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

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

Date:9/25/08.

Subject: Quinclorac. Magnitude of the Residue in Wheat and Sorghum Aspirated Grain Fractions.

PC Code: 128974
Decision No.: 384251
Petition No.: 7F4870
Risk Assessment Type: NA
TXR No.: NA
MRID No.: 45598703 & 45598704

DP Barcode: 344496
Registration No.: NA
Regulatory Action: NA
Case No.: NA
CAS No.: 84087-01-4
40 CFR: 180.463

From: Gary Otakie, Chemist
Reregistration Branch 4
Health Effects Division (7509P)

Gary Otakie

Through: Susan V. Hummel, Branch Senior Scientist
Reregistration Branch 4
Health Effects Division (7509P)

Susan V. Hummel

To: Joy Schnackenbeck
Special Review Branch
Special Review & Reregistration Division (7508P)

This document was originally prepared under contract by Dynamac Corporation (1910 Sedwick Road, Building 100, Suite B, Durham, NC 27713; resubmitted 04/23/2008). The document has been reviewed by the Health Effects Division (HED) and revised to reflect current Office of Pesticide Programs (OPP) policies.

1
Record 10/6/2008

Executive Summary

BASF Corporation has submitted data from two separate field trial studies for quinclorac (BAS 514 H) on wheat aspirated grain fractions and sorghum aspirated grain fractions. The studies were conducted in the United States in Zone 5 (York County, Nebraska) during the 1999 growing season.

Residues of quinclorac were determined in wheat AGF samples using BASF Analytical Method Number D9078/2 and in sorghum AGF samples using BASF Analytical Method Number D9078/1. These methods appear to be the same method (they both contain the same BASF Reg. Document Number of 98/5095). In this method, liquid chromatography with tandem mass-spectrometry detectors (LC-MS/MS) is used to quantitate residues of quinclorac in cereal grain and oil seed crops.

Residues of quinclorac were quantitated at 0.453 and 0.516 ppm in/on wheat AGFs following two applications of BAS 514 H at 0.25 lb ai/A/application (0.50 lb ai/A/season). Residues of quinclorac were quantitated at 0.147 and 0.145 ppm in/on sorghum AGFs following two applications of BAS 514 H at 0.25 and 0.50 lb ai/A/application (0.75 lb ai/A/season). Ash content was between 12.0 and 17.5% in all wheat AGF samples and between 5.5 and 9.0% in all sorghum AGF samples.

Regulatory Recommendations and Residue Chemistry Deficiencies

Tolerances for quinclorac established under 40 CFR 180.463 are 0.5 ppm and 6.0 ppm on wheat and sorghum grain, respectively. Average residues at the maximum application rate in aspirated grain fractions were 0.48 and 0.15 ppm, in wheat and sorghum respectively. Accordingly, separate tolerances on aspirated grain fractions are not required, pending submission of detailed weather data, throughout the residue trial period.

TABLE A.1. Quinclorac Nomenclature.

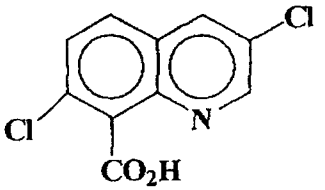
Chemical structure	
Common name	Quinclorac
Company experimental name	BAS 514 H
IUPAC name	3,7-Dichloroquinoline-8-carboxylic acid
CAS name	3,7-Dichloro-8-quinolinecarboxylic acid
CAS registry number	84087-01-4
End-use product (EP)	75% DF; Paramount (proposed); BAS 514 34 H

TABLE A.2. Physicochemical Properties of Quinclorac

Parameter	Value	Reference
Molecular Weight	242.1 Daltons	D342446 Memorandum
Melting point/range	~269°C	9/11/2007; M.A. Doherty

TABLE A.2. Physicochemical Properties of Quinclorac		
Parameter	Value	Reference
pH	N/A	
Density	~560 g/L	
Water solubility (20°C)	0.0064 g/100 mL	
Solvent solubility (20°C to 25°C)	ethanol 0.2 toluene <0.1 lutrol <0.1 acetone 0.2 olive oil <0.1 n-octanol <0.1 acetonitrile <0.1 1,2-propandiol <0.1 ethyl acetate 0.1 dichloromethane <0.1 ethyl ether 0.1 n-hexane <0.1	
Vapor pressure (20°C)	$<1.0\times10^{-7}$ mbar ($<0.75\times10^{-7}$ Torr)	
Dissociation constant, pKa	4.34 at 20°C 4.35 at 25°C	
Octanol/water partition coefficient, log P_{OW} (20°C)	1.76 at pH 4 -0.74 at pH 7 3.74 at pH 10	

Conclusions: Tolerances for quinclorac under 40 CFR 180.463 are 0.5 ppm and 6.0 ppm on wheat and sorghum grain, respectively. Average residues at the maximum application rate in aspirated grain fractions were 0.48 and 0.15 ppm, in wheat and sorghum grain, respectively. Accordingly, separate tolerances on aspirated grain fractions are not required.

RDI: G. Otakie 09/25/08; S. Hummel 09/25/08
Petition Number: #7F4870
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Quinclorac/BAS 514 H/ PC Code 128974/BASF Corporation
DACO 7.4.1/7.4.2/OPPTS 860.1500&1520/OECD IIA 6.3.1, 6.3.2, 6.3.3 and IIIA 8.3.1, 8.3.2, 8.3.3
Crop Field Trial – Wheat and Sorghum Aspirated Grain Fractions

Primary Evaluator	Gary Otakie, Chemist HED/RRB4 (7509P)	Date: 09/25/08
Approved by	Susan V. Hummel, Branch Senior Scientist HED/RRB4 (7509P)	Date: 09/25/08

This data-evaluation record (DER) was originally prepared under contract by Versar, Inc (6850 Versar Center, Springfield, VA 22151; submitted 06/15/08). The DER has been reviewed by the HED and revised to reflect current Office of Pesticide Programs (OPP) policies.

STUDY REPORT:

45598703. Haughey, D., Abdel-Baky, S., Daussin, S. (2000). Magnitude of BAS 514 H Residues in Wheat Aspirated Grain Fraction. BASF Study Number: 59553. Unpublished study prepared by BASF Corporation. 61 p.

45598704. Haughey, D., Daussin, S. (2000). Magnitude of BAS 514 H Residues in Sorghum Aspirated Grain Fraction. BASF Study Number: 59552. Unpublished study prepared by BASF Corporation. 61 p.

EXECUTIVE SUMMARY:

BASF Corporation has submitted data from two separate field trial studies for quinclorac (BAS 514 H) on wheat aspirated grain fractions and sorghum aspirated grain fractions. The studies were conducted in the United States in Zone 5 (York County, Nebraska) during the 1999 growing season.

Both field trials consisted of one untreated plot and three treated plots that received two pre-harvest spray applications of BAS 514 H, a 75% dry flowable (DF) formulation with quinclorac as the active ingredient. All of the applications were made using tractor mounted boom sprayers. Two applications at the maximum application rate were performed on the first treated plot and two applications at exaggerated application rates of 3X and 5X the maximum application rate were performed on the remaining treated plots. The plots treated at the exaggerated application rates were not harvested because data from exaggerated application rates are not required.

For the wheat trial, the first treated plot received two applications at the maximum target application rate of 0.25 lb ai/A per application for a total seasonal application rate of 0.50 lb ai/A. The two applications were made 31 days apart with the first application occurring just prior to planting and the second application being made over the top of the crop at the 4 to 5 leaf stage.

For the sorghum trial, the first treated plot received two applications at the proposed label rate of 0.25 and 0.50 lb ai/A, respectively. The total seasonal application rate was 0.75 lb ai/A. The two applications were made 35 days apart with the first application occurring just prior to planting and the second application being made over the top of the crop when the plants were approximately 12 inches tall.

An adjuvant was not used for the first application at either field trials; however, an adjuvant (crop oil concentrate) was mixed with the test substance at 0.25% spray solution volume for the second application at both field sites. All of the applications were made in ~10 gallons/Acre (GPA) of water.

Wheat grain samples were harvested from the untreated plot and from the treated plot 79 days after the last application [(79-day preharvest interval (PHI)] and processed into aspirated grain fractions (AGFs). Sorghum grain samples were harvested 86 days after the last application (86-day PHI) and processed into AGFs.

Residues of quinclorac were determined in wheat AGF samples using BASF Analytical Method Number D9078/2 and in sorghum AGF samples using BASF Analytical Method Number D9078/1. These methods appear to be the same method (they both contain the same BASF Reg. Document Number of 98/5095). In this method, liquid chromatography with tandem mass-spectrometry detectors (LC-MS/MS) is used to quantitate residues of quinclorac in cereal grain and oil seed crops. Concurrent recoveries for wheat AGFs samples were 136% at the 0.05 ppm spike level and 114% at the 0.50 ppm spike level and concurrent recoveries for sorghum AGFs were 122% at the 0.05 ppm spike level and 108% at the 0.50 ppm spike level. Although the recoveries at the low spiking level of 0.05 ppm were slightly higher than the generally acceptable range of 70% to 120%, the method has been validated at a level of 0.05 ppm in wheat grain (refer to MRID 44583103; J Stokes, 11/06/98, PP#7F4870). According to the study report, the lowest limit of method validation (LLMV) 0.05 ppm for quinclorac in/on wheat and sorghum AGF commodities.

The maximum storage duration of wheat AGF and sorghum AGF samples from harvest to analysis was 10 months and 8 months, respectively. The samples were stored frozen at <-10°C. The stability of quinclorac has been demonstrated for 38 to 39 months in/on whole grains of rice, corn soybean and sorghum (refer to MRID 44322214; J. Garbus, 08/02/90, PP9F3755). The data adequately support the storage duration and conditions of wheat AGF and sorghum AGF samples.

Residues of quinclorac were quantitated at 0.453 and 0.516 ppm in/on wheat AGFs following two applications of BAS 514 H at 0.25 lb ai/A/application (0.50 lb ai/A/season). Residues of quinclorac were quantitated at 0.147 and 0.145 ppm in/on sorghum AGFs following two applications of BAS 514 H at 0.25 and 0.50 lb ai/A/application (0.75 lb ai/A/season). Ash content was between 12.0 and 17.5% in all wheat AGF samples and between 5.5 and 9.0% in all sorghum AGF samples.

STUDY/WAIVER ACCEPTABILITY/DEFICIENCIES/CLARIFICATIONS:

Under the conditions and parameters used in the study, the field trial data are classified as scientifically acceptable pending submittal of detailed weather data throughout the trial residue period. The acceptability of this study for regulatory purposes is addressed in the forthcoming U.S. EPA Residue Chemistry Summary Document (DP #344496).

COMPLIANCE:

Signed and dated Good Laboratory Practice (GLP), Quality Assurance and Data Confidentiality statements were provided. No deviations from regulatory requirements were reported which would have an impact on the validity of the study.

A. BACKGROUND INFORMATION

Quinclorac is currently registered for use on rice, sorghum, wheat, ornamental plantings, and turfgrass. The primary path by which plants metabolize quinclorac is through the hydroxylation of the quinoline ring of the parent, followed by the conjugation of glucose and other biologically available compounds at the hydroxylated site. Ultimately, some radioactive residues are incorporated into the high molecular weight natural products. In livestock, the predominant residue is unchanged quinclorac. The nomenclature of quinclorac is summarized in Table A.1, and the physicochemical properties of quinclorac are summarized in Table A.2.

TABLE A.1. Quinclorac Nomenclature.

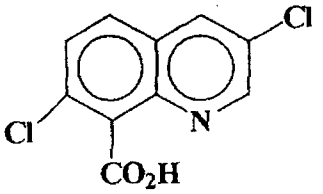
Chemical structure	
Common name	Quinclorac
Company experimental name	BAS 514 H
IUPAC name	3,7-Dichloroquinoline-8-carboxylic acid
CAS name	3,7-Dichloro-8-quinolinecarboxylic acid
CAS registry number	84087-01-4
End-use product (EP)	75% DF; Paramount (proposed); BAS 514 34 H

TABLE A.2. Physicochemical Properties of Quinclorac		
Parameter	Value	Reference
Molecular Weight	242.1 Daltons	D342446 Memorandum 9/11/2007; M.A. Doherty
Melting point/range	~269°C	
pH	N/A	
Density	~560 g/L	
Water solubility (20°C)	0.0064 g/100 mL	
Solvent solubility (20°C to 25°C)	ethanol 0.2 toluene <0.1 lutrol <0.1 acetone 0.2 olive oil <0.1 n-octanol <0.1 acetonitrile <0.1 1,2-propandiol <0.1 ethyl acetate 0.1 dichloromethane <0.1 ethyl ether 0.1 n-hexane <0.1	
Vapor pressure (20°C)	$<1.0\times10^{-7}$ mbar ($<0.75\times10^{-7}$ Torr)	
Dissociation constant, pKa	4.34 at 20°C 4.35 at 25°C	
Octanol/water partition coefficient, log P_{OW} (20°C)	1.76 at pH 4 -0.74 at pH 7 3.74 at pH 10	

B. EXPERIMENTAL DESIGN

B.1. Study Site Information

Trial site conditions are presented in Table B.1.1. Refer to Table B.1.2 for study use patterns and Table B.1.3 for geographic locations of submitted and requested trials. These tables present the information for the treatment plot at each test site which was conducted using the maximum application rate. Two additional treatment plots, at 3X and 5X application rates, were also established at each test site; however, samples from these plots were not harvested. Therefore, these plots are not discussed any further in this DER.

Wheat and sorghum were grown under normal agricultural conditions. The petitioner included air temperature, relative humidity, wind velocity and direction and percent cloud cover for each of the application dates. Meteorological data were not provided for the duration of the study and the petitioner made no comments regarding whether or not any unusual weather conditions occurred during the field phase of the two studies. Additionally, historical meteorological data were not provided in either study report.

TABLE B.1.1. Trial Site Conditions.

Trial Identification: City, State; Year (Trial No.)	Soil characteristics[1]			
	Type	%OM	pH	CEC (meq/g)
York, NE; 1999 (RCN 99269)	Silt loam	NA[2]	NA	NA
York, NE; 1999 (RCN 99270)	Silt loam	NA	NA	NA

1 OM = organic matter; CEC = cation-exchange capacity.
2 NA = Not Available (data not collected)

TABLE B.1.2. Study Use Pattern.

Trial Identification: City, State; Year (Trial No.)	EP[1]	Application						Tank Mix/ Adjuvants
		App. No.	Method; Timing	Volume[2] (GPA)	Rate (lb ai/A)	RTI[3] (days)	Total Rate (lb ai/A)	
York, NE; 1999 (RCN 99269)	75% DF	1	Broadcast; pre-planting	10.08	0.250	NA	0.492	NA
		2	Broadcast; 4-5 leaf stage	10.13	0.242	31		Activator 90 (crop oil concentrate) 0.25% v:v
York, NE; 1999 (RCN 99270)	75% DF	1	Broadcast; pre-planting	10.4	0.249	NA	0.749	NA
		2	Broadcast; 4-5 leaf stage	10.4	0.500	35		Activator 90 (crop oil concentrate) 0.25% v:v

1 EP = End-use Product; Paramount (proposed); BAS 514 34 H
2 GPA = Gallons per acre.
3 RTI = Retreatment Interval.

TABLE B.1.3. Trial Numbers and Geographical Locations.

NAFTA Growing Zones	Wheat			Sorghum		
	Submitted	Requested for AGFs[1]		Submitted	Requested for AGFs[1]	
		Canada	U.S.		Canada	U.S.
1						
2						
3						
4						
5	1			1		
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
Total	1		1	1		1

1 AGFs – Aspirated Grain Fractions. According to OPPTS Guideline 860.1500, only one residue study is needed for each grain (corn, wheat, sorghum, soy beans) that is treated post-harvest (or has a pre-harvest use resulting in quantifiable residues). The trials took place in Region 5, which accounts for 23% of wheat production and 34% of sorghum production (Table 6 of OPPTS Guideline 860.1500).

B.2. Sample Handling and Preparation

A single control and duplicate treated wheat grain and sorghum grain samples, weighing 600 lb each, were collected from the treatment plots at each of the two trial sites. The samples were randomly selected from within the plot using a small combine, avoiding the borders. It should be noted OPPTS Guideline 860.1500 recommends the collection of triplicate samples per grain, with duplicate analyses of pesticide residue performed on all samples.

After harvesting the wheat grain samples, the samples were stored in a freezer for four days at the field site before transporting them via ACDS freezer truck to the processing facility. Sample processing was finished 67 days after harvest. After harvesting the sorghum grain samples, the samples were shipped on the day of harvest by ACDS freezer truck to the processing facility. Sample processing was finished 36 days after harvest. The wheat and sorghum grain samples were stored frozen (<-10°C) at the processing facility until processing. Both grain crops were processed at the Food Protein R&D Center in Bryan Texas (Texas A&M University).

At the processing facility, the grain samples were removed from the freezer and allowed to thaw before processing. The moisture content of the grain was determined with a Sartorius moisture balance. If the moisture content was above 13%, the grain was dried in a Proctor Schwartz forced air oven at 110-135°F until a moisture content of 10-13% was achieved. To generate the AGF samples, the grain sample was placed in a dust generation room where the grain was moved from a holding bin and along drag and bucket conveyers in a manner designed to simulate the industrial practices used in terminal grain elevators. The samples were processed by batch rather than continuous, as in a commercial operation, because of compliance monitoring requirements and sample size. The equipment was arranged to cycle the grain from the holding bin, through the drag and bucket conveyors, and then back into the holding bin. As the grain moved, the grain dust was collected by aspiration using a Cincinnati Fan/Dust Collector. The grain dust was classified by size using 425, 850, 1180, 2000 and 2360 micron sieves for wheat aspirated grain fractions and using 425, 850, 1180, 2030 and 2540 micron sieves for sorghum aspirated grain fractions. All of the wheat dust less than 2360 microns and sorghum dust less than 2540 microns were recombined to produce one aspirated grain dust sample for each field sample processed. In addition, for each grain dust sample generated, a representative subsample was taken to determine the ash content of the dust. After processing all samples were stored frozen at <-10°C prior to shipment to the analytical laboratory (BASF Agricultural Products Center in Research Triangle, NC) for residue analysis.

Samples were stored frozen (<-10°C) at the analytical laboratory until preparation for extraction/analysis. Near the time of analysis, the samples were taken out of frozen storage for residue analysis; no sample homogenization was necessary.

B.3. Analytical Methodology

Aspirated grain fractions (AGFs) were analyzed for residues of quinclorac using LC-MS/MS method (D9708), entitled "Analytical Method for the Determination of Quinclorac Residues in Cereal Grain and Oil Seed Crops Using LC/MS/MS." Samples of wheat AGFs were analyzed for residues of quinclorac using BASF Analytical Method Number D9078/2 and samples of sorghum AGFs were analyzed for quinclorac residues using BASF Analytical Method Number D9078/1 (refer to DER for MRID 44583103). Analytical methods D9078/1 and D9078/2 appear to be the same method (they both contain the same BASF Reg. Document Number of 98/5095 and the description of the analytical method provided in both studies is the same). Briefly, each sample was soaked in 0.1 N NaOH for 1 hour and extracted with acetone. A 5% aliquot of sample extract was taken and the acetone was evaporated using rotary evaporation. The sample was acidified, partitioned with dichloromethane and the dichoromethane was evaporated to dryness. The sample was diluted back to 10 mL with 0.0025 N NaOH and the pH was adjusted to 8 – 11. The sample was taken to column clean up using a quaternary amine SPE column. Quinclorac residues were quantitated by LC/MS/MS. The LLMV was 0.05 ppm for both wheat and sorghum AGFs.

C. RESULTS AND DISCUSSION

Sample storage conditions and durations are summarized in Table C.2. For wheat, one month elapsed between harvest and initiation of sample processing and a maximum of 9 months elapsed between generation of the aspirated grain fraction samples and the final analysis. The total maximum storage duration was 10 months for wheat. For sorghum, less than one month elapsed between harvest and initiation of sample processing and a maximum of 7 months elapsed between generation of the aspirated grain fraction samples and the final analysis. The total maximum storage duration was 8 months for sorghum. The storage temperature was reported as <-10°C at the processing facility and analytical laboratory. Adequate storage stability data are available for whole grain (sorghum, rice, corn and soybean) to support wheat and sorghum AGFs (refer to MRID 44322214; J. Garbus, 08/02/90, PP9F3755).

Samples of wheat AGFs and sorghum AGFs were analyzed for residues of quinclorac using LC-MS/MS method D9708. Concurrent recoveries for wheat AGFs samples were 136% at the 0.05 ppm spike level and 114% at the 0.50 ppm spike level and concurrent recoveries for sorghum AGFs were 122% at the 0.05 ppm spike level and 108% at the 0.50 ppm spike level (see Table C.1). The recoveries were corrected for residue found in the control samples (0.103 ppm in wheat AGF and 0.035 ppm in sorghum AGF). Although the recoveries at the low spiking level of 0.05 ppm were slightly higher than the generally acceptable range of 70% to 120%, the method has been validated at a level of 0.05 ppm in wheat grain (refer to MRID 44583103). According to the study report, the LLMV 0.05 ppm for quinclorac in/on wheat and sorghum AGF commodities.

Residue data from both the wheat AGF and the sorghum AGF field trials are reported in Table C.3. A summary of the residue data for wheat AGFs and sorghum AGFs is presented in Table C.4. Quinclorac residues in the field sample AGFs were not corrected for control contribution.

Residues of quinclorac were quantitated at 0.453 and 0.516 ppm in/on wheat AGFs following two applications of BAS 514 H at 0.25 lb ai/A/application (0.50 lb ai/A/season). Residues of quinclorac were quantitated at 0.147 and 0.145 ppm in/on sorghum AGFs following two applications of BAS 514 H at 0.25 and 0.50 lb ai/A/application (0.75 lb ai/A/season). Ash content was between 12.0 and 17.5% in all wheat AGF samples and between 5.5 and 9.0% in all sorghum AGF samples.

TABLE C.1. Summary of Concurrent Recoveries of Quinclorac from Grain Sorghum.

Matrix	Spike Level (ppm)	Sample Size (n)	Recoveries (%)	Mean ± SD[1] (%)
Aspirated Grain Fractions (Wheat)	0.05	1	136	NA
	0.50	1	114	NA
Aspirated Grain Fractions (Sorghum)	0.05	1	122	NA
	0.50	1	108	NA

1 Standard deviation is applicable only for groups ≥ 3 samples.
2 Concurrent recoveries were corrected for residues detected in the control samples (0.103 ppm in wheat AGF and 0.035 ppm in sorghum AGF).

TABLE C.2. Summary of Storage Conditions.

Matrix	Storage Temperature (°C)	Actual Storage Duration	Interval of Demonstrated Storage Stability[3]
Wheat AGF	<-10	10 months[1]	38 to 39 months in rice grain, corn grain, and soybean grain; 37 to 40 months in rice straw, corn forage, silage, and fodder, soybean fodder, sugarbeet roots and tops, alfalfa hay, sorghum forage, hay, silage, and fodder
Sorghum AGF	<-10	8 months[2]	

1 For wheat, one month elapsed between harvest and initiation of sample processing and a maximum of 9 months elapsed between generation of the aspirated grain fraction samples and the final analysis. The total maximum storage duration was 10 months for wheat.
2 For sorghum, less than one month elapsed between harvest and initiation of sample processing and a maximum of 7 months elapsed between generation of the aspirated grain fraction samples and the final analysis. The total maximum storage duration was 8 months for sorghum.
3 The storage stability data is from MRID 44322214. Refer to J. Garbus, 08/02/90, PP9F3755

TABLE C.3. Residue Data from Crop Field Trials with Quinclorac.

Trial ID (City, State; Year)	Region	Crop; Variety	Commodity or Matrix	Formulation	Total Rate (lb ai/A)	PHI (days)	Quinclorac Residues (ppm)
York, NE; 1999 (RCN 99269)	5	Spring Wheat; Oxen	AGF	75% DF	0.492	79	0.453, 0.516
York, NE; 1999 (RCN 99270)	5	Grain Sorghum; NK 1486	AGF	75% DF	0.749	86	0.147, 0.145

AGF = aspirated grain fraction.

TABLE C.4. Summary of Residue Data from Crop Field Trials with Quinclorac.

Commodity	Total Applic. Rate (lb ai/A)	PHI (days)	Residue Levels (ppm)						
			n	Min.	Max.	HAFT[1]	Median	Mean	SD
Wheat AGF	0.492	79	2	0.453	0.516	0.485	0.485	0.485	--
Sorghum AGF	0.749	86	2	0.145	0.147	0.146	0.146	0.146	--

[1] HAFT = Highest-Average Field Trial.

D. CONCLUSION

This study reflects quinclorac residues in aspirated grain fractions processed from wheat and sorghum that received one pre-plant broadcast application of quinclorac and one foliar broadcast application of quinclorac prior to harvest. Quinclorac, formulated as a 75% DF, was applied to the wheat treatment plot at a total seasonal rate of 0.50 lb ai/A and to the sorghum treatment plot at a total seasonal rate of 0.75 lb ai/A. Residues in/on the wheat AGFs were 0.453 and 0.516 ppm. Ash content was between 12.0% and 17.5% in all samples. Residues in/on sorghum AGF were 0.145 and 0.147 ppm. Ash content was between 5.5% and 9.0% in all samples.

Acceptable methods were used for the quantitation of quinclorac. Additionally, there is adequate storage stability data for wheat, corn, and soybean grain which may be translated to validate the storage conditions and intervals of samples from the current aspirated grain fraction trials. There were no adverse affects noted due to farming practices or environmental conditions during the course of the study; however, it should be noted that detailed weather data were not provided for the entire residue study period and historical weather data were also not provided. Also, it should be noted that OPPTS guideline 860.1500 recommends the collection of triplicate samples per grain type and duplicate analyses of all samples. In this study only two wheat samples and two sorghum samples were collected and each sample was only analyzed once.

E. REFERENCES

DP#: 342446
Subject: Quinclorac – Request for Establishment of Tolerances on Barley Grain without a U.S. Registration. Summary of Analytical Chemistry and Residue Data.
From: Michael A. Doherty
To: Hope Johnson/Jim Tompkins
Date: 11-September-2007
MRID#: 44817507, 45088300, 45088301

DP#s: D241204, D248880 and D248881
Subject: PP#7F4870. Quinclorac. In/On Grain Sorghum and Wheat. Evaluation of Analytical Method and Residue Data.
From: Jerry. B. Stokes
To: Maxie J. Nelson

Date: 6-November-1998
MRID#: 44322206, 44322207, 44322208, 44322209, 44322211, 44322212, 44322213, 44322214, 44322216, 44583101, 44583102, and 44583103.

DP#s:
Subject: PP9F3755. Storage Stability Study
From: J. Garbus
To:
Date: 08/02/90
MRID#: 44322214

F. DOCUMENT TRACKING

RDI: G. Otakie 09/25/08; S. Hummel 09/25/08
Petition Number: #7F4870
DP#: 344496
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Template Version June 2005