



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

SEP 20 1994

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM:

SUBJECT: Chlorothalonil on Dry Beans. Amended Use. Decrease in PHI. (No MRID #'s. CBTS #'s 14057, 14058, and 14059. DP Barcode #'s D205409, D205411, and D205412.)

FROM: Jerry B. Stokes, Chemist
Chemistry Branch I/Tolerance Support
Health Effects Division (7509C) *Jerry B. Stokes*

THRU: Richard A. Loranger, Ph.D., Acting Chief
Chemistry Branch I/Tolerance Support
Health Effects Division (7509C)

TO: Cynthia Giles-Parker/James Stone, PM-22
Fungicide-Herbicide Branch
Registration Division (7505C)

The registrant, ISK Biosciences Corporation requests that the 42-day PHI for the registered use of fungicide chlorothalonil in/on dry beans (harvested with pod removed) be decreased to 14 days. This will provide a more effective control over plant diseases such as rust, anthracnose, downy mildew, and cercospora leafspot (blackeye only) on dry beans. Submission of these data are a followup to a meeting on May 23, 1994 between RD, CBTS and the registrant concerning the proposed PHI decrease.

A tolerance has been established for the combined residues of chlorothalonil (2,4,5,6-tetrachloroisophthalonitrile) and its 4-hydroxy metabolite (4-hydroxy-2,5,6-trichloroisophthalonitrile) in or on dry beans at 0.1 ppm. (See 40 CFR 180.275).

Chlorothalonil is a List A chemical. A Registration Standard (Guidance Document) was issued in September 1984; a Final Registration Standard and Tolerance Reassessment (FRSTR), Residue Chemistry Chapter, was issued in February 1988.

Proposed Use

Label changes are proposed for three chlorothalonil formulations: BRAVO®720, BRAVO ULTREX™ and BRAVO®ZN.



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BRAVO®720 (EPA Reg. No. 50534-188): The proposed use calls for an initial treatment during early bloom stage using 1-3/8 to 2 pints of BRAVO®720 (1.0 to 1.5 lb a.i.) per acre per application, treatment may be repeated at 7 to 10 day intervals. BRAVO®720 contains 54% chlorothalonil (6.0 lb a.i./gal). Use would be restricted to beans harvested dry with the pods removed. No more than 4 applications per growing season (6.0 lb a.i./A/season). Do not apply within 14 days before harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.

BRAVO ULTRESX™ (EPA Reg. No. 50534-201): The proposed use calls for an initial treatment during early bloom stage using 1.25 to 1.8 lb of BRAVO ULTRESX™ (1.0 to 1.5 lb a.i.) per acre per application, treatment may be repeated at 7 to 10 day intervals. BRAVO ULTRESX™ is a water dispersible granular formulation with 82.5% chlorothalonil. Use would be restricted to beans harvested dry with the pods removed. No more than 4 applications per growing season (6.0 lb a.i./A/season). Do not apply within 14 days before harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.

BRAVO®ZN (EPA Reg. No. 50534-204): The proposed use calls for an initial treatment during early bloom stage using 2 to 3 pints of BRAVO®ZN (1.0 to 1.5 lb a.i.) per acre per application, treatment may be repeated at 7 to 10 day intervals. BRAVO®ZN contains 38.5% chlorothalonil (4.17 lb a.i./gal). Note: Zn is incorporated into this formulation as a micronutrient to provide plants with zinc required for growth. Use would be restricted to beans harvested dry with the pods removed. No more than 4 applications per growing season (6.0 lb a.i./A/season). Do not apply within 14 days before harvest. Do not allow livestock to graze in treated areas or feed treated plant parts to livestock.

The current federally-registered Section 3 use for chlorothalonil on dry beans [i.e, navy, pinto, kidney, lima, and blackeye (harvested dry with pods removed)], allows for 3 pints/A/application of BRAVO®500 (1.5 lb a.i.), 3 pints/A/application of BRAVO®720 (1.5 lb a.i.), and 1-3/4 lb BRAVO®90DG (1.6 lb a.i.). Applications can begin during early bloom stage and repeated at 7 to 10 day intervals. All labels allow a 42-day PHI. Label restrictions read: "Do not graze treated areas or feed treated plant parts to livestock."

Background

On several occasions, the Chemistry Branches have recommended against a 14-day PHI for chlorothalonil on dry beans in various Section 24(c) registration requests (See memos of 10/23/90 and 2/26/91, D. McNeilly, and 5/22/91, J. Abbotts), because residue data indicated that the existing tolerance might be exceeded as a result of the proposed use. A summary of Chemistry Branches'

reviews on this proposed reduction in the PHI has been previously discussed (See memo of 5/22/91, J. Abbotts). A major concern of the Chemistry Branches has been the observed differences in chlorothalonil residues in dry beans between three sets of field trial data, i.e., one earlier data submission with 28 to 42-day PHI's (Diamond Shamrock report #463-3CR-81-0154-001), and another more recent submissions with 0 to 18-day PHI's (Diamond Shamrock report #612-3CR-82-0181-001 and MRID#418441-01).

These data for dry beans (with pods removed) are listed in the following Table I.

In reviewing the earliest data (report #463-3CR-81-0154-001), the Chemistry Branches previously noted that in several instances residues approached the 0.1 ppm tolerance level. In one instance residues exceeded the tolerance at an application rate of 0.7X the proposed rate with a 43-day PHI. With the one site at the 0.7X application rate in which residues >0.1 ppm were observed, 0.19 ppm was the highest residue, with several reported at 0.15 ppm, and a mean value of 0.11 ppm from four samples analyzed in duplicate. Also one untreated control sample from this site showed 0.16 ppm chlorothalonil residues. Thus the data from this site may not be reliable. However, data from other sites with PHI's ranging from 28 to 47 days and at application rates from 0.4X to 1.5X the proposed rate, showed residues below the established 0.1 ppm tolerance. Analyses of these site samples showed chlorothalonil residues <0.1 ppm, and in many cases reported residues as nondetectable (<0.04 ppm) for both chlorothalonil and its 4-hydroxy metabolite SDS-3701. Samples were also analyzed for impurities HCB and PCBN. No residues of either were found at <0.004 ppm HCB or <0.01 ppm PCBN.

Additional field residue data at application rates ranging from 0.5X to 2X the proposed SLN use, and with PHI's ranging from 0 to 29 days, showed no chlorothalonil residues above 0.07 ppm. Approximately half of the analyzed samples showed nondetectable (<0.01 ppm) residues for both chlorothalonil and its metabolite SDS-3701, with the other half of the field samples showing residues in the 0.01 to 0.04 ppm range. Samples analyzed from crops treated with the BRAVO 720 formulation proposed in these SLN's showed no residues of chlorothalonil (<0.01 ppm), or its metabolite (<0.01 ppm), including samples from the crop treated at 2X the proposed rate at a 14-day PHI. Likewise, the samples were analyzed for impurities HCB and PCBN. No residues of either were found at <0.003 ppm HCB or <0.005 ppm PCBN.

Table I. Summary of Chlorothalonil Residues in/on Dry Beans.

Location	Formulation	No. of applica-tions	pints/A applied applica-tion	total lb a.i./A applied	PHI, days	Residue range, ppm	
						SDS-2787	SDS-3701
Hoopeston, IL	BRAVO 500	2	2	2.1(0.4X)	43	ND ¹ -0.08	ND ¹ -0.03
"	"	2	3	3.1(0.5X)	43	ND ¹ -0.09	ND ¹
"	"	2	4	4.2(0.7X)	43	0.07-0.19	ND ¹ -0.04
Staples, MN	BRAVO 500	3	2	3.1	40	ND ¹ -0.08	ND ¹
"	"	3	3	4.7(0.8X)	40	ND ¹ -0.04	ND ¹
"	"	3	4	6.3(1.1X)	40	ND ¹ -0.08	ND ¹
"	"	3	4	6.3	28	ND ¹	ND ¹
Fargo, ND	BRAVO 500	1	3	1.6(0.3X)	47	ND ¹	ND ¹
Staples, MN	BRAVO 6F	6	2	6.3	28	ND ¹	ND ¹
"	"	6	3	9.2(1.5X)	28	ND ¹	ND ¹
Holyoke, CO	BRAVO 500	3	2	3.1	14	ND ² -0.03	ND ²
"	"	3	3	4.7	14	0.02-0.03	ND ²
Georgetown, DE	BRAVO 500	4	3	6.3	8	0.03	ND ²
"	"	5	3	7.8(1.3X)	0	0.04-0.07	ND ²
N. Platte, NE	BRAVO 500	4	3	6.3	13	ND ²	ND ²
Northwood, ND	BRAVO 500	3	3	4.7	22	0.02	ND ²

Table I. Summary of Chlorothalonil Residues in/on Dry Beans.

Location	Formulation	No. of applica-tions	pints/A applied applica-tion	total lb a.i./A applied	PHI, days	Residue range, ppm	
						SDS-2787	SDS-3701
Saginaw, MI	BRAVO 500	5	3	7.8	7	0.04	ND ²
"	"	4	3	6.3	14	0.01	ND ²
"	"	3	3	4.7	29	ND ²	ND ²
Jackson, TN	BRAVO 500	4	3	6.3	9	0.02-0.03	ND ²
E. Grand Forks, MN	BRAVO 720	8	2	12(2X)	14	ND ²	ND ²
N. Platte, NE	BRAVO 720	3	2	4.5(0.8X)	14	ND ²	ND ²
Saginaw, MI	BRAVO 720	4	2	6.0(2X)	14	ND ²	ND ²
Fort Collins, CO	BRAVO 720	2	2	3.0(0.5X)	18	ND ²	ND ²
"	BRAVO C/M	2	--	8.0(1.3X)	18	ND ²	ND ²

Formulations: BRAVO 500 (40.4% a.i.); BRAVO 720 (54.0% a.i.); BRAVO 6F (54.0% a.i.); BRAVO C/M [Combination of chlorothalonil (27.0% a.i.) and maneb (5.4% a.i.)]

ND¹: <0.04 ppm SDS-2787; <0.03 ppm SDS-3701

ND²: <0.01 ppm SDS-2787; <0.01 ppm SDS-3701

CBRS has recently reviewed a snapbean metabolism study for chlorothalonil and has determined that the residues for regulation are the parent chlorothalonil and its 4-hydroxy metabolite SDS-3701 (See memo of 05/26/94, W. Smith). This study also showed that chlorothalonil residues were present on the outside bean surface after foliar application according to the registered label. No systemic action was observed for chlorothalonil. Therefore, since the label use is for dry beans (i.e., the pods removed), then any chlorothalonil residues found on the dry beans could possibly be only from residues transferred in the harvesting process.

Therefore, based on consideration of the field trial data, CBTS concludes that the proposed decrease of the current 42-day PHI to a 14-day PHI will not give chlorothalonil (plus its metabolite) residues above the established 0.1 ppm tolerance. Results from the metabolism study imply that the residues that were observed probably resulted from post harvest handling.

NOTE: CBTS recently recommended reduction of the PHI from 42 to 14 days for several SLN's (See memo of 09/15/94, J. Stokes).

Recommendation

CBRS recommends acceptance of these amended labels (BRAVO®720, BRAVO ULTREX™ and BRAVO®ZN) with a proposed decrease of the PHI from 42 days to 14 days when using the formulations to treat beans grown for the harvest of dry beans (pods removed). This request is adequately supported by residue data, and any residues in/on dry beans would be covered by the established 0.1 ppm tolerance for the combined residues of chlorothalonil and its metabolite.

NOTE: Currently the BRAVO®500 and BRAVO®90DG labels have application directions for dry beans with a 42-day PHI. The above data will also support the proposed decrease to a 14-day PHI on these labels without additional comments/review by CBTS.

cc: J. Stokes (CBTS); chlorothalonil S.F.; R.F.; Circu.
RDI: JGarbus:09/15/94; MFlood:09/15/94
7509C:CBTS:JStokes:js:Rm 803:CM#2:305-7561:09/20/94

RD

RECORD OF COMMUNICATION	<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE			
	<input type="checkbox"/> OTHER (SPECIFY) _____ (Record of item checked above)			

TO: Debra Signoret Office of the U.S Agricultural Attaché, Guatemala, 502-232-4030	FROM: G.F. Kramer <i>[Signature]</i>	DATE 9/20/94
		TIME 12:10 PM

SUBJECT Coffee Milling Processes in Central America

SUMMARY OF COMMUNICATION

Green coffee beans are produced from ripe berries by one of two milling methods: dry processing or wet processing. For tolerances on imported coffee, CBTS generally requires residue data using both techniques. Zeneca has submitted a tolerance request for diquat on coffee imported from Guatemala and Guatemala. The registrant claims that all coffee imported from these countries is milled by wet processing and has thus submitted data for wet processing only. I called the U.S. Agricultural Attaché in Guatemala to verify this claim. Debra Signoret informed me that all coffee beans produced for export in Guatemala are, in fact, milled with wet processing.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

INFORMATION COPIES
TO: R.F., Circ., S.F., PP#4E04376, Kramer, Coffee Cultural Practices File

RJ

RECORD OF COMMUNICATION		<input checked="" type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE	
		<input type="checkbox"/> OTHER (SPECIFY) (Record of item checked above)	
TO: Victor Gonzales Office of the U.S Agricultural Attachè, Costa Rica, 506-231-6483		FROM: G.F. Kramer <i>GJK</i>	
		DATE	9/20/94
		TIME	2:00 PM
SUBJECT Coffee Milling Processes in Central America			
SUMMARY OF COMMUNICATION			
<p>Green coffee beans are produced from ripe berries by one of two milling methods: dry processing or wet processing. For tolerances on imported coffee, CBTS generally requires residue data using both techniques. Zeneca has submitted a tolerance request for diquat on coffee imported from Costa Rica and Guatemala. The registrant claims that all coffee imported from these countries is milled by wet processing and has thus submitted data for wet processing only. I called the U.S. Agricultural Attachè in Costa Rica to verify this claim. Victor Gonzales informed me that all coffee beans produced for export in Costa Rica are, in fact, milled with wet processing.</p>			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
INFORMATION COPIES			
TO: R.F., Circ., S.F., PP#4E04376, Kramer, Coffee Cultural Practices File			