

US EPA ARCHIVE DOCUMENT

SHAUGHNESSEY NO.
036101

REVIEW NO.

17

EEB BRANCH REVIEW

DATE: IN 7-1-83 OUT 8-23-83

FILE OR REG. NO. 1471-35, 1471-116, 1471-120

PETITION OR EXP. PERMIT NO.

DATE OF SUBMISSION 6-30-83

DATE RECEIVED BY HED 6-30-83

RD REQUESTED COMPLETION DATE 9-5-83

EEB ESTIMATED COMPLETION DATE 8-29-83

RD ACTION CODE/TYPE OF REVIEW 316/Amendment

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

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. R. Mountfort (23)

PRODUCT NAME(S) Treflan MTF (1471-116) Treflan EC (1471-35)

Treflan Pro-s (1471-120)

COMPANY NAME Elanco Products Company

SUBMISSION PURPOSE Proposed conditional registration of use in

cottonwood plantations

SHAUGHNESSEY NO.

CHEMICAL, & FORMULATION

% A.I.

036101

Trifluralin

Pesticide Name Treflan

100 Pesticide Label Information

100.1 Pesticide Use

Treflan is a preemergence herbicide currently registered for a variety of crops (most notably soybeans). The proposed label amendment would add the use on cottonwood trees grown for pulp.

100.2 Formulation Information

Treflan E.C. 44.5% a.i.
Treflan M.T.F.
Treflan Pro-5

100.3 Application Methods, Directions, Rates

See attached supplemental labeling.

100.4 Target Organism

Johnsongrass.

100.5 Precautionary Labeling

Environmental Warning:

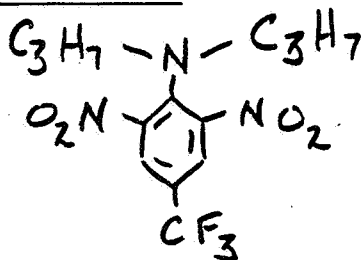
Direct contamination of any body of water with this emulsifiable concentrate may kill fish and other aquatic organisms. Do not contaminate any body of water by direct application, cleaning of equipment or disposal of wastes.

101 Physical and Chemical Properties

101.1 Chemical Name

x, x, x - Trifluoro-2,6-Dinitro-N,N-Dipropyl-p-Toluidine

101.2 Structural Formula



101.3 Common Name

Trifluralin

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103.2 Minimum Requirements

103.2.1 Avian Acute Oral LD₅₀

<u>Species</u>	<u>% a.i.</u>	<u>Result</u>	<u>Category</u>
Mallard Duck	96.7%	> 2000 mg/kg	Tucker & Crabtree (1970)
Ring-necked Pheasant	96.8	> 2000 mg/kg	"

103.2.3 Fish Acute LC₅₀ (96 Hr.)

<u>Species</u>	<u>% a.i.</u>	<u>Result</u>	<u>Category</u>
Bluegill Sunfish	95.9%	58 ppb	Johnson & Finley (1980)
Rainbow Trout	95.9%	41 ppb	"

103.2.4 Aquatic Invertebrate EC₅₀ (48 Hr.)

<u>Species</u>	<u>% a.i.</u>	<u>Result</u>	<u>Category</u>
<u>Daphnia magna</u>	95.9%	560 ppb	Johnson & Finley (1980)

103.4 Additional Aquatic Laboratory Tests

103.4.1 Toxicity to Estuarine and Marine Animals

<u>Species</u>	<u>% a.i.</u>	<u>Result</u>	<u>Category</u>
Sheepshead Minnow	Tech.	190 ppb	Parrish et al. (1978)

103.4.2 Embryo Larvae and Life Cycle Studies

<u>Species</u>	<u>% a.i.</u>	<u>Test</u>	<u>Result</u>	<u>Category</u>
Fathead Minnow	Tech.	Early Life Stage	MATC>1.9<5.1 ppb	Macek et al. (1976)
Sheepshead Minnow	Tech.	Early Life Stage	MATC>1.3<4.8 ppb	Parrish et al. (1978)

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101.4 Trade Name

Treflan

101.5 Molecular Weight

335.8

101.6 Physical State

Orange crystalline solid, no appreciable odor.

101.7 Solubility

Readily soluble in organic solvents such as acetone, xylene and aromatic naptha. Water solubility is 0.2 - 0.4 ppm at 25° C.

101.8 Vapor Pressure

1.14 x 10⁻⁵ mm Hg at 17.5° C
2.06 x 10⁻⁵ mm Hg at 20° C
1.14 x 10⁻⁴ mm Hg at 30° C
2.84 x 10⁻⁴ mm Hg at 35° C

102 Behavior in the Environment

(Also refer to file)

Trifluralin is moderately persistent to persistent in soil with a half-life > 1 year under certain conditions. Trifluralin is readily volatilized and photo degraded in the environment. According to available information, trifluralin does not readily run off from treated fields and does not readily leach, being strongly absorbed to organic matter.

Trifluralin has been shown to be highly bioconcentrated in fish (4200 - 11, 538 x) and molluscs (153,000 x).

103 Toxicological Properties

(Also refer to file)

103.1 Mammals

<u>Species</u>	<u>Test</u>	<u>% a.i.</u>	<u>Result</u>
Rat	Acute Oral LD ₅₀	97%	> 5000 mg/kg
Rat	Acute Oral LD ₅₀	97%	> 2000 mg/kg

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104 Hazard Assessment

104.1 Discussion

Trifluralin was the first and most prominent of a series of dinitro-aniline (or toluidine) herbicides introduced to agriculture in the 1960's. Formulated products of Trifluralin (e.g., Treflan) are widely used for prevention of grasses and broadleaf weeds infesting a variety of croplands. Current registrations include cotton, soybeans, peanuts, fruit and nut trees, and garden vegetables. The proposed amendment would add a use to cottonwood trees. The use is expected to be limited to approximately 24,000 acres in Mississippi and Arkansas on alluvial flood plains along the Mississippi River.

104.2 Likelihood or Adverse Effects to Non-Target Organisms

Trifluralin is practically non-toxic to terrestrial wildlife, but highly toxic to aquatic organisms. Aquatic organisms can be exposed to trifluralin which runs off treated fields bound to soil. However, these residues are expected to be below acute levels. The risks from exposure over long periods in the aquatic environment has yet to be clearly defined.

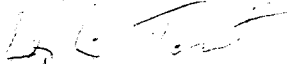
The increment added by the proposed action is small. In the vicinity of the cottonwood plantations to be treated are well over 500,000 acres of soybeans and cotton which are currently registered for Treflan use. Therefore, no significant increase in exposure or risks to non-target organisms is expected.

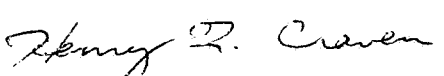
104.3 Endangered Species

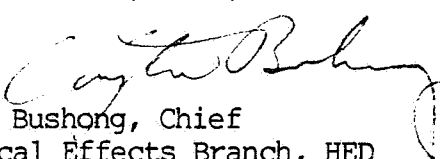
No federally listed endangered aquatic organism occurs in the vicinity of the proposed uses on cottonweed.

107 Conclusions

The Ecological Effects Branch has completed an incremental risk assessment (3(c)(7) finding) of the proposed conditional registration of Treflan for use on cottonwood plantations. Based upon the available data EEB concludes that the proposed use provides for no significant increase in exposure or risks to non-target organisms.

 8/23/83
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