3-C-91 K.F.

CBRS TRANSMITTAL SHEET FOR PHASE 4 REVIEWS

Transmitted to HED on 11/21/90
Case name: Vinclozolin
Chemical Name(s): 3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione
Data submitter(s): BASF

CRM: Franklin Rubis Phone #: 308-8184

Issues/flags:

Use information was derived from LUIS report and labels contained in the 5th edition of Crop Protection Chemicals Reference, 1989. Also note that some tolerances under 180.380 are established for import commodities: Belgian endive, grapes, kiwifruit, and bell peppers. EPA Reg # 7969-57 is a formulation intermediate and does not contain food crop use directions.

Branch: CBRS, Phase 4 Review Team
Reviewed by: Leung Cheng Lee Cheng Date: 3/5/91

Approvals:

Section Head: Andrew R. Rathman ARR Date: 3/5/91

Branch Approval: Edward Zager Edward Zager Date: 3/6/91

cc: Circ, RF, List B File, Cheng, B. Grim (EFED), FOD/PIB

Response, by Guideline

Guideline #: 171-4(a) Description: Nature of residue - plants
Is requirement applicable? (Y/N): Y
Does the summary/available information indicate that the MRID is a candidate for Phase V review? Y
Comment: Three plant metabolism studies were submitted with the Phase III response and are discussed below.
Commodity: Lettuce
MRID # 92194036 summary; 92194046 full report

Discussion: Radiolabeled vinclozolin was sprayed onto lettuce at the 2-leaf stage and 18 days later. The rate (2 x 1 lb ai/A) was equivalent to 66% of the maximum permitted rate. Samples were taken 1 hour, 6, 12, 21, and 26 days after the second treatment. TLC analysis of the 21-day sample identified parent (28% of TRR) and several metabolites (F, B, T). However, a method (Method 25A) in which residues were alkaline hydrolyzed, derivatized to N-(3,5-dichlorophenyl)-chloroacetamide, resolved by GC and quantitated by electron capture detector, showed 86% of TRR contained the 2,4-dichloroaniline (DCA) group. The identity of the DCA group was verified by 2-dimensional TLC and by GC/MS. The summary description appears to reflect an adequate lettuce metabolism study.

Commodity: Strawberry
MRID # 92194032 summary; 92194051 full report

Discussion: Two studies were carried out. The first one (study # 1429) involved 3 x 1 Kg radiolabeled vinclozolin/Ha treatments: at the beginning, in the middle, and at the end of flowering. In the second study (study # 1508), 6 x 1 lb ai/A treatments were made. The dose in study # 1508 was slightly higher than the rate permitted per season. In study # 1429, parent and several metabolites (B, D, E) were identified by TLC R_f values of authentic compounds; amounts of individual compounds were not provided. In study # 1508, 6 days after the 5th application, 98% of TRR was extracted into methanol and 79% of TRR was identified as the parent compound with 12% TRR as conjugates. Parent and metabolite E were confirmed by GC/MS. Total residue method (alkaline hydrolysis followed by derivatization with chloro-acetyl chloride) showed 78-94% TRR contained the DCA group. The summary description seems to indicate an adequate strawberry metabolism study.

Commodity: Peaches
MRID # 92194045 summary

Discussion: Forty eight days before harvest, peaches of 1-3 cm in diameter were evenly painted with 0.1% aqueous solution of radiolabeled vinclozolin. This procedure was adopted in order to obtain higher residues in peaches for metabolite characterization. Results indicate decrease of parent (100% at 2 h to 25% on day 48) and formation of several metabolites (B, E, S, and D). At least 82% of TRR was extracted into methanol, and total residue method determined 84% of TRR as the DCA derivative (confirmed by HPLC). The summary appears to be from an adequate metabolism study.

Data gap: None.

Guideline #: 171-4(b) Description: Nature of residue - animals
Is requirement applicable? (Y/N): N

Discussion: The registrant has responded that since tolerances on meat, milk, poultry and eggs have not been established at this time, no summary is required. CBRS agrees.

Data gap: None.

Guideline #: 171-4(c) Description: Res. analyt. method - plant
Is requirement applicable? (Y/N): Y.
MRID # 92194-033 Summary; 92194-047 & 414969-06 Full reports

Discussion: Method 25 and its addenda A, B, C, D and F use the same chemistry for the determination of vinclozolin and its 3,5-dichloroaniline containing metabolites. All crop matrices are base hydrolyzed without a prior solvent extraction step. This converts vinclozolin and its metabolites to 3,5-dichloroaniline (DCA). After steam distillation and chlorohydrocarbon solvent extraction, the isolated DCA is derivatized with chloroacetyl chloride. Quantitation is by GC/EC except in Method 25C in which HPLC/UV is employed. The limit of detection was reported to be 0.05 ppm.

Methods 25 through 25F do not require the use of untreated commodity as a blank, internal standards, exotic reagents or exotic equipment.

The registrant has adequately addressed the question of specificity of vinclozolin residues, in particular, with respect to iprodione, a fungicide which also contains a 3,5-dichloroaniline group. As expected, iprodione residues also yield the same DCA derivative under Method 25 and its addenda hydrolysis and derivatization conditions. However, the source of the DCA derivative can be traced back by the reanalysis of the sample with multiresidue methods 232.4 and 242.1 in PAM I in which vinclozolin and iprodione can be individually confirmed without interferences.

The Pestrak data base dated 12/13/89 indicates 80% recovery using protocols D and E.

Data gap: None.

Guideline #: 171-4(d) Description: Res. anal. method - animals
Is requirement applicable? (Y/N): N

Discussion: The registrant has responded that since tolerances on meat, milk, poultry and eggs have not been established at this time, no summary for animal residue analytical method is required. CBRS agrees.

Data gap: None.

Guideline #: 171-4(e) Description: Storage stability
Is requirement applicable? (Y/N): Y
MRID # 92194-041, -039, -038, -037, -035, & -034.

Discussion: Frozen storage data generated on the parent compound in strawberries (fortified at 5 ppm, up to 32 months), grapes (0.5 ppm, 40 months) and lettuce (2 ppm, 17 months) were provided. Recoveries ranged from 76-98%. Data on metabolites B and D in strawberries (5 ppm, 29 months) and grapes (0.5 ppm, 40 months) showed 66-78% recoveries. Metabolites B, E and S fortified at 2 ppm in lettuce were recovered in 92-95% after 17 months of storage. All studies were conducted at <-5 deg C.

Data gap: None.

Guideline #: 171-4(f) Description: Mag. res. - potable water
Is requirement applicable? (Y/N): N

Guideline #: 171-4(g) Description: Magnitude residue - fish
Is requirement applicable? (Y/N): N

Guideline #: 171-4(h) Description: Mag. res. - irrigated crop
Is requirement applicable? (Y/N): N

Guideline #: 171-4(i) Description: Mag. res. - food handling
Is requirement applicable? (Y/N): N

Guideline #: 171-4(j) Description: Mag. meat/milk/poultry/eggs
Is requirement applicable? (Y/N): N

Discussion: The registrant has stated that since animal tolerances have not been established at this time, no summary is required. CBRS agrees.

Data gap: None.

Guideline #: 171-4(k) Description: Crop field trials - lettuce
Is requirement applicable? (Y/N): Y
MRID # 92194-035

Discussion: Field trials were conducted in CA (3), FL (3), TX (2), MI (3), OH (2), NJ and WI; CA and FL account for 73% of the US lettuce production. Two or three applications by ground equipment at the maximum rate were made and lettuce was sampled at PHI's of 28 days or less. Measured residues (parent + metabolites containing 3,5-dichloroaniline) were all less than 10 ppm tolerance. No aerial applications were made and the registrant has said that aerial treatments are not expected to result in higher residues than those from ground treatments, citing stone fruit residue data.

Data gap: Residue data reflecting aerial mode of application must be submitted.

Guideline #: 171-4(k) Description: Crop field trials - onions
Is requirement applicable? (Y/N): Y
MRID # 92194-037

Discussion: Field trials were conducted in NY (3), MI (5), OR (4), MN (3) and TX (4). A total of 4, 5 (prescribed), 8, or 9 ground applications were made at the maximum rate. Samples collected at the prescribed PHI of 18 days all bore vinclozolin residues less than the tolerance level of 1 ppm.

Data gap: None.

Guideline #: 171-4(k,l) Description: Crop field trials/ processing - prunes, fresh and dried
Is requirement applicable? (Y/N): Y
MRID # 92194-041

Discussion: Field trials were conducted in CA (2), one at the label rate (5 x 1 lb ai/A) and the other at 7 x 1 lb ai/A. Samples of fresh and dried prunes were collected at 10, 98 or 104 day PHI. Prunes were dried under commercial conditions. Residues were found to concentrate (2.2-3.4x) in dried prunes. See additional residue data on plums under stone fruits.

Data gap: None.

Guideline #: 171-4(k) Description: Crop field trials - stone fruit: peaches, sweet and sour cherries, and plums
Is requirement applicable? (Y/N): Y
MRID # 92194-039

Discussion: For peaches, field trials were conducted in CA (2), NJ, NY, PA, TX, SC, GA (2), and MI. Both aerial and ground treatments were made at 4, 5 (prescribed), 6 or 9 x 1 lb ai/A. Samples were collected at 0, 1, 2 or 3 day (prescribed) PHI. Total vinclozolin residues on treated peaches were all within the tolerance level (25 ppm).

For sweet cherries, field trials were conducted in CA (4), MI and OR by aerial or ground equipment. Applied dose was either 5 x 1 lb ai/A or 7 x 0.75 lb ai/A with samples of cherries collected at 3 or 4 day PHI. Measured vinclozolin residues were all within the tolerance level.

Field trials of sour cherries were conducted in MI and OR at 4 x 0.75 lb ai/A or 7 x 0.75 lb ai/A by ground equipment. Samples collected at 3 or 4 day PHI contained less than the tolerance level of vinclozolin residues.

For plums, trials were conducted at MI and CA. The MI site employed 5 x 1 lb ai/A treatments and the CA site employed 3 x 0.5 lb ai/A + 2 x 1 lb ai/A treatments. All plum samples were collected at the prescribed PHI and contained <25 ppm total residues.

Data gap: The registrant needs to conduct additional cherry residue trials from NY/PA and UT/MT/ID sites.

Guideline #: 171-4(k) Description: Crop field trials - strawberries
Is requirement applicable? (Y/N): Y
MRID # 92194-034

Discussion: Field trials were conducted in CA (13), FL (8), OR and TN (2) by ground equipment only. Most treatments exceeded the seasonal rate limit. All strawberry samples bore vinclozolin residues within the 10 ppm tolerance level at 0, 1, 3, 4, 5, 7, 11 or 14 day PHI. No data reflecting aerial applications were provided. The registrant has said that aerial treatments are not expected to result in higher residues than those from ground treatments, citing stone fruit residue data.

Data gap: Residue data reflecting aerial mode of application must be submitted.

Guideline #: 171-4(k) Description: Crop field trials - raspberries
Is requirement applicable? (Y/N): Y
MRID # 92194-038

Discussion: Field trials were conducted in CA, WA (6), MI (3), OH (3), NJ (3), NY and OR (2) by ground equipment only. Total vinclozolin residues following the prescribed use pattern on raspberries were all within the 10 ppm tolerance. No residue data resulting from aerial applications were provided. The registrant has said that aerial treatments are not expected to result in higher residues than those

from ground treatments, citing stone fruit residue data.

Data gap: Residue data reflecting aerial mode of application must be submitted.

PRODUCT CHEMISTRY

Case Name: Vinclozolin
Chemical Name(s): 3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione
Registrant: BASF

Guideline Number	Is requirement applicable?	Does summary or available information indicate MRID is a candidate for Phase 5 review?	Are additional data required?	MRID Number
61-1[a]	Y	N	Y	
61-2(a)[a]	Y	N	Y	
61-2(b)[a]	Y	N	Y	
62-1[a]	Y	N	Y	
62-2[a]	Y	N	Y	
62-3[a]	Y	N	Y	
63-2	Y	Y	N	41626801
63-3	Y	Y	N	41626801
63-4	Y	Y	N	41626801
63-5	Y	Y	N	41626801
63-6	N/A			
63-7	Y	Y	N	41626801
63-8	Y	Y	Y[b]	41471001
63-9	Y	Y	N	41496901
63-10	N/A			
63-11	Y	Y		41496901
63-12	Y	Y	N	41626801
63-13	Y	Y	N	41626802

Key: Y=yes; N=no; I=a decision cannot be made at this time; S=fully satisfies requirement; P=partially; N/A=not applicable; U=unsatisfactory.

[a] in the Phase II submission, BASF cited MRID #'s supporting this requirement. After evaluating the submitted studies, the registrant decided to repeat the study and will submit the new study within the specified time frame

[b] solubility in representative polar and non-polar solvents reported in g/100 mL