041701 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: 2/28/79

SUBJECT: Registration No's 476-2056 (-2134) [Stauffer/Dyfonate formulations]: An amendment to reduce the pre-harvest interval on sorghum.

FROM: Edward Brittin, Chemist, Residue Chemistry Branch, HED (TS-769)

TO: Product Manager #16 (F. Gee), Registration Division (TS-767)

Thru: Chief, Residue Chemistry Branch, HED (TS-769) R D Schmitt

The subject Dyfonate formulations (4 lb ai/gallon) are registered for over-the-top applications, both aerial and ground, to sorghum which is irrigated. The rates range from 0.75 lb to 1.00 lb active per acre. The accepted (12/9/1977) labels bear the following restriction; "Do not apply within 60 days of harvest; nor feed, or graze to livestock within 60 days of application. Limit postemergence use to 2 applications per crop". The pre-emergent treatments of the soil which are implied by this restriction are not specified.

Proposed Use

Stauffer's proposed new restrictions for sorghum are; "Do not apply within 14 days of harvest nor feed or graze to livestock within 14 days of application". The postemergent restriction would remain unchanged, and limits the number of applications to 2 per crop.

Stauffer has submitted (11/18/77) residue data to support the proposed changes in the existing restrictions. The tolerance (40 CFR 180.221) for Dyfonate and its oxgyen-analog in sorghum (grain, fodder, and forage) is 0.1 ppm.

Conclusions

Residues from the proposed new use are not expected to exceed the level of the established tolerance. The atypical (high) values of study FSDS No. A-7595 appear to be due to a combination of soil treatment and foliar applications. Until we obtain a better explanation for these values, we conclude that combining treatments in this way may result in residues exceeding the established tolerance.

Recommendations

We concur in the proposed amendment to the use of the product.

Note to PM:

This product recommends, for crops other than sorghum, soil treatments; but only over-the-top application (foliar) application for sorghum, and these applications are limited to 2 per crop. Therefore the term postemergence should be deleted from the restriction,"Limit postemergence use to 2 applications per crop", because it implies the pre-emergent use on sorghum is not limited.

Captafol is under review for a possible RPAR action.

Analytical Methodology

The registrant's own procedure by O'Connor and Barney (WRC 72-35R, 10-6-72 ; with limits of detection at 0.05 ppm for Dyfonate and 0.03 ppm for its oxygen analog) is considered acceptable. The residue data submitted with PP# 3F1379, which supports the tolerance for residues of Dyfonate on sorghum, is based on the same methodology.

Residue Data

Data to support the amended use (Acc. #232473, Sect I) are from locations in California (2), Texas (3), Arizona (1), Mississippi (2), Nebraska (4) and South Dakota (1).

Residue data from 1 to 3 aerial or ground applications at rates of 0.75 to 2.25 lbs ai/per acre generally show nothing detectable (less than 0.05 ppm Dyfonate and less than 0.03 ppm O-analog); but with occasional high values of up to 0.10 ppm Dyfonate, and 0.07 ppm of the O-analog, in grain and forage (or stalks) with the proposed 14 day PHI. With allowances for existing exaggeration factors; all values (of combined Dyfonate and its O-analog) at 14 days would fall at or below the level (0.10 ppm) of the established tolerance.

Several Dyfonate residue values, at the shorter interval of 7 days, cause us concern. These are reported in FSDS Nos. A-7767 and A-7597.

One of these values (1.00 ppm in forage at 7 days from 1 aerial application at 0.75 lb ai/acre) declined to 0.07 ppm during the interval between 7 and 14 days; the O-analog to less than 0.03 ppm. The combined residues did not exceed the level of the established tolerance.

Two other values (9.45 ppm in grain, and 4.94 ppm in forage, at 7 days from 2 foliar applications at 2 lb ai/acre/application and 1 soil treatment at 4 lb ai/acre) are so atypical that some explanation is necessary. It would appear that a portion of these residues are due to the absorption of soil residues of Dyfonate. In any case, these residues declined to (0.10 + 0.03) ppm in grain; and to less than (0.05 + 0.03) ppm in forage, within 7 days. With an allowance for the 2X-rate of these applications; the combined residues would not exceed the level of the established tolerance.

We do not expect residues from the proposed foliar applications to exceed the established tolerance. Our expectation is consistent with the position taken in the review of the residue data (PP# 3F1379) which supports the tolerance for sorghum. However, until we obtain a better explanation for the aforementioned atypical values, we should caution the registrant against the combining of soil and foliar treatments on sorghum.

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