C. Furlow
PIB/FOB

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

MAY 24 1990

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: LA-900004. Mancozeb. In-furrow Sprays on Cottonseed.
No MRID #. DEB # 6562.

FROM: Leung Cheng, Chemist
Special Registration Section II
Dietary Exposure Branch
Health Effects Division (H7509C)

THRU: Francis Suhre, Section Head
Dietary Exposure Branch
Health Effects Division (H7509C)

TO: Susan Lewis/Jim Stone, PM Team # 21
Fungicide-Herbicide Branch
Registration Division (H7505C)

Louisiana has issued a Section 24 (c) registration for the use of Dithane F-45 (EPA Reg # 707-156, 4 lbs ai/gal) as an in-furrow treatment on cotton. The active ingredient is mancozeb, a coordination product of zinc ion and manganese ethylenebisdithiocarbamate. The registrant states that other 24 (c)'s for this use have been granted (MS-890005, AR-890006, LA-890003).

A tolerance of 0.5 ppm for residues of mancozeb is established on cottonseed resulting from foliar applications. However, the PM noted that food (foliar) use of mancozeb on cotton was voluntarily cancelled effective January 1, 1990, but seed treatment was retained. DEB has been asked to determine whether this in-furrow use is a food use or a seed treatment.

The Residue Chemistry chapter (8/15/86) concluded that seed treatments are no longer automatically considered to be non-food uses, and appropriate data reflecting seed uses are required.

This Section 24 (c) registration permits in-furrow sprays for early season control of soilborne seedling disease. Sprays of 2.4 quarts Dithane F-45 (2.4 lbs ai) per acre should be applied in a minimum of 5 gallons water and be directed between the seed drop opening and seed covering device. Do not use more than 2.4 quarts per acre with a 36-40 inch row spacing (13,068-14,520 linear feet of furrow).

In-furrow application, like foliar spray or preplant incorporation, is just one mode of pesticide application used in agriculture. It is not the same as seed treatment.

No residue data were submitted with this Section 24 (c) request. Residue data reflecting multiple (5) foliar applications of 1.6 and 3.2 lbs ai/A were discussed in the Residue Chemistry chapter of 8/16/86 and finite residues of mancozeb (up to 0.93 ppm from the low rate and up to 3.7 ppm from the high rate, PHI = 11 days) and its major metabolite ethylenethiourea, ETU (up to 0.09 ppm, PHI = 11 days) were found in cottonseeds. Normally, foliar residue data would support in-furrow treatments if the latter use involves a lower use rate. However, the foliar data are considered to be inadequate due to lack of storage duration or conditions of the cottonseed samples. Both mancozeb and its major metabolite ethylenethiourea are known to break down rapidly, even at frozen temperatures.

In response to the seed treatment residue data gap, Rohm and Haas Company submitted a study on the treatment of cottonseed with radiolabeled mancozeb (MRID # 408697-17). Briefly, cottonseeds were mixed in a slurry with carbon-14 mancozeb on a rotary shaker to ensure uniform coating of the seeds. The rate used was 4 oz ai/100 pounds of seed; the current label permits 4.8-9.6 fl oz Dithane 45 F (0.15-0.3 lb ai) per 100 pounds of seed. Treated seeds were planted and samples of cotton seeds, stems and leaves were harvested for radioanalysis (in triplicate). All fractions had no detectable activity (<0.01 ppm). No residue data showing levels of mancozeb residues in cottonseeds, stems and leaves harvested from cotton plants grown from treated seeds are available.

The radiotracer study discussed above is also not adequate to support the proposed in-furrow use. On the premise that 8-25 lbs of seeds may be planted in an acre and assuming uniform coating of the pesticide on individual seeds, the in-furrow use rate is equivalent to treating 100 pounds of seeds with a minimum of 9.6 lbs of mancozeb. Thus, cottonseed may contain finite residues of mancozeb as a result of in-furrow use.

Furthermore, to add uses to the label for crops which were voluntarily cancelled by the registrants will require full supporting data and a risk assessment showing acceptable risk, as stated in the 12/28/89 letter from A. Lindsay (RD) to J. Ollinger (Rohm & Haas). The PM should note that cottonseed was not listed as a deleted use but was also not listed as a remaining use.

CONCLUSIONS AND RECOMMENDATION

The in-furrow treatment pattern described in this Section 24 (c) registration is one mode of pesticide application and is not

the same as seed treatment. The proposed use is a food use.

The Residue Chemistry chapter concluded that the residue data resulting from cotton foliar use which normally would cover in-furrow treatments are inadequate. In the absence of residue data reflecting the proposed use, DEB can not recommend in favor of this Section 24 (c) registration. The PM should deny this and all other 24 (c) applications involving this use pattern.

cc:Circ, RF, 24 (c) F, Cheng, FOD/PIB
RDI:SHummel:5/21/90:EZager:5/22/90
H7509C:DEB:CM#2:Rm810:Cheng:5/11/90:1: