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

3/22/89

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Memorandum

Subject: 89-VA-04, 89-VA-05, 89-VA-06. Section 18
Specific Exemption for the Use of Clomazone
(Command®, EPA Reg. No. 241-3053) on Squash,
Snap Beans, and Cucumbers²⁷⁹
No Accession Number / No MRID Number
DEB # 5017, 5018, 5019

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To: D. Stubbs / L. Pemberton PM Team 41
Registration Support and Emergency Response Branch
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The Virginia Department of Agriculture requests a Specific Exemption authorizing application of the herbicide clomazone (Command® 4 lb a.i./gal emulsifiable concentrate) on summer squash, snap beans, and cucumbers to control broadleaf weeds.

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 includes one application either preemergence at 0.4 pt. (0.2 lbs a.i.)/acre or preplant incorporated (PPI) at 0.4 to 0.5 pt. (0.25 lbs a.i.)/acre. Approximately 8000 acres of snap beans, 8000 acres of cucumbers, and 500 acres of summer squash will be treated (sprayed) with the herbicide. The application would be made between March 20th and September 20th, 1989. The PHI is 45 days.

The metabolism of clomazone in plants has been adequately delineated and the parent compound is the residue of concern. The

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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).

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. Recoveries range from 70 to 110% for fortification levels of 0.05, 0.1, and 0.20 ppm. This method has been validated by the EPA. This method was slightly modified for the determination of residues in pumpkins. The modified method (FMC method P-0608 in PP#7E3532) entails analyses of the final extract on a GC with a nitrogen-phosphorus flame ionization detector. Recoveries from pumpkin samples fortified at 0.1 and 1.0 ppm averaged 96 and 98%, respectively.

Residue studies were conducted on pumpkins in CA, NY, PA, VA, and WI. A single application was made either preemergence or PPI at 1 lb a.i./acre. The PHIs ranged from 90 to 110 days. Residue data on treated samples were not detected (< 0.02 ppm) for all tests except WI where values ranged from 0.03 to 0.04 ppm. The controls in WI ranged from 0.04 to 0.07.

Residue studies on soybeans were conducted in nine states. Half of the studies were PPI treatments while the remaining half were preemergence treatments. Applications were made at 2.0 lbs a.i./acre. Soybeans were harvested 111 to 152 days after the last application either PPI or preemergence. No residues were detected (< 0.01 ppm) in/on any of the soybeans from either type of treatment. Residue data were not available from soybean forage, hay, and straw.

Residues should be essentially nondetectable in/on snap beans, cucumbers, and squash since treatment with clomazone will be either preemergence or preplant with soil incorporation. In addition, there were no residues detected in the residue studies using up to 10X of the proposed use. Based on the proposed use, and translating the soybean residue data to snap beans and the pumpkin residue data to cucumbers and squash, it is unlikely that residues of clomazone should exceed 0.1 ppm, for the purposes of this Section 18 only.

Meat, Milk, Eggs, and Poultry

Considering residues of clomazone were not detected in soybeans and are not anticipated in snap beans and the fact there is a feeding restriction on the forage, hay, and straw for snap beans,

residues are not likely to occur in the meat, milk, eggs, and poultry.

Cucurbits (squash, cucumbers, and pumpkins) are not animal feed items; 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.
- 2) The analytical method, FMC P-0653 in PP#4F3128, Accession #072818 is adequate for enforcement of the proposed tolerance for the purposes of this Section 18 only.
- 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 snap beans, squash, or cucumbers based on the proposed use.
- 4a) Squash and cucumbers are not animal feed items; therefore, secondary residues in milk, eggs, meat, and poultry will not occur based on the proposed use.
- 4b) Forage, straw, and hay from treated snap beans are restricted from use as animal feed items; therefore, residue are not likely to occur in milk, eggs, meat, and poultry.
- 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, Stanton (SACB), JSmith,
RDSchmitt
RDI:ARathman:03/22/89:EZager:03/22/89
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