UNDATED

Date Out EFB:

To: Product Manager Taylor (25)
TS-767

Through: Dr. Gunter Zweig, Chief
Environmental Fate Branch

From: Review Section No. 1
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 464-323

Chemical. pic loram (4-amino-3,5,6-Trichloropicolinic acid)
potassium salt

Type Product: Herbicide

Product Name: Tordon 22 K pellets

Company Name: Dow

Submission Purpose: permanent grass pasture and rangeland

EFB # 264 Action Code 51

ZBB Code: Sec. 3

Date in: 9/27/79

Date Completed

Deferrals To:

___ Ecological Effects Branch

___ Residue Chemistry Branch

___ Toxicology Branch

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Date Out EFB.

To: Product Manager Taylor (25)
TS-767

Through. Dr. Gunter Zweig, Chief /s/
Environmental Fate Branch

From: Review Section No. 1 RWCook
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 464-LEO, 464-323, 464-407

Chemical: Tordon = Picloram & 2,4D

Type Product: Herbicide

Product Name: Tordon

Company Name: Dow

Submission Purpose:

EFB # 247 Action Code 51

ZBB Code: Sec. 3

Date in: 8-15-79

Date Completed

Deferrals To:

☐ Ecological Effects Branch

☐ Residue Chemistry Branch

☐ Toxicology Branch

1. Introduction

This is a review of 4 Dow submissions for Tordon systemic herbicides:

(1) An amended registration for Tordon 22K (ai picloram, potassium salt, 25%) allowing use as a tank mix with 2,4-D amine formulations on spring barley, spring and winter wheat, and oats. Tordon 22K is currently registered for use on certain non-croplands (Reg. No. 464-323).

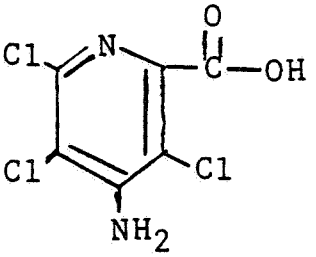
(2) Registration of the new product Tordon 202 (ais picloram 2.5%, 2,4-D 41%, both as the triisopropanol amine salts) for use on spring barley, spring and winter wheat, and oats. (Reg. No. 464-LE0).

(3) An amended registration for Tordon 225 (ais picloram 15%, 2,4,5-T 15%, both as the triethylamine salts) which would allow ULV spraying of rangeland and permanent pastures in Texas. Tordon 225 is currently registered for use on rangeland and permanent grass pastures in Texas (Reg. No. 464-407).

(4) An amended registration for Tordon 22K allowing use on rangeland and permanent grass pastures west of the Mississippi. Tordon 10K (ai picloram, potassium salt 11.6%) is currently registered for use on rangeland and permanent grass pastures in 17 states both east and west of the Mississippi (Reg. No. 464-320).

Chemical. 4-amino-3,5,6-trichloropicolinic acid

picloram



Past Submissions. See reviews of picloram dated 11/24/78, 12/18/75, and 11/15/74.

2. Directions for Use

These Tordon formulations are classified Restricted Use Pesticides. Apply aqueous or aqueous/oil dispersions by ground or aerial spraying in the spring or fall depending on the crop and the weeds to be controlled. Do not apply in the vicinity of sensitive or desirable plants. Do not apply to any water or nontarget land areas. Do not allow spray drift - apply only as a low pressure, coarse spray. Do not apply when air temperature exceeds 95° F or aerially during a temperature inversion. Do not rotate treated rangeland or pasture to other crops. Do not move treated soil to other areas. Do not graze

dairy animals within 6 weeks of application or meat animals within two weeks of slaughter. Do not transfer livestock from a treated grass area to a broadleaf crop area within 7 days.

Tordon 202 and Tordon 22K (grains)

Tordon 22K must be tank mixed with 2,4-D amine formulations (4 lb acid equiv./gal) in this proposed use. Apply 1/4-3/8 oz. picloram and 4-6 oz. 2,4-D/A. Do not graze or feed forage within two weeks of treatment. Do not spray grain underseeded to a legume. Do not rotate treated grainfields to other crops - fallow or replant to grass or grain crops the following year.

Tordon 225

Apply 1/4-1/2 lb each ai (picloram and 2,4,5-T)/A. Do not apply more than 1 lb each ai/A over any 5-year period. For low volume - low pressure aerial applications, use a total spray volume of 1 gal/A.

Tordon 22K (rangeland and pasture)

Use 1/4-2 lb ai/A depending on species of weed to be controlled. Restrictions for Rangeland and Pasture Use: Limit coverage to no greater than 25% of acreage in any watershed. Do not use where a sandy porous surface and substrate overlie ground water 10 feet or less below the surface. Where watersheds have significant slope and where rapid runoff can occur, use spot treatment only. Do not apply within 1/2 mile of where stream or pond water may be drawn for irrigation of susceptible broadleaf crops.

3. Discussion of Data and Conclusions

No new data are submitted or referenced. Nor is any rationale advanced for the proposed new and expanded uses.

Picloram is highly mobile in soil, very persistent in arid soil and water, and extremely phytotoxic to a variety of broadleaf plants. Picloram can leach at least 15 feet in 9 months in sandy loam under only 22 inches of water. It is quite soluble and readily moves laterally with the underground water flow. In arid areas phytotoxic concentrations of picloram can exist in the soil for at least 5 years after application. The various label cautions and restrictions acknowledge these areas of concern.

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Data gaps still exist, notably the lack of rotational crop studies for picloram. These studies are necessary to assess the incremental risk associated with expanding the use of picloram to major grain crops. The proposed label restrictions "Do not rotate grainfields to other crops" and "follow or replant to grass or grain the following year" are inadequate and do not mitigate the need for the rotational crop studies required for incremental risk assessment.

Allowing ULV spraying of Tordon 225 in Texas should not pose any significant incremental risks since the label precautions concerning spray drift and water contamination are adequate, and this herbicide is a restricted use pesticide. There is a question, however, about whether the use of 2,4,5-T on permanent pasture is allowed under current prohibitions. RD must asertain if this is indeed an allowable use for 2,4,5-T.

The problem areas for picloram - leaching, run-off, contamination of ground water - may lead to adverse environmental effects in a certain geographical area depending on factors such as amount of precipitation, soil type; and depth of ground water. The environmental fate of picloram in rangeland in western Oregon, for example, can reasonably be expected to differ from that in Arizona. Though label precautions address these concerns, the incremental risk to the environment from allowing this greatly expanded use of Tordon 22K on all rangeland and permanent pasture west of the Mississippi is considered significant. The registrant may wish to seek a label amendment for certain specific new states or areas. The incremental risk associated with the use of picloram in these specific new locations can then be assessed.

4. Recommendations

(1) EFB does not concur with the proposed amended registration of Tordon 22K which would allow use on specified small grain crops since an incremental risk assessment cannot be made without rotational crop data (see Conclusions). Also, the proposed label Use Directions must be rewritten to make clear that, in this use, picloram must be applied as a mixture with 2,4-D. "..., use Tordon 22K Herbicide as a tank mix only with ..." should be changed to "..., use Tordon 22K Herbicide only as a tank mi x with... ."

(2) EFB does not concur with the registration of the new product Tordon 202 for use on the specied small grains for the same reason as in (1) above.

(3) EFB concurs with the amended registration of Tordon 225 allowing ULV application in Texas (no associated significant incremental risk) provided that RD determines that the use of 2,4,5-T on permanent pasture land is not currently prohibited.

(4) EFB does not concur with expanding the use of Tordon 22K to rangeland and permanent pasture land west of the Mississippi since a significant incremental risk to the enviroment would be associated with this greatly expanded use (Note recommendation concerning resubmission in Conclusions).

Joe C. Reinert
Review Section 1

Joe C Reinert