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DATA EVALUATION RECORD

CHEM 080808 Propazine §164-1

FORMULATION--00--ACTIVE INGREDIENT

STUDY ID 442873-14
Hughes, D. L. 1996. Field Soil Dissipation of Propazine (Milo-Pro™ 4L) on Bare Soil in North Carolina. Laboratory Project Idenfication: CHW Study No. 6641-100A. Unpublished study performed by Corning Hazelton Inc., Madison, WI, and submitted by Griffin Corporation, Valdosta, GA.

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CONCLUSIONS:

1. The study was submitted to support registration of an end use product and to provide data that may be used toward fulfillment of Subdivision N (164-1) environmental fate data requirements on the field dissipation of propazine on bare soil at a test site in North Carolina. The study was found supplemental due to the following deficiencies: (a) the starting concentration of propazine was not reported; (b) soil sampling was not done at sufficient depth to adequately define the extent of leaching; (c) rate and pattern of formation and decline of propazine degradates were not addressed; (d) subsurface soil data obtained one day after pesticide application under conditions of no rainfall nor irrigation appear questionable.

2. After application, propazine dissipated rapidly with two reported half-lives: 7.2 days for a period of 1 to 21 days and 58.2 days for a period of 28 to 184 days. Residues of propazine

were found in the 0-3, 3-6, and 6-9 inch depths during the first 14 days. After 21, 28, and 90 days, propazine was detected in the 0-3 and 3-6 inch depths. After 90 days, residues of propazine were found only in the 0-3 inch depths.The three degrdates of propazine that were detected in the soil samples included 2-amino-4-chloro-6-isopropylamino-s-triazine (DEA), 2,4-diamino-6-chloro-s-triazine (DAA), and 4,6-diisopropylamino-2-hydroxy-s-triazine or 2-hydroxypropazine (OH-propazine). DAA was only detected once in the 0-3 inch depth during the entire sampling period. DEA was detected only in the 0-3 inch layers. Residues of OH-propazine were found in the 0-3 and 3-6 inch depths.

3. The degradates detected and identified in the study suggest that metabolism is a likely major dissipation pathway for propazine in the field. Leaching may be an important fate mechanism; however, the gathered data and soil depth layers sampled in the study are limited to adequately assess the actual extent of vertical migration of the pesticide.

METHODS:

Test Substance and Plot Information: The soil dissipation study was conducted on a bareground test site in Wilson County of North Carolina.The site has a sandy loam on its 0-6 inch depth and sandy clay loam on its 6-12 inch depth (Table 2). The lower sandy clay loam layer has lower organic matter (0.3%) and more acidic (pH 5.3) compared to the upper sandy loam layer (1.5% organic matter; pH 6.2). Unlabeled propazine or 2-chloro-4,6-bis(isopropylamino)-s-triazine (Milo-Pro™ 4L) was applied on the bare ground using a tractor mounted sprayer on July 18, 1995 at a rate of 1.2 lb a.i./acre (proposed maximum use) in one of the two test plots (Trt 2). The other plot (Trt 1) was untreated and provided the control samples of the study. Figure 3 shows plot diagram of Trt 2(225' x 15') and Trt 1(75' x 15'). The test site has a slope of <1%.There was no reported application of a triazine-containing product for three years prior to this study. However, pesticide Roundup was reported to be used at the test site from 1993 to 1994 at the rate of 1.0 and 2.0 lb ai/acre, respectively (Table 3 - Field History). From the application date through the last sampling date, weather data were collected from the instruments located at the test site and/or institutional, permanent weather recording stations (NOAA and others). The maximum and minimum air temperatures and rainfall data are summarized in Table 4. The daily weather data including pan evaporation are presented in Table 5. The test plot was only irrigated (2.38 in) in August 1996. Overall, the rainfall amounted to 109% of the norm from July 1995 to July 1996.

Sampling: The treated bareground plot (3,375 ft^2) was divided into three equal subplots for sampling. Soil core locations within each subplots were specified by transect lines 5 feet apart. At each sampling interval, five soil samples were taken along one transect line in each of the treated subplots. Three cores were collected from the untreated control plot (1125 ft^2). Each core was about 12 inches long and 2 inches in diameter. Soil cores were sectioned into three inch segments representing 0-3, 3-6, 6-9, and 9-12 inch fractions. Samples from similar depth fractions within each subplot were composited. Soil samples

were collected one day prior to the study, about one hour after the pesticide application, then at 1, 3, 7, 14, 21, 28, 90, 184, 269, and 359 days after the application. Within an hour after collection, the samples were placed in the freezer storage at temperatures of -19 to 31°F for 1 to 21 days before shipping the samples via a freezer truck or overnight carrier on dry ice to the laboratory for analysis. Irrigation water sample was not collected as mentioned in the protocol.

Analysis: Although several soil samples were collected, samples taken one day prior to the study (day -1), about one hour after the pesticide application (day 0), and samples from day 3, 7, and 269 did not appear to have been analyzed or reported in the analytical results. For each soil sample, a representative fraction was initially soxhlet-extracted with a mixture of methanol and water (ratio was not reported). The methanol was removed by rotary evaporation and the resulting water mixture was adsorbed onto a CHEM ELUTE column, which was subsequently eluted with ethyl acetate/hexane solution. After the ethyl acetate/hexane solution was evaporated to dryness, the extract was reconstituted in ethyl acetate and later analyzed using gas chromatograph for the parent compound and degradates. Propazine, and two degradates, 2-amino-4-chloro-6-isopropylamino-s-triazine (DEA) and 2,4-diamino-6-chloro-s-triazine (DAA) were analyzed using capillary gas chromatography with mass selective detection with a limit of quantification of 0.0100 ppm on a wet basis. The other degradate, 4,6-diisopropylamino-2-hydroxy-s-triazine (OH-propazine) was analyzed using high performance liquid chromatography with column switching with a limit of quantification of 0.0200 ppm on a wet basis. The analytical data for propazine and its degradates were reported in ppm on a dry weight basis. Method validation analysis indicated that propazine recoveries ranged from 91.4 to 111%, DEA recoveries from 98.3 to 130%, and DAA recoveries from 32.0 to 92.2%. Recoveries from OH-propazine method ranged from 78.3 to 107%.

DATA SUMMARY:

As previously mentioned in the Analysis section of Methods, samples collected for days -1, 0, 3, 7, and 269 did not appear to have been analyzed or reported in the study report. The total concentrations of the residues of propazine and degradates (DEA, DAA, and OH-propazine) were all reported on a dry weight basis, and found to vary with time in the upper 0-9 inch of the soil layer. The level of propazine dropped from 0.971 ppm at day 1 to 0.161 ppm at day 14, and remained approximately the same on day 21 (0.158 ppm) and day 28 (0.155 ppm). The propazine concentrations continued to decrease to 0.0789, 0.0244, and 0.0219 ppm after 90, 184, and 359 days, respectively. DEA decreased from 0.0518 ppm at day 1 to 0.0129 ppm at day 14, and somewhat remained essentially constant through day 90. No DEA was detected after 184 and 359 days. DAA was only detected at 0.0105 ppm at day 28 and undetected for the rest of the sampling dates after the pesticide application. OH-propazine was initially found at 1.022 ppm at day 1 and remained almost the same after 14, 21 and 28 days (0.174, 0.172, and 0.192 ppm). Its concentration declined to 0.0938, 0.0244, and 0.0219 ppm after 90, 184, and 359 days,

respectively.

Most of the residues of propazine and the two degradates, DEA and OH-propazine, were generally found in the 0-3 and 3-6 inch soil layers after 1, 14, and 21 days of application. Propazine was found in the 0-3, 3-6, and 6-9 inch depths on day 1 and day 14 samples. After 21, 28, and 90 days, propazine residues were detected only in the 0-3 and 3-6 inch depths. After 90 days, propazine was found only in the 0-3 inch depth samples. DEA was only detected in the 0-3 inch depth samples after 1, 14, 21, 28, and 90 days. No DEA was found in the 184- and 359-day samples. Residues of OH-propazine were found in the 0-3 and 3-6 inch depth samples after 14, 21, and 184 days. For the rest of sampling dates, OH-propazine were detected only in the 0-3 inch depths.

Dissipation Rates: Propazine dissipated rapidly after the first day of application. Based on total residue data, about 16% of the propazine present on day 1 remained after 14 and 21 days. After 184 and 359 days, approximately 2% of propazine was detected. The author of the study divided the propazine dissipation curve into two segments and indicated that the dissipation appears biphasic. The first-order kinetic treatment of the total residue data yielded a propazine dissipation half-life of 7.2 days for 1 to 21 days and a half-life of 58.2 days for 28 to 184 days. Using similar approach for the combined mass concentrations of propazine and degradates (DEA and OH-propazine), the author reported a half-life of 7.3 days for 1-21 day period and 52.2 days for 28-184 day period for propazine and chlorinated metabolites.

Dissipation Pathways: Propazine was applied on July 18, 1995 when both the air and soil temperatures were high (94°F) under a sunlight radiation of 237 kW/sq. m/day. After 3 days, there was a rainfall of about 2 inches. During the next 90 days (Aug., Sept., and Oct.,1995), the total rainfall was 15.52 inches and the total solar intensity was 16, 474 kW/sq.m/day. Under these conditions, and after the pesticide has migrated to the subsurface soil, the possible loss of propazine due to volatilization and photolysis, even on a limited basis, is less likely. Based on the degradates detected during the study, soil metabolism appear to be the major route of dissipation for propazine. The low adsorption coefficients of propazine and a major degradate OH-propazine (Koc of both chemicals < 400 ml/g), indicate that leaching could have potentially contributed to the overall dissipation in the environment. The lower 6-12 inch layer of the site soil has lower organic matter content and is more acidic than the upper 0-6 inch zone. It would be possible that leaching might be more favored once propazine and the degradate OH-propazine have reached the 6-12 inch depth. The data collected during the study are however limited to adequately evaluate the extent of leaching. No data were available or presented for deeper soil layers from 12 inches (~30 cm) to 35 inches (~90 cm).

REVIEWER'S COMMENTS:

1. The starting or original concentration of propazine, corresponding to day 0 (~ 1 hr after

pesticide application) was not reported. As a result, the concentration of propazine at the start of the study could not be established. In addition, concentrations for day 3 and day 7 are not available which could help in better understanding the pattern or rate of formation and decline of the degradates. The soil samples were collected one day prior to the study (day -1), on the day of pesticide application (~1 hour after application corresponding to day 0), and then at 1, 3, 7, 21, 28, 90, 184, 269, and 359 days which was consistent with Protocol Amendment No.6 on page 80 of the report. However, it appears that the soil samples were not analyzed or were analyzed but the analytical data for day 0, 3, and 7 were not reported. The concentrations for day 0, 3, and 7 are very important in the degradation kinetic analysis because the author reported that propazine dissipated rapidly after application at the bareground site.The data indicate that most of the dissipation loss of propazine happened between day 1 and day 14. Propazine concentrations decreased from 0.971 ppm at day 1 to 0.161 ppm at day 14, representing a mass loss of about 83%, based on the recovery in the 0-3, 3-6, and 6-9 inch soil layers.. But the concentrations of DEA and OH-propazine at day 14 are 0.0129 ppm and 0.170 ppm, respectively, and could not account for the 83% mass loss, unless the two degradates dissipated also rapidly between day 1 and day 14, or the other degradates such as DAA and other product may have been formed but were not detected due to poor analytical recovery. It is equally possible also that propazine could have leached beyond 9-in depth since this pesticide was reported to be highly to moderately mobile in soils. Based on the study of Perdue (1995), the adsorption Koc values of propazine are 78.7 for loam, 96.0 for silty clay, 127.6 for sandy loam, and 268.4 for sand. A Koc value of less than 400 suggests that the chemical is not strongly adsorbed and would be expected to be mobile in the unsaturated zone.

2. The soil samples were not taken at sufficient depth (~35 in or 90 cm) to define the extent of potential leaching of propazine and its degradates. The sampling was done only up to a maximum depth of 12 inches at 0-3, 3-6, 6-9, and 9-12 inch intervals. For samples corresponding to day 1, 14, 21, 28, and 90 the average concentration of propazine and its degradates were reported only for 0-3, 3-6, and 6-9 inch depths. At day 1 and 14, propazine was detected in all the soil depth intervals. It is difficult to assess whether propazine leached beyond 9 inches because no data are available for 9-12 inch depth and below 12 inches. Analytical data for the 9-12 inch depths were only provided at day 184 and 359.

3. The pattern of formation and decline of the two degradates of propazine, DEA and DAA, was not analyzed separately from the parent pesticide. Instead, the average mass concentrations of DEA and DAA were added to that of propazine. The combined mass concentrations of the three chemicals were then used in the kinetic analysis to yield for propazine and chlorinated metabolites a half-life of 7.3 days for the 1-21 day period and a second half-life of 52.2 days for the 28-184 day period. This type of kinetic data treatment would not provide information on the rate of formation and decline of DEA and DAA. The high concentration of propazine would mask the kinetic behavior of the two

degradates and not give meaningful information about DEA and DAA. For the third metabolite, a closer inspection of the data reveals that OH-propazine increased from 0.0414 ppm at day 1, to 0.170 ppm at day 14, and then to 0.227 ppm at day 21. However, no kinetic analysis was provided for OH-propazine during the 1-21 day period and remaining 28-184 day period.

4. The subsurface soil data obtained on day 1 (one day after pesticide application) in which no rainfall nor irrigation was documented appear questionable. The pesticide was applied on July 18, 1995 and day 1 samples were taken on July 19, 1995. After analysis, the data indicated that propazine had migrated already to the 6-9 inch zone even though there was no rain nor irrigation before and after the pesticide application. Detection of propazine in the 6-9 inch layer could have been due to potential sample contamination partly brought about during compositing of soil samples.

5. According to the field history data provided by the author (page 102 of 276), several pesticides were applied to the test site during 1992 to 1994 with application rates ranging from 0.75 to 2.0 lb a.i./acre. For 1992, the pesticides applied were Prowl 4EC, Storm 4S, Poast 1.5EC, Lorsban 15G, and Bravo 6F (5 times). From 1993 to 1994, Roundup was used. If some of the residues of these pesticides and their degradates were still present at the test site during the study, the residues could have potentially affected the dissipation rate of propazine.

6. The pesticide was applied at a rate of 1.2 lbs a.i./A . This application rate corresponds to the proposed maximum use. The soil dissipation study was conducted in the Wilson County of North Carolina where sorghum is grown commercially. North Carolina is, however, not one of the states in the proposed propazine market areas (Colorado, Kansas, Nebraska, Oklahoma, and Texas).

Reference

Perdue, D. 1995. Soil Adsorption/Desorption of ^{14}C-Propazine by the Batch Equilibrium Method. Unpublished Data. PTRL Report No. 1653. 78 p.

STUDY AUTHOR'S CONCLUSIONS

INCLUDING PERTINENT TABLES AND FIGURES

Reference Substances

The following analytical reference substances were supplied by the Sponsor.

Code Name	Common Name	Chemical Name
Propazine	Propazine	2-chloro-4,6-bis(isopropylamino)-s-triazine
OH-Propazine	Hydroxy propazine	4,6-diisopropylamino-2-hydroxy-s-triazine
DEA	Desethyl atrazine	2-amino-4-chloro-6-isopropylamino-s-triazine
DAA	Diamino atrazine*	2,4-diamino-6-chloro-s-triazine

*Designated term; no common name assigned

The following information applies to each reference substance and was supplied by the Sponsor:

Propazine	Purity:	98.1%
	Lot No.:	177-19-1
	Storage Conditions:	Ambient
	Expiration Date:	8/8/2002
Hydroxy propazine	Purity:	98.0%
	Lot No.:	317-5
	Storage Conditions:	Ambient
	Expiration Date:	8/8/2002
Desethyl atrazine	Purity:	99.4%
	Lot No.:	313-13-F
	Storage Conditions:	Ambient
	Expiration Date:	8/8/2002
Diamino atrazine	Purity:	93.6%
	Lot No.:	Not Available
	Storage Conditions:	Ambient
	Expiration Date:	8/8/2002

The Sponsor was responsible for the information concerning solubility, identity, uniformity, stability, and composition of the analytical reference substances.

Reserve samples of the test material and reference substances were retained by the Sponsor in accordance with 40 CFR 160.195. Both test and reference substances have been characterized under GLP standards.

CHW 6641-100A

Table 2. Soil Characteristics

Soil Characteristics	Test Site North Carolina
Soil Series	Norfolk
0- 6 inch depth	
USDA Textural Class	Sandy Loam
% Sand	60
% Silt	28
% Clay	12
% Organic Matter	1.5
pH	6.2
Cation Exchange Capacity (meq/100 g)	7.4
% Moisture at 1/3 Bar	14.0
Bulk Density (disturbed) gm/cc	1.29
6 -12 inch depth	
USDA Textural Class	Sandy Clay Loam
% Sand	54
% Silt	22
% Clay	24
% Organic Matter	0.3
pH	5.3
Cation Exchange Capacity (meq/100 g)	8.2
% Moisture at 1/3 Bar	15.3
Bulk Density (disturbed) gm/cc	1.24

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Table 3. Field History

Test Site	Year	Crop	Pesticide (lb ai/acre)	
North Carolina	1992	Peanut	Prowl 4EC	0.75
			Storm 4S	0.75
			Poast 1.5EC	0.19
			Lorsban 15G	2.00
			Bravo 6F (5 times)	1.12
	1993	None	Roundup	1.00
	1994	None	Roundup (2 times)	2.00

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Figure 3. Plot Diagram for North Carolina

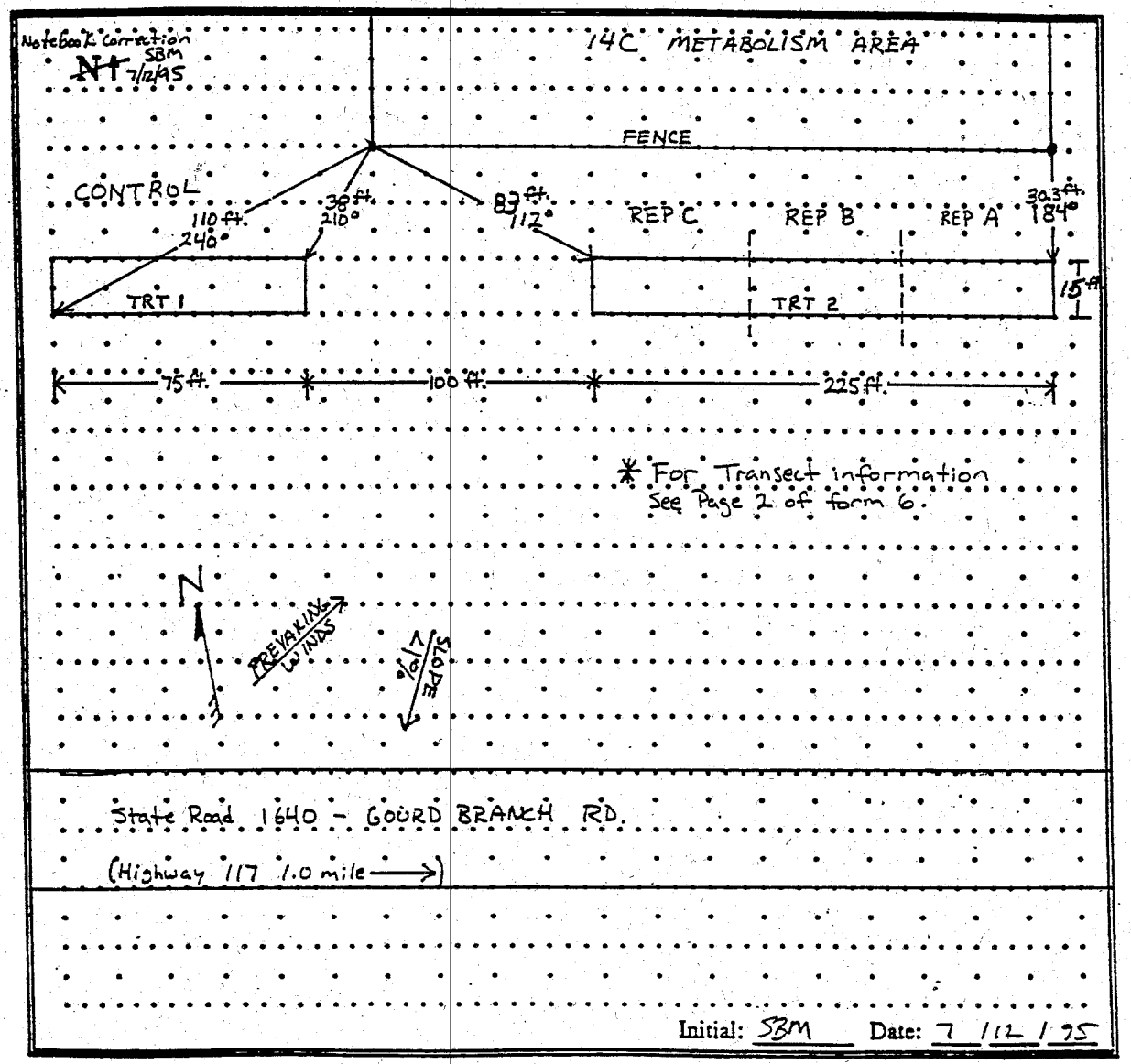

Table 4. Summary of Weather Data for Trial Period

Test Site	Month	Air Temperature (°F) 1995-1996 Averages				Rainfall & Irrigation 1995-1996			Sources of Weather Data and Distance from Test Site
		Maximum	Norm	Minimum	Norm	Rainfall	Norm	Irrigation	
North Carolina	July 1995	92	92	73	68	6.36	4.87	0:00	Rainfall: on-site Temperature: on-site Historical data: NOAA #31-9476-7 Wilson, NC
	August	90	89	70	66	4.48	5.76	2.38	
	September	80	84	63	58	3.99	3.37	0.00	
	October	76	74	54	46	7.05	3.36	0.00	
	November	59	66	37	40	4.10	3.20	0.00	
	December	51	55	29	31	1.64	2.78	0.00	
	January 1996	49	52	31	28	4.19	4.06	0.00	
	February	54	55	33	31	1.83	3.08	0.00	
	March	58	64	36	38	2.85	4.54	0.00	
	April	73	73	49	45	3.14	3.16	0.00	
	May	82	80	60	54	6.39	3.92	0.00	
	June	88	89	68	63	4.65	4.07	0.00	
	July 1-11	89	92	71	68	1.53	1.73[1]	0.00	
	Total					52.20	47.90	2.38	

Norm is the 10-year (1985-1994) average

[1]Calculated by extrapolating monthly total to fraction of the month (11 days).

Table 5. Daily Weather Data

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW** (sq m/day)	PAN EVAP (mm)
07/01/95	182*	0.00	***	***	87	69	***	***	***	***	***	***	***	***	***	***
07/02/95	183*	0.61	***	***	88	69	***	***	***	***	***	***	***	***	***	***
07/03/95	184*	0.00	***	***	87	66	***	***	***	***	***	***	***	***	***	***
07/04/95	185*	0.00	***	***	88	70	***	***	***	***	***	***	***	***	***	***
07/05/95	186*	0.72	***	***	91	67	***	***	***	***	***	***	***	***	***	***
07/06/95	187	0.26	1.8	153	89	70	96	67	92	75	89	75	80	79	296	5.5
07/07/95	188	1.10	1.3	208	88	69	97	69	90	72	87	73	80	79	264	10.1
07/08/95	189	0.00	0.8	246	90	70	97	47	93	72	89	73	80	79	363	7.7
07/09/95	190	0.00	0.9	174	87	67	96	59	91	71	87	71	80	79	316	5.5
07/10/95	191	0.51	1.6	145	90	71	96	62	91	73	88	74	80	78	272	3.1
07/11/95	192	1.13	1.0	185	91	69	97	64	92	71	87	71	80	78	284	9.2
07/12/95	193	0.00	1.8	142	89	70	96	54	93	73	89	73	80	79	349	7.4
07/13/95	194	0.00	0.9	166	91	68	96	44	94	71	90	72	80	79	362	6.4
07/14/95	195	0.00	1.5	211	95	73	96	56	96	74	92	75	81	80	353	6.2
07/15/95	196	0.00	2.1	198	94	76	95	59	98	77	94	77	83	81	358	6.1
07/16/95	197	0.00	1.9	171	94	77	94	61	98	78	95	79	83	82	322	4.5
07/17/95	198	0.03	1.4	184	94	76	95	64	100	79	95	79	83	82	244	6.9
07/18/95	199	0.00	1.9	205	94	74	95	65	94	77	92	77	83	82	237	5.2
07/19/95	200	0.00	1.4	177	93	72	95	51	96	75	92	75	83	81	344	6.3
07/20/95	201	0.00	1.0	180	95	72	95	54	99	76	95	76	84	82	322	6.5
07/21/95	202	1.98	3.0	180	92	74	96	74	92	77	90	78	87	83	186	0.0
07/22/95	203	0.02	1.1	205	92	75	95	73	92	76	89	76	83	82	272	3.9
07/23/95	204	0.00	1.5	202	96	79	94	62	98	78	94	78	84	82	334	7.4
07/24/95	205	0.00	2.0	203	95	74	92	64	101	77	96	78	85	83	344	8.2
07/25/95	206	0.00	2.0	166	95	75	94	63	101	78	97	78	85	83	353	6.8
07/26/95	207	0.00	1.1	198	95	73	93	65	97	79	93	79	85	84	299	4.8
07/27/95	208	0.00	3.3	176	91	75	93	66	98	79	94	79	85	84	305	5.0
07/28/95	209	0.00	2.3	154	90	74	95	66	98	77	93	77	85	84	271	3.3
07/29/95	210	0.00	1.2	184	95	71	95	53	102	75	97	76	86	84	365	3.0
07/30/95	211	0.00	1.0	203	97	75	94	56	105	78	99	79	86	84	321	1.4
07/31/95	212	0.00	1.7	136	92	74	94	58	100	78	96	79	86	85	317	2.5
MONTHLY SUM/AVG		6.36	1.6	183	92	73	95	61	96	76	92	76	83	81	8051	142.9 5.63"

* During this period rainfall data collected on-site manual reading of National Weather Bureau Standard Rainguage.

* Daily max/min air temperature data transcribed from data provided by NOAA Station # 31-9476-7 (Wilson, NC)

** Readings taken at minute intervals. Minute readings are totaled for each hour. Hour totals are totaled for each day.

*** These data lost due to datalogger malfunction caused by lightning strike incident.

THE ABOVE DATA WERE ELECTRONICALLY COLLECTED (EXCEPT FOR *) AND HAVE NOT BEEN ALTERED.

Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
08/01/95	213	0.00	1.1	156	92	73	94	60	101	78	97	79	86	85	339	7.4
08/02/95	214	0.00	1.5	172	92	71	94	55	100	77	95	78	86	85	309	6.6
08/03/95	215	0.13	1.6	102	92	70	94	63	101	76	96	77	86	84	310	4.7
08/04/95	216	0.00	1.3	173	94	75	94	56	101	77	96	78	86	85	327	6.1
08/05/95	217	0.00	1.8	201	95	76	94	57	100	78	95	79	86	85	298	5.2
08/06/95	218	0.00	3.7	216	91	76	91	62	98	78	94	79	86	85	254	4.5
08/07/95	219	0.00	4.1	127	82	68	93	68	90	74	88	76	86	85	229	3.0
08/08/95	220	0.00	2.9	138	81	64	91	63	90	71	86	72	85	83	269	2.0
08/09/95	221	0.00	2.1	180	80	69	93	85	83	73	81	74	83	82	115	0.5
08/10/95	222	0.40	2.6	138	86	73	94	73	92	74	88	74	82	81	195	1.2
08/11/95	223	0.00	2.0	224	87	72	94	69	89	74	86	74	82	81	231	1.5
08/12/95	224	0.00	0.5	246	97	70	94	53	100	73	94	73	83	81	322	2.0
08/13/95	225	0.00	0.4	178	100	74	93	49	102	77	96	77	85	83	312	1.0
08/14/95	226	0.00	1.4	136	96	77	92	64	102	80	98	80	86	84	285	0.3
08/15/95	227	0.00	2.0	144	92	73	93	57	97	78	93	79	86	85	286	5.2
08/16/95	228	0.00	3.1	237	94	67	91	55	100	73	95	75	85	83	345	8.0
08/17/95	229	0.00	1.9	275	96	75	91	52	101	78	97	79	86	84	304	6.0
08/18/95	230	0.00	1.3	160	96	71	93	55	102	78	97	79	86	85	273	6.7
08/19/95	231	0.00	2.3	148	90	65	94	45	98	74	94	76	86	85	314	7.2
08/20/95	232	0.00	1.0	219	87	57	95	30	95	70	91	72	85	83	330	4.9
08/21/95	233	0.00	1.2	213	94	57	95	37	98	68	93	69	84	82	327	5.0
08/22/95	234	0.00	1.2	160	94	71	93	49	102	75	96	76	85	83	300	4.1
08/23/95	235	0.00	2.4	155	89	71	93	51	97	76	93	77	85	84	242	3.2
08/24/95	236	0.00	1.3	163	94	70	93	53	100	75	95	76	85	84	267	2.3
08/25/95	237	0.61	2.6	133	95	70	93	44	104	76	98	76	86	84	308	2.0
08/26/95	238	0.06	2.4	75	80	70	92	81	83	74	82	75	86	83	116	0.9
08/27/95	239	2.14	3.3	73	84	76	93	83	83	76	82	76	83	82	104	0.4
08/28/95	240	1.14	5.1	91	82	70	94	74	82	72	80	73	83	81	141	7.9
08/29/95	241	0.00	2.1	190	86	67	92	64	88	69	84	70	81	80	308	4.6
08/30/95	242	0.00	0.6	174	91	68	93	50	91	70	87	71	81	80	306	5.0
08/31/95	243	0.00	1.5	201	90	70	93	59	91	72	87	73	82	80	289	5.4
MONTHLY SUM/AVG		4.48	2.0	166	90	70	93	59	96	75	92	76	85	83	8354	125.0 4.92"

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
09/01/95	244	0.42	3.1	205	88	71	92	66	90	73	87	73	82	80	274	4.0
09/02/95	245	0.08	2.3	227	81	62	92	59	86	69	83	70	82	80	294	4.2
09/03/95	246	0.00	1.5	217	82	57	93	42	85	65	82	66	81	79	316	4.7
09/04/95	247	0.00	0.5	133	85	58	93	43	88	64	84	65	79	78	313	4.1
09/05/95	248	0.00	0.8	161	82	58	93	49	85	65	82	66	79	77	249	3.2
09/06/95	249	0.00	1.9	161	83	61	93	56	85	66	81	67	79	77	251	3.2
09/07/95	250	0.57	1.4	143	76	67	92	88	78	70	76	70	78	78	87	0.6
09/08/95	251	0.00	0.6	198	80	71	92	82	81	72	79	72	78	78	114	1.0
09/09/95	252	0.00	0.8	206	83	69	92	72	84	72	81	73	79	78	177	2.3
09/10/95	253	0.00	1.5	135	81	68	92	71	80	70	78	70	79	78	155	2.6
09/11/95	254	0.00	2.2	78	77	63	90	64	79	67	77	68	79	77	176	3.2
09/12/95	255	0.00	0.8	137	84	61	92	54	87	65	83	66	78	76	269	3.1
09/13/95	256	0.00	1.1	208	87	62	92	57	88	67	83	68	78	77	244	3.2
09/14/95	257	0.00	0.8	208	89	72	91	65	89	73	84	74	79	78	188	2.1
09/15/95	258	0.00	3.5	117	85	69	91	59	89	71	85	72	80	78	256	3.1
09/16/95	259	0.27	2.5	110	78	67	91	82	78	70	76	71	80	78	82	0.4
09/17/95	260	0.03	1.8	206	84	65	91	74	80	69	79	70	78	78	127	1.1
09/18/95	261	0.00	2.8	179	79	62	92	69	81	66	78	67	78	77	185	2.1
09/19/95	262	0.00	3.9	148	79	62	91	65	81	65	79	66	78	76	251	2.2
09/20/95	263	0.00	1.3	177	80	62	92	64	80	67	78	67	77	76	184	1.1
09/21/95	264	0.26	0.5	122	79	69	91	82	80	71	78	71	77	77	97	0.3
09/22/95	265	1.23	2.7	182	88	69	91	67	84	73	82	73	78	77	196	2.1
09/23/95	266	0.60	5.0	156	69	51	93	80	73	58	73	59	78	74	36	2.7
09/24/95	267	0.00	3.2	224	66	51	91	82	68	57	66	58	74	71	110	1.3
09/25/95	268	0.00	0.8	247	77	59	92	77	76	62	73	62	71	70	165	1.7
09/26/95	269	0.45	0.8	203	77	64	91	76	77	65	75	65	73	70	150	1.8
09/27/95	270	0.08	1.8	167	77	60	91	61	80	66	76	66	73	71	240	5.6
09/28/95	271	0.00	1.9	207	78	57	92	49	78	61	74	62	73	71	259	4.5
09/29/95	272	0.00	3.7	148	77	58	92	69	78	61	74	62	72	70	215	3.9
09/30/95	273	0.00	3.0	182	75	61	91	74	74	63	72	63	71	70	139	2.3
MONTHLY SUM/AVG		3.99	2.0	173	80	63	92	67	81	67	79	67	77	76	5797	77.5 5.58**

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	SOIL TEMP (°F) 1" LOW	SOIL TEMP (°F) 4" HIGH	SOIL TEMP (°F) 4" LOW	SOIL TEMP (°F) 20" HIGH	SOIL TEMP (°F) 20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
10/01/95	274	0.00	0.8	223	81	56	92	59	81	61	76	61	71	70	238	3.2
10/02/95	275	0.00	0.5	228	87	55	92	51	84	61	78	62	72	70	247	3.5
10/03/95	276	0.00	1.6	158	84	60	92	48	83	64	79	65	72	70	221	3.9
10/04/95	277	2.24	1.0	128	77	65	91	89	75	69	73	69	73	71	22	5.8
10/05/95	278	0.92	7.9	165	81	76	91	84	78	72	76	72	74	72	48	11.3
10/06/95	279	0.40	2.0	183	83	71	89	81	81	72	79	72	74	73	120	2.0
10/07/95	280	0.18	1.9	174	80	71	89	78	79	71	77	72	75	74	114	3.7
10/08/95	281	0.00	2.2	205	76	58	91	59	78	64	75	65	75	73	245	4.4
10/09/95	282	0.00	1.6	174	76	53	91	60	77	59	74	60	73	71	234	3.1
10/10/95	283	0.00	2.4	119	76	64	88	76	76	66	74	66	73	70	112	2.3
10/11/95	284	0.00	3.5	123	76	63	89	76	75	65	73	66	72	71	118	2.9
10/12/95	285	0.00	2.3	131	79	61	91	62	80	63	77	64	72	70	188	3.3
10/13/95	286	0.40	0.9	153	79	61	91	81	77	65	74	66	72	71	102	1.1
10/14/95	287	0.94	4.1	179	83	64	91	78	82	70	79	70	73	72	141	3.0
10/15/95	288	0.11	2.1	279	68	46	92	41	72	56	71	58	73	71	215	5.3
10/16/95	289	0.00	2.2	275	70	46	92	35	71	52	68	53	73	68	235	3.5
10/17/95	290	0.00	1.6	208	68	42	92	35	70	50	66	51	68	65	234	2.9
10/18/95	291	0.00	0.7	214	77	40	93	47	72	49	68	50	66	64	221	2.4
10/19/95	292	0.00	1.1	156	76	47	92	46	75	53	71	54	66	64	220	3.0
10/20/95	293	0.08	3.3	134	78	58	91	76	74	60	70	60	67	66	85	0.4
10/21/95	294	1.06	3.1	256	71	43	92	44	71	54	68	55	68	67	223	9.0
10/22/95	295	0.00	0.8	252	73	40	93	38	71	50	67	51	67	65	219	2.4
10/23/95	296	0.00	0.5	214	75	40	92	42	73	50	69	51	65	63	215	2.5
10/24/95	297	0.00	1.4	195	80	53	91	55	74	58	71	59	66	64	152	2.4
10/25/95	298	0.00	0.8	256	76	53	91	53	73	59	71	59	67	65	201	2.7
10/26/95	299	0.00	0.9	197	72	47	92	54	72	55	70	55	67	64	197	2.0
10/27/95	300	0.01	6.0	199	81	52	91	65	75	57	72	57	67	64	145	3.1
10/28/95	301	0.71	4.2	242	74	53	90	35	74	56	72	58	68	66	183	6.9
10/29/95	302	0.00	2.0	276	65	42	93	46	66	51	64	52	67	65	206	3.0
10/30/95	303	0.00	0.3	246	66	38	93	34	65	47	63	48	65	62	194	2.1
10/31/95	304	0.13	0.1	188	62	48	92	79	62	54	60	54	63	62	41	0.3
MONTHLY SUM/AVG		7.05	2.1	198	76	54	91	58	75	59	72	60	70	68	5293	106.9 4.21"

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR -TEMP (°F)- HIGH	AIR -TEMP (°F)- LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
11/01/95	305	0.08	0.6	102	70	61	90	86	68	60	67	59	65	62	46	0.0
11/02/95	306	0.97	0.8	200	75	69	90	88	69	65	68	64	66	64	20	3.1
11/03/95	307	0.06	1.5	233	77	53	89	76	75	63	73	65	68	66	101	2.5
11/04/95	308	0.00	2.6	282	56	35	92	29	63	46	65	48	68	65	204	3.4
11/05/95	309	0.00	0.8	199	47	29	90	42	53	41	52	43	65	61	146	1.4
11/06/95	310	0.00	0.2	222	60	32	93	42	60	43	57	44	61	59	184	1.8
11/07/95	311	1.61	2.1	188	68	45	91	85	60	50	58	50	60	59	13	3.7
11/08/95	312	0.00	3.9	294	56	36	90	42	61	43	59	44	60	59	192	4.6
11/09/95	313	0.00	1.1	176	50	30	92	34	54	38	52	40	60	57	193	1.8
11/10/95	314	0.00	1.6	211	63	30	92	54	59	39	55	40	57	55	174	2.1
11/11/95	315	0.66	7.2	183	70	42	91	67	63	49	61	50	59	56	45	5.4
11/12/95	316	0.00	2.6	256	52	32	93	40	56	42	53	43	59	57	185	2.2
11/13/95	317	0.00	0.5	179	58	30	93	41	58	39	56	40	57	55	170	1.8
11/14/95	318	0.54	2.1	246	48	41	92	76	51	45	50	45	57	55	21	1.8
11/15/95	319	0.00	2.8	264	50	29	92	42	53	39	50	40	56	54	181	2.7
11/16/95	320	0.00	0.8	255	52	26	93	36	55	35	51	37	54	52	180	2.6
11/17/95	321	0.00	1.0	215	53	29	93	37	53	36	51	37	53	51	177	1.9
11/18/95	322	0.00	0.3	240	57	30	92	44	51	38	49	39	52	51	97	1.2
11/19/95	323	0.00	1.0	227	63	36	92	44	59	42	55	43	53	52	170	1.8
11/20/95	324	0.00	0.5	190	57	32	93	57	55	40	52	41	53	52	136	1.6
11/21/95	325	0.00	1.8	267	64	39	92	25	59	42	55	43	54	52	138	***
11/22/95	326	0.00	1.9	255	49	27	93	35	50	37	48	38	54	52	172	***
11/23/95	327	0.00	2.6	204	61	27	93	24	52	35	49	36	52	50	150	***
11/24/95	328	0.12	3.0	135	51	40	92	61	49	44	48	44	52	51	45	***
11/25/95	329	0.05	2.7	222	52	32	93	55	53	40	50	41	52	51	132	***
11/26/95	330	0.00	1.0	192	62	29	93	42	56	37	52	38	52	50	162	***
11/27/95	331	0.00	3.3	202	65	41	91	44	57	42	54	43	53	51	124	***
11/28/95	332	0.00	3.6	205	76	56	87	57	68	51	64	50	55	53	146	***
11/29/95	333	0.01	3.6	172	62	33	90	81	58	41	57	42	56	55	18	***
11/30/95	334	0.00	1.0	233	49	28	93	51	51	36	48	38	55	52	161	***
MONTHLY SUM/AVG		4.10	1.9	215	59	37	92	51	58	43	55	44	57	55	3882	47.4 1.9"

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
12/01/95	335	0.00	3.3	216	64	32	90	42	56	37	52	38	52	51	155	***
12/02/95	336	0.00	1.0	243	70	40	86	16	59	42	55	43	53	52	163	***
12/03/95	337	0.00	1.7	239	72	32	93	55	60	40	57	41	53	52	133	***
12/04/95	338	0.00	1.3	180	62	37	91	56	58	44	55	45	54	53	106	***
12/05/95	339	0.02	1.2	164	56	33	93	57	54	40	51	41	54	52	96	***
12/06/95	340	0.00	1.0	232	60	42	92	44	58	47	55	47	54	53	111	***
12/07/95	341	0.40	3.5	174	47	27	93	64	48	36	48	38	54	52	43	***
12/08/95	342	0.00	2.4	152	46	22	93	39	46	34	44	35	52	49	135	***
12/09/95	343	0.76	2.1	261	49	37	92	64	49	40	47	41	50	49	83	***
12/10/95	344	0.00	4.4	287	41	25	69	35	43	33	43	34	50	48	163	***
12/11/95	345	0.00	2.1	244	39	21	90	25	37	33	36	33	48	46	126	***
12/12/95	346	0.00	0.5	143	49	22	92	23	43	33	41	33	46	45	139	***
12/13/95	347	0.00	0.6	140	54	35	86	37	51	38	48	38	47	45	118	***
12/14/95	348	0.00	1.7	219	68	34	92	50	56	39	52	39	49	47	139	***
12/15/95	349	0.00	0.5	239	72	50	91	57	61	47	58	47	51	49	117	***
12/16/95	350	0.03	2.2	237	61	34	92	72	56	42	54	43	52	51	55	***
12/17/95	351	0.00	1.9	172	47	28	92	57	51	37	48	38	52	50	150	***
12/18/95	352	0.05	0.8	120	41	29	92	73	44	37	44	38	50	48	42	***
12/19/95	353	0.34	1.5	173	43	39	91	90	44	42	44	42	49	48	12	***
12/20/95	354	0.00	3.2	306	43	27	91	41	45	34	44	35	49	48	111	***
12/21/95	355	0.00	2.9	276	44	23	72	44	43	33	40	34	48	46	145	***
12/22/95	356	0.00	1.5	286	42	23	87	41	43	33	39	33	46	45	150	***
12/23/95	357	0.00	1.2	298	40	22	89	46	41	33	39	33	45	44	153	***
12/24/95	358	0.00	2.1	268	41	24	80	44	38	32	36	33	44	43	153	***
12/25/95	359	0.00	1.5	276	42	19	91	46	39	32	37	33	43	42	153	***
12/26/95	360	0.00	4.1	223	38	23	82	38	38	33	36	33	43	42	156	***
12/27/95	361	0.00	2.5	280	44	22	85	43	41	33	38	33	42	42	136	***
12/28/95	362	0.00	0.6	292	42	21	89	44	39	32	37	33	42	42	156	***
12/29/95	363	0.00	0.5	236	48	22	92	42	42	33	39	33	42	41	156	***
12/30/95	364	0.00	0.9	218	56	21	92	39	45	33	42	33	42	41	144	***
12/31/95	365	0.04	0.1	225	54	38	91	84	50	39	48	39	45	42	48	***
MONTHLY SUM/AVG		1.64	1.8	226	51	29	89	49	48	37	45	37	48	47	3748	***
																***

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR -TEMP (F)- HIGH	AIR -TEMP (F)- LOW	- - RH% - - HIGH	- - RH% - - LOW	SOIL TEMP (F) - - 1" - - HIGH	SOIL TEMP (F) - - 1" - - LOW	SOIL TEMP (F) - - 4" - - HIGH	SOIL TEMP (F) - - 4" - - LOW	SOIL TEMP (F) - - 20" - - HIGH	SOIL TEMP (F) - - 20" - - LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
01/01/96	1	0.17	1.4	101	53	47	90	89	50	47	49	46	47	45	15	***
01/02/96	2	0.02	0.4	138	54	47	91	89	52	47	50	46	48	47	33	***
01/03/96	3	0.02	2.6	256	56	38	91	62	56	44	53	45	50	48	100	***
01/04/96	4	0.00	1.9	251	44	27	88	44	48	36	45	37	50	47	160	***
01/05/96	5	0.00	1.0	233	50	25	90	44	48	34	45	35	47	45	154	***
01/06/96	6	0.00	5.1	62	35	27	91	59	39	35	38	35	46	44	48	***
01/07/96	7	0.26	2.4	212	34	22	91	88	36	34	35	34	44	43	16	***
01/08/96	8	0.10	2.4	304	33	20	89	65	34	33	34	33	43	42	133	***
01/09/96	9	0.37	1.5	230	39	20	89	70	33	32	33	32	42	41	140	***
01/10/96	10	0.01	2.6	275	44	30	89	45	38	33	36	32	41	40	163	***
01/11/96	11	0.00	2.2	96	32	20	82	47	33	32	33	32	41	40	94	***
01/12/96	12	0.59	0.4	277	33	29	92	83	35	33	34	33	40	40	42	***
01/13/96	13	0.03	1.0	288	46	27	91	68	45	33	41	33	41	40	162	***
01/14/96	14	0.00	0.8	240	60	28	91	45	53	33	48	33	42	40	166	***
01/15/96	15	0.00	1.8	202	68	37	88	40	58	37	53	37	45	42	160	***
01/16/96	16	0.00	2.1	115	43	34	87	73	45	37	44	38	45	44	54	***
01/17/96	17	0.00	0.3	199	58	39	90	74	53	42	50	41	46	44	99	***
01/18/96	18	0.43	4.6	149	70	44	89	81	63	44	60	44	49	46	71	***
01/19/96	19	0.22	10.9	226	70	29	86	41	65	37	62	40	53	49	108	***
01/20/96	20	0.00	3.6	108	36	23	82	46	46	34	43	35	52	47	178	***
01/21/96	21	0.00	2.0	193	37	26	83	70	38	34	38	34	47	44	41	***
01/22/96	22	0.00	1.8	156	48	26	91	50	47	33	44	33	44	43	179	***
01/23/96	23	0.00	1.9	197	60	27	91	55	52	34	48	34	44	43	148	***
01/24/96	24	0.27	8.4	210	67	42	88	44	57	42	54	44	48	44	47	***
01/25/96	25	0.00	2.8	223	47	27	91	35	51	35	48	36	48	46	186	***
01/26/96	26	0.00	4.2	141	61	25	91	62	53	34	50	34	46	44	142	***
01/27/96	27	1.42	9.4	206	64	39	89	27	60	40	57	41	49	46	39	***
01/28/96	28	0.00	2.8	172	45	28	84	25	49	34	46	35	49	46	186	***
01/29/96	29	0.20	0.2	152	41	29	91	63	43	35	42	35	46	45	34	***
01/30/96	30	0.08	0.3	194	48	40	89	84	49	41	47	41	46	45	49	***
01/31/96	31	0.17	2.3	157	51	34	88	72	49	39	47	40	47	46	27	***
MONTHLY SUM/AVG		4.19	2.8	194	49	31	89	59	48	37	45	37	46	44	3144	***
																***

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR -TEMP (°F)- HIGH	AIR -TEMP (°F)- LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
02/01/96	32	0.00	3.7	65	35	29	89	54	39	35	40	36	47	44	37	***
02/02/96	33	0.46	0.6	119	33	28	90	87	37	34	36	34	44	43	11	***
02/03/96	34	0.00	0.0	43	28	19	90	89	34	32	34	33	43	41	31	***
02/04/96	35	0.00	0.0	43	21	12	89	83	33	32	33	32	41	40	180	***
02/05/96	36	0.00	0.5	19	24	2	86	65	33	31	32	32	40	39	219	***
02/06/96	37	0.04	0.9	71	37	13	91	52	33	31	32	32	40	39	203	***
02/07/96	38	0.08	1.6	183	46	16	91	53	33	31	32	31	39	39	167	***
02/08/96	39	0.03	5.0	208	61	38	87	48	48	33	45	32	40	38	143	***
02/09/96	40	0.07	4.3	262	63	34	88	37	60	41	56	41	45	40	196	***
02/10/96	41	0.00	2.4	236	64	30	90	28	60	36	55	36	46	44	201	***
02/11/96	42	0.00	5.8	240	69	43	85	20	62	42	58	43	48	45	152	***
02/12/96	43	0.00	5.7	249	44	32	54	37	50	34	47	35	47	45	145	***
02/13/96	44	0.00	3.9	232	45	22	68	25	48	33	44	33	45	43	218	***
02/14/96	45	0.00	5.1	217	55	39	78	42	47	36	45	36	44	43	72	***
02/15/96	46	0.00	1.7	166	61	41	88	45	60	41	56	41	46	44	194	***
02/16/96	47	0.10	6.1	211	42	28	90	76	45	34	45	34	46	44	21	***
02/17/96	48	0.04	3.6	245	40	21	89	35	47	33	44	33	44	42	230	***
02/18/96	49	0.00	1.7	254	48	26	82	32	50	33	46	33	43	42	215	***
02/19/96	50	0.00	1.5	167	58	24	90	48	52	33	48	33	43	42	141	***
02/20/96	51	1.01	2.1	140	63	46	89	82	56	42	53	42	46	43	48	***
02/21/96	52	0.00	0.4	204	65	49	87	73	65	50	61	50	50	46	120	***
02/22/96	53	0.00	1.5	164	71	50	88	61	67	48	63	48	51	49	143	***
02/23/96	54	0.00	0.4	178	71	55	87	68	70	54	66	53	54	51	151	***
02/24/96	55	0.00	4.5	263	71	40	86	16	69	46	65	48	54	53	236	***
02/25/96	56	0.00	1.5	259	75	34	85	14	68	41	63	42	54	51	251	***
02/26/96	57	0.00	1.7	218	81	52	68	28	71	48	66	48	54	52	224	***
02/27/96	58	0.00	1.9	157	75	47	83	44	70	49	66	50	55	53	197	***
02/28/96	59	0.00	3.3	245	70	58	80	34	65	53	63	54	56	55	79	***
02/29/96	60	0.00	3.9	229	58	32	75	29	58	40	55	42	56	53	229	***
MONTHLY SUM/AVG		1.83	2.6	182	54	33	84	48	53	39	50	39	47	45	4454	*** ***

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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
03/01/96	61	0.20	2.3	107	45	33	90	51	50	40	48	40	53	50	85	***
03/02/96	62	0.11	1.9	214	51	37	90	61	56	41	52	41	50	49	115	***
03/03/96	63	0.00	4.5	214	59	35	87	18	59	36	55	38	49	48	270	***
03/04/96	64	0.00	2.2	115	52	26	77	24	59	34	54	35	49	46	266	***
03/05/96	65	0.00	6.7	176	73	32	89	40	64	38	59	38	50	47	217	***
03/06/96	66	0.19	5.6	203	67	59	86	80	64	55	61	54	53	50	39	***
03/07/96	67	0.97	4.1	179	68	45	87	83	64	51	61	52	55	53	39	***
03/08/96	68	0.14	8.3	264	45	24	88	36	52	33	52	35	55	50	267	***
03/09/96	69	0.00	3.0	278	36	19	79	35	49	32	45	33	50	46	286	***
03/10/96	70	0.00	5.8	82	40	23	79	38	49	32	46	33	46	44	289	***
03/11/96	71	0.00	7.4	64	48	27	80	43	52	32	48	33	45	43	258	***
03/12/96	72	0.00	5.4	178	57	29	81	18	55	33	50	33	45	44	298	***
03/13/96	73	0.00	0.8	278	68	25	89	15	61	33	55	34	46	44	291	***
03/14/96	74	0.00	1.7	216	76	39	62	21	66	38	60	38	49	46	272	***
03/15/96	75	0.16	3.5	221	78	50	85	43	70	48	64	48	52	49	193	***
03/16/96	76	0.05	2.8	169	71	45	88	44	72	49	67	49	54	52	263	***
03/17/96	77	0.09	1.3	92	52	48	88	84	55	51	54	51	54	53	41	***
03/18/96	78	0.01	2.2	72	52	49	87	84	53	50	52	50	53	52	32	***
03/19/96	79	0.10	8.0	159	67	44	87	48	63	42	59	44	53	51	137	***
03/20/96	80	0.00	7.0	219	49	39	69	43	53	38	52	39	52	50	192	***
03/21/96	81	0.00	4.5	256	54	35	66	35	57	37	53	38	50	48	296	***
03/22/96	82	0.00	3.9	272	53	31	64	26	56	35	53	36	50	48	310	***
03/23/96	83	0.00	3.5	270	59	26	85	17	57	34	54	35	49	47	322	***
03/24/96	84	0.00	2.2	172	67	27	88	15	64	35	60	36	50	47	303	***
03/25/96	85	0.00	5.9	184	73	38	87	45	67	42	63	43	52	49	181	***
03/26/96	86	0.00	1.6	215	76	54	86	30	73	55	69	55	56	52	202	***
03/27/96	87	0.02	7.3	81	55	38	82	29	60	46	58	48	56	54	121	***
03/28/96	88	0.80	5.2	161	49	37	88	82	50	43	49	44	54	51	38	***
03/29/96	89	0.01	3.1	220	59	39	86	61	61	43	57	43	51	50	174	***
03/30/96	90	0.00	1.4	107	54	41	87	69	61	44	58	45	51	50	147	***
03/31/96	91	0.19	0.8	97	57	42	87	73	55	45	53	46	51	50	58	***
MONTHLY SUM/AVG		2.85	4.1	181	58	36	83	44	59	41	56	41	51	49	5942	***
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Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR TEMP (°F) HIGH	AIR TEMP (°F) LOW	RH% HIGH	RH% LOW	SOIL TEMP (°F) 1" HIGH	1" LOW	4" HIGH	4" LOW	20" HIGH	20" LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
04/01/96	92	0.34	0.5	248	62	54	86	80	63	52	60	51	53	51	79	0.1
04/02/96	93	0.03	5.8	253	61	39	86	22	67	46	63	47	54	53	329	4.7
04/03/96	94	0.00	3.9	230	77	36	87	18	73	42	67	43	54	52	333	6.2
04/04/96	95	0.00	4.7	216	82	54	62	18	78	49	72	49	56	53	330	8.4
04/05/96	96	0.00	3.8	237	72	51	72	35	76	53	71	54	58	56	280	6.3
04/06/96	97	0.34	3.6	104	51	41	87	61	53	46	54	46	58	54	45	1.2
04/07/96	98	0.00	3.0	294	57	38	86	34	62	43	59	44	54	52	261	3.7
04/08/96	99	0.09	1.5	190	55	32	87	30	61	39	57	40	53	51	196	3.1
04/09/96	100	0.11	3.8	245	53	39	87	34	57	39	53	41	52	52	128	1.5
04/10/96	101	0.00	4.4	262	56	33	86	31	63	35	58	37	52	49	312	4.4
04/11/96	102	0.00	3.0	254	72	35	85	18	70	39	65	39	52	49	348	6.2
04/12/96	103	0.00	3.8	217	85	50	50	12	79	46	73	47	56	52	345	8.6
04/13/96	104	0.37	5.7	215	83	58	85	13	84	54	77	54	59	56	330	7.3
04/14/96	105	0.00	2.7	222	83	59	84	33	83	59	78	59	61	59	346	4.9
04/15/96	106	0.04	8.2	134	77	55	86	60	74	58	69	58	61	60	124	2.8
04/16/96	107	0.00	6.1	258	67	44	82	27	72	51	68	53	61	60	274	4.5
04/17/96	108	0.00	2.6	257	67	39	86	17	76	47	71	48	61	58	368	3.6
04/18/96	109	0.00	2.4	202	82	36	87	14	83	45	77	47	60	57	350	5.1
04/19/96	110	0.00	5.4	199	75	59	69	44	74	56	69	56	61	59	137	2.1
04/20/96	111	0.08	7.1	193	83	64	84	36	84	61	78	61	63	60	245	1.6
04/21/96	112	0.00	2.5	220	84	61	84	37	85	60	79	60	64	62	284	1.9
04/22/96	113	0.00	4.9	205	86	62	83	35	90	62	84	62	66	64	314	0.4
04/23/96	114	0.21	6.8	214	85	60	84	34	89	64	83	64	67	65	291	1.1
04/24/96	115	0.00	3.5	252	69	47	74	23	83	52	77	54	67	64	378	0.4
04/25/96	116	0.00	6.9	188	77	43	85	16	83	51	78	53	65	62	349	0.6
04/26/96	117	0.28	5.7	202	77	58	85	48	77	59	72	59	64	63	118	0.4
04/27/96	118	0.00	2.4	254	73	47	85	21	81	56	77	57	64	62	367	0.2
04/28/96	119	0.00	4.8	189	79	46	85	28	86	53	79	54	65	62	337	0.6
04/29/96	120	0.00	7.5	173	85	63	83	42	89	62	84	63	67	64	274	0.3
04/30/96	121	1.25	6.3	196	73	55	85	57	71	57	71	59	67	66	84	0.5
MONTHLY SUM/AVG		3.14	4.4	217	73	49	82	33	76	51	71	52	60	58	7954	92.6 3.6"

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Table 5. Daily Weather Data (continued)

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05/01/96	122	0.00	1.9	218	69	42	86	27	82	51	77	53	66	63	381	0.7
05/02/96	123	0.00	1.6	181	79	48	85	31	86	54	80	54	65	62	356	0.5
05/03/96	124	0.00	3.4	186	81	52	85	36	83	57	79	58	66	64	343	0.5
05/04/96	125	0.00	4.9	203	87	66	83	41	90	63	84	63	68	65	342	0.2
05/05/96	126	0.01	3.0	128	88	68	83	39	95	67	89	67	71	68	340	0.3
05/06/96	127	0.98	3.5	165	88	67	84	38	95	68	90	69	72	70	351	0.8
05/07/96	128	0.00	4.7	75	67	56	84	81	69	60	70	60	72	68	49	0.2
05/08/96	129	0.99	1.5	220	82	59	84	56	81	59	77	59	68	66	249	**
05/09/96	130	0.00	1.8	203	91	70	82	36	92	65	87	65	70	67	338	5.1
05/10/96	131	0.00	2.8	149	90	68	83	35	95	67	90	67	73	70	355	6.1
05/11/96	132	0.00	5.0	195	88	66	81	43	95	67	89	57	74	72	316	4.1
05/12/96	133	0.00	4.3	267	70	50	81	28	88	61	83	63	74	72	374	2.2
05/13/96	134	0.00	1.2	182	68	48	84	28	84	57	79	59	73	69	296	2.4
05/14/96	135	0.00	3.5	93	67	47	82	41	84	56	78	57	70	68	311	3.3
05/15/96	136	0.35	0.8	123	58	43	85	54	64	52	63	54	69	66	92	0.7
05/16/96	137	0.39	1.6	200	71	58	83	65	72	58	69	57	66	64	117	0.6
05/17/96	138	0.01	1.2	214	87	71	82	44	87	63	82	63	69	66	269	3.5
05/18/96	139	0.00	1.0	165	96	71	81	29	96	68	90	68	73	69	364	6.4
05/19/96	140	0.00	0.6	122	99	69	82	16	101	68	94	69	76	72	382	6.7
05/20/96	141	0.00	2.3	134	97	72	81	27	101	70	95	71	77	74	371	5.8
05/21/96	142	0.00	3.2	127	94	72	80	36	101	72	95	73	79	76	342	3.7
05/22/96	143	0.00	3.0	131	84	63	83	53	96	71	90	72	79	77	260	1.4
05/23/96	144	0.00	1.3	192	90	58	83	18	99	65	92	66	78	76	369	0.8
05/24/96	145	0.00	1.9	177	92	62	81	39	98	67	92	68	78	76	272	0.2
05/25/96	146	0.00	3.2	130	79	64	80	54	91	71	86	72	78	77	243	1.7
05/26/96	147	0.03	1.6	136	78	60	82	53	83	67	80	68	78	75	159	1.7
05/27/96	148	1.18	2.8	140	90	67	82	41	99	70	92	70	78	75	317	**
05/28/96	149	0.09	2.0	145	74	67	89	77	79	69	77	69	78	75	110	1.5
05/29/96	150	2.33	2.4	121	84	67	82	60	84	68	80	68	75	71	171	**
05/30/96	151	0.03	4.3	114	72	54	82	37	85	61	80	62	74	73	366	6.2
05/31/96	152	0.00	1.9	158	75	49	83	33	86	56	81	57	73	71	394	6.6
MONTHLY SUM/AVG		6.39	2.5	161	82	60	83	42	88	64	84	64	73	70	8999	74.1 2.9"

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Table 5. Daily Weather Data (continued)

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06/01/96	153	0.00	1.1	130	79	51	83	18	88	57	83	58	73	71	397	6.6
06/02/96	154	0.00	1.7	162	80	54	82	30	89	59	84	60	73	71	349	5.7
06/03/96	155**	0.00	***	***	81	56	***	***	***	***	***	***	***	***	***	***
06/04/96	156**	0.00	***	***	80	57	***	***	***	***	***	***	***	***	***	***
06/05/96	157**	0.00	***	***	81	63	***	***	***	***	***	***	***	***	***	***
06/06/96	158**	0.03	***	***	84	62	***	***	***	***	***	***	***	***	***	***
06/07/96	159	0.00	2.6	125	89	68	79	34	98	71	92	71	78	76	336	2.9
06/08/96	160	0.00	4.4	107	91	73	80	33	102	72	95	73	80	77	340	1.4
06/09/96	161	0.23	5.2	127	82	74	79	61	90	75	85	74	80	78	173	0.6
06/10/96	162	0.04	4.7	128	86	75	78	54	95	74	89	73	79	77	286	0.6
06/11/96	163	1.13	3.1	117	86	72	81	45	93	72	88	73	79	78	302	2.7
06/12/96	164	1.02	2.2	138	89	69	82	37	96	73	91	73	80	78	344	3.6
06/13/96	165	0.01	1.5	176	89	72	88	39	96	70	91	71	80	78	361	5.7
06/14/96	166	0.00	0.8	166	92	71	79	36	96	72	91	72	80	78	324	5.7
06/15/96	167	0.00	1.0	133	92	72	80	33	99	72	94	72	81	79	342	5.9
06/16/96	168	0.00	2.1	127	89	71	80	41	101	73	95	73	82	79	348	5.2
06/17/96	169	0.00	2.2	147	89	72	80	40	102	73	95	73	82	80	307	3.5
06/18/96	170	0.00	2.9	115	91	74	71	38	104	74	97	75	83	80	365	2.8
06/19/96	171	2.15	1.1	141	87	74	72	51	98	76	92	76	83	81	169	0.8
06/20/96	172	0.00	1.1	220	90	76	87	47	93	76	89	76	82	80	288	5.4
06/21/96	173	0.00	0.6	142	93	74	71	45	100	75	94	75	83	81	335	6.7
06/22/96	174	0.00	0.1	175	96	77	71	32	101	76	95	76	84	82	358	8.1
06/23/96	175	0.00	0.5	144	99	76	69	30	101	77	96	77	84	82	328	6.3
06/24/96	176	0.03	1.5	103	96	76	71	39	104	78	98	78	85	83	324	6.1
06/25/96	177	0.01	1.4	152	95	73	71	37	101	76	95	77	86	84	306	4.4
06/26/96	178	0.00	3.8	66	82	64	69	40	100	74	94	75	86	84	353	4.7
06/27/96	179	0.00	0.4	145	83	60	72	34	100	68	93	69	85	82	368	2.6
06/28/96	180	0.00	0.3	176	89	60	72	33	101	68	94	69	84	81	359	2.8
06/29/96	181	0.00	0.7	102	86	67	71	42	99	72	92	73	84	82	326	6.5
06/30/96	182	0.00	0.1	134	89	67	70	51	94	74	89	74	84	82	219	4.2
MONTHLY SUM/AVG		4.65	1.6	120	88	68	66	34	85	62	80	63	71	69	8306	111.4 4.39

* READINGS TAKEN AT MINUTE INTERVALS. MINUTE READINGS ARE TOTALED FOR EACH HOUR. HOUR TOTALS ARE TOTALED FOR EACH DAY.
** DATA THESE DATES TRANSCRIBED FROM WILSON, NC NOAA #31-9476-7
*** THESE DATA NOT COLLECTED DURING THIS PERIOD.

THE ABOVE DATA WERE ELECTRONICALLY COLLECTED AND HAVE NOT BEEN ALTERED.

Table 5. Daily Weather Data (continued)

DATE	JULIAN DATE	DAILY RAIN FALL (IN)	AVG WIND SPEED (MPH)	AVG WIND DIR (0=N)	AIR -TEMP (°F)- HIGH	AIR -TEMP (°F)- LOW	- - RH% - - HIGH	- - RH% - - LOW	SOIL TEMP (°F) - - 1" - - HIGH	SOIL TEMP (°F) - - 1" - - LOW	SOIL TEMP (°F) - - 4" - - HIGH	SOIL TEMP (°F) - - 4" - - LOW	SOIL TEMP (°F) - - 20" - - HIGH	SOIL TEMP (°F) - - 20" - - LOW	SUNLIGHT TOTAL kW* (sq m/day)	PAN EVAP (mm)
07/01/96	183	0.00	0.6	100	96	75	70	36	104	76	96	76	85	82	320	6.5
07/02/96	184	0.48	0.8	105	96	72	75	37	104	78	98	78	88	84	284	4.5
07/03/96	185	0.00	1.0	242	90	65	77	34	97	74	90	75	85	83	287	5.9
07/04/96	186	0.00	1.2	256	83	58	72	18	99	68	92	69	84	81	389	7.3
07/05/96	187	0.00	0.4	167	84	57	72	38	90	66	86	68	83	80	255	3.5
07/06/96	188	0.00	1.0	104	87	70	71	46	98	74	92	74	82	80	302	4.1
07/07/96	189	0.00	1.7	115	93	70	71	31	105	74	97	74	84	81	359	5.3
07/08/96	190	0.00	2.4	119	91	74	70	47	101	77	95	77	85	83	290	2.9
07/09/96	191	1.05	1.4	138	92	74	74	42	104	77	97	77	85	83	296	1.7
07/10/96	192	0.00	1.8	129	86	69	72	40	95	75	90	76	85	83	275	5.1
07/11/96	193	0.00	3.6	67	79	67	68	52	87	72	82	73	84	81	193	3.2
07/12/96	194	5.43	7.2	117	78	68	84	65	75	71	74	71	81	78	34	**
07/13/96	195	0.01	3.7	216	90	70	87	38	95	70	89	70	79	77	363	11.9
07/14/96	196	0.07	4.0	178	87	77	69	49	93	76	87	76	80	79	243	4.4
07/15/96	197	0.62	5.3	196	88	72	73	43	93	75	88	75	81	80	221	3.5
07/16/96	198	0.00	1.4	195	86	73	74	50	94	74	88	74	81	79	270	4.4
07/17/96	199	0.37	1.1	184	91	74	72	46	98	75	92	75	81	80	251	3.8
07/18/96	200	0.00	1.6	131	94	75	72	37	98	75	92	75	82	80	315	6.8
07/19/96	201	0.00	2.3	157	94	78	65	33	98	79	92	78	83	81	314	8.0
07/20/96	202	0.00	1.4	111	90	73	69	20	100	78	94	78	83	81	352	7.2
07/21/96	203	0.00	2.2	85	85	72	70	24	93	75	88	76	83	81	270	5.2
07/22/96	204	0.08	1.3	164	92	72	72	32	95	75	90	75	82	80	219	3.0
07/23/96	205	0.12	0.7	151	92	74	72	26	97	77	92	77	82	81	251	3.1
07/24/96	206	0.01	0.3	172	90	74	72	28	94	76	89	76	82	81	237	3.0
07/25/96	207	0.36	1.6	177	86	73	73	53	90	76	86	76	82	80	187	2.2
07/26/96	208	0.00	1.4	237	89	70	72	25	96	74	90	74	81	80	325	4.8
07/27/96	209	0.00	0.8	139	92	68	72	11	100	73	92	73	82	80	366	4.4
07/28/96	210	0.14	1.1	156	86	72	72	38	95	76	89	76	82	80	178	1.4
07/29/96	211	0.00	0.5	201	89	73	72	24	92	75	87	75	81	79	267	2.4
07/30/96	212	0.38	1.8	174	91	72	71	26	98	75	91	75	81	79	247	2.1
07/31/96	213	0.14	3.1	182	89	70	69	34	97	74	90	74	81	79	282	2.8
MONTHLY SUM/AVG		9.12	1.9	156	89	71	72	36	96	74	90	75	83	80	8158	131.5 5.18

* READINGS TAKEN AT MINUTE INTERVALS. MINUTE READINGS ARE TOTALED FOR EACH HOUR. HOUR TOTALS ARE TOTALED FOR EACH DAY.

** THIS SENSOR WAS NOT FUNCTIONING PROPERLY DURING THIS PERIOD.

*** THESE DATA NOT COLLECTED DURING THIS PERIOD.

THE ABOVE DATA WERE ELECTRONICALLY COLLECTED AND HAVE NOT BEEN ALTERED.

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CORNING Hazleton

AMENDMENT NO. 6 TO THE PROTOCOL

Field Soil Dissipation of Propazine (Milo-Pro™ 4L) on Bare Soil in North Carolina

CHW Study No. 6641-100A

Effective September 23, 1996

- On page 16, under Soil Sampling Schedule change number of days to:

  Days after application: -1, 0, 1, 3, 7, 14, 21, 30, 90, 180, 270, and 360 days.

  Reason: Sufficient residue data has been obtained to define dissipation and mobility of propazine and its metabolites.

Donald L. Hughes — 10/9/96
Donald L. Hughes
Study Director
Corning Hazleton Inc.

L. Vernon White — 11/1/96
Sponsor Representative
Griffin Corporation

Field Spikes

Propazine, DEA, DAA, and OH-Propazine are stable under frozen conditions. Field fortified sample recoveries ranged from 88.5% to 92.0% for propazine, 84.3% to 87.4% for DEA, and 72.0% to 80.0% for DAA after 223 days of freezer storage from time of fortification. Recoveries for OH-Propazine ranged from 87.0% to 89.5% after 222 days of freezer storage. The field spike results are in Table VI.

All samples were assayed within the time that field fortifications were stored. The maximum storage time from field sampling to extraction was 170 days for the analysis of propazine and it's chlorinated metabolites and 181 days for OH-Propazine.

Recoveries for control samples fortified with propazine were 91.2 % with a standard deviation of 7.92, DEA averaged 87.5 % with a standard deviation of 11.66, DAA averaged 84.3 % with a standard deviation of 10.68, and OH-Propazine averaged 90.9 % with a standard deviation of 13.78. Refer to Table VII for recovery results.

CONCLUSION

The half-life of propazine and metabolites is biphasic with a half-life of 7.3 days for the first 21 days and a half-life of 52.2 days between 28-184 days after application. Nearly all of the residues detected were confined to the 0-3 inch soil level. Only small quantities were detected in the 3-6 and 6-9 inch levels. No residues of propazine or its metabolites could be detected below the 9 inch level in soil. Recoveries of samples fortified with propazine and metabolites were all greater than 70% when stored under actual sampling conditions for a period of up to 223 days for propazine and chlorinated metabolites, and 222 days for OH-Propazine.

MATERIAL AND RAW DATA RETENTION

All study-specific data generated by CHW and the final report will be submitted to the Sponsor for archiving. Supporting records such as storage area temperature records and instrument calibration/maintenance records will be retained at CHW. Remaining samples will be returned to the Sponsor after completion of the final report.

Table IV

Average Residues of Propazine and Metabolites in Soil
After Bareground Application of Milo-Pro™ 4L

Day(s) After Application	Soil Depth	Dry Weight Basis (ppm) Propazine	DEA	DAA	OH-Propazine
1	0-3"	0.923	0.0518	<0.0100	0.0414
	3-6"	0.0314	<0.0100	<0.0100	<0.0200
	6-9"	0.0161	<0.0100	<0.0100	<0.0200
14	0-3"	0.123	0.0129	<0.0100	0.150
	3-6"	0.0271	<0.0100	<0.0100	0.0204
	6-9"	0.0106	<0.0100	<0.0100	<0.0200
21	0-3"	0.129	0.0145	<0.0100	0.205
	3-6"	0.0288	<0.0100	<0.0100	0.0224
	6-9"	<0.0100	<0.0100	<0.0100	<0.0200
28	0-3"	0.130	0.0261	0.0105	0.144
	3-6"	0.0246	<0.0100	<0.0100	<0.0200
	6-9"	<0.0100	<0.0100	<0.0100	<0.0200
90	0-3"	0.0629	0.0149	<0.0100	0.0585
	3-6"	0.0160	<0.0100	<0.0100	<0.0200
	6-9"	<0.0100	<0.0100	<0.0100	<0.0200
184	0-3"	0.0244	<0.0100	<0.0100	0.0610
	3-6"	<0.0100	<0.0100	<0.0100	0.0221
	6-9"	<0.0100	<0.0100	<0.0100	<0.0200
	9-12"	<0.0100	<0.0100	<0.0100	<0.0200
359	0-3"	0.0219	<0.0100	<0.0100	0.0510
	3-6"	<0.0100	<0.0100	<0.0100	<0.0200
	6-9"	<0.0100	<0.0100	<0.0100	<0.0200
	9-12"	<0.0100	<0.0100	<0.0100	<0.0200

Table V

Total Residues of Propazine and Metabolites in Soil
Dry Weight Basis (ppm)

Days After Application	Propazine	DEA	DAA	OH-Propazine	Total Propazine, DEA, and DAA
1	0.971	0.0518	0	0.0414	1.022
14	0.161	0.0129	0	0.170	0.174
21	0.158	0.0145	0	0.227	0.172
28	0.155	0.0261	0.0105	0.144	0.191
90	0.0789	0.0149	0	0.0585	0.0938
184	0.0244	0	0	0.0831	0.0244
359	0.0219	0	0	0.0510	0.0219

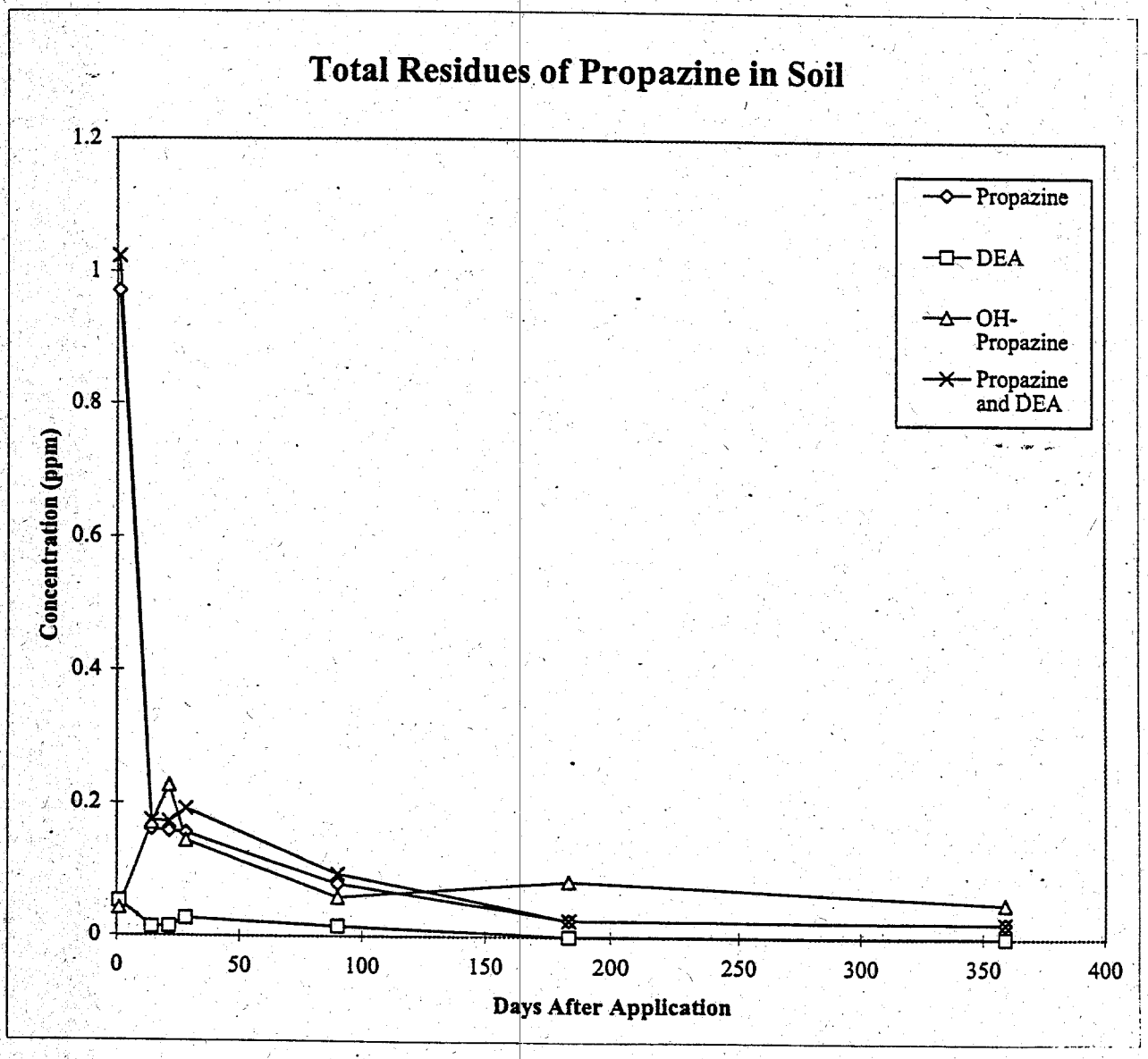

Table II

Determination of Dissipation Half-Life of Propazine and Chlorinated (Cl) Metabolites In Soil After Bareground Application of Milo-Pro™ 4L

Sample Interval Day(s)	Propazine and Cl Metabolites (Dry Weight Basis) (ppm)	ln (ppm)
1	1.02	0.020
14	0.174	-1.749
21	0.172	-1.760
28	0.191	-1.655
90	0.0938	-2.367
184	0.0244	-3.713

		1-21Days	28-184 Days
Correlation Coefficient	=	0.884697	0.996574
Regression Coefficient (Slope)	=	-0.09494	-0.013283
Constant (y-intercept)	=	-0.023776	-1.241304
Degradation Half-Life(days)	=	7.3	52.2

Sample Interval Day(s)	Propazine (Dry Weight Basis) (ppm)	ln (ppm)
1	0.971	-0.029
14	0.161	-1.826
21	0.158	-1.845
28	0.155	-1.864
90	0.0789	-2.540
184	0.0244	-3.713

		1-21Days	28-184 Days
Correlation Coefficient	=	0.886844	0.998668
Regression Coefficient (Slope)	=	-0.096774	-0.011903
Constant (y-intercept)	=	-0.07236	-1.507453
Degradation Half-Life(days)	=	7.2	58.2

Note: Dissipation appears to be biphasic and therefore the 1/2 life has been calculated for days 1-21 and 28-184 days. Approximately three half lives occur in the first 21 days and three occur in the residues that remain between 28-184 days.