11-3-93

MEMORANDUM

SUBJECT: ID#: 003125-UEU. **Triadimenol** (Baytan 2.6 FS) for Use as a Seed Treatment in or on **Wheat**, **Barley** and **Oats**. Evaluation of Analytical Method and Magnitude of the Residue Data.
MRID Nos.: 427121-01, 426963-08, -09
CBTS No: 11690
DP Barcode: D189881

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and

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Miles, Inc. has submitted crop field trial data to support the registration of a new triadimenol flowable formulation, BAYTAN 2.6 FS, for use as a seed treatment on wheat, barley and oats. This submission consists of the application form, a CSF, a proposed label for BAYTAN 2.6 FS Seed Treatment Fungicide, and three volumes of field trial data for wheat, barley and oats. RD has requested that CBTS review the data and determine if existing tolerances are adequate to cover residues likely to occur as a result of application of BAYTAN 2.6 FS as a seed treatment to wheat,

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TRIADNOL .001

barley and oats.

CONCLUSIONS

1. The manufacture of technical triadimenol has been adequately discussed in previous reviews. Impurities in the technical product are not likely to cause a residue problem. Clearance of the inerts in this formulation is under the purview of RD.

2. CBTS concludes that the proposed use directions submitted for BAYTAN 2.6 FS for use on wheat, barley and oats as a seed treatment are adequate and reflect the application pattern used to generate residue data presented in support of this registration request.

3a. Adequate analytical methodologies are available in PAM II for the enforcement of the existing/suggested tolerances in/on wheat, barley and oats.

3b. Miles Method 80488, with modifications as described in this submission, has been adequately validated for the collection of residue levels of triadimenol and its butanediol metabolite, KWG-1342 in/on wheat, barley and oat grain, forage and straw.

4a. The geographic representation of the available wheat, barley and oat residue data is adequate to support registration of Baytan 2.6 FS for use as a seed treatment in/on wheat, barley and oats.

4b. CBTS concludes that existing tolerances established under 40CFR §180.450 for residues resulting from the application of the active ingredient, triadimenol, to wheat, barley and oats are adequate to cover residues in/on wheat forage and grain, barley forage and grain and oat forage and grain likely as a result of the proposed use in this submission.

4c. The existing triadimenol tolerances for wheat straw, barley straw and oats straw are not adequate to cover residues of triadimenol and its butanediol metabolite likely as a result of the use proposed in this submission. Prior to Section 3 registration of this formulation for use as a seed treatment, CBTS will require either substantial evidence to invalidate the over-tolerance residue reported for wheat straw, or will require amendment of 40CFR §180.450 to increase the tolerances for wheat straw, barley straw and oats straw to 0.2 ppm.

4d. CBTS concludes that residues of triadimenol and its butanediol metabolite in processed grain commodities are not likely to exceed the established RAC tolerances for wheat, barley and oats. No food additive tolerances are required to support registration of this formulation.

5. CBTS concludes that existing tolerances are adequate to cover secondary residues of triadimenol likely to occur in animal commodities as a result of the seed treatment use

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proposed in this registration request.

6. The frozen stability of residues of triadimenol and its butanediol metabolite in wheat, barley and oat RACs have been adequately demonstrated for the time period under which field trial samples were stored.

RECOMMENDATIONS

CBTS cannot, at this time, recommend in favor of registration of Baytan 2.6 FS for use as a seed treatment on wheat, barley and oats for the reason cited in Conclusions 4c, above.

Prior to registration of this formulation, CBTS will require resolution of the issues surrounding straw over-tolerance residue levels.

BACKGROUND

Tolerances are established [40CFR §180.450(a)] for the combined residues of the fungicide triadimenol (KWG-0519, β-(4-chlorophenoxy)-α-(1,1-dimethylethyl)-1H-1,2,4-triazol-1-ethanol) and its butanediol metabolite (KWG-1342, 4-(4-chlorophenoxy)-2,2-dimethyl-4-(1*H*-1,2,4-triazol-1-yl)-1,3-butanediol) calculated as triadimenol in or on various commodities including barley, oats and wheat grain at 0.05 ppm, barley, oats and wheat forage at 2.5 ppm and barley, oats and wheat straw at 0.1 ppm. Tolerances are established [40CFR 180.450(b)] for the combined residues of triadimenol and its metabolites containing the chlorophenoxy moiety calculated as triadimenol in or on the fat, meat and meat by-products of cattle, goats, hogs, horses and sheep at 0.1 ppm, milk at 0.01 ppm, the fat meat and meat by-products of poultry at 0.01 ppm and eggs at 0.01 ppm. There are no established food or feed additive regulations.

Triadimenol is not only an active ingredient, but is also a metabolite of the fungicide, triadimefon (Bayleton, 1-(4-chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone). Tolerances have been established under 40CFR §180.410 for the combined residues of triadimefon and its metabolites containing the chlorophenoxy and triazole moieties (expressed as the fungicide) in or on various raw agricultural commodities. Food additive tolerances are established for the combined residues of triadimefon and its metabolite, triadimenol under 40CFR §185.800. Feed additive tolerances are established under 40CFR §186.800 for the combined residues of triadimefon and its metabolite triadimenol.

Tolerances for triadimefon and those for triadimenol have chemical compounds as common components of their residues. We note that tolerances for triadimefon reflective of foliar application, are higher in some instances than those of triadimenol based on a seed treatment use pattern. Further guidance is provided on allowed residues under 40CFR §180.3(c)(13), which reads as follows.

Where tolerances are established for residues of both 1-(4-chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-

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2-butanone (triadimefon) and β-(4-chlorophenoxy)-α-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol (triadimenol) including its butanediol metabolite, 4-(4-chlorophenoxy)-2,2-dimethyl-4-(1H-1,2,4-triazol-1-yl)-1,3-butanediol, in or on the same raw agricultural commodity and its products thereof, the total amount of such residues shall not yield more residue than that permitted by the higher of the two tolerances.

A search of the Agency's files indicates that Baytan Seed Treatment Fungicide (EPA Reg. No. 3125-346) is registered for use as a seed treatment in/on barley, wheat and oats. The wettable powder formulation is registered for use at a maximum rate of 0.5 oz ai/100 lbs seed.

Miles, Inc. (as Mobay Chemical Corporation) previously submitted a petition for the foliar use of triadimenol on wheat (PP#5F3224/FAP#5H5458). The registrant has proposed to amend 40CFR §180.450 by increasing tolerances for residues of triadimenol and its butanediol metabolite in/on wheat forage to 100 ppm, wheat grain to 1.0 ppm, wheat straw to 20 ppm. A food additive tolerance is proposed for wheat milled fractions (except flour) at 4.0 ppm. Further, the petitioner has proposed to increase tolerances covering the secondary residues likely in animal commodities. The following tolerance levels are proposed: the meat, fat and meat by-products of cattle, goats, horses, hogs and sheep at 2.5, the meat fat and meat by-products of poultry at 0.02 ppm and milk at 0.1 ppm. No increase is proposed for eggs. The petition is currently in reject status pending receipt of suggested Section F (tolerance expression) and B (label amendment) revisions.

Detailed Considerations

Manufacture and Formulation

The manufacture of technical triadimenol has been adequately discussed in our review dated 8/1/83 (PP#3F2854, A. Smith). Impurities in the technical product are not likely to cause a residue problem at the application rates proposed in this submission.

BAYTAN 2.6 FS Seed Treatment Fungicide contains 28.3% triadimenol (2.6 pounds triadimenol per gallon) as the active ingredient.

Clearance of the inerts in this formulation is under the purview of RD.

Proposed Use

BAYTAN 2.6 FS Fungicide is intended for use as a seed treatment to control or suppress certain designated seed and soilborne diseases of wheat barley and oats. Further, the petitioner notes that the systemic activity of BAYTAN 2.6 FS will provide early season control of infections by powdery mildew and rusts.

Specific use instructions as contained on the proposed label are as follows. The manufacturer

recommends that BAYTAN 2.6 FS be applied as a water-based slurry through standard slurry or mist-type closed system commercial seed treatment equipment. Preparation of the seed treatment slurry involves mixing 0.75 to 1.5 fluid ounces of BAYTAN 2.6 FS in 16 fluid ounces of water/100 lbs of seed (0.24 to 0.40 oz ai/100 lbs seed). An EPA approved dye is to be added to the slurry, which is then mixed thoroughly with the seeds to provide uniform coverage. All seed treated with BAYTAN 2.6 FS should be labelled "*Treated with β-(4-chlorophenoxy)-α-(1,1-dimethylethyl)-1H-1,2,4-triazol-1-ethanol (BAYTAN)*". The following restrictions are contained on the label.

- Do not use treated seed for feed, food or oil purposes.
- Green forage may be grazed 40 days after seeding.

CBTS concludes that the proposed use directions submitted for BAYTAN 2.6 FS for use on wheat, barley and oats as a seed treatment are adequate and reflect the application pattern used to generate residue data presented in support of this registration request.

Analytical Method - Enforcement

Method 69531 for the determination of triadimefon, triadimenol, KWG 1323 and KWG 1342 by GC/MS in cattle tissues and milk is included in PAM II, Pesticide Reg. Sec. 180.410 as Method I. GC/MS Method 80265 for the determination of triadimefon, triadimenol, KWG 1323 and KWG 1342 in eggs and poultry tissue by GC/MS is included in PAM II, Pesticide Reg. Sec. 180.410 as Method II. Both methods have undergone agency method trials and Method I and Method II have been validated with beef liver and eggs respectively. PAM II suggests that both methods are suitable for use with "all crops".

Method 80488 used to collect residue data on plant commodities has undergone a successful Agency method validation on tomatoes (PP#4F3148, M. Firestone, 4/3/86). The method was submitted to the FDA for publication in PAM II (ltr to A. Marcotte from M. Firestone, 4/9/86). CBTS concludes that adequate methodologies are available in PAM II for enforcement of the existing/suggested tolerances on wheat, barley and oats.

Analytical Method - Data Collection

Wheat, barley and oat grain, forage, hay and straw samples were analyzed by the method described in Miles Report No. 80488 with modifications as documented in Miles Report No. 100106 entitled *Triadimenol - Magnitude of the Residue on Bananas, 25DF*. Briefly the method is described as follows. Triadimenol and metabolite residues were extracted from sample matrices using methanol/water (7:3). The extract was refluxed for 1½ hours, cooled and filtered. The methanol from the resulting extract was removed via rotary evaporation, the extract was then buffered and incubated with cellulase enzyme overnight. Residues were partitioned into methylene

chloride and cleaned up via GPC. A florisil column was used to clean up and separate the residues into parent (triadimenol) and metabolite (KWG-1342) fractions. The parent fraction was made to an appropriate volume in toluene and quantitated by GC/NPD. The metabolite fraction was made to an appropriate volume in acetone and an aliquot transferred to a Reacti-Vial. Keeper (1-decanol, 50 μL) and trifluoracetic acid (50 μL) were added prior to the addition of trifluoracetic anhydride (200 - 250 μL). The extract was heated at 45 °C for one hour to produce the trifluoroacyl derivative. The metabolite derivative was quantitated by GC/NPD.

The chosen method of quantitation was a single-point calibration. To support the validity of the results reported, the registrant injected standards ranging from 0.005 to 0.20 ppm. The resulting correlation coefficients demonstrated the linearity of the detector response within that range for all commodities and all matrices.

Method validation results are reported for wheat matrices and concurrent recovery results are reported for wheat, barley and oat matrices. The pertinent results are summarized below.

Table 1. Method Validation Results[1]

Matrix[2]	Fortification Level (ppm)	Triadimenol Recovery (%)	KWG-1342 Recovery (%)
Wheat Forage	0.01	120, 100	70, 60
	0.02	100	90
	0.05	102	94
Wheat Grain	0.01	120, 90	110, 90
	0.02	100	80
	0.05	94	116
Wheat Straw	0.01	90, 90	110, 100
	0.02	95	90
	0.05	94	114

[1] Results taken verbatim from Table 2, page 18, MRID No. 427121-01.
[2] Hay results not included since a tolerance for that commodity is no longer required.

All control samples were reported at <0.01 ppm, the method limit of quantitation.

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Table 2. Concurrent Recoveries[1]

Crop	Matrix	Fortification Level (ppm)	Triadimenol Recovery (%)	KWG-1342 Recovery (%)
Wheat	Forage	0.05 0.10	106 102	110 91
	Grain	0.10	119	95
	Straw	0.10	89	125, 70
Barley	Forage	0.10	125, 92, 108	87
	Grain	0.10	103, 97	99, 99
	Straw	0.10	109	82
Oats	Forage	0.10	120	100
	Grain	0.10	104	82
	Straw	0.10	98	98

[1] Residues are corrected only for concurrent recovery values $\geq$ 0.01 (Method LOQ). Those residues which were reported by the registrant as corrected for concurrent recovery values <0.01 have been recalculated.

Apparent residues found in controls were <0.01 with the exception of barley grain control samples 83795 (ABC ID: 38700-27) with an apparent residue value of 0.017 ppm reported.

Miles Method 80488, with modifications as described in this submission, has been adequately validated for the collection of residue levels of triadimenol and its butanediol metabolite, KWG-1342 in/on wheat, barley and oat grain, forage and straw.

Magnitude of the Residue - Crop Field Trials

MRID No. 427121-01 (Wheat)

Seven crop field trials were conducted on spring (5) and winter (2) seeded wheat in seven states (MN, CA, ID, ND, WA, IN, KS). All studies involved a single seed treatment with BAYTAN 2.6 FS at a rate of 0.5 oz ai/100 lbs seed. Earliest grazing forage and earliest harvest grain and straw samples were collected and analyzed for residues of triadimenol and its butanediol metabolite. PHIs ranged from 33 to 196 days for forage and 83-296 days for grain and straw. Samples were frozen following collection and shipped to Miles Inc. for processing. Forage, hay and straw samples were chopped in the presence of dry ice, and grain samples were milled while frozen. Samples were subsequently frozen and transported to ABC Laboratories, Inc., Columbia, Missouri. All samples were stored frozen prior to analysis. The pertinent results are summarized below.

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Table 3. Wheat Residue Data[1]

Matrix	Location/Field Trial ID	Variety	PHI (days)[2]	Triadimenol (ppm)	KWG 1342 (ppm)	Total (ppm)[3]
Forage	MN/251-BT001-89H	Spring Seeded	41	<0.01	<0.01	0.02
	ND/251-BT002-89H	Spring Seeded	33	0.03	<0.01	0.04
	ID/452-BT004-89H	Spring Seeded	44	<0.01	<0.01	0.02
	WA/454-BT006-89H	Spring Seeded	47	0.03	<0.01	0.04
	CA/457-BT007-89H	Spring Seeded	45	0.17	<0.01	0.18
	IN/HIN-BT008-89H	Winter Seeded	196	0.03	<0.01	0.04
	KS/STF-BT009-89H	Winter Seeded	68	0.03	<0.01	0.04
Grain	MN/251-BT001-89H	Spring	83	<0.01	<0.01	0.02
	ND/251-BT002-89H	Spring	90	<0.01	<0.01	0.02
	ID/452-BT004-89H	Spring	127	<0.01	<0.01	0.02
	WA/454-BT006-89H	Spring	108	<0.01	<0.01	0.02
	IN/HIN-BT008-89H	Winter	296	<0.01	<0.01	0.02
	KS/STF-BT009-89H	Winter	286	<0.01	0.02	0.03
Straw	MN/251-BT001-89H	Spring	83	0.11	0.04	0.15
	ND/251-BT002-89H	Spring	90	<0.01	<0.01	0.02
	ID/452-BT004-89H	Spring	127	0.01	<0.01	0.02
	WA/454-BT006-89H	Spring	108	<0.01	<0.01	0.02
	IN/HIN-BT008-89H	Winter	296	0.02	<0.01	0.03
	KS/STF-BT009-89H	Winter	286	<0.01	<0.01	0.02

1 Result of a single seed treatment application at approximately 0.5 oz ai/100 lbs seed.
[2] Forage samples were collected at earliest grazing. Grain and straw samples were collected at earliest harvest.
[3] Residues with reported value of <0.01 are assigned a value of 0.01 for the purpose of calculating the total residue.

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MRID No. 426963-08 (Barley)

Six barley field trials were conducted in CA, MN, KS, ID, ND and WA to collect residue data as a result of a single seed treatment application of BAYTAN 2.6 FS at a rate of 0.5 oz ai/100 lbs seed. Earliest grazing forage and earliest harvest grain and straw samples were collected and analyzed for residues of triadimenol and its butanediol metabolite. PHIs ranged from 33 to 68 days for forage and 83-282 days for grain and straw. Samples were transported to Miles Inc. for processing. Forage and straw samples were chopped in the presence of dry ice, and grain samples were milled while frozen. Samples were shipped frozen to ABC Laboratories, Inc., Columbia, Missouri and stored frozen prior to analysis. The analytical results reported are summarized below.

Table 4. Barley Residue Data[1]

Matrix	Location/Field Trial ID	Variety	PHI (days)[1]	Triadimenol (ppm)	KWG 1342 (ppm)	Total (ppm)[2]
Forage	MN/251-BT010-89H	Spring Seeded	41	0.02	<0.01	0.03
	ND/251-BT011-89H	Spring Seeded	33	0.02	<0.01	0.03
	ID/452-BT012-89H	Spring Seeded	44	0.03	<0.01	0.04
	WA/454-BT014-89H	Spring Seeded	47	0.03	<0.01	0.04
	CA/457-BT015-89H	Spring Seeded	45	0.07	<0.01	0.08
	KS/STF-BT016-89H	Winter Seeded	68	0.03	<0.01	0.04
Grain	MN/251-BT010-89H	Spring	83	0.02	<0.01	0.03
	ND/251-BT011-89H	Spring	87	<0.01	<0.01	0.02
	ID/452-BT012-89H	Spring	110	<0.01	<0.01	0.02
	WA/454-BT014-89H	Spring	108	<0.01	<0.01	0.02
	KS/STF-BT016-89H	Winter	282	<0.01	<0.01	0.02
Straw	MN/251-BT010-89H	Spring	83	0.05 0.05	<0.01 <0.01	0.06 0.06
	ND/251-BT011-89H	Spring	87	<0.01	<0.01	0.02
	ID/452-BT012-89H	Spring	110	<0.01	0.01	0.02
	WA/454-BT014-89H	Spring	108	0.01	<0.01	0.02
	KS/STF-BT016-89H	Winter	282	<0.01	<0.01	0.02

1 Result of a single seed treatment application at approximately 0.5 oz ai/100 lbs seed.

[2] Forage samples were collected at earliest grazing. Grain and straw samples were collected at earliest harvest.

[3] Residues with reported value of <0.01 are assigned a value of 0.01 for the purpose of calculating the total residue.

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MRID No. 426963-09 (Oats)

Six crop field trials were conducted in IA, MN, KS, NY, IN and WI on oats. Each study involved a single seed treatment with BAYTAN 2.6 FS at a rate of 0.5 oz ai/100 lbs seed. Earliest grazing forage and earliest harvest grain and straw samples were collected and analyzed for residues of triadimenol and its butanediol metabolite. PHIs ranged from 35 to 73 days for forage and 83-122 days for grain and straw. Samples were frozen following collection and shipped to Miles Inc. for processing. Forage, hay and straw samples were chopped in the presence of dry ice, and grain samples were milled while frozen. Samples were subsequently frozen and transported to ABC Laboratories, Inc., Columbia, Missouri. All samples were stored frozen prior to analysis. The pertinent results are summarized below.

Table 5. Oats Residue Data[1]

Matrix	Location/Field Trial ID	PHI (days)[1]	Triadimenol (ppm)	KWG 1342 (ppm)	Total (ppm)[2]
Forage	MN/251-BT-017-89H	41	0.01	<0.01	0.02
	IA/255-BT018-89H	39	0.07	<0.01	0.08
	NY/758-BT019-89H	35	0.26	<0.01	0.27
	WI/851-BT020-89H	42	0.09	<0.01	0.10
	IN/HIN-BT021-89H	53	0.14	<0.01	0.15
	KS/STF-BT022-89H	73	<0.01	<0.01	0.02
Grain	MN/251-BT-017-89H	83	<0.01	<0.01	0.02
	IA/255-BT018-89H	92	<0.01	<0.01	0.02
	NY/758-BT019-89H	114	<0.01	<0.01	0.02
	WI/851-BT020-89H	98	<0.01	<0.01	0.02
	IN/HIN-BT021-89H	107	<0.01	<0.01	0.02
	KS/STF-BT022-89H	122	<0.01	<0.01	0.02
Straw	MN/251-BT-017-89H	83	0.02	<0.01	0.03
	IA/255-BT018-89H	92	<0.01	<0.02	0.02
	NY/758-BT019-89H	114	<0.01	<0.01	0.02
	WI/851-BT020-89H	98	0.03	0.02	0.05
	IN/HIN-BT021-89H	107	<0.01	<0.01	0.02
	KS/STF-BT022-89H	122	<0.01	0.02	0.03

[1] Result of a single seed treatment application at approximately 0.5 oz ai/100 lbs seed.

[2] Forage samples were collected at earliest grazing. Grain and straw samples were collected at earliest harvest.

[3] Residues with reported value of <0.01 are assigned a value of 0.01 for the purpose of calculating the total residue.

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Discussion

Geographic Representation

The registrant notes that the seven wheat trials submitted in support of this registration were conducted in locations which directly represent 36% of total wheat producing regions of the U.S. (*Agricultural Statistics, 1985*). Bordering states represent an additional 30%, for a total geographic representation of 66% of the domestic wheat production. The statistics can be further broken down in terms of winter vs. spring wheat production. According to the registrant, 74% of the spring wheat production and 24% of the winter wheat production are directly represented by the wheat residue trials cited. Further, bordering states account for an additional 27% of the spring wheat and 32% of the winter wheat production. Therefore, the registrant maintains that 101% of the domestic spring wheat production and 56% of the domestic winter wheat production has been geographically represented by the wheat field trials submitted.

Six barley crop field trials were submitted in support of this registration request. The registrant notes that the locations encompassed in the field trials directly represent 68% of the domestic barley producing regions (*Agricultural Statistics, 1985*). Further, bordering states increase the geographic representation to 95%.

According to the 1985 *Agricultural Statistics* publication, the registrant notes that the six oat field trials submitted directly represent 43% of the domestic oat production. Bordering states account for an additional 45%, thus the residue data submit represent 88% of the oat producing regions in the US.

CBTS concludes that the geographic representation of the available wheat, barley and oat residue data is adequate to support registration of Baytan 2.6 FS for use as a seed treatment in/on wheat, barley and oats.

Tolerance Considerations

Since CBTS considers translation of data between the three RACs, wheat, oats and barley, acceptable, the registrant has provided an adequate number of field trials to support registration of Baytan 2.6 FS for use on wheat, barley and oats as a seed treatment. Based on the residue data submitted, CBTS concludes that existing tolerances established under 40CFR §180.450 for residues resulting from the application of triadimenol are adequate to cover residues in/on wheat forage and grain, barley forage and grain and oat forage and grain likely as a result of the proposed use in this submission.

The registrant comments that the current tolerance for "*total triadimenol*" in/on wheat straw is 5 ppm. As noted previously, triadimenol and its butanediol metabolite are not only regulated as a part of the triadimenol tolerance expression, but are also included in the tolerance expression for the pesticide, triadimefon. While CBTS acknowledges that, from an enforcement perspective, according to the 40CFR §180.3(c)(13), the "total allowable residue level" in the harvested commodity, wheat straw would be 5 ppm (the **triadimefon** tolerance level), we note that the

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residues reported in this submission were generated specifically as a result of application of **triadimenol** to the subject commodities. Since the requested registration is for a formulation containing **triadimenol** as the active ingredient, residues resulting are subject to regulation under 40CFR §180.450 (**triadimenol** tolerance levels). The maximum residue level reported for wheat straw was 0.15 ppm. Of the 19 field trials reported, only one trial contained a residue level greater than the 0.1 ppm established triadimenol wheat straw tolerance. However, in our review of the submitted field trials, we find no evidence to support the exclusion of this data point as an outlier. Since CBTS considers data generated on wheat translatable to both barley and oats, CBTS concludes that the existing tolerances in/on wheat straw, barley straw and oats straw as a result of application of triadimenol are not adequate to cover residues of triadimenol and its butanediol metabolite likely as a result of the use proposed in this submission.

Prior to Section 3 registration of this formulation for use as a seed treatment, CBTS will require either substantial evidence to invalidate the over-tolerance residue reported for wheat straw, or will require amendment of 40CFR §180.450 to increase the tolerances for wheat straw, barley straw and oat straw to 0.2 ppm.

Magnitude of the Residue - Processing Studies

No new processing studies were submitted with this registration request.

The copending petition for foliar application of triadimenol on wheat (PP#5F3224/FAP#5H5458) contained the results of a wheat processing study in which **triadimefon** treated wheat was milled. The study was reviewed in our memorandum dated 5/31/85 (A. Smith). Briefly, the study indicated that residues of triadimenol and its butanediol metabolite concentrated by a factor of 4.0 in bran and by a factor of 1.5 in shorts. Residues in flour were well below that in the grain. The Phase 4 review of **triadimefon** concluded that the processing study was not adequate as the grain had not been processed into middlings. Miles, Inc. has committed to conduct a new processing study.

Original tolerances for triadimenol as a result of seed treatment application were proposed in PP#3F2854 (1/4/84, A. Smith). At the time of that review, we did not require food additive tolerances since there were no detectable residues in the grain.

Of the sixteen grain samples subject to analysis, only two samples showed residues above the limit of quantitation (<0.01 ppm) for the analytical method. The grain sample from Kansas had no detectable residues of parent compound (<0.01 ppm) and 0.02 ppm of its butanediol metabolite. A single barley grain sample from Minnesota had 0.03 ppm of triadimenol and no detectable (<0.01 ppm) KWG 1342. Given the low residue levels found in grain, CBTS concludes that residues of triadimenol and its butanediol metabolite in processed grain commodities are not likely to exceed the established RAC tolerances for wheat, barley and oats. No food additive tolerances are required to support registration of this formulation.

Meat, Milk, Poultry and Eggs

The only anticipated livestock feed item tolerance increase associated with this request is an increase for wheat straw from 0.1 to 0.2 ppm. Wheat straw is a feed item only for beef and dairy cattle at 10% of the diet. CBTS notes that this is a minimal residue level increase in a commodity which comprises a low percentage of the ruminant diet. Further, there are currently ruminant feed items with much higher tolerances which comprise much greater percentages of the ruminant diet. We, therefore, do not anticipate a notable increase in the ruminant dietary burden. Consequently, CBTS concludes that existing tolerances are adequate to cover secondary residues of triadimenol likely to occur in animal commodities as a result of the seed treatment use proposed in this registration request.

Storage Stability

The registrant has referenced adequate storage stability data to support the residue data submitted. The frozen stability of residues of triadimenol and its butanediol metabolite in wheat, barley and oat RACs have been adequately demonstrated for the time period under which field trial samples were stored.

cc: circ., RF, Triadimefon List File, Triadimenol SF, DDavis.
H-7509C:CBTS:DSD:CM#2:Rm804:305-7085:dd:10/21/93.
RDI:SecHd:RSQuick:11/3/93:BrCh:DFEdwards:11/3/93.
Disk:DSD-2 File:BAYTAN.WBO