

US EPA ARCHIVE DOCUMENT

246110,246111
RECORD NO.

122010
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 6/12/89 OUT JUL 21 1989

FILE OR REG. NO. 89-OK-05,89-KS-05

PETITION OR EXP. NO. _____

DATE OF SUBMISSION 5/31/89

DATE RECEIVED BY EFED 6/09/89

RD REQUESTED COMPLETION DATE 6/24/89

EEB ESTIMATED COMPLETION DATE 6/24/89

RD ACTION CODE/TYPE OF REVIEW 550

TYPE PRODUCT(S) Herbicide

DATA ACCESSION NOS. _____

PRODUCT MANAGER NO. D. Stubbs (41)

PRODUCT NAME(S) metsulfuron methyl (Ally)

COMPANY NAME States of Oklahoma and Kansas

SUBMISSION PURPOSE Proposed Sec. 18 for use on winter wheat
as a harvest aid

SHAUGHNESSEY NO.	CHEMICAL AND FORMULATION	% AI
_____	_____	_____
_____	_____	_____
_____	_____	_____

EEB REVIEW

Chemical: metsulfuron methyl (Ally)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The states of Oklahoma and Kansas have declared a crisis exemption (Section 18) for the use of (Ally) as a harvest aid to kill weeds before wheat harvest. No new data were submitted with these requests.

100.2 Formulation Information

Active Ingredient (metsulfuron methyl (Ally))
Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino]carbonyl]-amino]sulfonyl]benzoate...60%

Inert Ingredients 40%
(Reg. NO. 352-435)

100.3 Application Methods, Directions, Rates

- Ally will be applied in 6 N.W. counties in OK. by aircraft only; using a minimum of 1 gallon spray per acre
- In KS. Ally will be used in Butler and Cowley counties and all counties inclusive and West of U.S. Hwy. 81 using air or ground equipment; 2-5 gallons spray per acre for air.
- Ally will be applied in a tank mix with 2,4-D. The Ally rate is one-tenth ounce product per acre (0.00375#ai) plus 4-8 ounces ai/A 2,4-D (amine or ester).
- Apply when wheat is in the dough stage but no later than 21 days prior to harvest.
- Apply the Ally plus 2,4-D mixture with a surfactant at 1 quart per 100 gallons of spray solution.
- Do not use more than one-tenth ounce Ally per acre per 22 month period.
- Do not allow spray to drift onto adjacent crops, or onto agricultural land scheduled to be planted to crops other than wheat or grassland for the CRP program, as injury to the crop may occur. Extreme care must be taken to prevent drift to desirable plants or non-target agricultural land.

100.4 Target Organisms

Target organisms are annual broadleaf weeds such as pigweed species, kochia, lambsquarters, marestalk, and wild buckwheat.

101 Hazard Assessment

101.1 Discussion

The States of Oklahoma and Kansas have declared crisis exemptions for the use of Ally to control weeds prior to wheat harvest. The lack of winter rains reduced wheat growth. Spring rains stimulated weed growth which has overgrown the wheat. Oklahoma has requested the use of Ally on 100,000 to 150,000 acres and Kansas did not specify total acres to be treated.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial Organisms

Metsulfuron methyl has been characterized as practically nontoxic on an acute and subacute basis to avian species (mallard duck LD50=2510mg/Kg, LC50=5620ppm; bobwhite quail LC50=5620ppm) and practically nontoxic to the honeybee (acute contact >24ug/bee).

Data for the rat report an LD50 of >5000mg/Kg for both the male and female. For the rabbit, the dermal LD50 was >2000mg/Kg. A 90 day dietary test with the rat showed a NOEL of 1000ppm.

In a previous review (Review No.6-11/07/88), 1 ounce per acre (a 10X rate over the wheat rate) resulted in residues on leafy crops, forage, fruit, long grass, and short range grass below the LC50's for mallard duck and bobwhite quail.

Based on available data the proposed use does not pose a significant increased acute threat to avian species, mammals, or honey bees.

Persistence data indicates that metsulfuron methyl is stable in the environment. No conclusions can be reached concerning the chronic hazard.

Aquatic Organisms

Data from previous reviews indicate that metsulfuron methyl is practically nontoxic to the rainbow trout, bluegill sunfish, and Daphnia magna (LC50's all >150ppm).

At a 10X rate of 1 ounce per acre, residues in 6 inch deep water after an inadvertent direct application were calculated as 0.05 ppm; significantly below the LC50 values for aquatic organisms.

The one-tenth ounce per acre rate in 6 inch deep water from an inadvertent direct application would total 0.005 ppm.

Plant Hazard

The large number of acres to be treated, and the use of low volume aerial sprays per acre (1 to 2 gallons/A) are conditions that increase the potential for off-target drift. Based on past reviews of Tier 2 data, any movement off-target could result in serious phytotoxic effects to non-target plants adjacent to the treated area; and that aerial application of metsulfuron methyl would seriously increase the hazard to non-target plants.

101.3 Endangered Species Considerations

Contact of endangered plant species through direct overspray or by drift is expected to be hazardous.

101.4 Adequacy of Toxicity Data

The existing database is adequate to assess hazards to nontargets with the exception of required off-target drift studies (158.142, 201-1, 202-1). The acute hazard to avian, aquatic, and mammalian species is expected to be minimal.

101.5 Adequacy of Labeling

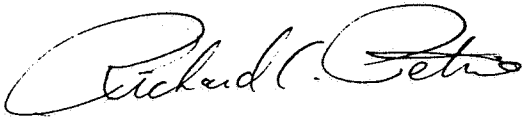
The OK. and KS. labels are deficient in the following areas:

- Maximum wind velocity at the time of application; we suggest a maximum of 5MPH until drift data are submitted.
- Maximum spray pressure in psi; we suggest a maximum of 30psi.
- Minimum distance (buffer zone) from target to adjacent crops, ornamental plantings, vegetable gardens, residences, subdivisions, townships, commercial nurseries, commercial greenhouses, and commercial fruit and vegetable plantings. We suggest a 1 mile buffer zone until Tier 3 drift data are submitted.
- Labels do not specify which drift control agents to use and rates.

103 Conclusions

EEB has reviewed the crisis exemption applications for the use of metsulfuron methyl to control weeds in wheat in OK. and KS. Hazard to nontargets is expected to be minimal with the exception of non-target plant species including endangered plant species (via drift). A review of the EEB endangered species data base did not identify any endangered plant species growing in "close proximity" (in the treated field or in a boundary around the field) to the proposed use areas in KS and OK. However, EEB is concerned with potential off-target movement of methsulfuron methyl to areas where endangered species may be located beyond the "close proximity" definition.


Prior to Section 3 registration, methods other than buffer zones must be established to reduce off-target movement to reasonable distances (ie. no greater than 200 feet).



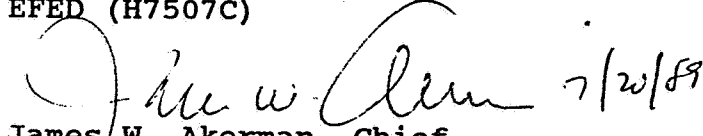
Richard C Petrie , Agronomist
Ecological Effects Branch
EFED (H7507C)



Charles R. Lewis, Agronomist
Ecological Effects Branch
EFED (H7507C)



Douglas J. Urban, Head Section 3
Ecological Effects Branch
EFED (H7507C)



James W. Akerman, Chief
Ecological Effects Branch
EFED (7507C)