

US EPA ARCHIVE DOCUMENT

3-9-92  
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PESTICIDES AND TOXIC  
SUBSTANCES

MAR 9 1992

MEMORANDUM

SUBJECT: ID HI-920003. Triadimefon: 24 (c) on pineapple processed commodities in the State of Hawaii. CBTS # 9336. HED # 2-1300. DP Barcode D174365. MRID # n/a.

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TO: Cynthia Giles-Parker, PM 22  
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and  
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The Mobay Chemical Corporation, Agricultural Chemicals Division, is requesting a 24 (c) registration for the use of Bayleton (EPA Reg. No. 3125-320) on pineapple processed commodities in the state of Hawaii.

Tolerances are established for the combined residues of the fungicide Bayleton [1-(4-chlorophenoxy)-3,3-dimethyl-1(1H-1,2,4-triazol-1-yl)-2-butanone] and its metabolites containing chlorophenoxy and triazole moieties (expressed as the fungicide) on various crops and commodities of animal origin from 0.04 ppm to 105 ppm (40 CFR 180.410). A tolerance of 3 ppm is currently established on pineapples.

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A tolerance with regional registration is established for the combined residues of this fungicide and its metabolites at 2 ppm on raspberries (40 CFR 180.410).

Food additive tolerances for Bayleton are established on barley and wheat milled fractions (except flour) at 1 ppm each (40 CFR 185.800). Feed additive tolerances are established for Bayleton on dry and wet apple pomace at 4 ppm, wet and dry grape pomace at 3 ppm and raisin waste at 7 ppm (40 CFR 186.800). However, no food/feed additive tolerances are established for pineapple byproducts.

Bayleton is a List B chemical. A phase IV review was completed (S. Funk, 01/24/91). The latter stated that data are required for the postharvest use on pineapples. The registrant committed to supply such data.

### CONCLUSIONS

1. Residues of triadimefon and its metabolites in pineapples from the proposed 24 (c) use are not expected to exceed the existing 3 ppm tolerance.
2. The proposed seed piece treatment could result in residues in pineapple forage and fodder. In the absence of residue data for these feed items, the registrant should impose a label restriction against feed use of forage and fodder.
3. Although we question the practicality of the proposed restriction against feeding by-products to animals, the established tolerances for meat and milk are adequate to cover feeding of pineapple bran. Residues in pulp and juice are considerably lower than those in the whole fruit.

### RECOMMENDATION

Provided a label restriction is imposed against the feeding of pineapple forage and fodder, we have no objection to this 24 (c) registration.

We note that the restriction against feeding by-products could be deleted if a feed additive tolerance were established for pineapple bran. We suggest that a feed additive petition proposing a feed additive tolerance of 5 ppm be submitted.

We emphasize that our recommendation for this use depends upon the proposed postharvest use having a lower rate than that already registered. This recommendation does not negate the need for additional data to reregister Bayleton on pineapples.

## DETAILED CONSIDERATIONS

The current registered use for Bayleton (50% Dry Flowable Fungicide), permits applications to pineapple (fresh market only). The registration allows for a postharvest treatment using 6.6 ounces of ai in 100 gallons of water to fruit after harvest. Fruits should be dipped or sprayed for thorough coverage and allowed to drain.

The proposed use in this 24 (c) registration is for a preplant seed piece application or post harvest fruit treatment. Preplant application is made by applying 1.3 to 4.5 ounces of ai in 100 gallons of water as a planting material dip. Seeds should be immersed for thorough wetting before planting. Post-harvest application is made by applying 1.3 to 4.5 ounces of ai in 100 gallons of water or wax-water after harvest. Fruit should be dipped or sprayed for thorough coverage and allowed to drain. Limit dipping time to not more than 3 minutes. Fruit discarded from fresh fruit packing operation may be used for processing. By-products resulting from processed fruit shall not be fed to animals. Do not apply this product through any type of irrigation system.

The nature of the residue in plants and animals is adequately understood for the purpose of this 24 (c) registration. The residues of concern are triadimefon and its metabolites KWG-0519, KWG-1342 and KWG-1323.

There are adequate and validated enforcement methods for triadimefon published in PAM II (Sec. 180.410, methods I and II). Triadimefon residues in pineapple were determined by gas chromatography equipped with a thermionic specific detector operating in the nitrogen mode. The limit of detection is 0.01 ppm.

The proposed use would permit both seed piece and postharvest treatments of the same crop. However, as noted in our 9/9/82 review of PP#2F2688, we expect residues in mature pineapples from the seed piece treatment to be low in comparison to those from postharvest application. Taking into account that the proposed rate for postharvest use is less than the registered use, we conclude that the 3 ppm tolerance on pineapples is adequate to cover residues from the requested 24 (c) registration. Data in PP#2F2688 reflecting 500 - 700 ppm postharvest use (up to 2X proposed rate) showed maximum residues of 2.23 ppm (versus 3 ppm tolerance).

The proposed seed treatment could result in residues in pineapple forage and fodder. In the absence of residue data for these items, the registrant should impose a label restriction against feed use of forage and fodder.

The proposed use also deletes the current limitation that treated pineapples are for the fresh market only. As shown below, data have been submitted for processed pineapple fractions.

Residues in pulp and juice were lower than the rac, while the feed item pineapple bran had higher residues than the fruit. The proposed label prohibits the feeding of by-products to animals. Although we question the practicality of this restriction, our analysis below shows that existing meat and milk tolerances are adequate. If a feed additive tolerance were established for pineapple bran, this label restriction could be deleted.

A field study was conducted to determine triadimefon residues which could result in processed pineapple fractions following treatment with Bayleton. A single dip application was made at a 5X exaggerated rate of 33.33 ozs. ai/100 gallons. Fruits were collected immediately following the dip application for processing into slices, bran, waste pulp, skins, juice and syrup. Total residues of triadimefon plus its metabolites in unprocessed whole fruit (rac) and pineapple processed products are shown in table I. The only processed commodity to show a concentration of residue from the unprocessed whole fruit was bran, in which a concentration factor of 1.29 was calculated.

Table I. Total maximum residue data and concentration factors for triadimefon and metabolites KWG-0519, KWG-1342 and KWG-1323 in pineapple and processed commodities.

Sample (ppm)	Triadimefon (ppm)	KWG-0519 (ppm)	KWG-1342 (ppm)	KWG-1323 (ppm)	Total max. res. (ppm)	Conc. factor <sup>1</sup>
whole fruit	12.01	0.28	<0.10	<0.10	12.29	--
pulp	0.04	<0.01	<0.01	<0.01	0.04	<1.0
bran	13.97	1.83	<0.01	<0.01	15.80	1.29
waste pulp	<6.0	0.62	<0.01	<0.01	<6.0	<1.0
skins	3.66	1.31	<0.01	<0.01	4.97	<1.0
juice	<6.0	<0.14	<0.01	<0.01	<6.0	<1.0
syrup	<6.0	<0.14	<0.01	<0.01	<6.0	<1.0

1. Calculated on the basis of total maximum residues in the whole fruit.

CBTS concludes that the suggested feed additive tolerance of 5 ppm for triadimefon on pineapple bran is adequate.

Table II was taken from PP#6F3419. This table illustrates the residues of triadimefon and its metabolites found in milk and tissues of cattle fed at 25, 75 and 250 ppm.

Table II. Maximum triadimefon and its metabolites residues at various feeding levels.

Commodity	Feeding levels in ppm		
	25	75	250
milk	0.014	0.035	0.076
liver	0.093	0.287	1.0
kidney	0.412	0.787	2.27
muscle	<0.01	0.019	0.043
fat	0.024	0.086	0.211

Table III shows the resulting dietary exposure upon cattle fed with triadimefon on pineapple bran at 5 ppm.

Feed type	% Diet	Residue level (ppm)	Pesticide intake (ppm)
wheat	25	15	3.750
pineapple bran	40	5	2
Total	65		5.750

Extrapolating from the feeding studies in table II, CBTS estimates that residues ranging up to 0.003 ppm in milk, 0.021 ppm in liver, 0.095 ppm in meat by-products, <0.01 ppm in muscle and 0.006 ppm in fat of cattle; could result from the proposed use of triadimefon on pineapple bran. CBTS concludes that the established tolerances in the meat (1.0 ppm), fat (1.0 ppm), meat by-products (1.0 ppm) and milk (0.04 ppm) of cattle; are adequate to cover secondary residues arising from the use of pineapple bran as an animal feed item.

cc: SF, RF, Circu., C. Furlow (PIB/FOD), José J. Morales, E. T. Haeberer, Triadimefon 24 (c).

H7509C: Reviewer (JJM): CM#2: Rm 814-A: 305-5079: typist (JJM): 3/2/92.

RDI: E. T. Haeberer (3/2/92): R. Loranger (3/5/92)