity studies.
(v)	Short-term toxicity: lowest relevant oral NOAEL	The meeting discussed the use of findings at 90 days in the mouse carcinogenicity study, as a NOAEL could not be derived from the 90-day study. It was concluded that a NOAEL of 30 ppm (4 mg/kg bw/d) derived from the carcinogenicity study was appropriate, based on effects reported at the 90-day timepoint. No further data were required.	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(vi)	Short-term toxicity: lowest relevant inhalation NOAEL	It was concluded that a repeat-dose inhalation study was not required based on the physico-chemical properties of pyraclostrobin and the proposed use pattern.	
(vii)	Genotoxicity	UK comments regarding the results of the mammalian cell mutation assay were discussed, however the meeting concluded that there was no evidence of genotoxicity in the studies submitted.	
(viii)	Long-term toxicity and carcinogenicity: lowest relevant NOAEL	BE comments regarding the NOAEL in the mouse chronic study were discussed; bodyweight changes at 30 ppm were not considered to be clearly dose-related. The meeting confirmed the NOAEL to be 30 ppm (4 mg/kg bw/d).	
(ix)	Reproductive toxicity: developmental target/critical effect	The incidence of skeletal malformations in the rabbit developmental toxicity study was discussed. The raw data were examined and revealed a small increase over the control incidence, however findings were noted to be associated with clear maternal toxicity.	
(x)	Reproductive toxicity: lowest relevant developmental NOAEL	The meeting discussed the findings of decreased maternal bodyweight gain in the rabbit developmental toxicity study. Although small effects were apparent in all treated groups, it was concluded that 3 mg/kg bw/d represented a NOAEL for maternal toxicity. The meeting also agreed a developmental NOAEL of 5 mg/kg bw/d, based on effects seen in the rabbit study.	
(xi)	ADI	Suitable endpoints for deriving the ADI were discussed at length; it was concluded that the rabbit developmental study was most appropriate as it represented the lowest NOAEL. The meeting agreed an ADI of 0.03 mg/kg bw/d, based on the NOAEL of 3 mg/kg bw/d for maternal toxicity in the rabbit developmental toxicity study and using a safety factor of 100.	
(xii)	AOEL	The meeting discussed the relevant endpoint for derivation of the AOEL. A value of 0.015 mg/kg bw/d was agreed, based on the NOAEL of 3 mg/kg bw/d for maternal toxicity in the rabbit developmental toxicity study, using a safety factor of 100 and correcting for oral absorption of 50%.	
(xiii)	ARfD	The meeting agreed an ARfD of 0.03 mg/kg bw/d, based on the NOAEL of 3 mg/kg bw/d for maternal toxicity in the rabbit developmental toxicity study and using a safety factor of 100. It was noted that treatment-related effects (decreased food consumption and weight gain) were apparent from the first day of dosing in this study.	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xiv)	Dermal absorption	The meeting agreed the calculated value of 1% for dermal absorption based on *in vivo*/*in vitro* studies. It was also agreed that bioavailable material associated with the skin in the study *in vivo* had been included in the figure of 2.6% derived for this study as absorption had been measured at up to 72 hours. It was noted that experiments had been performed using an EC formulation and that the figure of 1% may not be appropriate for all formulations.	
(xv	Operator exposure	Exposures were noted to be acceptable with the revised AOEL.	
(xvi)	Worker exposure	Exposures were noted to be acceptable with the revised AOEL.	
(xvii)	Bystander exposure	Exposures were noted to be acceptable with the revised AOEL.	

Appendix 2

LIST OF END POINTS: **PYRACLOSTROBIN**

2 Mammalian toxicology section

Appendix III.3: Chapter 3 (impact on human and animal health)

Absorption, distribution, excretion and metabolism in mammals (Annex IIA, point 5.1)

Rate and extent of absorption	Rapid absorption: T_{max} ~1 hour 50% (based on urinary and biliary excretion within 48 hours).
Distribution	Widely, highest concentrations in the liver
Potential for accumulation	None
Rate and extent of excretion	Complete within 5 d; mainly via faeces (80-90%, biliary excretion amounting to 35%), via urine 11-15%
Metabolism in animals	Extensive (>95%) with nearly 50 metabolites occurring Main metabolic pathways included N-demethoxylation, hydroxylation, cleavage of ester bond and further oxidation of the resulting molecule parts, conjugation with glucoronic acid or sulphate
Toxicologically significant compounds (animals, plants and environment)	Parent compound [pending discussion at ECCO 124]

Acute toxicity (Annex IIA, point 5.2)

Rat LD_{50} oral	>5000 mg/kg bw (Mouse: mortality at ≥300 mg/kg bw)
Rat LD_{50} dermal	>2000 mg/kg bw
Rat LC_{50} inhalation	0.69 mg/l
Skin irritation	Irritating
Eye irritation	Not irritating
Skin sensitization (test method used and result)	Not sensitizing (M&K maximization test)

Short term toxicity (Annex IIA, point 5.3)

Target / critical effect	Reduced body weight, gastrointestinal tract, red blood cells, diarrhoea (dog); hepatocellular hypertrophy (rat); white blood cells and lymphatic organs (mouse)
Lowest relevant oral NOAEL / NOEL	90-day mouse[1]: 30 ppm (4 mg/kg bw/d)
Lowest relevant dermal NOAEL / NOEL	28-day rat: ≥250 mg/kg bw/d (systemic)
Lowest relevant inhalation NOAEL / NOEL	No data - not required because of physical and chemical properties and proposed use)

[1] based on effects on body weight after 90 days in the carcinogenicity study in male mice

Genotoxicity (Annex IIA, point 5.4)

No genotoxic potential

Long term toxicity and carcinogenicity (Annex IIA, point 5.5)

Target / critical effect	Reduced body weight (rat & mouse); liver cell necrosis (rat)
Lowest relevant NOAEL / NOEL	Chronic rat (75 ppm) and chronic mouse (30 ppm): both 4 mg/kg bw/d
Carcinogenicity	No carcinogenic potential

Reproductive toxicity (Annex IIA, point 5.6)

Reproduction target / critical effect	Reduced pup body weight gain in the presence of parental toxicity
Lowest relevant reproductive NOAEL / NOEL	75 ppm (8.2 mg/kg bw/d)
Developmental target / critical effect	Developmental effects in rats and embryotoxicity (including malformations) in rabbits at maternally toxic doses
Lowest relevant developmental NOAEL / NOEL	5 mg/kg bw/d (rabbit)
Lowest relevant maternal NOAEL / NOEL	3 mg/kg bw/d (rabbit)

Neurotoxicity / Delayed neurotoxicity (Annex IIA, point 5.7)

No neurotoxic potential (rat; acute and 13 week studies)

Other toxicological studies (Annex IIA, point 5.8)

Three water metabolites (BF500-11, 500-13, 500-14) proved negative in the Ames test

Medical data (Annex IIA, point 5.9)

Limited data (new compound); no human health problems identified

Summary (Annex IIA, point 5.10)

	Value	Study	Safety factor
ADI	0.03 mg/kg bw	Rabbit, developmental toxicity study (maternal toxicity)	100
AOEL systemic	0.015 mg/kg bw	Rabbit, developmental toxicity study (maternal toxicity; 50% oral absorption)	100
Drinking water limit	Not considered by ECCO	-	-
ARfD (acute reference dose)	0.03 mg/kg bw	Rabbit, developmental toxicity study (maternal toxicity)	100

Dermal absorption (Annex IIIA, point 7.3)

	(EC formulation) 2.6% (rat, *in vivo*); *in vitro* data suggest much lower permeability of human skin; 1% used for calculation based on *in vitro/in vivo* data

Acceptable exposure scenarios (including method of calculation)

Operator	Intended use acceptable (Exposure < syst. AOEL, without PPE; German model, UK-POEM)
Workers	Intended use acceptable
Bystanders	Intended use acceptable

Classification and proposed labelling (Annex IIA, point 10)

with regard to toxicological data	T, R 23; Xi, R 38

Appendix 3

LIST OF STUDIES WHICH WERE SUBMITTED DURING THE EVALUATION PROCESS AND WERE NOT CITED IN THE DRAFT ASSESSMENT REPORT: **PYRACLOSTROBIN**

2 Mammalian toxicology section

Appendix 4

SUGGESTED CLASSIFICATION AND LABELLING: **PYRACLOSTROBIN**

2 Mammalian toxicology section

The experts provisionally proposed classification with R23 (Toxic by inhalation), however it was recognised that final decisions on classification and labelling issues would be made by the ECB. The RMS proposals for classification are detailed below.

Hazard symbol	**T**	**TOXIC**
Risk phrase	**R38**	Irritating to skin
	R23	Toxic by inhalation

ANNEX 8 TO CONCISE OUTLINE REPORT OF ECCO 125 PEER REVIEW MEETING

PYRACLOSTROBIN

Rapporteur Member State: GERMANY

Specific comments on the active substances in the section **Residues** are listed below. The conclusions of the meeting were as follows:

1a. Comments received and discussed:

Date	**Supplier**	**File Name**
17 April 2002	BASF AG	Pyraclostrobin 125 com01 BASF
18 April 2002	United Kingdom	Pyraclostrobin 125 com02 UK
26 April	The Netherlands	Pyraclostrobin 125 com03 NL

1b. Comments received but not discussed (because deadline of submission was not met):

None

1c. Documents tabled at the meeting:

Date	**Supplier**	**File Name**
21 May 2002	France	Pyraclostrobin 125 com04 FR (comments on pyraclostrobin)

2. **Definition of the residues relevant to MRLs:** pyraclostrobin.

3. **Data on preparations:** The data package for the preparation was considered to be more or less complete.

4. **Classification and labelling:** none.

5. **Claims for data protection:** not considered since pyraclostrobin is a new active substance.

6. **Recommended restrictions/conditions for use:** none.

Areas of concern: Potential acute consumer exposure risk assessment concerns for grape.

Appendix 1: ECCO 125 reporting table: PYRACLOSTROBIN

Appendix 2: List of end points: PYRACLOSTROBIN

Appendix 3: List of studies which were submitted during the evaluation process and were not cited in the draft assessment report: PYRACLOSTROBIN

Appendix 4: Suggested classification and labelling: PYRACLOSTROBIN

Appendix 1: ECCO 125 reporting table PYRACLOSTROBIN (Fu)

5. Residues

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
			Section 1 Data requirements: 1 Open points: 8 Messages to other Meetings: 4
(i)	General	The RMS clarified the GAP and that the formal submission for Annex 1 listing was for grape and turf only. However use would be extended to cereals so for completeness all data received had been evaluated (including cereals residue trials data) and was reviewed at this meeting. It was noted that there are potential risk assessment concerns for grape and various options are proposed (see point xiii). The data package and risk assessment for cereals was acceptable (there are new data for barley to be evaluated by the RMS (see open point 5.2) , but no concerns are anticipated).	Message to other Meeting 5.1 - message to overview meeting (ECCO 127): it is noted that whilst there may be risk assessment concerns for grape, an almost complete residues package is available for cereals (which has been assessed by the RMS and considered by ECCO 125), and there are no expected risk assessment concerns for this use.
(ii)	Plant metabolism	The plant metabolism progresses via metabolism to metabolite 500M07. There are close similarities in the metabolism in wheat and grapes. For potatoes, some differences in the metabolism are seen that are possibly due to the underground cultivation of the crop. The meeting was informed that pyraclostrobin only exhibits local systemicity, and differences between above and below ground parts may be expected. Parent was the main component of the residue in all crop groups studied.	Message to other Meeting 5.2 - message to overview meeting (ECCO 127) in response to request from ECCO 123 (toxicology) to clarify the metabolite profile in edible crops : pyraclostrobin was the main component. A number of metabolites were identified, the major ones being metabolite 500M07 and metabolite 500M54. For full details refer to Section 7.1 of the DAR.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(iii)	Rotational crops	Residues are not expected to be found in rotational crops (as indicated by the available data)	
(iv)	Crop residue definition (for monitoring and risk assessment)	As the major component, it was agreed that pyraclostrobin (parent) only should be the residue definition for risk assessment and monitoring.	
(v)	Animal metabolism	The comment was accepted that intakes by poultry based on the current GAP were not significant and the hen metabolism study did not need to be relied upon. However the hen metabolism was referred to in considering the residue definitions in view of the potential for the active substance to have more widespread crop use in the future and to link it with the discussion of the appropriate residue definition based on the goat study. It was noted that in the goat study, parent was the main metabolite in muscle and fat. In milk and kidney parent and the metabolite 500M07 could not be distinguished so it was not possible to differentiate their relative proportions; in liver, parent and the metabolite were present at similar levels. In the poultry study, parent was present in fat and eggs but not liver; the metabolite 500M07 was the major component in fat, present in eggs at similar levels to parent but only present in liver as a glucose conjugate. It was also noted that in milk other metabolites were present at similar proportions relative to parent and metabolite 500M07 combined i.e. metabolite 500M04, 16%TRR and metabolite 500M05, 14%TRR. It was noted that the total identified residue in the liver in the metabolism study was low (13%TRR). The unextractable material in both liver and kidney was considered to have been adequately addressed by acid and enzyme hydrolysis (residues of metabolite 500M04 and metabolite 500M85 were found).	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(vi)	Animal residue definition (for monitoring and risk assessment)	There was considerable discussion of the most appropriate residue definitions, taking into account the comments provided from MSs, and the possibility of having separate definitions for risk assessment and monitoring purposes. The meeting noted that parent was a good marker for muscle and fat, but not necessarily ideal for eggs, poultry fat, liver, kidney and milk. The other alternative marker that would be suitable for some matrices would be metabolite 500M07, but there was not a specific method of analysis for this molecule. From a scientific view it was noted that an ideal residue definition for ruminant products would include parent and at least metabolite 500M07 (and possibly also metabolite 500M04). The difficulty was that a method of analysis specific to individual metabolites was not available. Reference was also made to the ruminant feeding studies in which milk and tissues were analysed either for parent only or using the 'total method' that would incorporate a range of metabolites. Taking into account all of these factors, the residue definitions were agreed as originally proposed. Residue definition for monitoring: It was agreed that the comparison of the feeding study with the metabolism study enabled a residue definition to be agreed for the current GAP of parent only as the appropriate 'marker molecule' for monitoring and enforcement/MRLs (parent was found in cream at the 10N rate). Residue definition for risk assessment: It was considered necessary to take account of total residues found in liver and milk fat. Therefore, the residue definition for ruminant animal products was agreed as parent only, except for milk fat and liver where a residue definition was agreed as:- pyraclostrobin and its metabolites (to be specified) analysed as the hydroxypyrazoles BF 500-5 and BF 500-8, sum analysed as pyraclostrobin. For future extensions of use, the residue definitions may need to be reconsidered. If animal intakes were higher, a further consideration of these studies would need to take account of the levels expected of different metabolites as a result of higher dose rates (information available for higher dose rates was available in the metabolism and livestock feeding studies) and also metabolites in poultry. This may result in the need to develop more specific methods of analysis in the future.	Open point 5.1: RMS to define/name the metabolites that are included in the residue definition (for risk assessment) for animal products (ruminants), and to add in a conversion factor.
(vii)	Plant and/or animal metabolites not found in the rat	Metabolism in ruminant and rat was regarded as similar.	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(viii)	Residues in succeeding crops	See point iii	
(ix)	Stability of residues	Studies are supported by acceptable freezer storage stability data.	
(x)	Residues from livestock feeding studies	See points v and vi. It was concluded that low level residues may be expected to occur as a result of GAP. One of the dose rates in the animal metabolism study (12 mg/kg feed, approximately 2N) resulted in residues of 0.01 mg/kg (parent plus metabolite 500M07) in milk and 0.07 mg/kg (parent only) in fat. These residue levels were compared with residues in livestock feeding study where parent pyraclostrobin was measured and also 'total residues' determined using a common moiety method. This showed that residues of parent in milk were <0.01 mg/kg at 1, 3 and 10N; residues in cream were 0.03 mg/kg in cream at 10N. 'Total residues' in milk at 1 and 3N were <0.02 mg/kg and 0.07 mg/kg at 10N and in cream were 0.03, 0.04 and 0.20 mg/kg at 1, 3 and 10N respectively.	
(xi)	Residue trials		
	cereals	Trials for wheat are available for both N and S GAP (extrapolation to rye and triticale). These trials support an MRL of 0.1 mg/kg. For barley, 20 trials are available for N MSs and 3 trials for S MSs. New data to support barley have been recently submitted, and not yet evaluated (applicant's submission states these would support an MRL of 0.5 mg/kg). No MRL proposal at present for barley, but a residue of 0.5 was considered for risk assessment purposes.	Open point 5.2: RMS to evaluate the new barley residues trials data (end points sheet to reflect that the cereal use is not intended for A1 listing)
	Banana	Twelve trials are available, all showing no residues; residues were < LOQ of 0.02 mg/kg even on day 0 (bagged and unbagged fruits) from trials conducted in such a way to simulate aerial application. It was explained that in practice treatment would be from aerial application and that commercially the tendency was to now bag fruit. Therefore the trials data were accepted.	

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
	Grapes	There was some discussion as to the acceptability of the residue trials for grapes in view of the fact that the crops had received 8 treatments compared to the 3 applications proposed. The argument was presented that the latter applications were the most important, particularly those made post flowering when the fruit was present, especially given the limited local systemicity of the compound. However for a number of trials more than three applications were made post flowering and it was also noted that the decline data also indicated that residues were relatively persistent. It was recognised that the trials are likely to represent the worst case. In general the number of applications may be of lesser importance in determining the final residue. Whilst some flexibility in assessing the relevance of the trials may be possible for some compounds depending on a consideration of residue decline over time, it was agreed that some additional confirmatory data that accurately reflects the GAP should be generated to support the requested use on grapes. If these data indicate residues are significantly lower, further trials at the critical GAP may be required. The additional data were considered important for both MRL and risk assessment purposes.	Message to other Meeting 5.3 - message to overview meeting (ECCO 127). To note that the current residue trials reflect a worst case GAP (greater number of applications than GAP) and further additional confirmatory data from trials that accurately reflect the GAP should be submitted to support an MRL. However note potential acute risk assessment concerns for grape, point xiii). Data Requirement 5.1: additional residues trials data (or bridging data as appropriate) to support the GAP using the correct number of applications. **A** (Annex point 6.3).
(xii)	Chronic consumer exposure	To be checked when barley trials have been evaluated, although current indications are that there are no chronic exposure concerns (TMDI is 14% ADI).	Open point 5.3: RMS to check the consumer risk assessment (chronic and acute) after the evaluation of the barley trials.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xiii)	Acute consumer exposure	The acute reference dose was lowered as a result of ECCO 123 (toxicology) discussion (from 0.04 to 0.03 mg/kg bw/day). There was a potential acute exposure concern for toddlers consuming grapes (UK diet) where acute intakes were 120 to 125% ARfD. It was discussed that it was the highest residue in the trials (0.72 mg/kg) that was triggering the exceedance and the earlier discussion on the relevance of these trials to the critical GAP was raised (see item xi) and whether this was realistic. Bridging data and/or residues trials data for grapes have been requested, but these may not necessarily result in lower levels of residues. for UK diet (table grapes using a default variability factor of 5): toddler NESTI is 0.0392 mg/kg bw/day; adult NESTI is 0.0098 mg/kg bw/day	Message to other Meeting 5.4-message to overview meeting (ECCO 127): potential concern for UK consumers for table grapes. Advice sought from overview meeting on possible options/data requirements:- amend GAP, only use trials that are in stricter accordance with GAP, probabilistic modelling; restrict use to wine grapes only; generation of data for individual grape bunches (unit assessment) to allow the risk assessment to be refined.
(xiv)	Processing data	The available hydrolysis study showed that radioactive residues remained stable. The study which had been conducted under aqueous conditions was considered relevant to the intended GAP on grapes and cereals and was considered acceptable. It was noted that data are not required to address residues in grape pomace (not fed to animals as a general practice) The processing studies indicated that residues did not concentrate in wine. The applicant has stated that a processing study with wheat (germ) is on-going. This is not a standard EU requirement. It was explained that it had been conducted because the log Kow at 3.99 indicated the potential for residues to concentrate in fat/oil.	Open point 5.4: RMS to clarify with applicant whether the processing study in wine, recorded the fraction weights to provide estimation of % transference for addition to the end points sheet. Open point 5.5: For cereals (wheat and barley), RMS to update end points sheet to add bran processing factor and to correct the value for flour, middlings and shorts.

No.	Subject	Discussion ECCO-Peer Review Meeting	Recommendations ECCO-Peer Review Meeting (Annex point)
(xv)	MRLs	MRLs of 0.1 for wheat, rye and triticale, 2.0 (provisional) for grapes, and 0.02* for bananas (import tolerance) and 0.05 mg/kg for all animal products were considered appropriate. The MRL for barley should be an open position, until the new data have been evaluated (applicant suggests that 0.5 mg/kg appropriate but to be confirmed).	Open point 5.6: RMS to review the barley MRL following evaluation of the new trials data.
(xvi)	List of end points	The RMS was asked to update the end points list in accordance with the outcome of the discussions.	Open point 5.7: RMS to update the end points list in accordance with the outcome of the discussion at ECCO 125.
(xvii)	Data List	The RMS was asked to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.	Open point 5.8: RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the DAR. A list of studies will be required, if necessary.

Appendix 2

LIST OF END POINTS: **PYRACLOSTROBIN**

5 Residues section

Metabolism in plants (Annex IIA, point 6.1 and 6.7, Annex IIIA, point 8.1 and 8.6)

Plant groups covered	wheat (cereals), grapes (fruit), potatoes (root and tuber vegetable)
Rotational crops	radish, lettuce, wheat
Plant residue definition for monitoring	Pyraclostrobin
Plant residue definition for risk assessment	Pyraclostrobin
Conversion factor (monitoring to risk assessment)	none

Metabolism in livestock (Annex IIA, point 6.2 and 6.7, Annex IIIA, point 8.1 and 8.6)

Animals covered	lactating goat, laying hen
Animal residue definition for monitoring	Pyraclostrobin
Animal residue definition for risk assessment	liver (except poultry liver) and milk fat only: Pyraclostrobin and its metabolites containing the 1-(4-chlorophenyl)-1H-pyrazole - or the 1-(4-chloro-2-hydroxyphenyl)-1H-pyrazole moiety, sum expressed as Pyraclostrobin
Conversion factor (monitoring to risk assessment)	cream: 6; liver: not applicable, no Pyraclostrobin in liver to be expected
Metabolism in rat and ruminant similar (yes/no)	yes
Fat soluble residue: (yes/no)	yes (Log Po/w 3.99)

Residues in succeeding crops (Annex IIA, point 6.6, Annex IIIA, point 8.5)

30, 120, 365 days plant back interval after application of 0.9 kg as/ha: TRR in the edible parts for human consumption are very low (radish roots, lettuce: < 0.040 mg/kg; wheat grain: < 0.089 mg/kg). No accumulation of Pyraclostrobin or its degradation products [radish, lettuce < 0.0106 mg/kg; wheat straw < 0.0147 mg/kg; wheat grain: not detectable]

Stability of residues (Annex IIA, point 6 introduction, Annex IIIA, point 8 introduction)

Food of animal origin: Pyraclostrobin stable for 8 month Metabolite BAS 500-10 (model compound) with slow degradation but stable enough to evaluate the submitted feeding study (analysed within 6 month). Plant (peanut nutmeat, peanut oil, wheat grain, wheat straw, sugarbeet tops, sugarbeet roots, tomatoes, grape juice): Pyraclostrobin, metabolite BAS 500-3 stable for 18 month

Residues* from livestock feeding studies (Annex IIA, point 6.4, Annex IIIA, point 8.3)

Intakes by livestock ≥ 0.1 mg/kg diet/day:	Ruminant: yes/~~no~~	Poultry: yes/~~no~~	Pig: yes/~~no~~
Muscle	< 0.05	< 0.05	< 0.05
Liver	< 0.05	< 0.05	< 0.05
Kidney	< 0.05	< 0.05	< 0.05
Fat	< 0.05	< 0.05	< 0.05
Milk	< 0.01	not applicable	not applicable
Eggs	not applicable	< 0.05	not applicable

*parent only

[Parent plus metabolites : milk <0.02 mg/kg, liver 0.2 mg/kg, kidney <0.1 mg/kg]

Summary of critical residues data (Annex IIA, point 6.3, Annex IIIA, point 8.2)

Crop	Northern or Mediterranean Region	Trials results relevant to the critical GAP (a)	Recommendation/comments	MRL	STMR (b)
wheat	N	17 results: 11 x < 0.02, 0.02, 0.03, 0.04, 0.04, 0.05, 0.05		0.1 mg/kg	0.02 mg/kg
	S	11 results: 11 x <0.02			
barley	N	29 results: <0.02, <0.02, <0.02, <0.02, 0.03, 0.03, 0.03, 0.03, 0.04, 0.04, 0.04, 0.05, 0.05, 0.06, 0.07, 0.07, 0.07, 0.07, 0.09, 0.1, 0.1,		0.3 mg/kg	0.05 mg/kg
	S	0.11, 0.11, 0.12, 0.12, 0.13, 0.13, 0.14, 0.29 8 results: <0.02, 0.02, 0.03, 0.03, 0.04, 0.05, 0.07, 0.10			
grapes	N	8 results: 0.19, 0.25, 0.48, 0.57, 0.78, 0.82, 0.84, 0.89		2 mg/kg	0.68 mg/kg
	S	8 results: 0.18, 0.20, 0.21, 0.34, 0.38, 0.48, 0.59, 0.72			
banana	Import	12 x < 0.02	PHI in trials 0 days, fruits not covered with plastic, analysis with peel	0.02 * mg/kg	< 0.02 mg/kg

(a) Numbers of trials in which particular residue levels were reported *e.g.* 3 x <0.01, 1 x 0.01, 6 x 0.02, 1 x 0.04, 1 x 0.08, 2 x 0.1, 2 x 0.15, 1 x 0.17
(b) Supervised Trials Median Residue *i.e.* the median residue level estimated on the basis of supervised trials relating to the critical GAP

Consumer risk assessment (Annex IIA, point 6.9, Annex IIIA, point 8.8)

ADI	0.03 mg/kg bw/d
TMDI (European Diet) (% ADI)	0.004793mg/kg bw/d (15.98 %)
NEDI (% ADI)	not calculated
Factors included in NEDI	-
ARfD	0.03 mg/kg bw
Acute exposure NESTI (% ARfD)	grapes: UK-toddler 0.0392 mg/kg bw (130.8 %) UK-adult 0.0098 mg/kg bw (32.5 %)

Processing factors (Annex IIA, point 6.5, Annex IIIA, point 8.4)

Crop/processed crop	Number of studies	Transfer factor	% Transference *
grapes / must, juice, wine	4 trials	0.03	
grapes / wet pomace	4 trials	3.9	
grapes / rasins	1 (2 trials)	2.7	
barley/pot barley	1 trial	0.7	
barley/pearling dust	1 trial	11	
barley/malt	4 trials	1.2	
barley/malt germs	1 trial	2.3	
barley/spent grain	1 trial	10	
barley/trubs (flocs)	1 trial	0.7	
barley/beer yeast	1 trial	0.7	
barley/beer	4 trials	0.7	
wheat/flour, bran, middlings, shorts	1	0.6	
wheat/ germ	1	0.8	

* Calculated on the basis of distribution in the different portions, parts or products as determined through balance studies

Proposed MRLs (Annex IIA, point 6.7, Annex IIIA, point 8.6)

wheat, rye, triticale	0.1 mg/kg
barley, oats	0.3 mg/kg
grapes	2 mg/kg *
banana (import tolerance)	0.02* mg/kg

* provisional only

Appendix 3

LIST OF STUDIES WHICH WERE SUBMITTED DURING THE EVALUATION PROCESS AND WERE NOT CITED IN THE DRAFT ASSESSMENT REPORT: **PYRACLOSTROBIN**

5 Residues section

RMS to confirm whether any studies, which were submitted during the evaluation process, were not cited in the draft assessment report.

Appendix 4

SUGGESTED CLASSIFICATION AND LABELLING: **PYRACLOSTROBIN**

5 Residues section

None