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

JAN 31 1986

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Subject: Amended registration for aerial application of methomyl (two formulations) on strawberries. Nudrin® 90 (EPA Reg. No. 201-324). RCB#288. Nudrin® 1.8 (EPA Reg. No. 201-347). RCB#289.

From: Michael S. Metzger, Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

Thru: Edward Zager, Section Head, SRS 2
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

To: Jay S. Ellenberger, PM-12
Registration Division (TS-767)

Shell Oil Company proposes amended registration which would allow aerial application of Nudrin® 90 and Nudrin® 1.8 (active ingredient methomyl) for insect control on strawberries.

Nudrin® 90 is a water soluble powder containing 90% methomyl. Nudrin® 1.8 is a liquid formulation containing 1.8 lb.a.i./gal.

Tolerances for methomyl residues have previously been established for a large number of agricultural commodities. These range from 0.1 ppm (corn) to 40 ppm (dry, dehydrated Bermuda grass hay). The tolerance established for strawberries is 2 ppm.

Nudrin formulations are currently registered for use on strawberries at a maximum application rate of 0.9 lb.a.i./A with an unspecified maximum number of applications. Intervals between applications are also unspecified. Applications can be made by ground equipment only, and PHI's of 3 days for fresh and 10 days for processed strawberries are required. The 10 day PHI for processed strawberries is based largely on taste considerations.

The proposed new use for Nudrin would allow aerial applications as well as ground applications. Other uses would remain unchanged.

Methomyl residues of concern include the parent compound (principal residue) and 5-methyl-N-hydroxythioacetimidate (methomyl oxime). It has recently been suggested that acetamide may also be a methomyl metabolite (R.W. Cook,

memo, Nov. 23, 1984). The analytical method used determines the total methomyl and methomyl oxime residues. A sample of the RAC is blended with ethyl acetate. The residues are partitioned into water and the solution is acidified. This is followed by extraction into chloroform, volume reduction and treatment with sodium hydroxide to hydrolyze the methomyl to the oxime. The solution is again acidified, the residues extracted into ethyl acetate, and the volume reduced. Analysis of the total residue determined as the oxime is accomplished using GLC with a flame photometric detector (Pease 1969, 00009074). Sensitivity is 0.02 ppm.

No new residue data was supplied with this amended registration. Residue data submitted previously for strawberries (096079; 7F1948) showed residue ranges of 0.25-1.3 ppm, 0.16-0.61 ppm, and 0.25-0.38 ppm for 0.45, 0.9 and 1.8 lb.a.i./A respectively. 3 to 5 applications were made at 5-7 day intervals, and the PHI's were 3 days. All of this data was for ground application of Nudrin.

The submitter also cites data submitted previously for aerial applications of methomyl on crops other than strawberries (Acc. No. 253221). In these studies, only two trials were carried out in which the same application rates, number of applications, and PHI's were used for both aerial and ground applications. Both were carried out on crops unrelated to strawberries. In the first, residues in or on nectarines were <0.05 and 0.23 ppm for aerial and ground applications respectively. The application rate (single application) was 0.9 lb.a.i./A with a PHI of one day. Residues in or on peppers were <0.05 and 0.05 ppm for ground and aerial applications respectively, 0.9 lb.a.i./A, and a 10 day PHI.

A 1981 report (Registration Standards, 7.4) states that for most crops, residues resulting from aerial applications were similar to those found from ground applications, but that aerial applications were found to sometimes result in much higher residues on some crops. No data reflecting aerial applications to strawberries or related crops are available.

CONCLUSIONS AND RECOMMENDATIONS

Levels of residues of methomyl on strawberries resulting from aerial application of the pesticide cannot be determined because there is insufficient data available reflecting aerial applications to strawberries or related commodities.

Consequently, RCB recommends against the amended registration.

cc:R.F., circu, M.Metzger, Methomyl (Nudrin) S.F., Amended use file, PMSD/ISB
RDI:E.Zager:EZ:1/31/86:RDS:1/31/86
TS-769:RCB:M.Metzger:MM:Rm810:1/31/86

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