

## PHORATE (112)

## EXPLANATION

Residue and analytical aspects of phorate were evaluated by the JMPR in 1977, 1984, 1990, 1991 and 1992. At the 21st Session of the CCPR (1989) several delegations considered the MRL for phorate on carrots (0.5 mg/kg) to be too high and it was held at Step 7B. Information on current use patterns in the United Kingdom and Australia was provided to the 1990 Joint Meeting which concluded that as they were essentially the same as those recorded in 1977 the MRL for carrots (0.5 mg/kg) was still valid. The MRL was maintained at Step 7B by the 1991 CCPR pending further information from the United Kingdom and evaluation by the JMPR. The United Kingdom informed the 1992 CCPR that it had changed its GAP. The MRL was moved to Step 7C at the 1993 CCPR awaiting further information from the United Kingdom and Australia.

Residue data and updated information on GAP in the United Kingdom were made available to the Meeting and the Australian GAP available to the 1990 JMPR was confirmed.

## USE PATTERN

Updated information on authorized uses of phorate on carrots in the United Kingdom is given in Table 1.

Table 1. Registered uses of phorate on carrots

Country	Application		PHI (weeks)
	No.	Rate, g ai/100 m row	
Australia	1 per crop either as a band at sowing <u>or</u> to established plants	1 kg ai/ha	10
UK	1 per crop	6 mineral soil 10 organic soil	21

## RESIDUES RESULTING FROM SUPERVISED TRIALS

The MRL for carrot was originally proposed by the 1977 JMPR on the basis of residue trials

conducted in the United Kingdom with 2 or 3 applications of 1.5 or 3 kg ai/h. It was based on a PHI of 120 days (17 weeks).

Information was received from the United Kingdom on supervised trials conducted in 1983 and 1984 on both mineral and organic soils involving single applications by soil incorporation at planting. Total phorate residues in carrots treated in mineral soils at 4 to 8 g ai/100 m row after PHIs of 16 to 24 weeks ranged up to 0.25 mg/kg. The corresponding residues in carrots treated at 8 to 10 g ai/100 m row in organic soils after PHIs of 20 to 21 weeks ranged from 0.02 to 0.06 mg/kg. Further trials at higher rates (16-22 g ai/100 m row) and PHIs of 20-27 weeks showed a maximum residue of 0.22 mg/kg although most were <0.1 mg/kg. Results are shown in Table 2.

The data to support the application to established plantings (10 weeks pre-harvest) recommended in the Australian use pattern are limited.

Table 2. Phorate residues in carrots from supervised trials in the United Kingdom. Underlined residues are from treatments according to GAP.

Year	Application		Weeks after sowing	Soil type	Residue, mg/kg	Ref.
	g ai/100 m row	No.				
1983 (June)	2	1	31	Mineral	0.064, 0.047	1
	5	1	31		0.148, 0.167	
	22	1	27		0.181	
	2.8		27	Organic	0.005	
	17		27		0.053	
1984 (June)	2	1	24	Mineral	0.028, 0.020, 0.039	2*
					0.014, 0.005, 0.008	
	4	1	24		<u>0.059, 0.060, 0.036</u>	
					<u>0.016, 0.016, 0.016</u>	
	8	1	24		<u>0.159, 0.115, 0.253</u>	
					<u>0.028, 0.017, 0.049</u>	
	4	1	20	Organic	0.021, 0.031, 0.062	
					0.036, 0.027, 0.025	

Year	Application		Weeks after sowing	Soil type	Residue, mg/kg	Ref.
	g ai/ 100 m row	No.				
	8	1	20		<u>0.024, 0.042, 0.062</u>	
					<u>0.027, 0.025, 0.032</u>	
	16	1	20		0.056, 0.025, 0.050	
					0.071, 0.059, 0.220	

Residues are expressed as total phorate

\* Residues >90% phorate sulphone

Table 2 (contd.)

Year	Application	Weeks after sowing	Soil type	Residue, mg/kg	Ref.
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	g ai/ 100 m row	No.			P	PSO	PSO <sub>2</sub>	Total	
1984	6	1	16	Sandy loam	-	0.006	0.110	0.12	3
					-	0.009	0.136	0.15	
					-	0.006	0.052	0.06	
		1	24		-	0.002	0.016	<u>0.02</u>	
					-	<0.001	0.019	<u>0.02</u>	
					-	<0.001	0.030	<u>0.03</u>	
	10	1	13	Organic	0.009	0.122	0.074	0.21	
					0.036	0.211	0.028	0.28	
					0.003	0.037	0.029	0.07	
		1	21		0.003	0.032	0.029	<u>0.06</u>	
					0.001	0.008	0.030	<u>0.04</u>	

P = parent phorate

PSO = phorate sulphoxide

PSO<sub>2</sub> = phorate sulphone

All residues calculated as phorate equivalent

## APPRAISAL

New information on use patterns and data on residues in carrots resulting from supervised trials were evaluated. The MRL proposed for carrots (0.5 mg/kg) by the 1977 Joint Meeting has been the subject of much discussion at the CCPR as it would appear that the use is limited to the United Kingdom and Australia. GAP in the United Kingdom will result in residues that are unlikely to exceed 0.2 mg/kg. The residue data available were inadequate to permit an effective assessment of the residues likely to result from Australian GAP.

## RECOMMENDATIONS

On the basis of the new GAP information and residue data from the United Kingdom the meeting concluded that the residue level listed below is suitable for establishing a maximum residue limit.

Definition of the residue: Sum of phorate, its oxygen analogue and their sulphoxides and sulphones, expressed as phorate.

Commodity	Recommended MRL (mg/kg)
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CCN	Name	New	Previous	PHI on which based (weeks)
VR 0577	Carrot	0.2	0.5	21