(12)

EE BRANCH REVIEW

IN 4/18/80 OUT 4/23/80

FILE OR REG. NO. 1471-35

PETITION OR (EXP. PERMIT NO.) 44390-EUP-1

DATE DIV. RECEIVED

DATE OF SUBMISSION

DATE SUBMISSION ACCEPTED

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

DATA ACCESSION NO(S).

PRODUCT MGR. NO. 23 Jim Stone

PRODUCT NAME(S) Treflan

COMPANY NAME State of Alaska

SUBMISSION PURPOSE Experimental Use on Rape

CHEMICAL & FORMULATION ∝,∝,∝,-Trifluoro-2,6-dinitro-N,N-dipropyl-p-Toluidine----------44.5% E.C.

Pesticide Name

Treflan

100 Experimental Use Label Information

100.1 Pestice Use

The proposed experimental use of Treflan is on rape in Alaska to control grass and broadleaf weeds.

100.2 Formulation Information

Emulsifiable Concentrate with 44.5% active ingredient.

100.3 Application Methods, Directions, Rates

Application rates and areas to be treated are a maximum of 1000 pounds a.i. formulated as 250 gallons of Treflan 4 E.C. will be used on a maximum of 1000 acres. The recommended rate of application is 1/2 to 1 pound a.i. (1 to 2 pints Treflan 4 E.C.) per acre. Applications may be made by both aircraft and ground equipment. Volumes of spray mixture will range from 5 to 40 gallons per acre by ground equipment and 5 to 10 gallons per acre by aircraft. Both methods to be followed by incorporation into the soil. Treatment would occur preplant.

100.4 Target Organisms

The principal weeds involved are:

Lambsquarter (Chenopodium album)
Chickweed (Stellaria media)
Fireweed (Epiloblum augustofolium)
Wild Oats (Avena fatua)
Annual Bluegrass (Poa annua)
Horsenettles (Solanum carlinense, S. elaeagnifolium)
Hempnettle (Galeopsis tetrahit)

100.5 Precautionary Labeling

None in addition to those on the registered Treflan E.C. label.

100.6 Proposed EUP Program

Experimental treatment with Treflan is proposed for Alaska farmland areas of the Yukon-Tanana River Valleys, Matanuska-Susitna River Valleys (Matanuska-Susitna Borough) and Western Kenai Peninsula.

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Treatment with the proposed herbicide, Treflan 4 E.C., would occur preplant and would be applied from May 1 through June 30, 1980, for the 1980 growing season. Application will also occur between August 15 and September 30, 1980, as a fall preplant treatment for other fields for the 1981 season.

Application rates and areas to be treated are a maximum of 1,000 pounds a.i. formulated as 250 gallons of Treflan 4 E.C. will be used on a maximum of 1,000 acres. Applications may be made by both aircraft and ground equipment.

101 Physical and Chemical Properties

See review by D. J. McLane (10/22/79).

102 Behavior in the Environment

See Review by D. J. McLane (10/22/79).

103 Toxicological Properties

See review by D. J. McLane (10/22/79).

104 Hazard Assessment

104.1 Discussion

Treflan E.C. is a widely used herbicide for the prevention of grasses and broadleaf weeds infesting a variety of croplands. Treflan E.C. is currently registered for use on many crops throughout the United States, most notably cotton, soybeans, peanuts (Spanish), fruit and nut trees, and garden vegetables. The proposed experimental use is on rape in Alaska, with a total proposed acreage of just 1000 acres. Treflan is currently used on millions of acres in Canada to control weeds in rape.

104.2 Likelihood of Adverse Effects to Non-Target Organisms

See also the review by L. Touart (2/7/80).

The use of Treflan on rape in Alaska would not pose an acute hazard to terrestrial mammals and birds. Trifluralin residues would amount to a soil concentration of 1.1 ppm when a 1 pound a.i. application has been incorporated to 2 inches. The LD_{50}'s for terrestrial vertebrates are all > 2000 mg/kg.

Trifluralin is highly toxic to aquatic organisms. The acute toxicities of trifluralin have been reported for fishes down to a low EC_{50} of 11 ppb for a 48-hour exposure to rainbow trout. The MATC for fathead minnows and sheepshead minnows have been reported at 1.9 ppb and 1.3 ppb, respectively. Trifluralin is highly bioconcentrated by fishes and molluscs, with BCF's reported to 153,000 x. The actual chronic no-effect level for fishes has yet to be determined.

The aquatic toxicity of trifluralin is mitigated by several factors. Trifluralin is highly soil bound, it has a soil absorption coefficient of 13,700, and is water soluble only to 0.6 ppm. Trifluralin is not subject to leaching and is relatively immobile. Trifluralin is volatile and substantial losses of applied material can occur without incorporation. Incorporation also reduces the amount of trifluralin lost in runoff.

The proposed experimental use of Treflan is for treatment of only 1000 acres. The amount of trifluralin capable of entering aquatic areas should not pose any acute hazard to non-target organisms, but may pose a slight chronic hazard to small static aquatic features receiving drainage from treated fields.

The application of Treflan to rape fields by aircraft may increase the likelihood of trifluralin entering aquatic areas. Spray drift could directly and indirectly, as unincorporated trifluralin enters runoff more easily, facilitate the addition of trifluralin to the aquatic environment. To reduce the chance of biologically significant levels of trifluralin being introduced directly into aquatic features, a buffer zone of 300 feet (90 meters) should be imposed (based on a critical level of 1 ppb with a 1 pound a.i./acre application rate applied at a height of 12 feet with a 10 mph wind).

104.3 Endangered Species Considerations

No federally listed endangered or threatened species likely to be affected by trifluralin occur in the proposed experimental use area.

105 Conclusions

The Ecological Effects Branch conditionally concurs with the proposed EUP for the use of Treflan on rape. Applications of Treflan by aircraft should be with a minimum buffer zone of 300 feet from the high-water mark of any body of water.

105.2 Environmental Hazards Labeling

The experimental use label should include the following statement:

> "Applications made by aircraft require a minimum layoff distance of 300 feet from the high water line of any body of water."

105.6 Recommendations

Field and non-target organism residue studies are recommended to be undertaken as a part of the experimental use program. Monitoring data may be necessary to support future registration actions.

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Ray Matheny, Head, Section 1

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