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EEE BRANCH REVIEW

DATE: IN ___ OUT ___ IN ___ OUT ___ IN 9/21/78 OUT 9/26/78
FISH & WILDLIFE ENVIRONMENTAL CHEMISTRY EFFICACY

FILE OR REG. NO 1471-97

PETITION OR EXP. PERMIT NO.

DATE DIV. RECEIVED 8-25-78

DATE OF SUBMISSION 8-24-78

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

DATA ACCESSION NO(S). 234334

PRODUCT MGR. NO. (25) Bob Taylor

PRODUCT NAME(S) Spike 80 W

COMPANY NAME Elanco

SUBMISSION PURPOSE To add tank-mix combinations of Paraquat, MSMA, Roundup, Amitrole and 2,4-D to non-cropland areas.

CHEMICAL & FORMULATION Tebuthiuron: N-[5-(1, 1-dimethylethyl) -1, 3, 4-thiadiazol-2-yl]-N, N 'dimethylurea-80% WP

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200.0 Introduction

200.1 Uses

See attached label amendment.

200.2 Background Information

Elanco Products is requesting registration of Spike 80 W to include use in a tank mix combination with each of Paraquat, MSMA, Roundup, Amitrole, and 2,4-D for total vegetation control in non-cropland areas (EPA file No., 1471-97; submitted on 8/24/78).

The aforementioned herbicides are currently registered for selective or nonselective weed control. Some weed species are known to be controlled by one or more of these herbicides; whereas, others are unique to a given product. For example, of some 120 plant species listed on Spike Label and 44 listed on the Roundup Label, 27 of these are listed on either Spike or Roundup Labels.

201.0 Data Summary

201.1 Abstract of Test Reports

Company summary data are filed in R. D.

201.2 Brief Description of Tests

1. Spike/Roundup Tank Mix- Data submitted were from 76 small replicated or large nonreplicated field trials from 11 states. The tank-mix combination and its individual components were applied during the active growth period beginning early in the spring to late summer or early fall. All applications were made by ground equipment. Test results showed that the tank-mix effectively controlled existing vegetation, giving average weed control of 93%. Roundup alone gave an average weed control of 62%; whereas weed control in Spike-treated plots average 71%.

2. Spike/Paraquat Tank Mix- Data submitted were from 12 small replicated field trials from New York. Applications were made by ground equipment where the tank mix was compared against its individual components. Test results were inconsistent where in one test the tank mix was inferior relative to Spike's performance and in the second test, the tank mix gave superior performance over its individual components. In the first situation, weed control averaged 56%; whereas in the latter, average weed control was 95%.

3. Spike/MSMA Tank Mix- Data submitted were from 12 small replicated field trials from 5 states. All applications were made by ground equipment where the tank mix was compared against its individual components. It was evident from these data that weed control from Spike-treated plots averaged 100% whether applied alone or in a tank mix with MSMA at the same rates. Perennial weed control in Spike-treated plots was not significantly different than in those receiving equal rate of Spike in a tank mix with MSMA. In the latter situation, MSMA rates ranged from none to 8.0 lbs. ai/A.

4. Spike/Amitrole Tank Mix- Data submitted were from 23 large nonreplicated field trials from California, Minnesota and Washington. All applications were made by ground equipment. Where comparison could be made between the tank mix and its individual components, it was apparent that Spike's performances were not significantly different whether applied alone or in a tank mix with Amitrole.

5. Spike/2,4-D Tank Mix- Data submitted were from one test trial from Kansas. In this test, Spike was mixed with 2,4-D at 2.4 lbs of 2,4-D/A plus 2.0 lbs. ai/A of Spike with no comparison against either herbicide alone. Test results showed zero perennial grass weed control, unacceptable annual weed control and 75% broadleaf weed control. Data were judged to be unacceptable and insufficient to support use of this tank mix.

202.0 Conclusions

202.1 Claims Supported by the Data Submitted

Data submitted will support use of Spike plus Roundup tank mix for total vegetation control in non-cropland areas.

202.2 Claims Not Supported by the Data Submitted

Data submitted did not support use of Spike in a tank mix with each of Paraquat, MSMA, Amitrole and 2,4-D for the following reasons: (a) In many situations, Spike's performance was not significantly different whether applied alone or in a tank mix with each of the aforementioned herbicides; (b) Unacceptable efficacy data in several test trials; and (c) Insufficient data as in the case of 2,4-D tank mix.

202.3 Additional Data Required to Support Claims and Achieve Amended Registration

202.3.1 To achieve amended registration of Spike allowing its use in a tank mix with Paraquat, MSMS, Amitrole, or 2,4-D, submit additional efficacy data at minimum rates in maximum spray volume. Note that: (a) Test trails must be from small replicated field trials and they must represent adequate geographic coverage; (b) In every test, comparison must be made between each tank mix and its individual components; and, (c) In order to show the advantages of each tank mix over its individual components, weed control measures must include weed species known to be controlled by one herbicide of a given tank mix but not by the other as well as those controlled by the tank mix but not by either herbicide. For example: If Herbicide A controls weeds 1, 2, 3, & 4; and Herbicide B controls weeds, 1, 2, 5 & 6; weed control measures of weeds 3, 4, 5, 6, 7 & 10 would be applied to evaluate product performance in the tank mix.

202.3.2 Submit tank mix compatibility (physical) data between Spike and each of Roundup, Paraquat, MSMA, Amitrole, and 2,4-D. Note that data must be at maximum rates in minimum spray volume and that reports should include variables such as water temperature (40,70, °F), pH (5,7) and hardness (50,500 ppm) as well as resuspendibility (after 1, 2, 4, and 24 hrs.) and sprayability through commercial equipment at normal operating pressure.

203.0 Label Comments

Delete from Spike label amendment submitted on 8/24/78 all recommendations pertinent to use of Spike in a tank mix with Paraquat, MSMA, Amitrole, or 2,4-D.

204.0 Recommendations

Use of Spike in a tank mix with Roundup will be accepted after submitting tank mix compatibility data as requested under section 202.3.2 above.

Sami Malak 10/30/78
Sami Malak
September 26, 1978
Registration Division, OPP