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

OCT 17 1989

OFFICE OF  
PESTICIDES AND TOXIC SUBSTANCES

**MEMORANDUM**

**Subject:** Georgia Special Local Needs Registration for the Fungicide Pentachloronitrobenzene (PCNB, GA890003) on Peanuts. No MRID Number. DEB#5797.

**From:** Stephen R. Funk, Chemist  
Special Registration Section I  
Dietary Exposure Branch  
Health Effects Division (H7509C) *S.R. Funk*

**Thru:** Andrew Rathman, Section Head  
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**To:** Susan Lewis and Jim Stone, PM21  
Registration Division (H7505C)

Background

The State of Georgia has proposed changing the use pattern of Terraclor 10G (Pentachloronitrobenzene 10%) for peanuts. The current labeling specifies application at a rate of 50 to 100 pounds of 10% product formulation per acre with a 12 to 18 inch band centered over the peanut row (36 inch row spacing). Either single or split applications are permitted. The State of Georgia proposes lowering the rate of application to 25 pounds (two applications) or 50 pounds (one application) per acre of 10% formulation and decreasing the band width to 0 (drop tube) to 6 inches. Either single or split application is during pegging (50 to 70 days after planting). This use is requested under FIFRA, Section 24(c), local need registration.

Terraclor 10G is 10% granular pentachloronitrobenzene (PCNB). An interim tolerance of 1.0 ppm exists (40CFR180.319) and applies only to the kernels. No tolerance exists for peanut hulls. In 1983, Olin Corporation proposed permanent tolerances for total combined

residues of the fungicide PCNB and its metabolites, pentachloroaniline and methyl pentachlorophenyl sulfide, and its impurities, hexachlorobenzene and pentachlorobenzene, in or on peanuts (kernels). The proposed tolerance was 2 ppm total residue, including a 0.4 ppm (maximum) hexachlorobenzene. Total annual application of PCNB on peanuts was limited to 10 lb a.i./A and peanut vine and hay feeding restrictions were imposed. The tolerance petition has not been finalized.

### Discussion

The proposed use reduces the amount of PCNB applied per acre, and modifies the application from a 12 - 18 inch band centered over the row to a 0 - 6 inch band over the row. All previous residue data for application during pegging used band widths of 12 inches or more. No study exists on the effect of band application size on residue levels. There is no data on PCNB residues for band applications of 6 inches or less.

Application of 117 pounds of 10% PCNB (11.7 lbs. a.i./A.) per acre in a 12 inch band yields 8.06 pounds/square foot, considering only the area of direct contact. Application of 50 pounds per acre in a point (drop tube) application (assume 1 inch band) yields 48 pounds/square foot, considering only the area of direct contact. The maximum band proposed (6 inches) yields 8.06 pound/square foot direct contact, equivalent to 117 pounds per acre in a 12 inch band. All assume a 36 inch row spacing. The effect of a six fold increase in concentration (1 inch band) directly over the peanut plant is unknown. Residue studies under the proposed conditions of very narrow band application and of resulting effective high concentration of fungicide per plant surface are required to determine the quantity of total PCNB residue on the peanut (kernel).

Total residues, including PCNB and its metabolites and impurities, ranged as high as 1.4 ppm from 7 - 21 inch band applications of 10% PCNB (10 lbs. a.i./A.) at planting time (not at pegging) in 1969 - 1971 Olin Corporation studies in Texas, Georgia, and Oklahoma. Hull residues are typically higher (2.6 ppm max in this study). A 1972 Oklahoma crop study (Olin Corp., CASR-16-73, Supp. 1, 9-20-73) showed a total residue of 0.602 ppm (0.5 ppm PCNB) from the application of 100 lbs of 10% PCNB (10 lbs. a.i.) per acre at pegging. A factor of 2 increase or a factor of 4 increase, possibly resulting from narrow band application, would place the residue over the interim and proposed tolerances, respectively.

Residues of PCNB and HCB were lower when Terraclor 10G was applied at rates below 10 pounds active ingredient per acre, at planting. Olin Corporation studies (1971) where the pounds active ingredient per acre were varied at planting from 1 to 10 pounds showed an approximately linear relationship between total residue and amount of PCNB applied. However, other studies (Olin Corp., 1972, NC and

VA) showed no significant difference in residues from 5 lb a.i./acre and 10 lb a.i./acre applications at pegging. For the present request, no quantitative value can be placed upon the reduction in residues, if any, accompanying a reduction in total amount applied, but no residues over the 1 ppm interim tolerance are expected provided the minimum band width is 6 inches.

#### Conclusions

1. The proposed use will not result in exceeding the interim tolerance, provided a minimum 6 inch band width is used. The lowering of the amount of PCNB applied per acre offsets the decreased band width.
2. No permanent tolerance exists for PCNB on peanuts. Therefore, any 24c registration use would be revoked upon termination of the interim tolerance.

#### Recommendation

DEB recommends for the proposed change, per GA-890003, but with the provision that the label be revised to specify a minimum band application of 6 (six) inches. The amount of PCNB applied per acre is reduced by about 50%, but this is offset by lowering the application band from 12 to 18 inches to 6 inches. The six inch band with a 50 lb/acre application rate approximates a 100 lb/acre application rate with a twelve inch band, the currently approved use. With reduced band application, such as six inches or less, the fungicide is concentrated directly over the center of the plant, rather than spread over the entire plant and surrounding soil. If a band of less than six inches is needed, per the request, then residue data from the proposed application method must be submitted to substantiate that the 1.0 ppm interim tolerance is not exceeded. Additionally, such a study should include determinations of PCNB's metabolites and impurities, especially hexachlorobenzene (HCB).

cc: RF, SF, PP#1F1083, R. Schmitt (Branch Chief), Funk, Circ., Eldridge (PMSD, ISB).

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