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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Fonofos (Dyfonate® 20 G, EPA Reg. No. 476-2028) on sorghum (milo). Amended Registration. Accession No. 400036-01. RCB No. 1692.

FROM: Linda S. Propst, Chemist
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THRU: Andrew R. Rathman, Section Head
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ARR

TO: William Miller, PM 16
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Stauffer Chemical Company is requesting an amended registration for Dyfonate® 20 G (20% fonofos, granular formulation) on sorghum. The registrant wishes to apply Dyfonate® 20 G (1.0 lb. a.i./A) to sorghum as a band application at time of planting.

Tolerances have been established for residues of the insecticide O-ethyl S-phenyl ethylphosphonodithioate including its oxygen analog S-ethyl S-phenyl ethylphosphonothiolate) in or on sorghum (grain, fodder, and forage) at 0.1 ppm (negligible residue) 40 CFR 180.221.

The Product Chemistry and Residue Chemistry Chapters of the Fonofos Registration Standard were completed October 6, 1983.

The currently registered use of fonophos on sorghum allows for two foliar applications to irrigated crops only. Apply "over the top" at rates as high as 1.0 lb. a.i./acre using aerial application equipment. Do not apply within 14 days of harvest nor feed or graze to livestock within 14 days of application. Dyfonate® 10G and Dyfonate® 15G are limited to Texas at 0.75 lbs. a.i./acre; Dyfonate® 4 EC has no geographic restrictions.

The proposed amended registration would allow a 6-8 inch band application using 5 pounds (1 lb. a.i./acre) of Dyfonate® 20G (6 ounces per 1000 linear feet of row) at planting. Incorporate into the soil by making application of press wheels or by dragging a short length of chain behind the press wheels. Do not apply

Dyfonate® 20G in furrow. Do not place Dyfonate® 20G in direct contact with the seed.

Data reviewed in the Fonofos Registration Standard reflected residues on sorghum from four studies conducted in Texas using 1 lb. a.i. per acre of 10G applied in-whorl with ground or aerial application and with PHIs of 90-109 days. All residues were reported as <0.05 ppm fonofos and <0.03 ppm oxon. One study at 1 lb. a.i./acre, air application had shown a combined residue of 0.05 ppm with a 91-day PHI. Two MS studies with PHI of 7 and 14 days, showed no detectable residues from a combination of both PPI and in-whorl (ground) applications at up to 8 lbs. a.i./A in 3 applications, using both 10G, 20G, and 4E formulations. Since the label allows a short PHI, there is a possibility of residues in the grain which could transfer to processed commodities.

The Residue Chemistry Chapter of the Fonofos Registration Standard concluded that the number of studies was not sufficient to support the use pattern with a short PHI (14 days). Residue data from representative growing areas reflecting the 14-day PHI must be submitted. Upon evaluation, a decision will be made on the necessity for residue data on processed commodities.

Data from seven studies (six in Texas, one in Nebraska) reflecting residues of fonofos on sorghum were submitted with this request. Dyfonate® 10G and Dyfonate® 20G were applied to sorghum as a preplant band application using rates ranging from 1 lb. a.i./acre to 12 lbs. a.i./acre. Some sorghum received an additional post-emergence application in the whorl with rates ranging from 1 to 4 lbs active/ acre. PHIs ranged from 7 to 465 days. All fonofos and its oxygen-analog residues were reported as <0.05 ppm in the whole plant, fodder, and grain. The majority of the oxygen-analog residues were reported as <0.03 ppm.

There were no data submitted reflecting residues of fonofos and its oxygen analogue in the processed fractions of sorghum.

Conclusions and Recommendations

From the residue trials submitted with this request, we conclude that the established tolerance of 0.1 ppm in or on sorghum (grain, fodder, and forage) will be adequate to cover any residues of fonofos and its oxygen analog which may occur on these raw agricultural commodities as a result of this amended registration.

Although no residues of fonofos were detected in sorghum grain even at exaggerated application rates, RCB will still require that sorghum grain from these exaggerated studies be processed to determine if residues of fonofos or its oxygen analog concentrate in the processed fractions. (These data need not be submitted prior to granting this at planting use).

If the processed commodities do contain detectable residues, then a food/feed additive tolerance is needed.

We recommend for the proposed amended registration.

cc: Reading File, Subject File, Circulation, Reviewer, Fonofos
Reg. Stds. File, PMSD/ISB
RDI:A. R. Rathman, 1/20/87; R. D. Schmitt, 1/20/87
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