PROFENOFOS (171)

EXPLANATION

Profenofos was first evaluated by the 1990 JMPR which estimated several temporary maximum residue levels, some of which were revised or withdrawn in 1992. The 1994 JMPR recommended new limits for common beans and chilli peppers, confirmed several recommendations for MRLs, withdrew the recommendation for onions and removed the temporary restriction from others.

At the 1995 CCPR the GAP basis for the 1992 JMPR recommendations for head cabbage and cotton seed, and the limit of determination for meat were questioned. The CCPR held the MRLs for these commodities at Step 7B. The draft MRL for tea was held at step 6 pending clarification of the GAP PHI. The Meeting received clarification of GAP for tea and information from Germany regarding the question on cotton seed. The Meeting reviewed the new information and considered the questions on meat and head cabbage on the basis of the information in the earlier monographs.

RESIDUES RESULTING FROM SUPERVISED TRIALS

Cotton seed. At the 1995 CCPR a delegation objected that the maximum residue level of 3 mg/kg estimated by the 1992 JMPR for cotton seed had been based on exaggerated application rates. The 1990 JMPR had initially estimated a temporary level of 1 mg/kg, based on a 21-day PHI, pending the receipt of information on GAP. Substantial information on GAP provided to the 1992 JMPR led that Meeting to recommend an increase to 3 mg/kg, based on the more common 14-day PHI and the residue data reviewed in 1990. The limited additional data reviewed by the 1994 JMPR (residues were <0.03 mg/kg) did not require a change.

Documentation provided to the present Meeting by the German government (Evers, 1995) showed that some of the residues in the US trials recorded in Reports 3928-A and 3963 of the 1990 monograph had erroneously been reported as resulting from 1.1 kg ai/ha, when in fact the rate was 2.2 kg ai/ha (twice the GAP rate). It was some of these residues (1.8, 2.8 mg/kg after 14 days, 2.6, 2.1 mg/kg after 21 days and 2.3, 2.2 mg/kg after 30 days) that prompted the 1992 JMPR to recommend the increase from 1 to 3 mg/kg. Those residues which were correctly recorded in the 1990 monograph as resulting from GAP application rates of 1-1.1 kg ai/ha at PHIs of ≥14 days (the Australian GAP PHI is 28 days and the US 14 days) are shown in Table 1, where the underlined residues are at GAP PHIs.

Table 1. Residues resulting from the use of profenofos on cotton seed in Australia and the USA at 1-1.1 kg ai/ha (from 1990 monograph, Table 12 corrected).

Country/No. of trials	Residues, mg/kg, at PHI (days)			
	14-15	21	28-30	36
Australia				
trial 2	1.2[1]		<u>0.65</u>[1]	
trial 3	0.8	0.23	<u>0.1</u>	0.05, 0.04
trial 4	0.1	0.07	<u>0.03</u>	
USA				
trial 1	<u>0.08</u>	0.25		
trial 2[2]	<u>1, 0.93</u>	0.47, 0.46	0.23, 0.26	
trial 3[2]	<u>0.8, 1.1</u>	1, 1.2		

[1] Mean of 4 analyses

[2] Reports 3928-A (trial 2) and 3963 (trial 3) do not indicate whether the two values are from duplicate analyses or duplicate samples.

Meat. The 27th CCPR held the recommended MRL for meat of 0.02 mg/kg (at the limit of determination) at Step 7B pending clarification of the limit of determination for meat. The recommendations of the 1990 JMPR for meat, milks and eggs were confirmed by the 1992 JMPR. Pages 369 and 372 of the 1990 JMPR monograph state that the limit of determination for meat is 0.05 mg/kg, so the recommendation of an MRL of 0.02 mg/kg was an error.

Tea. A temporary maximum residue level for tea of 0.5 mg/kg estimated by the 1990 JMPR was based on a 21-day PHI and an application rate of 1 kg ai/ha in Japanese trials. It was temporary pending information on Japanese GAP. The information on Japanese GAP provided to the 1992 JMPR (40 g ai/hl) could not be compared to the kg ai/ha rate of the trials, so the temporary restriction was retained. Since information provided to the 1994 JMPR confirmed that the application rate used in the trials was according to GAP, that Meeting confirmed the 0.5 mg/kg estimate and recommended that it should no longer be temporary.

At the 27th (1995) CCPR a question arose concerning the GAP PHI. The proposed MRL had been based on a 21-day PHI, which was recorded in the 1990 monograph (page 371) as Japanese GAP. The Meeting received confirmation that a 21-day PHI had in fact been GAP in Japan, but the label recommendation had since been revised (Altenburger, 1995). The current recommendation is for application after the last plucking, making it in effect a post-harvest application. However, although recommending application after the last plucking, the label recognizes that applications before harvest may be needed, especially for the less common autumn/winter harvest. A 30-day PHI is recommended to accommodate that need, primarily to minimize an odour problem.

APPRAISAL

Profenofos was reviewed by the JMPR in 1990, 1992 and 1994. At the 1995 CCPR questions were raised concerning the basis for the limits recommended for cotton seed and meat, which were held at Step 7B, and for tea which was held at step 6. The Meeting reviewed additional information provided for cotton seed and tea and considered the question on meat on the basis of information in earlier JMPR monographs. The Meeting also considered information provided to clarify GAP for green peppers in the context of data evaluated by the 1994 JMPR.

Cotton seed. The Meeting received confirmation that residues up to 2.8 mg/kg after 14 days reported in 1990 had been erroneously recorded as being from GAP treatments, whereas in fact the applications had been at twice the GAP rate. The original reports show that maximum residues after 14 days from the GAP application rate were $\leq$1.2 mg/kg. The Meeting noted that several results from a relatively limited number of trials were very close to or slightly above 1 mg/kg, concluded that although a 3 mg/kg limit was not required, a 1 mg/kg limit might be too low, and recommended reduction of the 3 mg/kg proposal to 2 mg/kg. The Meeting saw no need to revise the current proposal of 0.05 mg/kg (at the limit of determination) for edible cotton seed oil.

Meat. The Meeting re-examined the text of the 1990 JMPR monograph to resolve the question raised at the 1995 CCPR, on the limit of determination for profenofos in meat. The recommendation recorded in 1990 is 0.02* mg/kg, but the 1990 monograph makes it clear that the limit of determination in meat is 0.05 mg/kg. The Meeting concluded that 0.02 mg/kg had been recorded in error and recommended that the estimate of 0.02 mg/kg should be changed to 0.05 mg/kg.

Teas (tea and herb teas). The 1994 JMPR had confirmed the temporary maximum residue level of 0.5 mg/kg estimated by the 1990 JMPR for tea. The 21-day PHI used for the estimate was questioned at the 1995 CCPR. The Meeting was informed that the GAP PHI had since been revised to 30 days. Because the available data no longer accorded with GAP the Meeting recommended withdrawal of the previous estimate.

Peppers, Sweet. The 1994 JMPR concluded that the available data on green peppers could support an estimate of a maximum residue level of 0.5 mg/kg after 28 days if the application rates of 0.2-0.65 kg ai/ha used in the trials could be related to Italian GAP. Information provided to the present Meeting confirmed that the applications were equivalent to 0.04 to 0.05 kg ai/hl, which is the concentration specified in Italian GAP (one application at 0.04-0.05 kg ai/hl, equivalent to 0.24-0.4 kg ai/ha, with a 28 day PHI). With this confirmation that GAP had been followed and the observation that even at exaggerated rates residues only slightly exceeded 0.5 mg/kg the Meeting endorsed the 1994 JMPR view and estimated a maximum residue level of 0.5 mg/kg.

RECOMMENDATIONS

The Meeting recommended the changes shown in the Table below.

Definition of the residue: profenofos.

Commodity		Recommended MRL (mg/kg)		PHI (days)
CNN	Name	New	Previous	
SO 0691	Cotton seed	2	3	14
MM 0095	Meat	0.05*	0.02*	--
VO 0045	Peppers, sweet	0.5	--	28
DT 0171	Teas (Tea and Herb Teas)	W[1]	0.5	21

* At or about the limit of determination
[1] Withdrawn

REFERENCES

Altenburger, E., 1995. Letter to F. Ives, June 8, 1995 and attachment "PHI of Profenofos (Encedan) in tea in Japan" (M. Sasaki, Ciba Japan, June 2, 1995).

Evers. 1995. Letter to B. Murray, May 23, 1995 and attachments, including Reports 3928-A and 3963.