265180
RECORD NO.

122010
SHAUGHNESSEY NO

REVIEW NO.

EEB REVIEW

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PETITION OR EXP. NO.

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TYPE PRODUCT(S) Herbicide

DATA ACCESSION NO(S)

PRODUCT MANAGER, NO. Cool (41)

PRODUCT NAME(S) Ally Herbicide

COMPANY NAME TX Dept. Agriculture

SUBMISSION PURPOSE Sec.18 - pre-harvest aid in wheat

SHAUGHNESSEY NO.	CHEMICAL	% A.I.
122010	Metsulfuron - methyl	60.0

ECOLOGICAL EFFECTS BRANCH REVIEW
SECTION 18

Ally

100 Section 18 Application

100.1 Nature and Scope of Emergency

The State of Texas has requested an emergency exemption to use Ally Herbicide as a pre-harvest aid in non-irrigated winter wheat. Use will be restricted to three physiographic regions in Texas ie. the High Plains, Rolling Plains, and the Blackland Prairie. There are no pesticides currently registered for harvest aid use in wheat.

100.2 Formulation Information

ACTIVE INGREDIENTS:----------60.0%
Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)-amino] carbonyl]-sulfonyl] benzoate
INERT INGREDIENTS:----------40.0%

100.3 Application Methods, Directions, Rates

Use rate is 0.06 oz ai/acre applied aerially when non-irrigated winter wheat reaches the dough stage. Not more than 0.06 oz ai may be applied to the same field in a 22 month period. Application to approximately 350,000 acres.

100.4 Target Organism

Broadleaf weeds such as sunflower (common and wild), flixweed, common purslane, kochia, lambsquarters (common and slimleaf), marestail, pigweed (redroot and tumble), prickly lettuce, Russian thistle, tansymustard, and treacle mustard.

100.5 Precautionary Labeling

"The Texas Department of Agriculture shall be immediately informed of any adverse affects resulting from the above noted use of "Ally" herbicide as authorized by this crisis exemption.

"Do NOT feed treated straw to livestock or graze treated stubble.

"Do NOT apply "Ally" as a preharvest treatment to a crop that has been previously treated in the same growing season with

"Ally", Express, Glean, Glean Fertilizer Compatible, or Harmony Extra.

"Do NOT use more than 1/10 oz/A of "Ally" in a 22 month period.

"Do NOT apply where runoff is likely to occur.

"Metsulfuron methyl, the active ingredient in "Ally", has the potential to contaminate ground water at very low concentrations. Users are advised not to apply "Ally" in areas where groundwater is vulnerable to contamination (ie. shallow groundwater overlain by soils having high hydraulic conductivity or high recharge conditions).

"Because cultivars of cereals differ in their tolerance to herbicides, limit the first use of "Ally" to a small area prior to adoption as a field practice.

"Applications made prior to soft dough may result in crop injury including reduction of yield.

"NOTE: Do not allow spray drift onto adjacent crops, or onto agricultural land scheduled to be planted to crops other than wheat or grasslands for the CRP program, as injury to the crop may occur. Extreme care must be taken to prevent drift onto desirable plants or nontarget agricultural land."

101 Hazard Assessment

101.1 Discussion

The Texas Department of Agriculture (TDA) is requesting an emergency exemption for use of Ally Herbicide as a pre-harvest aid for non-irrigated winter wheat. Proposed rate is 0.06 oz ai/A applied to approximately 350,000 acres in the High Plains, Rolling Plains, and Blackland Prairie of Texas.

101.2 Likelihood of Adverse Effects on Nontarget Organisms

Terrestrial Organisms

Data from previous reviews indicate that metsulfuron methyl is practically nontoxic to birds on both an acute oral basis and a dietary basis (mallard duck LD50 >2510 mg/kg, LC50 >5620 ppm, bobwhite quail LC50 >5620 ppm). The available data on rats suggest that the chemical also has a low mammalian toxicity (LD50 >5000 mg/kg - male and female). The dermal LD50 for the rabbit was reported to be >2000 mg/kg. A 90-day dietary test using the rat showed a NOEL of 1000 ppm.

For the honey bee, the acute contact LD50 was estimated to be >25 ug/bee and may be characterized as practically nontoxic.

Assuming a maximum application of 0.00375 lb ai/a, the following residues were calculated using the nomograph of Kenaga and Hoerger (1972):

Substrate	Residue (ppm)
Short range grass	0.90
Long grass	0.41
Leaves and leafy crops	0.47
Forage	0.22
Pod containing seeds	0.05
Fruit	0.03

These levels are well below calculated or laboratory determined toxicity values for both mammals and birds. Based on the data currently available, the hazard to birds and mammals is considered minimal.

Ally Herbicide would not be expected to impact honey bees.

Aquatic Organisms

Ally Herbicide is practically nontoxic to freshwater fish and aquatic invertebrates (LC50's >150 ppm for rainbow trout, bluegill sunfish, and Daphnia magna). Assuming an inadvertent direct application to a pond 6 feet deep, the estimated environmental concentration (EEC) should be 0.23 ppb. This value is considerably less than the lowest aquatic LC50 and does not exceed the 1/10 LC50 trigger for restricted use classification. On the basis of these figures, the proposed use of Ally Herbicide will not result in an increased hazard to aquatic organisms.

Nontarget Plants

The potential exists for herbicides to move from the site of application through drift, volatilization, and runoff. The herbicide has been characterized as nonvolatile (vapor pressure 2.5×10^{-12} mm Hg @ 25C), however applications will be made with aerial equipment and the chemical has been characterized as soluble in water (9,500 ppm @ pH 6.7, 25C). EEB's primary concern is from drift during application and subsequent runoff.

Runoff/Drift - Aquatic Plants

Assuming an aerial application of 0.06 oz ai/a (0.00375 lb ai/a) with 5% drift, 0.00019 lb ai could drift into a one acre pond 6 feet deep. In addition, runoff would add 0.0011 lb ai [1/] resulting in a pond loading of 0.0013 lb ai or a water concentration of 0.08 ppb [2/].

Data for Selenastrum capricornutum indicate the 5-day EC50 is 285.6 ppb. Consequently, freshwater green algae are not expected to be adversely affected from the aerial application of Ally Herbicide.

Data are unavailable for aquatic macrophytes. EEB has utilized data for the most sensitive terrestrial species (morningglory, preemergence EC50 0.014 lb ai) in an attempt to estimate the hazard to these species. The calculated EC50 for morningglory is greater than the total pond loading of 0.0013 lb ai. Therefore, the hazard to aquatic macrophytes is considered minimal.

1/ 0.00375 x 0.6 application efficiency x 5% runoff x 10 acres = 0.001125 lb ai
2/ 0.0013 x 61 ppb = 0.0793 ppb

Runoff/Drift - Terrestrial Plants

Using the same runoff/drift scenario as for aquatics, 0.021 oz ai (0.0013 lb ai) could be expected to be deposited on a one acre site adjacent to a treated field. This value exceeds the preemergence EC25 values for soybean, cocklebur, cotton, morningglory, wild buckwheat, and sugar beet (0.0066, 0.0077, 0.0059, 0.0001, 0.0056, and 0.0007 oz ai/a, respectively).

Postemergence data for metsulfuron methyl indicate EC25 values for soybean and cocklebur were 0.003 and 0.002 oz ai/a, respectively. Assuming 5% drift, 0.003 oz ai could be deposited on a one acre site adjacent to the treated field which would exceed the EC25 values for these species.

Consequently, based on currently available data, the growth of nontarget terrestrial plants could be adversely affected following an aerial application of Ally Herbicide.

101.3 Endangered Species Considerations

Based on the very low application rate and practically nontoxic characterization of the herbicide, endangered/threatened mammals, fish, and birds are not expected to be adversely affected from the use of Ally

Herbicide as a pre-harvest aid for non-irrigated winter wheat. However, two endangered plants (Texas poppy-mallow found in Coke, Mitchell, and Runnels counties and Texas wild-rice found in Hays county) have been identified as occurring in the regions where the herbicide will be used. The TDA has suggested that ground applications should not occur within 100 yards of the Colorado River in the three counties where the Texas poppy-mallow occurs and that aerial applicators should maintain a 1/4 mile buffer from the species. Relying on data in Chemical and Biological Controls in Forestry. pp 95-115 by Akesson and Yates (1984), EEB feels that the buffer strips suggested by TDA should also be applicable to Texas wild-rice and that these buffers are adequate to reduce the hazard to these two endangered plants.

101.4 Adequacy of Toxicity Data

The existing data base is adequate to assess the hazard to nontarget organisms for this Section 18.

Results of Tier II nontarget plant testing have triggered the requirement for testing at the Tier III level for certain uses of metsulfuron methyl. These data are outstanding.

101.5 Adequacy of Labeling

An "Environmental Hazards" section should be added to the label with the following statements:

"Do not apply to water. Do not apply were runoff is likely to occur. Do not contaminate water by cleaning of equipment or disposal of rinsate."

103 Conclusions

EEB has reviewed the proposed emergency exemption for the use of Ally Herbicide in Texas as a pre-harvest aid for non-irrigated winter wheat.

Mammals, birds, aquatic organisms, and honey bees are not expected to be adversely affected by this exemption. However, the potential exists for nontarget plants to be adversely affected from drift and runoff.

Endangered/threatened species, other than plants, are not expected to be impacted. The potential exists for endangered/threatened plants to be adversely affected, however by maintaining a 1/4 mile buffer strip from these plants as suggested by TDA, the hazard should be reduced.

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