

TRIAZOPHOS (143)

EXPLANATION

Triazophos was evaluated in 1982 and has been reviewed several times since, most recently in 1991. At the 23rd and 24th Sessions of the CCPR (1991-92) some countries questioned the interpretation of residue data on citrus fruits and bananas, and undertook to send written comments to the JMPR. It was also suggested that the TMRLs proposed for residues in Brussels sprouts, head cabbages and carrots should be higher, while those for common beans and cauliflower were too high. The question was also raised as to whether 0.01 or 0.05 mg/kg was a realistic limit of determination for cereal grains, bulb onions, potatoes and sugar beet, and the JMPR was asked to reconsider this limit in the light of further data which had been requested. The UK stated that information on GAP and residue data from supervised trials on carrots would be made available to the JMPR.

The Meeting had received written comments on the proposed limits for triazophos in citrus fruits and bananas from France, Germany and The Netherlands and comments on the limits for Brussels sprouts and head cabbage from The Netherlands. Information was also available on GAP and residues from trials on carrots in the UK, including residues after cooking, and the UK provided extensive data from a survey of residues in carrots with a known application history. Residue data were also received from supervised trials on strawberries in Germany and soya beans in Brazil.

USE PATTERN

New registered uses of triazophos in the UK and Spain are listed in Table 1.

Table 1. Registered uses of triazophos.

Crop	Country	Application			PHI days
		No.	kg ai/ha	kg ai/hl	
Citrus fruits	Spain		0.9-1.2	0.06-0.08	40
Apples	Spain		2.4-3.2	0.06-0.08	30
Brassicas	UK	3	0.35		28
Carrots and parsnips	UK	3-6	0.53-1.05		28
Sugar beet	Spain			0.06-0.08	30

RESIDUES RESULTING FROM SUPERVISED TRIALS

Residue data were available from supervised trials on strawberries, carrots and soya beans.

Strawberries. In twelve supervised trials carried out in Germany residues with one exception were below or near the limit of determination (Table 2).

Table 2. Residues of triazophos in strawberries from supervised trials in Germany.

Year	Application			PHI, days	Residues, mg/kg	Report
	No.	kg ai/ha	kg ai/hl			
1969	1	0.96	0.04	34	<0.01 <0.01	A01111 A01112
	1	1.9	0.08	34	<0.01 <0.01	A01113 A01114
1973	1	1.5	0.06	22 28 35 42 49	0.11 0.03 <0.01 <0.01 <0.01	A01074
1974	1	1.6	0.08	43 49 61 68	<0.03 <0.03 0.04 <0.03 <0.03 <0.03 <0.03 <0.03	A01912 A01913
	1	1.6	0.08	46 53 60 67	<0.03 <0.03 <0.03 <0.03	A0914
	1	1.6	0.08	42 49 56 63	<0.03 <0.03 <0.03 <0.03	A0915
	1	1.6	0.08	56 63 73 80	<0.02 <0.01 <0.02 0.01 <0.02 <0.01 <0.02 <0.01	A02279 A02280
1977	2	0.84	0.04	39 57	<0.01 <0.01	A19564

Carrots. Ten supervised trials were carried out in the UK and all except two with applications in accordance with registered UK uses. Residues were 0.06-0.23 mg/kg 28 days after the last application. Carrots from six of the trials were cooked for 15 minutes in an open pan in water containing 0.035% sodium chloride. The residues in the cooked carrots ranged from 6% to 73% of the original residues (Table 3).

Table 3. Residues of triazophos in raw and cooked carrots from supervised trials in the UK.

Year	Application			PHI, days	Residues, mg/kg		Report
	No	kg ai/ha	kg ai/hl				
1991	3	1.05	0.11	14	0.18		A47679 0501
				28	0.08		
				44	0.08		
	3	2.1	0.21	14	0.40		
				28	0.32		
				44	0.36		
	3	1.05	0.11	0	0.19*		A47679 0901
				14	0.19*		
				28	0.23*		
				43	0.34*		
	3	2.1	0.21	0	0.41*		A47679 0901
				14	0.42*		
				28	0.34*		
				43	0.24*		
1992	3	1.05	0.11	0	0.38	0.38	0401 0402
				28	0.16	0.23	
				28	Cooked: 0.01	0.03	
	3	1.05	0.11	0	0.12	0.30	0501 0502
				27-28	0.23	0.18	
				27-28	Cooked: 0.04	0.04	
	3	1.05	0.11	0	0.06	0.14	0901 0902
				26	0.12	0.11	
				26	Cooked: 0.09	0.06	

* Residues in untreated samples were of the same order in these trials.

Soya beans. Residues in seeds and hulls from trials on soya beans were very low, mostly below the limit of determination. Whole plants were also analysed in two trials with residues at 12-13 mg/kg just after application (Table 4).

Table 4. Residues of triazophos in soya beans from supervised trials in Brazil.

Year	Application			PHI, days	Residues, mg/kg			Report
	No	kg ai/ha	kg ai/hl					
1978	2	0.40	0.13	51	Seed: 0.02	0.10	<0.01	A14649 A14650 A15555
1982	1	0.42	0.17	0	Plant: 13		A30042	
				43	0.10			
				120	Seed: <0.001			
				120	Hull: <0.001			
	1	0.50	0.20	0	Plant: 12		A30043	
				43	0.12			
				120	Seed: <0.001			
				120	Hull: <0.001			
1983	1	0.42	0.17	69	Seed: <0.001		A30044	
				69	Hull: 0.025			
	1	0.50	0.20	69	Seed: <0.001		A40045	
				69	Hull: 0.027			

RESIDUES IN FOOD IN COMMERCE OR AT CONSUMPTION

In a survey in the UK 81 samples of carrots were taken in 1991 and 1992 from crops with a known history of treatment with triazophos in accordance with label recommendations. The application rates were 0.53 or 1.05 kg ai/ha, the number of treatments from 1 to 3 and the PHI from 78 to 250 days, mostly between 100 and 200 days. Residues ranged from <0.02 to 0.94 mg/kg with a mean of 0.17 mg/kg, and the 90th percentile was approximately 0.4 mg/kg.

APPRAISAL

Triazophos was evaluated in 1982 and several times since then, most recently in 1991. Maximum residue levels were estimated for a number of commodities and recommended as TMRLs because the ADI was temporary. At the 23rd and 24th Sessions of the CCPR (1991-92) the proposed TMRLs for citrus fruits, bananas, Brussels sprouts, head cabbages, common beans and cauliflower were held at step 7b and referred back to the JMPR. Written comments were received from France, Germany and The Netherlands on citrus fruits, bananas, Brussels sprouts and head cabbages. The manufacturer submitted new residue data from supervised trials on carrots, strawberries and soya beans.

At the same Sessions of the CCPR it was proposed to lower the limit of determination from 0.05 mg/kg to 0.01 mg/kg for residues of triazophos in cereal grains, potatoes, bulb onions and sugar beet.

The Meeting took note of the observations made by France, Germany and The Netherlands, who stated that the data base was insufficient to set residue limits for citrus fruits and bananas. The Meeting examined the data and proposed to withdraw the TMRL of 1 mg/kg for bananas, as the limit is based on residue data from only two trials. It was also difficult to link the summarized data for citrus fruits to the information on GAP in the 1983 Evaluation. The Meeting was informed that new information on GAP for triazophos and residue data from a number of trials on citrus fruits would be available in the near future, and therefore recommended that the limit for triazophos in citrus fruits should be made temporary, irrespective of the status of the ADI, until the new data were evaluated.

In 1986 the JMPR had already re-evaluated and confirmed the proposed limits for residues in Brussels sprouts and head cabbages. No new data were available. The Meeting reaffirmed the recommendation.

The Meeting considered the limit of determination of 0.05 mg/kg for triazophos in cereal grains, potatoes, bulb onions and sugar beets. The residues in these crops reported to the 1983 and 1990 Meetings were below the limit of determination, which ranged from 0.001 to 0.07 mg/kg. Although most residues were below 0.02 mg/kg, the Meeting proposed to maintain the limit of determination of 0.05 mg/kg as a realistic limit of determination for the purpose of enforcement.

Supervised trials on carrots were carried out in the UK, all except two in accordance with recommended use. The highest residue in samples from two trials 28 days after the last treatment was 0.23 mg/kg. In addition to the trials a survey was carried out in the UK in which many samples of carrots with a known pesticide treatment history were analysed, all applications being in accordance with label recommendations. Residues were from <0.02 mg/kg to 0.94 mg/kg with a mean value of 0.17 mg/kg, and the 90th percentile was approximately 0.4 mg/kg. The Meeting recommended a maximum residue limit of 0.5 mg/kg for carrots.

Supervised trials were also carried out on strawberries in Germany. Residues were very low and except for the PHI of 11 days all residues were below 0.05 mg/kg. No information on GAP on in Germany was available, but GAP in The Netherlands would give rise to even lower residues. The Meeting estimated a maximum residue level at the limit of determination for strawberries (0.05 mg/kg).

Residues in seeds from trials on soya beans in Brazil with application in accordance with Brazilian GAP were also below the limit of determination, and a maximum residue limit was proposed at the limit of determination (0.05 mg/kg).

RECOMMENDATIONS

On the basis on the residues from supervised trials the Meeting concluded that the residue levels listed below are suitable for establishing maximum residue limits.

Definition of the residue: triazpphos.

Commodity		Recommended MRL (mg/kg)		PHI on which based, days
CNN	Name	New	previous ¹	
FI 0327	Banana	W	1	28
VR 0577	Carrot	0.5	0.1	
FC 0001	Citrus fruits	2 T	2	50 before flower- ing
VD 0541	Soya bean (dry)	0.05*	-	
FB 0275	Strawberry	0.05*	-	

W: the previous recommendation is withdrawn.

¹ previous recommendations were temporary because the ADI was temporary. As a full ADI has now been allocated, all unchanged limites except that for citrus fruits become full MRLs.

FURTHER WORK OR INFORMATION

Required (by 1994).

Information on GAP for triazophos on citrus fruits and residue data from trials in accordance with GAP.