

## CYROMAZINE (169)

### EXPLANATION

Cyromazine was evaluated by the JMPR in 1990 and maximum residue limits were proposed. At the 22nd (1991) and the 23rd (1992) Sessions of the CCPR some delegations were concerned that the definition of the residue did not include the main metabolite melamine, and the JMPR was asked to reconsider the possibility of including melamine in the definition. The Meeting has received arguments for including and not including melamine.

The Meeting also received residue data from trials on peppers to support a proposed increase of the residue limit from 1 mg/kg to 2 mg/kg.

### USE PATTERN

In Spain the registered application rate of cyromazine on peppers is 15-30 g ai/hl with a PHI at 3 days.

### RESIDUES RESULTING FROM SUPERVISED TRIALS

Peppers. Supervised trials were carried out in The Netherlands, Spain and the USA. Residues of cyromazine and melamine were determined in all the trials. In The Netherlands the application rate was 0.4 kg ai/ha with 5-10 applications. Residues 3 days after treatment were 0.85-2.7 mg/kg for cyromazine and 0.09-0.37 mg/kg for melamine. In one experiment in Spain with the registered use rate residues 2 days after application were 0.72 mg/kg of cyromazine and 0.05 mg/kg of melamine. In experiments in the USA carried out in California and Texas application rates were 0.14-0.28 kg ai/ha with 11-12 applications. At day 0 residues of cyromazine were <0.05-0.57 mg/kg, while residues of melamine were 0.15-1.7 mg/kg. After 2-3 weeks residues of cyromazine were at about the same level, while residues of melamine were normally increased (Table 1).

### APPRAISAL

The 1990 JMPR proposed residue limits for cyromazine in a number of commodities including peppers. New data from trials on peppers supported the existing residue limit of 1 mg/kg. Some residue levels were higher than 1 mg/kg but originated from trials in The Netherlands with an increased application rate of 0.4 kg ai/ha. No information on registered uses of cyromazine in The Netherlands was received, so there was no basis on which to recommend any change.

#### Definition of the residue.

Nearly all the residue data submitted to the JMPR in 1990 were on both cyromazine and its main metabolite melamine. Residues of melamine were in many cases of the same order as those of cyromazine. At the CCPR in 1991 and 1992 some delegations were concerned that melamine was not included in the residue definition. The 1990 JMPR decided not to include melamine mainly because it is considered to be less toxic than cyromazine. Arguments for including or not including melamine have now been submitted to the Meeting from The Netherlands, the USA, and the manufacturer of cyromazine.

Table 1. Residues of cyromazine and melamine in peppers from supervised trials

Country Year	Application			Residues, mg/kg after PHI, days										Report No.
	No.	kg ai /ha	g ai /hl	Cyromazine					Melamine					
				0	2-3	7-8	14- 15	21	0	2-3	7-8	14- 15	21	
														CIBA GEIGI
Netherl ands														
1984	5	0.4	20		0.85	0.34				0.09	0.07			1141/ 84
	10	0.4	20		2.7	2.2	1.7			0.37	0.28	0.31		1142/ 84
Spain 1984	1	0.25	25		0.72	0.38	0.21			0.05	<0.0 5	<0.0 5		1099/ 84
Texas														
1983	11	0.14		0.33		0.31	0.38		0.65		0.95	1.0		32901 3/ 7447
				0.52		0.29	0.42		0.69		0.81	1.2		
	11	0.14		0.48		0.38	0.45		1.4		1.6	2.3		32901 3/ 7448
				0.45		0.40	0.39		1.7		1.6	1.9		
	11	0.14		<0.0 5		0.14	0.19		0.23		0.46	0.61		32901 3/ 7445
				<0.0 5		0.09	0.33		0.19		0.26	0.72		
Califor nia														
1984	12	0.14- 0.28		0.21		0.20	0.13	0.06	0.15		0.26	0.27	0.17	32901 3/ 8458
				0.26		0.19	0.12	0.10	0.23		0.23	0.25	0.19	
				0.57		0.46		0.07	0.56		0.60	0.35	0.28	

The reasons for including melamine in the residue definition are:

1. It is not clear whether high residues of cyromazine are always connected with high residues of melamine.
2. Residues of melamine can equal or significantly exceed those of cyromazine in plants and animals, and the proportion of melamine in the total residue is highly variable.
3. In mushrooms, cyromazine residues are often undetectable, whereas melamine may be present at levels up to 7 mg/kg.

The reasons for not including melamine are:

1. The available toxicological data base indicates that melamine is of no toxicological concern at the levels present in food or feed.
2. Analytical samples can be contaminated with melamine originating from the production of wet-strength filter paper.
3. Some plastic laboratory utensils and bags may contain melamine as a contaminant.
4. Melamine is also a metabolite of prometryne.

## RECOMMENDATIONS

The Meeting has considered the above arguments and has decided to maintain the definition established in 1990. The main reasons are that melamine is considered to be less toxic than cyromazine, and that melamine in a sample may have originated from sources other than cyromazine. Nevertheless the Meeting recognizes that the monitoring of good agricultural practice in growing mushrooms under certain conditions is not possible when the metabolite is omitted from the residue definition.