C. Furlow
PIB/FOD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 13 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

Subject: 90-WI-10. Section 18. Specific Exemption for the Use of Clomazone (Command® 4 EC, EPA Reg. No. 279~~241~~-3053) on Cabbage.
No Accession Number / No MRID Number
DEB # 6550.

From: Jane S. Smith, Chemist
Special Registration Section I
Dietary Exposure Branch
Health Effects Division (H-7509C)

Thru: Andrew Rathman, Section Head
Dietary Exposure Branch
Health Effects Division (H-7509C)

To: B. Cool / L. Pemberton PM Team 41
Registration Support and Emergency Response Branch
Registration Division (H-7505C)

The State of Wisconsin, Department of Agriculture, Trade & Consumer Protection has requested an Emergency Exemption to permit the application of the herbicide clomazone (Command® 4 lb a.i./gal emulsifiable concentrate) on cabbage to control various annual and broadleaf weeds during the 1990 growing season.

Tolerances have been established (40 CFR 180.425) for residues of clomazone, 2-(2-chlorophenyl)-methyl-4,4-dimethyl-3-isoxazolidione, on peas (succulent) and soybeans at 0.05 ppm, and pumpkins at 0.1 ppm.

The proposed use involves the treatment of 5,000 acres by soil incorporation of direct seeded or transplanted cabbage. The majority of the cabbage treated is for sauerkraut and the remainder is for fresh market. Direct seeded cabbage is to be treated at a rate of 0.25 lbs a.i./A (up to 0.5 pt. Command® 4 EC /A) incorporating prior to seeding. Only one application per season is permitted. Transplanted cabbage is to be treated at a rate of 0.25 - 0.50 lbs a.i./A (up to 1.0 pt. Command® 4 EC/A) incorporating prior to transplanting. Only one application per season is permitted.

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Command® is not permitted for use;
- within 45 days of harvest.
- through irrigation systems.
- when weather condition favor drift.
- with aerial spray equipment.
- within 1,500 feet of the areas of commercial nurseries, residences, towns, etc, (see label for details).
- directly to any body of water, where runoff might occur, etc., (see details on label).

Nature of the Residue

The metabolism of clomazone in plants has been adequately delineated and the parent compound is the residue of concern. The metabolism studies are discussed in detail in the review of PP#4G2987 (see memo L. Propst, 4/17/84) and PP#4F3128 (see memo J. Worthington, 9/24/84).

Analytical Method

The analytical method FMC P-0653 (in PP#4F3128, Accession #072818) used on soybeans involves acid hydrolysis of the sample and extraction of the residues with hexane. The extract is washed with sodium bicarbonate followed by clean up on a Florisil column. The final extract is analyzed on a GC/MS using single ion monitoring for quantitation. The reported limit of detection is 0.01 ppm and the limit of quantitation is 0.05 ppm. This method has been validated by the EPA.

The method used for the analysis of cabbage, FMC P-0908, is similar to FMC P-0653 except the final extract is analyzed by GC using a nitrogen-phosphorus flame ionization detector. Other modifications specific to the residue data submitted included using a 5.00g sample in its entirety, refluxing in 125 mls 0.25N ~~HCl,~~ filtering through glass fiber filter paper under vacuum, and washing with an additional 125 ml 0.25N HCl prior to hexane extraction. The method sensitivity is 0.05 ppm. Recoveries from untreated cabbage fortified at 0.0547 ppm resulted in recoveries ranging from 81.1 to 91.1% (n=5, avg = 86.6). Samples fortified with 0.0547 ppm clomozone and stored 433 days before analysis resulted in recoveries ranged from 87.6 - 98.6% (n=4, avg = 91.5).

Residue Data

Residue data from six field trials conducted by IR-4 in the 1988 growing season were submitted with this request. The cabbage harvested for analyses were described as the mature cabbage head, the mature whole cabbage, and the cabbage wrappers and leaves (NC).

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Summary of Residue Data Submitted from
Field Trials Conducted on Cabbage

Trial	Appl. Rate lbs a.i./A	# of Appl.	PHI days	clomazone (ppm)*
CA	0	0	77	<0.05
	0.5	1	77	<0.05
	1.0	1	77	<0.05
FL	0	0	70	<0.05
	0.5	1	70	<0.05
	1.0	1	70	<0.05
WI (PPI**) (PRE**)	0	0	103	<0.05
	0.5	1	103	<0.05
	1.0	1	103	<0.05
WI	0	0	100	<0.05
	0.5	1	100	<0.05
	1.0	1	100	<0.05
NY	0	0	61	<0.05
	0.5	1	61	<0.05
	1.0	1	61	<0.05
NC	0	0	70	<0.05
	0.5	1	70	<0.05
	1.0	1	70	<0.05

* uncorrected values. Most of the samples were analyzed in replicate.
All residues in treated samples and control samples were <0.05 ppm.
** PPI = post plant soil incorporation, PRE = Preemergence soil incorporation.

~~Based~~ on the residue data submitted and for the purposes of this Section 18 only, we conclude that the residues of clomozone are not likely to exceed 0.1 ppm in cabbage when treated as proposed for this Section 18.

Meat, Milk, Eggs, and Poultry

Cabbage is not an animal feed item; therefore, secondary residues are unlikely to occur in meat, milk, eggs, and poultry.

Conclusions

1) The metabolism in plants is adequately delineated and the residue of concern is the parent compound.

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2) The analytical method, FMC P-0908 is adequate for enforcement of the proposed tolerance for the purposes of this Section 18.

3) For the purposes of this Section 18 only, we conclude that residues of clomazone are not likely to exceed 0.1 ppm in/on cabbage.

4) Cabbage is not an animal feed item; therefore, secondary residues in milk, eggs, meat, and poultry will not occur based on the proposed use.

5) Analytical reference standards are available from the Pesticides and Industrial Chemicals Repository.

Recommendations

DEB has no objections to this Section 18. An agreement should be made with the FDA regarding the legal status of the treated commodities in commerce.

cc: RF, Circ, Section 18 F, PMSD/ISB (C. Furlow), DRES (Kariya), JSmith,
RDI: ARathman:04/13/89:EZager:04/13/89
H-7509C:DEB:jss:JSmith:Rm803a:CM#2:04/12/89