PMSD/ISB

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

MAY 26 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 89-NE-06. Section 18 Exemption for the use of Sethoxydim (Poast®) on Dry Edible Beans to control wild Proso Millet.
EPA Reg. No. 7969-58.
(No MRID #, DEB # 5330).

From: Freshteh Toghrol Ph.D., Chemist F. Toghrol
Special Registration Section II
Dietary Exposure Branch
Health Effect Division (H7509C)

THRU: Francis B. Suhre, Acting Section Head Francis B. Suhre
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To: D. Stubbs/Jim Tompkins, PM 41
Emergency Response Section
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and
Toxicology Branch
Health Effect Division(H7509C)

The Nebraska Department of Agriculture requests a Section 18 exemption for the use of sethoxydim herbicide(trade name: Poast®) on dry edible beans to control wild Proso millet.

Poast® Herbicide (EPA Reg. No. 7969-58) is a registered pesticide of BASF Wyandotte Corporation; the product contains 18% sethoxydim 2-[1- (ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexene-1-one as its active ingredient.

A maximum of 30,000 acres of beans will be treated with 6,000 lbs of active ingredient.

Tolerances are established (40 CFR 180.412) for combined residues of sethoxydim 2-[1- (ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexene-1-one and its metabolites containing the 2-cyclohexene-1-one moiety, calculated as the herbicide, at 0.05 ppm to 40.0 ppm in or on numerous commodities, including (but not limited to) alfalfa hay and forage at 40 ppm; milk at 0.05 ppm; fat, meat, and meat by-products of cattle, goats, hogs, horses, poultry, and sheep at 0.2 ppm; and eggs at 0.5 ppm.

Tolerances are also established (21 CFR 561.430) for combined residues of sethoxydim and its metabolites containing the 2-cyclohexene-1-one in or on animal feed items at 0.5 to 15 ppm.

A petition (PP#8F3640) has been submitted to the Agency, requesting permanent tolerances for residues of sethoxydim/ metabolites in or on dry and succulent beans at 15.0 ppm, dry and succulent peas at 40.0 ppm; bean forage and hay at 40.0 ppm, and pea forage and hay at 40.0 ppm. This petition is in reject status for the deficiencies cited in DEB's review dated 11/4/88, ie: Section B (clarification of PHI); Section F (modification of the tolerance expression for sethoxydim/metabolites, as follows: dry beans and pea forage at 20.0 ppm; succulent bean at 5.0 ppm; succulent peas and bean forage at 10.0 ppm; dry peas and pea hay at 40.0 ppm; bean hay at 50.0 ppm;, and poultry meat by products and eggs at 2.0 ppm (PP#8F3640/8H5557, H. Fonouni, dated 11/4/88).

No plant or animal metabolism studies were submitted with this request. However, as discussed in DEB's review of PP#8F3640 (H. Fonouni, dated 11/4/88) the metabolism data previously submitted in connection with PP#0G2396, PP#3F2904, and PP#F3284 are adequate. The residue of concern are sethoxydim and its metabolites containing the 2-cyclohexene-1-one.

89-NE-06 calls for two postemergence applications of poast Herbicide at 0.1 lb. ai/A (with maximum usage of 0.2 lb. ai/A/year), and a PHI of 30 days. Application will be made utilizing ground and aerial equipment, in a minimum of five gallons of water per acre.

The GC method described as Method I for sethoxydim in PAM II [see also PP# 3F2904, S. Malak, memo dated 6/23/86 (supplement to Method I) and PP#8F3640, H. Fonouni, memo dated 11/4/88] is adequate for enforcement purposes.

No residue data were submitted with this Section 18, however,

residue data for dry beans were previously submitted in connection with PP#8F3640. The available data reflect higher application rates (0.3 and 0.5 lb ai/A) and a higher seasonal dose (0.8 lb ai/A/season) than those proposed for this Section 18 request (0.1 lb ai/A; 0.2 lb ai/A/season). The Data most applicable to this request are summarized below:

Application rate lb ai/ A/season	PHI days	Residues PPM Dry beans	Dry bean Forage hay
0.8 CA black eye	30	10.1	40.0
0.8 CA pinquitos	29	5.5	29.5
0.8 CA pinto	31	9.5	------
0.8 ID pinto	34	3.1	1.1
0.8 MC navy	31	5.3	1.9
0.8 MC pink	31	7.4	1.6
0.8 MC pinto	31	7.2	------
0.8 MN kidney	30	3.5	1.3
0.8 MN navy	30	5.7	3.6
0.8 NE Great Northern	29	13.5	1.9

Based on these data we conclude that residues of sethoxydim/ metabolites in or on dry beans and dry bean hay will not exceed 15 ppm, and 40.0 ppm respectively, as a result of this proposed Section 18.

Meat, Milk, Poultry and Eggs:

Beans may be fed to cattle, and poultry at up to 20 and 15% of their diet respectively. Beans vines and hay are also animal feed items and may reflect up to 35% of the diet of dairy cattle. Since the estimated residues from this proposed Section 18 use are equivalent to the established tolerances for comparable feed items (soybeans at 10.0 ppm and alfalfa forage and hay at 40 ppm), we conclude that the established tolerances for milk (0.05 ppm); and fat, meat and meat by-products of cattle, goats, poultry hogs, horses, (excluding poultry meat by-products) and sheep (0.2 ppm) will not be exceeded as a result of the proposed use. Furthermore, we conclude that residues of sethoxydim/ metabolites will not exceed 2.0 ppm in poultry meat by-product and eggs as a result of this Section 18.

Note to PM:

The adequacy of the existing tolerance expression for residues of sethoxydim/metabolites in poultry meat by-products at 0.2 ppm and eggs at 0.5 ppm has been questioned; DEB has recommended that these tolerances be increased to 2.0 ppm (PP#8F3640, H. Fonouni, conclusion 6b memo dated 11/4/88).

Conclusions:

1. The metabolism of sethoxydim in plants and animals is adequately understood. The residues of concern are sethoxydim and its metabolites containing the 2-cyclohexene-1-one moiety.

2. The GC analytical method (Method I) described in PAM II is adequate for enforcement purposes. Analytical reference standards of sethoxydim are available the EPA Pesticide Chemical Repository.

3. Residues of sethoxydim are not expected to exceed 15 ppm in or on dry beans, and 40 ppm in or on bean forage and bean hay as a result of this proposed Section 18 use.

4. DEB concludes that the established tolerances for residues of sethoxydim/metabolites in meat, fat, and meat by-products of cattle, goat, hogs, (except poultry meat by-products) are adequate to cover the residues resulting from this proposed use. Residues of sethoxydim/metabolites in eggs and poultry meat by-products are not expected to exceed 2.0 ppm(see PP#8F3640, H. Fonouni, dated 11/4/88) resulting from this proposed use.

Recommendations:

TOX considerations permitting, DEB recommends in favor of this Section 18. An agreement should be made with the FDA regarding the legal status of the treated commodities in commerce.

cc: Sethoxydim S.F., R.F., Section 18 S.F., Circ., F. Toghrol, PMSD/ISB, TAS (R. Tomberlin) R Schmitt
RDI: F. B. Suhre Acting Section Head (5/25/89): E. Zager: Acting Deputy Chief (5/26/89):
TS-H7509C:DEB:F.Toghrol:F.T.:RM:802:CM#2:5/26/89.