PYRACLOSTROBIN (210)

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EXPLANATION

The fungicide pyraclostrobin belonging to the strobilurin group was first evaluated for toxicology by the JMPR in 2003 where an ADI of 0–0.03 mg/kg bw per day and an ARfD of 0.05 mg/kg bw per day were established. The 2004 JMPR concluded that the residue definition for plant commodities for compliance with MRL values and for dietary risk assessments was parent pyraclostrobin and estimated a number of maximum residue levels. The compound was re-evaluated for residues by the JMPR in 2006, 2011 and 2012.

Pyraclostrobin was listed by the Forty-fifth Session of the CCPR (2013) for the review of an additional MRL for apricots.

The 2011 JMPR withdraw the previous group MRL recommendation of 1 mg/kg for Stone fruits and estimated different maximum residue levels for the individual commodities; cherries, plums, peaches and nectarines, but made no recommendation for apricots. The 2014 JMPR received GAP information and residue trial data for pyraclostrobin in apricots.

USE PATTERN

The information available to the 2014 JMPR on registered uses of pyraclostrobin in stone fruits, apricot, plums, peaches and nectarines is summarized in Table 1. Copies of labels including an English translation, where appropriate, were made available to the Meeting.

Table 1 Registered uses of pyraclostrobin in stone fruits, apricots, plums, peaches and nectarines

Country	Form	Application			Application rate per treatment			PHI, days
		Method	No.	Interval, days	kg ai/hL max	Water L/ha min max	kg ai/ha min max	
Stone fruits								
Canada	WG	Foliar spray	5	7-14	0.013	1000	0.13	10
Canada	WG	Foliar spray	5	7-14	-	-	0.09-0.13	0
Germany	WG	Foliar spray	3	7-14	0.003	max. 500 L/ha or per m crown height	0.02 (per growing metre)	7
USA	WG	Foliar spray	5	7-14	-	-	0.13	0
USA	SC	Foliar spray	3	7-14	-	-	0.06-0.1	0
USA	WG	Foliar spray	5	7-14	-	-	0.09-0.13	0
Apricots								
Belgium	WG	Foliar spray	1-3	10-14	-	-	0.03	7
Czech Republic	WG	Foliar spray	3	-	0.005	1000	0.05	-
France	WG	Foliar spray	3	8-12	0.005	1000	0.04-0.05	3
Greece	WG	Foliar spray	2-3	7-14	0.005	1000	0.04-0.05	7
Hungary	WG	Foliar spray	3	7	0.008	800-1000	0.05-0.07	7
Italy	WG	Foliar spray	3	7-14	0.005	1000	0.04-0.05	3
Japan	WG	Foliar spray	1-2	-	0.012	2000-7000	0.07-0.24	7
Slovakia	WG	Foliar spray	1-3	-	0.005	1000	0.05	7
Plums								
Belgium	WG	Foliar spray	1-3	7-10	-	-	0.03	7
Denmark	WG	Foliar spray	3	-	0.025	200-400	0.05	-
Finland	WG	Foliar spray	2	5-10	0.011	600-1000	0.05-0.07	3
France	WG	Foliar spray	3	8-12	0.005	1000	0.03-0.05	3
Greece	WG	Foliar spray	2-3	7-14	0.005	1000	0.04-0.05	7

Country	Form	Application			Application rate per treatment			PHI, days
		Method	No.	Interval, days	kg ai/hL max	Water L/ha min max	kg ai/ha min max	
Hungary	WG	Foliar spray	3	7	0.008	800-1000	0.05-0.07	7
Italy	WG	Foliar spray	3	7-14	0.005	1000	0.04-0.05	3
Japan	WG	Foliar spray	1-2	-	0.012	2000-7000	0.07-0.24	7
Norway	WG	Foliar spray	2	5-10	0.005	150	0.007	-
Slovakia	WG	Foliar spray	1-3	5-10	0.005	1000	0.05	7
Peaches, nectarines								
Belgium	WG	Foliar spray	1-3	10-14	-	-	0.03	7
France	WG	Foliar spray	3	8-12	0.005	1000	0.04-0.05	3
Greece	WG	Foliar spray	2-3	7-14	0.005	1000	0.04-0.05	7
Hungary	WG	Foliar spray	3	7	0.008	800-1000	0.05-0.07	7
Italy	WG	Foliar spray	3	7-14	0.005	1000	0.04-0.05	3
Japan	WG	Foliar spray	1-2	-	0.012	2000-7000	0.07-0.24	1
Slovakia	WG	Foliar spray	1-3	5 -10	0.005	1000	0.05	7

RESIDUES RESULTING FROM SUPERVISED TRIALS ON CROPS

The current Meeting received information on two field trials of pyraclostrobin residues in apricots in 2013 in Southern Europe. The applications were done by foliar spray three times at rates of 0.05 kg ai/ha at 30–31, 17 and 3 days before harvest. Specimens of apricot fruits were collected at the day of the last application and 3, 6–7 and 13–14 days thereafter. Residues were analysed with method 535/1 (determination via LC/MS, see JMPR 2011) with mean recovery rate of 87.6% for pyraclostrobin at fortification levels from 0.01 to 1.0 mg/kg. Residues were corrected to the whole fruit (stone + flesh) with the pulp/whole fruit correction factor, which was calculated by dividing flesh weight by the weight of the whole fruit. The results are summarized in Table 2.

Table 2 Pyraclostrobin residues in apricots

Country, Year Location (variety) Trial No.	Application				PHI, days	Sample material	Residues, mg/kg	Author, Report Year Study No., DocID
	Form	Method	Rate, kg ai/ha	Spray volume, L/ha				
Italy, 2013 Ravenna (Farbaly) L130390	WG	Foliar	3 × 0.05	1000	0 3 7 14	Fruit Fruit Fruit Fruit	0.11 0.07 <u>0.08</u> 0.04	Martin T. 2013 428270 2013/1349143
Spain, 2013 Sevilla (Lillycot) L130391	WG	Foliar	3 × 0.05	1000	0 3 6 13	Fruit Fruit Fruit Fruit	0.11 <u>0.08</u> 0.06 0.02	Martin T. 2013 428270 2013/1349143

APPRAISAL

Pyraclostrobin was first evaluated for toxicology by the JMPR in 2003 where an ADI of 0–0.03 mg/kg bw per day and an ARfD of 0.05 mg/kg bw per day were established. The 2004 JMPR evaluated the residue behaviour of the fungicide and concluded that the residue definition for both, plant and animal commodities was parent pyraclostrobin for compliance with MRL values as well as for dietary risk assessments. The compound was re-evaluated for residues several times by the JMPR since 2006 and was listed by the 45th Session of the CCPR (2013) for the review of an additional MRL for apricot.

The 2011 JMPR withdraw the formerly group MRL recommendation of 1 mg/kg for stone fruits and estimated different maximum residue levels for the single commodities cherries, plums

(including prunes), peach and nectarine but did no recommendation for apricot. The 2014 JMPR received GAP information and residue data of pyraclostrobin in apricot.

Results of supervised residue trials in crops

Stone fruits

The maximum GAP for the use of pyraclostrobin in stone fruits was from Canada and the USA, consisting of 5×0.13 kg ai/ha and a PHI of 0 days. Labels for alternative use patterns of pyraclostrobin in France and Italy on apricots, plums, peach and nectarine were submitted with application of 3×0.04–0.05 kg ai/ha and a PHI of 3 days.

The 2011 JMPR estimated for pyraclostrobin residues different maximum residue levels, STMRs and HRs for cherries, plums, peach and nectarine. The 2011 Meeting noted that the estimations for peach and nectarine were based on an alternative GAP (France) as the evaluation based on the maximum GAP of the USA exceeded the ARfD. The residue data on which the estimations were based are summarized as follows:

	2011 Estimation, mg/kg				Region, application
Crop	MRL	STMR	HR	Residue data, mg/kg	kg ai/ha, PHI
Cherries	3	0.51	1.57	0.03, 0.27, 0.38, 0.42, 0.47, 0.5, 0.51, 0.56, 0.63, 0.82, 1.06, 1.08, 1.57	USA, 5×0.13, 0 days
Plums	0.8	0.09	0.40	0.02, 0.02, 0.04, 0.05, 0.06, 0.07, 0.09, 0.09, 0.12, 0.19, 0.22, 0.34, 0.38, 0.40, 0.40	USA, 5 × 0.13, 0 days
Peach, nectarine	0.3	0.07	0.13	< 0.02, 0.03, 0.04, 0.05, 0.07, 0.07, 0.08, 0.11, 0.12, 0.13	South-EU, 3×0.04–0.05, 3 days

The current Meeting received information on two field trials for pyraclostrobin uses on apricots in 2013 in Italy and Spain. Three foliar sprays at rates of 0.05 kg ai/ha were made matching the French and Italian GAP. The residues were 0.08 (2) mg/kg in fruits at a 3-days PHI.

The Meeting noted that the two residue values on apricots of 0.08 mg/kg are in the same order of magnitude as the residues in peaches matching the alternative European GAP (3×0.04–0.05, PHI 3 days).

The Meeting concluded that the MRL of 0.3 mg/kg, the STMR of 0.51 mg/kg and the HR of 1.57 mg/kg established for cherries should be extrapolated to the whole Stone fruits subgroup 003A Cherries (includes all commodities in this subgroup). The meeting withdrew its previous recommendation of 0.3 mg/kg for the single commodity cherries.

The Meeting decided that the maximum residue level of 0.8 mg/kg, the STMR of 0.09 mg/kg and the HR of 0.40 mg/kg established for plums should be extrapolated to the whole stone fruit subgroup 003B for Plums. The meeting withdrew its previous recommendation of 0.8 mg/kg for the single commodity Plums (including prunes).

The Meeting decided that each maximum residue level of 0.3 mg/kg, the STMR of 0.07 mg/kg and the HR of 0.13 mg/kg established for peaches and nectarines should be extrapolated to the whole stone fruit subgroup 003 C for Peaches (including nectarines and apricots). The meeting withdrew its previous recommendation of 0.3 mg/kg for the individual commodities peaches and nectarines.

RECOMMENDATIONS

On the basis of the data from supervised trials the Meeting concluded that the residue levels listed below are suitable for establishing maximum residue limits and for dietary risk assessment.

Definition of the residue (for compliance with the MRL and for estimation of dietary intake) for plant and animal commodities: Pyraclostrobin.

The residue is not fat-soluble.

CCN	Commodity name	MRL, mg/kg Proposed	Previous	STMR mg/kg	HR mg/kg
FS 003C	Peaches (including Nectarine and Apricots) (includes all commodities in this subgroup)	0.3		0.07	0.13
FS 003A	Cherries (includes all commodities in this subgroup)	0.3		0.51	1.57
FS 003B	Plums (includes all commodities in this subgroup)	0.8		0.09	0.40
FS 0013	Cherries	W	0.3		
FS 0014	Plums (including Prunes)	W	0.8		
FS 0245	Nectarine	W	0.3		
FS 0247	Peach	W	0.3		

DIETARY RISK ASSESSMENT

Long-term intake

The International Estimated Daily Intakes (IEDIs) of pyraclostrobin were calculated for the 17 GEMS/Food cluster diets using STMRs and STMR-Ps estimated by the JMPR in 2004, 2006, 2011, 2012 and 2014. The results are shown in Annex 3 to the 2014 Report.

The ADI is 0–0.03 mg/kg bw and the calculated IEDIs were 1–6% of the maximum ADI. The Meeting concluded that the long-term intake of residues of pyraclostrobin resulting from the uses considered by the JMPR is unlikely to present a public health concern.

Short-term intake

The International Estimated Short Term Intake (IESTI) for pyraclostrobin was calculated by the current Meeting for apricot. The results are shown in Annex 4 to the 2014 Report.

For the commodities considered by the 2014 JMPR, the IESTI represented 0–30% of the ARfD for the general population and 0–40% for children. The Meeting concluded that the short-term intake of residues of pyraclostrobin, when used in ways that have been considered by the JMPR, is unlikely to present a public health concern.

REFERENCES

DocID	Author	Year	Title
2013/1349143	Martin T.	2013	Study on the residue behaviour of pyraclostrobin (BAS 500 F) and boscalid (BAS 510 F) on apricots after the application of BAS 516 07 F under field conditions in Italy and Spain, 2013. Agrologia SLU, Utera, Spain. Unpublished.