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RECORD NO.

121001
SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 10/27/87 OUT APR 26 1988

FILE OR REG. NO. 7969-58

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 10/15/87

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RD ACTION CODE/TYPE OF REVIEW 335

TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Sethoxydim

COMPANY NAME BASF Corporation

SUBMISSION PURPOSE Proposed new uses - celery, head lettuce, leaf lettuce, spinach

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% A.I.

EEB REVIEW

100.0 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

Add use on celery, head lettuce, leaf lettuce, and spinach for grass control.

100.2 Formulation

Active Ingredient:	
Sethoxydim	18.0%
Inert Ingredients:	82.0%

One gallon contains 1.5 lb ai.

100.3 Application Methods, Directions, Rates

See attached supplemental labeling.

100.4 Target Organisms

Annual and perennial grass weeds.

100.5 Precautionary Labeling

No fish and wildlife statements appear on the label.

101.0 Hazard Assessment

101.1 Discussion

Poast is currently registered for use as a foliar treatment for grass control on soybeans, Virginia pine (forest), ornamental herbaceous plants, nursery stock, nonfood crops, onions (SLN CA, NV), cucurbits (SLN CA), ladino clover (SLN CA), alfalfa (SNL CA, NV), garlic (SLN NV), fescue (SLN OR) and carrots (SLN WA): NPIRS March 30, 1988.

This amendment will allow use of Poast on celery, head lettuce, leaf lettuce, and spinach for control of grasses. This will add approximately 300,000 acres of cropland that could be exposed.

For broad-spectrum control of annual grasses 1 1/2 pints of Poast per acre (.28 lb ai) are applied. One additional application may be made if new growth occurs (maximum 3 pints per season; .56 lb ai).

Likelihood of Adverse Effects to Nontarget Organisms

Terrestrial

The toxicity data available suggest that sethoxydim is practically nontoxic to mammals based on an acute oral LD_{50} of > 2000 mg/kg for rats and > 5000 mg/kg for mice. With an LD_{50} of > 2000 mg/kg for the mallard duck, sethoxydim may be characterized as practically nontoxic on an acute oral basis. The chemical also has a low order of toxicity on a dietary basis for avian species (LC_{50} > 5000 ppm for bobwhite quail and mallard duck).

Following a single application at .28 lb ai/A (1 1/2 pints), maximum expected residues would range from 67.2 ppm on short rangegrass to 16.2 ppm on forage/(insects). These values are significantly below mallard duck and bobwhite quail LC_{50} values.

With a half-life of < 4 days in soil and water (< 1 day in direct sunlight) an additional application at .28 lb ai/A to control newly emerged grasses would not pose any greater risk than the initial application.

Aquatic

Sethoxydim is practically nontoxic to freshwater fish, LC_{50} > 100 ppm, and slightly toxic to aquatic invertebrates, LC_{50} 75.7 ppm. Assuming a direct application to water at .28 lb ai, the concentration in 6 acre feet of water would be 17.08 ppb. This level is substantially below that necessary to adversely affect aquatic organisms.

Plants

The label cautions not to apply Poast when the air temperature exceeds 90 °F and when the relative humidity exceeds 60 percent.

Mr. Jack R. Graham, Manager of Registration for BASF reported in a conversation on March 30, 1988 that this statement was placed on the label because of toxicity problems associated with these specific leafy vegetables and not as a result of herbicide volatility.

Since the vapor pressure of Poast is 1.6×10^{-7} mm Hg @ 25 °C, volatility should not be a hazard to nontarget plants. EEB's current level of concern is a vapor pressure of 10^{-5} mm Hg @ 25 °C or greater.

The solubility of Poast is 0.0048 g/100 g water @ 25 °C (48 ppm), therefore movement from the site of application as a result of runoff is considered to be below the level requiring aquatic plant testing (a solubility of > 0.04 g/100 g @ 25 °C, or 400 ppm).

101.3 Endangered Species Consideration

No significant impact is expected to any endangered or threatened animal from the use of Poast on celery, head lettuce, leaf lettuce, and spinach because of the low application rate, minimal toxicity, and relatively short persistence.

The chemical would be expected to be phytotoxic to endangered grass species; however, no endangered plants have been identified with these uses.

101.4 Adequacy of Toxicity Data

No new data were submitted with this amendment. All data in EEB files have been previously reviewed.

101.5 Adequacy of Labeling

The following statement should be added to the label:

> Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes).
>
> Do not contaminate water when disposing of equipment washwaters or rinsate.

102.0 Classification

Unclassified, conditional registration (NPIRS March 30, 1988).

103.0 Conclusions

EEB has completed an incremental risk assessment [3(c)(7) finding] for the proposed registration of Poast on celery, head lettuce, leaf lettuce, and spinach. This use will enlarge the potential acreage that could be exposed to the chemical; however, based on the data available, it does not increase the risks to nontarget organisms.

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