PM 33D/ISB

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

MAY 26 1989

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: 89-IA-01. Section 18 Exemption for the use of Sethoxydim (Poast®) on Lima beans.
EPA Reg. No. 7969-58.
(No MRID #, DEB # 5331).

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
Special Registration Section II
Dietary Exposure Branch
Health Effect Division (H7509C)

To: D. Stubbs/Jim Tompkins, PM 41
Emergency Response Section
Registration Support Branch
Registration Division (H7505C)

and
Toxicology Branch
Health Effect Division(H7509C)

The Iowa Department of Agriculture requests a Section 18 exemption for the use of sethoxydim (trade name: Poast) on lima beans to control annual and perennial grasses.

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 500 acres of lima beans will be treated with 140.0 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 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 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: succulent bean at 5.0 ppm; dry beans and pea forage at 20.0 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 product 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 DED's review of PP#8F3640 (H. Fonouni, memo dated 11/4/88), the metabolism data were previously submitted in connection with PP#0G2396, PP#3F2904, and PP#F3284 are adequate. The residues of concern are sethoxydim and its metabolites containing the 2-cyclohexene-1-one.

89-IA-07 calls for a single postemergence application (ground only) of Poast Herbicide at 0.28 lb. ai/A/season (1.5 pints of Poast®), and a PHI of 30 days.

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

No residue data were submitted with this Section 18, however, residue data were previously submitted in connection with PP#8F3640. The available data reflect higher application rates (0.3 and 0.5 lb ai/A) than those proposed for this Section 18

request (0.28 lb. ai/A/season). Data most applicable to this request are summarized below:

Application rate lb ai/A	PHI days	Residues PPM Lima beans	Lima bean forage/hay*
0.8 CA	14	1.5	------
0.8 CA	15	1.8	1.0
0.8 IL	55	0.2	------
0.8 MN	30	1.2	3.9
0.8 MS	13	2.5	------
0.8 NJ	30	0.82	-----
0.8 NJ	15	2.10	------
0.8 NY	31	1.20	------
0.8 NC	14	1.20	-------
0.8 WI	15	0.2	1.0

* Similar data on forage/hay of dry beans indicates residues ranging from 1 to 40 ppm (PP#8F3640).

Based on this data we conclude that residues of sethoxydim/ metabolites will not exceed 5.0 ppm in or on lima beans; and 40.0 ppm in or on lima bean forage/hay 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 residue 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 hogs, horses, poultry (excluding poultry meat by-products) and sheep (0.2 ppm) will not be exceeded as a result of this Section 18. Furthermore, we conclude that residues of sethoxydim/metabolites will not exceed 2.0 ppm in poultry meat by products 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, 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 from the EPA Pesticide Chemical Repository.

3. Residues of sethoxydim are not expected to exceed 5 ppm, in or on succulent beans (lima beans), and 40 ppm in or on bean forage, and beans 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, goats, hogs, horses, poultry(except for poultry meat by products) and sheep at 0.2 ppm are adequate to cover the residues resulting from this proposed use. Residues of sethoxydim/ metabolites in or on eggs and poultry meat by-product are expected to exceed at 2.0 ppm (see PP#8F3640, H. Fonouni, dated 11/4/88) resulting from this proposed use.

Recommendations:

TAX considerations permitting, DEB has no objections to this section 18. An agreement should be made with the FDA regarding the legal status of the treated tomatoes in commerce.

cc: Sethoxydim S.F., R.F., Section 18 S.F., Circ., Richard D. Schmitt, Ph.D., Acting Chief. Toghrol, PMSD/ISB, TAS (R. Tomberlin).
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.