4-16-91 R.F.

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

APR 16 1991

MEMORANDUM:

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: EPA Reg. No 3125-320 and 3125-340. Bayleton on Grapes. Proposed amendment to increase total amount applied in a season.
MRID No.418094-00 (Transmittal) and -01 (Residue Study)
DEB No. 7785. DP Barcode No. D162704.

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Mobay has proposed to revise the registration for the use of Bayleton® 50% Wettable Powder (EPA Reg. No. 3125-320) and Bayleton® 50% Wettable Powder in Water Soluble Packets (EPA Reg. No. 3125-340) on grapes to increase the maximum amount of product which can be applied per season from 18 to 24 ounces per acre. The assignment instructions are to determine if residues will remain within tolerance with the proposed amendment.

Tolerances for residues of Bayleton (triadimefon) [1-(4-chlorophenoxy)-3,3-dimethyl-1(1H-1,2,4-triazol-1-yl)-2-butanone] and its metabolites containing chlorophenoxy and triazole moieties are set at 1.0 ppm in or on grapes (40 CFR 180.410).

Proposed Amendment

Mobay is proposing the following revisions for the registration for use of Bayleton 50% Wettable Powder on grapes:

1. The current label permits use on grapes at rates of 2 to 6 ounces per acre (1-3 oz ai/A).. Multiple applications can be made at 7 to 21 days, with the maximum amount of product which can be applied per season being 18 ounces (9 oz ai) per acre. The proposed revision is to increase this maximum amount to 24 ounces (12 oz ai) per acre per season, with a PHI of 14 days.

2. The current label states that a minimum of 20 gallons of spray solution per acre should be used by ground equipment except as noted for each crop. The proposed revision would state that the recommended dosage for grapes should be supplied in a minimum of 50 gallons of spray solution per acre and this volume should be increased as vine growth increases.

3. Current directions for control of powdery mildew state that the first application should be made pre-bloom and continued at 14- to 21-day intervals. The proposed revision would state that preventative applications should be made before the disease becomes established. Applications should be made to new cane growth or according to local recommendations. The 14- to 21-day spray interval has not changed.

4. For black rot control, the current label has rates of 2 to 3 oz/acre for protective applications and 3 to 4 oz/acre for post-infection applications. The proposed revision would eliminate the ranges and recommend 3 oz/acre and 4 oz/acre, respectively.

5. Current directions for black rot protective schedule indicate that applications should begin at 10-inch green shoot and continue at 7- to 14-day intervals. The proposed revision states that applications should be made at the 6- to 10-inch green shoot and continue at 14-day intervals.

6. Current specific directions for the black rot post-infective schedule allow applications at 7-day spray intervals. The proposed revisions state that the post-infective schedule may be followed if weather monitoring equipment is used to calculate the average temperature and duration of leaf wetness periods for proper timing of applications. Applications should be made no closer in any event than 14 days after the previous application.

Residue Trials

In support of its application, Mobay submitted the report "Triadimefon-Magnitude of the Residue on Grapes, 50DF," January 11, 1991 (MRID 418094-01). This report gives the results of seven crop field trials conducted in locations in California, Oregon, Washington, New York, and Michigan. These states account for about 99 percent of grape production in the U.S. (Agricultural Statistics, 1986)

Crop field trials were conducted with Bayleton formulation 50DF, the 50% dry flowable formulation, with 3 oz active ingredient per acre (6 oz/acre of the powder), sprayed in 50 to 300 gallons. The dry flowable formulation and the wettable powder each contain 50% active ingredient, and are considered equivalent. For each field trial, the first application occurred at a fruiting stage.

The chemicals of concern as residues are triadimefon (Bayleton), triadimenol (Baytan), and their corresponding t-butylhydroxy metabolites, designated KWG 1323 and KWG 1342, respectively. Total residues represent the sum of these four compounds.

Summary of Residue Data from Field Trials:

Trial/ Site	PHI, days	Bayleton, ppm	Baytan, ppm	KWG 1342, ppm	KWG 1323, ppm	Total ppm
1/OR	0	0.17	0.20	0.04	0.04	0.45
	14	0.10	0.17	ND	0.01	0.28
	21	0.04	0.16	0.01	ND	0.21
	28	0.03	0.09	0.01	ND	0.13
2/WA	0	1.30	0.30	ND	0.01	1.61
	7	0.17	0.15	0.01	0.01	0.34
	14	0.29	0.30	ND	ND	0.59
	21	0.38	0.40	0.01	0.01	0.80
3/CA	0	0.51	0.04	ND	0.01	0.56
	14	0.07	0.01	ND	ND	0.08
	21	0.03	ND	ND	0.01	0.04
	28	0.02	0.02	ND	ND	0.04
4/CA	0	0.11	0.05	ND	0.01	0.17
	14	0.02	ND	ND	ND	0.02
	21	0.02	ND	ND	ND	0.02
	28	0.02	0.01	ND	ND	0.03
5/CA	0	0.22	0.33	ND	0.02	0.57
	14	0.12	0.45	0.01	ND	0.58
	21	0.17	0.61	ND	ND	0.78
	28	0.05	0.24	0.01	ND	0.30
6/NY	0	0.77	0.30	0.02	0.03	1.12
	14	0.21	0.38	0.02	0.03	0.64
	21	0.15	0.39	0.01	0.01	0.56
	28	0.11	0.30	ND	0.01	0.42

Trial/ Site	PHI, days	Bayleton, ppm	Baytan, ppm	KWG 1342, ppm	KWG 1323, ppm	Total ppm
7/MI	0	0.15	0.16	ND	0.01	0.32
	14	0.02	0.13	ND	ND	0.15
	21	0.02	0.11	ND	0.01	0.14
	28	0.02	0.13	ND	0.01	0.16

Table notes: ND=<0.01
Each field trial was conducted using four foliar applications at the rate of 3 oz ai/acre each with ground spray. Application intervals were 14 days except for trial 2 (intervals of 15, 17, and 11 days) and trial 4 (intervals of 15, 13, 14 days).

For four of the field trials, total Bayleton residues at 14 days PHI were 0.28 ppm or less. For three trials, residues were somewhat higher. The highest residue values for each of these trials were: Trial 2, 0.80 ppm at 21 days PHI; Trial 6, 0.78 ppm at 21 days PHI; Trial 7, 0.64 ppm at 14 days PHI.

Method

The analytical method is described in Mobay Method No. 80488. This method has been tested by methods trial and validated for determination of Bayleton and metabolites relevant to 40 CFR 180.410 on plant commodities (M. Firestone, EPA, 4/3/86, PP 4F3148).

Under this standard method, Bayleton and metabolites are extracted with a methanol-water mixture which is filtered to remove solids. The filtrate is evaporated to the aqueous phase which is incubated with a cellulase enzyme solution, to remove conjugated residues. Bayleton and metabolites are then extracted with dichloromethane (DCM). The DCM extract is evaporated to dryness and the residue is dissolved in chloroform and subjected to gel permeation chromatography and cleanup with a Florisil column, which separates the sample into one fraction with Bayleton and Baytan; and one fraction with metabolites KWG 1323 and KWG 1342. KWG 1323 and KWG 1342 are derivatized to an ester by trifluoroacetic anhydride. The ester is analyzed by gas phase chromatography with a nitrogen detector. Bayleton and Baytan can be measured directly by gas phase chromatography without derivatization.

The procedure used in support of the proposed amendment had some alterations to the validated method. In addition to minor changes, these include the use of a different solvent prior to the gel permeation step and replacement of the Florisil column with a reverse phase LOBAR column. It appears that the reason

for the column change is that with the Florisil column, there may be coelution of KWG 1323 with the Bayleton/Baytan fraction (Phase 3 Summary of Residue Analysis Procedure, May 4, 1990, MRID 92188-042, Triadimefon List B File) Recoveries of fortified samples at the 0.1 ppm level with this modification were 99 percent or more for Bayleton and Baytan, and 69-120 percent for the KWG metabolites. Recoveries during methods trials were at least 75 percent for Baytan and at least 80 percent for Bayleton and KWG metabolites (M. Firestone, EPA, to A. Marcotte, FDA, April 9, 1986, PP 4F3148). The changes to the method here should not significantly reduce detection of Bayleton and its metabolites.

With regard to the trials (Trials 2, 6, and 7) in the table above with relatively high residue concentrations, concurrent recoveries of fortified samples were 99 percent or more for Bayleton and Baytan, the compounds at highest concentration.

Conclusion

The proposed revision, application rates of 1-3 oz ai per acre, with the maximum amount of product to be applied per season of 12 oz ai per acre, with intervals between applications at least 14 days, and a PHI of 14 days, should not cause the tolerance in or on grapes of 1.0 ppm to be exceeded.

Recommendation

CBII-RS has no objection to the registrant's proposal to amend the registered use of Bayleton Wettable Powder and Bayleton Wettable Powder in Water Soluble Packets on grapes by increasing the maximum application rate from 9 oz to 12 oz ai per acre per season.

cc:Circ, SF, RF, Abbotts, PIB/FOD (C. Furlow), Amended Use file
RDI:FBSuhre:4/15/91:EZager:4/15/91
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