

MICROWAVE RADIOMETER EXPERIMENT OF SOIL MOISTURE SENSING
AT BARC TEST SITE DURING SUMMER 1981

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January 1984

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REMOTE MEASUREMENTS OF SOIL MOISTURE
BY MICROWAVE RADIOMETERS AT BARC
TEST SITE, III

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ABSTRACT

Remote measurements of soil moisture by truck-mounted microwave radiometers at the frequencies Of 1.4 GHz 5 GHz and 10.7 GHz were made over two test sites at Beltsville, MD during July-September of 1981. The soil textures in the two test sites were different so that the soil type effect of microwave radiometric response could be studied. Several fields in each test site were prepared with different surface roughness and vegetation covers. Ground truth on the soil moisture and temperature, as well as the biomass of the vegetation was acquired in support of the microwave radiometric measurements. Soil bulk density for each of the fields in both test sites was sampled several times during the course of the experiment. Mechanical and chemical analyses of the soils in both sites were done with conventional methods. This documents gives a tabulation of tile measured data and a brief discussion of the sensors as well as operational problems associated with the measurements

1. Introduction

An experiment on the remote sensing of soil moisture content by microwave radiometer was conducted over two test sites in Beltsville, Maryland during June-September of 1981 by personnel from both NASA/Goddard Space Flight Center and USDA/Beltsville Agricultural Research Center. The experiment was supported by the AgRISTARS (Agriculture and Resources Inventory Surveys, Through Aerospace Remote Sensing) program. The major objectives of the experiment were to study the effects of soil texture, surface roughness, and vegetation cover on the remote estimate of soil moisture content by microwave radiometers. This report contains the reduced data in tabulated form obtained from the experiment.

Similar experiments were conducted in both 1979, and 1980. The experimental procedure, sensor package, sensor calibrations, ground truth data acquisition, and data reduction of those experiments were described in detail by Wang, et al., (1980a, 1982). In the 1981 experiment, however, the soils in the two test sites were of different textures and covered a much wider range of surface roughness. Therefore, the following description of the experiment will emphasize these new features and those items considered necessary for the completeness of the report.

2. Microwave Sensor Systems and Calibration

Three microwave radiometers at the frequencies of 1.4 GHz, 5 GHz and 10.7 GHz were mounted on a mobile tower and used in the 1981 field measurements. Another one at 0.6 GHz was mounted on a heavy-duty truck with a beam extendable to 24 m. These radiometers were of the Dicke type and measured thermal microwave emission in both vertical and horizontal polarizations almost simultaneously. The 1.4 GHz and 5 GHz radiometers were the same ones used in the 1980 measurements (Wang, et al., 1982). The 10.7 GHz radiometer had a circular horn antenna. The signal collected by the antenna was split into vertical and horizontal polarizations by waveguides. The 0.6 GHz radiometer antenna was a circular dish about 2.5 m in diameter. At the focus of the dish were two dipole feeds detecting signals in vertical and horizontal polarizations. All four radiometers had a comparable beamwidth of 13° .

Absolute calibrations of 1.4 GHz, 5 GHz, and 10.7 GHz radiometers were made by pointing the radiometer antennas at three external targets whose brightness temperatures can be either calculated or measured accurately, namely, Eccosorb slabs, sky and a calm water surface. The Eccosorb slabs are 23 cm thick and have an absorption coefficient of 0.99 at 1.4 GHz frequency. They adequately provide a calibration target at ambient temperature for all three radiometers. The calm water surface gives a range of brightness temperatures depending on incidence angle θ , which can be calculated fairly accurately knowing the water temperature and the dielectric relaxation spectrum (Lane and Saxton, 1952). The sky brightness temperatures in zenith direction at 1.4 GHz and 5 GHz frequencies are calculated to be 4.9 K and 5.2 K respectively and do not change by more than 0.2 K when the amount of atmospheric water vapor content is varied from 0.5 cm to 3.55 cm. At 10.7 GHz the calculated brightness temperatures vary from 5.9 K to 7.4 K over the same range of atmospheric water vapor content. These small changes in sky brightness due to atmospheric water vapor variations do not seriously affect the sensor calibrations at any of the three frequencies.

The results of radiometer calibrations are given in Figure 1 where the known target brightness temperature T_{BP} are plotted as a function of normalized antenna voltage N_p (subscript P stands for either V for vertical polarization or H for horizontal polarization). N_p is given by

$$N_p = \frac{V_A - V_H}{V_C - V_H}$$

Here V_A is the output voltage of a radiometer when the antenna is pointing at an external target. V_H and V_C are the output voltages when the radiometer is looking at internal hot and cold reference loads respectively. Applying a linear regression to the calibration data shown in Figure 1 gives the dependence of T_{BP} on N_p for each of the three radiometers as:

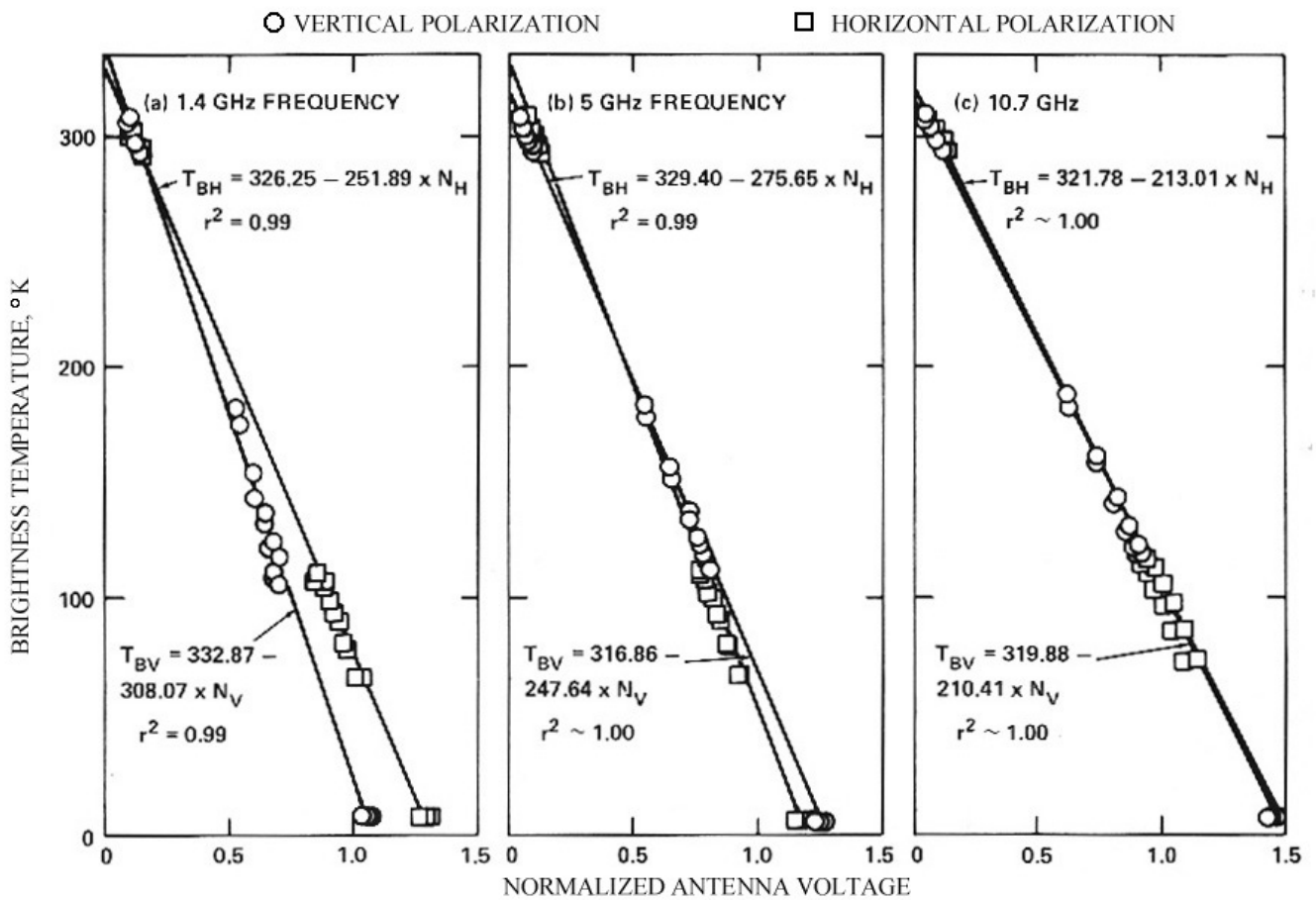


Figure 1. The Calibration Results of Microwave Radiometers at (a) 1.4 GHz, (b) 5 GHz, and (c) 10.7 GHz Frequencies.

at 1.4 GHz frequency,

$$T_{BV} = 332.9 - 308.1 N_V$$

$$T_{BH} = 326.25 - 251.9 N_H$$

at 5 GHz frequency.

$$T_{BV} = 316.9 - 247.6 N_V$$

$$T_{BH} = 329.4 - 275.7 N_H$$

at 10.7 GHz frequency,

$$T_{BV} = 319.9 - 210.4 N_V$$

$$T_{BH} = 321.8 - 213.0 N_H$$

These equations are used to obtain the calibrated T_{BP} 's. The estimated accuracy of the calibrated T_{BP} 's is about $\pm 3K$ at all three frequencies.

Because of its small thickness, the Eccosorb slabs were not used for the 0.6 GHz radiometer calibration. Instead the connectors to the antenna feeds were terminated with 50 ohm leads and calibration was made with loads at ambient air temperature, room and ice water temperatures, and liquid nitrogen temperature. These calibration measurements are shown in Figure 2 together with those of sky and calm water surface. A linear regression of these data points gives:

$$T_{BV} = 303.2 - 208.8 N_V$$

$$T_{BH} = 305.1 - 206.7 N_H$$

Based on these calibration data, it was estimated that the accuracy of the 0.6 GHz radiometer measurements was about $\pm 5 K$.

3. Field Description and Operation

Two test sites managed by USDA Beltsville Agricultural Research Center were selected for the 1981 microwave radiometric measurements. The first site is the same as that used for the previous measurements (Wang, et al., 1980a, 1982) and contains an Elinsboro sandy loam soil with 0 - 2% slopes. Four 18.3 in X 18.3 m plots (I 11, 121, 131, 1 (A) and one 18.3 in X 12.21 in (152) plot

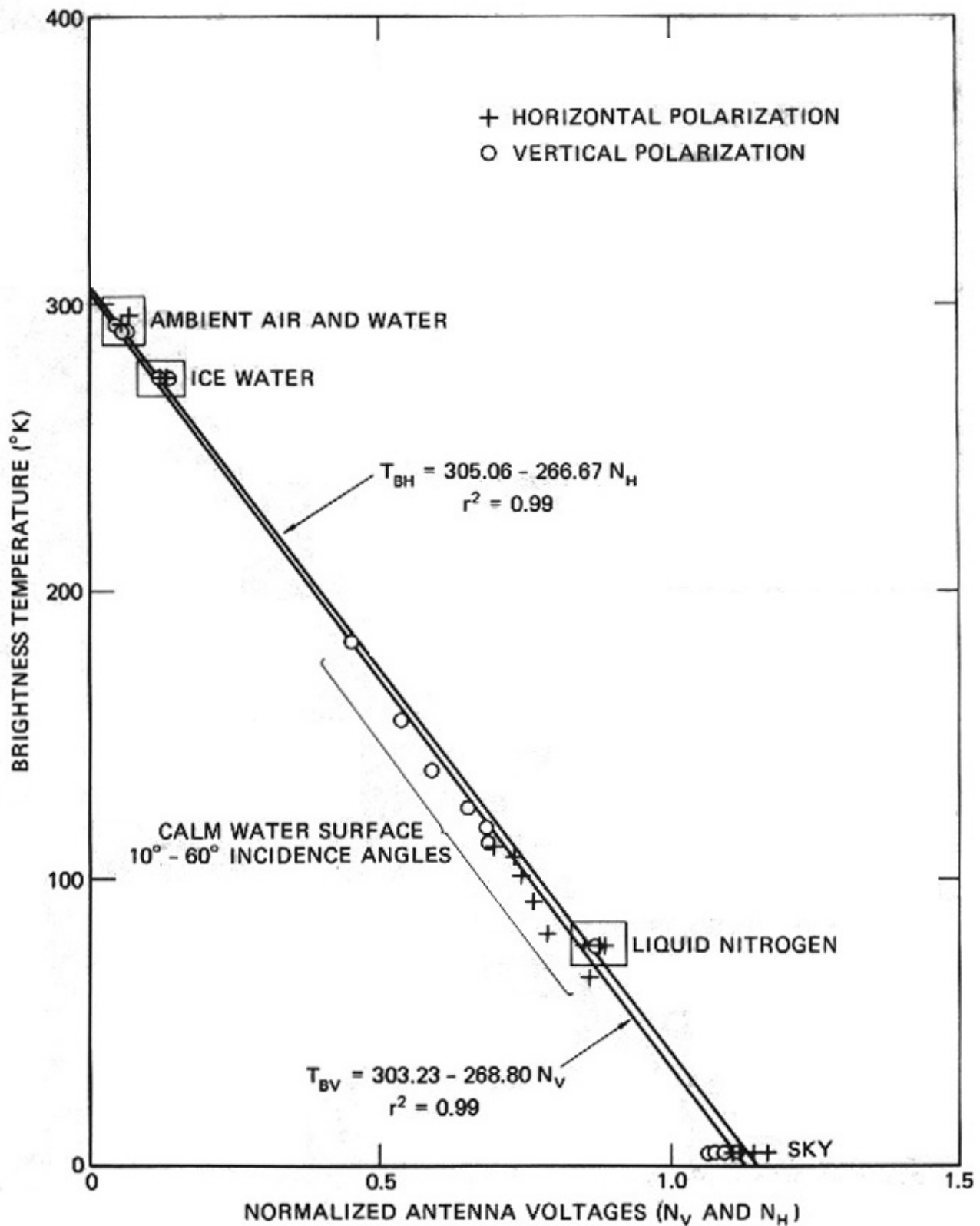


Figure 2. The Calibration Results of the 0.6 GHz Microwave Radiometer.

were prepared for the measurements. The layout of these plots is shown in Figure 3. Plot 152 was planted with orchardgrass (*Dactylis glomerata* L.) on April 23, 1981, Plot 111 with Saranac AR alfalfa (*Medicago sativa* L.) on April 24, Plot 131 with S. S. 335A corn on June 9, and Plot 161 with Williams soybean on June 17. Plot 121 was kept free of vegetation during the entire measurement period. The second site has a Mattapex silt loam soil with about 2% slope and is moderately eroded. Sub-soil layers are a silty clay loam that is sticky and slightly plastic. The soil is moderately well drained. Plot 231 was planted with corn (*Zea mays* L.) on June 9 and Plot 261 with soybean (*Glycine max.* L.) on June 17. Plots 221 and 223 were kept bare, but with different surface roughnesses. One 18.3 m X 12.2 m plot (291) was planted with winter wheat (*Triticum aestivum* L.) on October 14, 1980. The entire plot layout is shown in Figure 4. Table I summarizes the field procedures applied to the plots in both test sites.

Prior to planting, the soils were limed and fertilized according to Recommended rates. Tillage and planting were accomplished by conventional practices. Herbicides were applied at planting to control weeds. Row crops were planted in an east-west direction with 76 cm between rows for corn and 61 cm for soybeans. Within row spacing was approximately 23 cm for corn and 5 cm for soybeans. On July 7, 1981 the bare plot 223 at the second site was roughened with a turn plow and the bare plot 221 was tilled and smoothed. The bare plot 121 at the first site was maintained in a smooth condition all the time.

The radiometric measurements over a given field were made at incidence angles ranging from 100 to 700 in 100 steps. The measurements at 0° incidence were not made because of the radiometers' self-emission problem observed in the previous experiment (Wang, et al., 1980b). The radiometer systems were maneuvered such that the main beams of the radiometer antennae always aimed at the same spots regardless of incidence angles. This maneuvering was accomplished by placing a marker on a spot which was then monitored by a TV camera mounted on the platform of the truck. Measurements by this approach minimized the variations in the radiometric outputs due

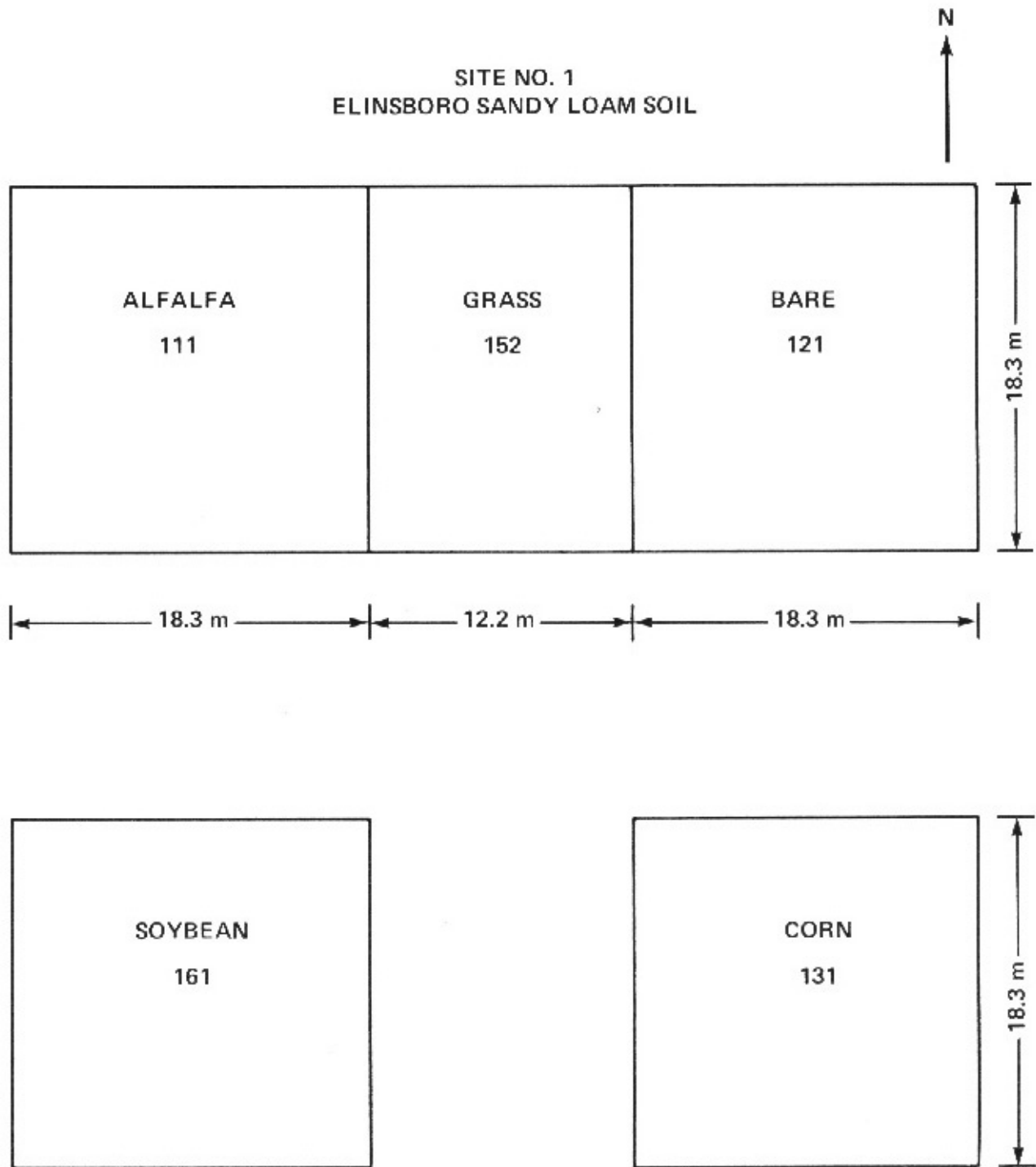


Figure 3. A Sketch of Field Arrangement at Test Site No. 1.

SITE NO. 2
MATTAPEX SILTY LOAM SOIL

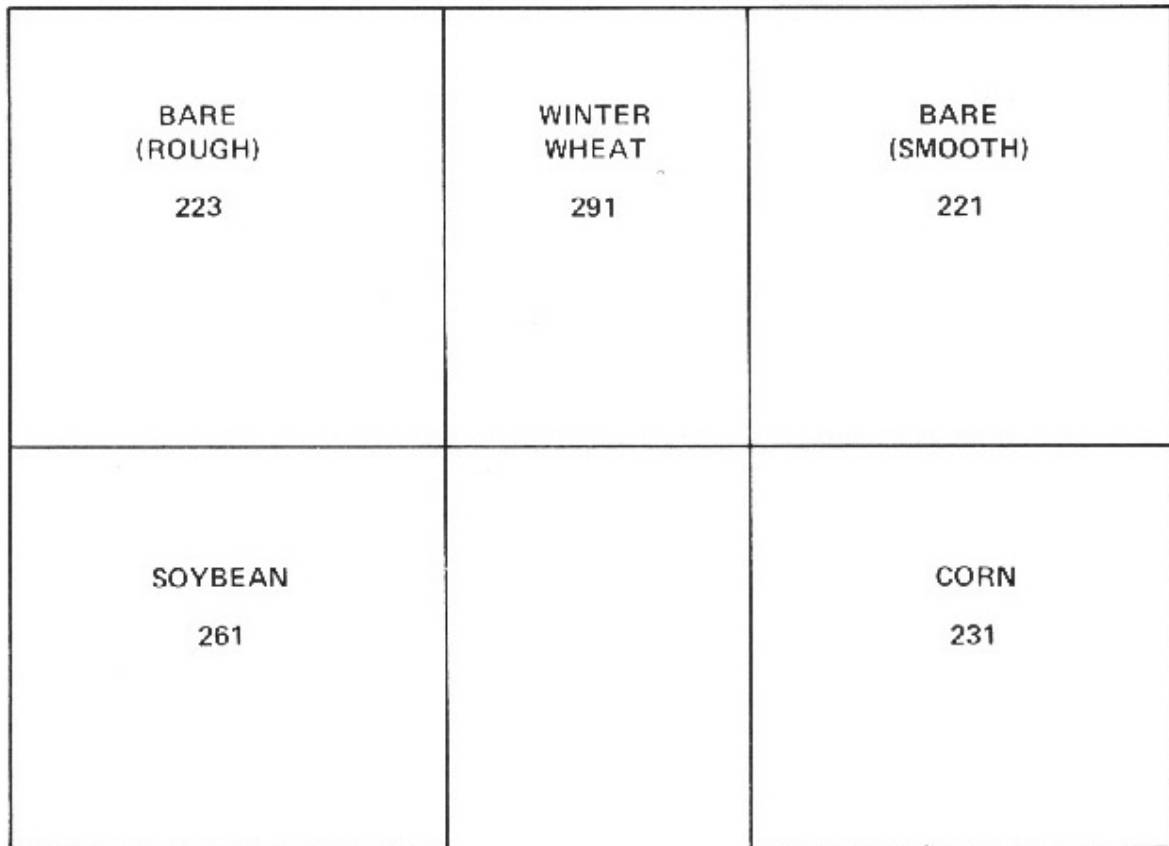


Figure 4. A Sketch of Field Arrangement at Test Site No. 2.

to the field inhomogeneities. The entire measurements covered a 3-month period from June 22 to September 30, 1981.

Table I
1981 Harvest Season Field Procedure Dates For Microwave Studies

Date	Procedure
10/14/80	18.3 m X12.2 m plot planted in Arthur Wheat (plot 291)
4/3/81	All Plots plowed or roto-tilled
4/23/81	Planted orchardgrass in 18.3m X12.2 m plot (152)
4/24/81	Planted Saranac AR alfalfa in 18.3 m X18.3 m plot (111)
5/19/81	Inter/re-seeded Saranac AR alfalfa in 18.3m X 18.3 m plot (111)
6/9/81	Planted 90 day corn in 18.3 m X 18.3m plots (131 and 231)
6/17/81	Planted Soybeans in 18.3 m X 18.3 m plots (161 and 261)
7/1/81	Harvested wheat in 18.3 m X 12.2 m plot (291)
7/7/81	Roughened 18.3 m X 18.3 m bare plot area (223)
7/9/81	Clipped wheat to stubble (291)
7/29/81	Replanted soybeans in 18.3 m X 18.3 m plot (161)
7/30/81	Clipped alfalfa and orchardgrass and sprayed paraquat on alfalfa stubble (111 and 152)
8/18/81	Sprayed paraquat on bare plots (111,221 and 223)
9/3/81	Mowed 18.3m X 12.2m wheat stubble plot (291)

Concurrent with radiometric measurements two soil samples within the footprint of the sensors were measured gravimetrically for moisture content at the depths of 0-0.5 cm, 0-2.5 cm, 2.5-5.0 cm, and 5.0-10.0 cm. Ambient temperature (or canopy temperature in the case of vegetated field) was measured by a thermometer and the soil temperature at the depth of 0.25 cm, 1.25 cm, 2.5 cm, 7.5 cm, and 15.0 cm was measured by Omega platinum resistance probes. More extensive soil sampling covering the entire field uniformly and extending to deeper layers were made within ± 1 hours of radiometric measurements as

discussed in the next section. Profiles of surface roughness were measured at two different locations for each of the three bare plots. These profiles were obtained by driving grided panels into the soil and taking photos as shown in Figure 5. The deviations of the roughness profiles from the mean surface were measured from the photographs at 0.5 cm intervals. These deviations were averaged to arrive at a RMS roughness σ . The average σ 's for tile bare plots 121, 221, and 223 were 0.21 cm, 0.73 cm, and 2.45 cm, respectively.

4. Extensive Ground Truth Acquisition and Processing

The ground data collection program to support the 1981 BARC microwave truck experiments emphasized detailed soil moisture measurements and general climatic data.

4.1 Soil Moisture Sampling

In addition to the two soil samples mentioned earlier which were taken concurrently with the radiometric measurements, soil moisture was also determined by gravimetric sampling at six locations within each plot and at four depths (0-2 cm, 2-4 cm, 4-10 cm and 10-16 cm) per location. Data collection was made within one hour of the microwave measurements from the trucks. Precise bulk density measurements were made in each plot several times during the experimental season, approximately every 2-3 weeks. The bulk density was determined for each of the depth layers that the gravimetric soil moisture was determined. The procedure used for determining bulk density is described below.

The technique is based on a volumetric displacement procedure that utilizes a specially designed bulk density ring with a hook gage and three one-foot long bolts. The bulk density ring is placed on the ground and secured by driving in the three bolts. A sheet of plastic film is used to line the inside of the cylinder. Using a water filled 500ml graduated cylinder, the bulk density cylinder is filled to the hook gage and the quantity of water is recorded. This is returned to the graduated cylinder. The soil from the inside of the bulk density ring is then dug

out to the desired depth of measurement and placed in a scaled container. The plastic liner is replaced and the ring is filled again. This amount of water is recorded. The soil wet and then dry weights are measured. The volume of soil removed is equal to the difference between the two water volumes used to fill the bulk density ring. The bulk density is computed by dividing the dry weight by this volume.

In general, only one sample was taken each date. To assess the reliability of these data, an experiment was conducted in which 16 samples were collected for each layer of the tall orchardgrass plot. The results of this experiment, shown in Table 2, indicate that the range and standard deviation are consistent with depth. Based upon these results, each individual bulk density sampled was compared to other samples obtained for the plot in order to smooth the results and identify outliers.

All of the data collected over the experimental period were plotted and a value of the bulk density was estimated for each period when conditions were the same. In some cases values had to be extrapolated or interpolated. Results are summarized in Table 3.

Table 2
Bulk Density Statistics for 30cm Orchardgrass Plot
(16 samples per depth)

Depth Interval -cm-	Bulk Density		
	Mean	Standard Deviation -g/cm ³ -	Range
0-2.5	1.28	.10	1.00-1.39
2.5-5	1.44	.06	1.31-1.53
5-10	1.53	.10	1.40-1.67
10-15	1.70	.11	1.44-1.89

Table 3
Bulk Density Values at BARC Plots

Bulk Density in Interval							
Site	Plot	Cover	Date	0-2.5	2.5-5	5-10	10-15
g/cm ³							
Edmonston	111	Alfalfa	All	1.30	1.30	1.50	1.50
	121	Bare	All	1.20	1.12	1.19	1.49
	131	Corn	All	1.20	1.20	1.20	1.20
	152	Grass	All	1.22	1.48	1.55	1.68
	161	Soybeans	Pre – 7/21	1.31	1.26	1.36	1.46
			Post – 7/21	1.13	1.07	1.09	1.16
South Farm	221	Bare	All	1.22	1.22	1.22	1.22
	223	Bare	Pre – 7/18	1.44	1.34	1.39	1.50
			Post – 7/18	1.15	1.10	1.20	1.28
	231	Corn	All	1.52	1.52	1.52	1.52
	261	Soybeans	All	1.25	1.25	1.25	1.25
	291	W. Wheat	All	1.35	1.52	1.68	1.68

At each of the six sites on each plot, a sample of approximately 100 grams was taken for each of the four depths. The samples were carved from the face of a shallow hole with a special sampling tool. The sample was placed in a prelabeled plastic jar and scaled with a

moisture tight lid. The samples were taken into the lab and weighed (wet weight) that same day. The samples were then oven dried for 80 minutes in a microwave oven and the samples were weighed again (dry weight). All containers weighed within ± 0.01 gms of each other, which was considered to be constant. These three weights (wet weight, dry weight, container weight) were punched on cards with the proper date and plot identification information for computer calculation of soil moisture. Volumetric soil moisture is calculated by the following

$$\theta_v = (\text{wet weight} - \text{dry weight} / \text{dry weight} - \text{container weight}) D_b$$

where D_b is the bulk density. The results are tabulated in Appendix A.

4.2 Climatic Data

Climatic data consisting of rainfall, temperature, humidity, total wind movement and pan evaporation were measured at the Edmonston site. Only rainfall, air temperature and relative humidity data were recorded for the south farm site. Although separated by more than one mile, additional data collected at the Edmonston site were also considered representative of the South Farm sites. The results are summarized in Appendix B.

4.3 Mechanical and Organic Content Analyses of Soils

Four samples were taken from each depth interval on the bare soil plots at the Edmonston Road and South Farm sites. The Cooperative Extension Service Soil Testing Laboratory at the University of Maryland analyzed the samples to determine the textural percentages and organic matter content. The results of these tests are presented in Table 4.

4.4 Moisture-Tension Observations

Porous cup type tensiometers with pressure gages were installed at the Edmonston site in one of the corn plots at depths of 30, 45, and 75 cm. Two tensiometers were installed at the 30 cm depth, one in the corn row and one in the furrow between the rows. All of the deeper depths were samples in the furrow. Observed values are listed in Appendix B.

4.5 Agronomic Data

Mean values of 10 plant samples were taken on each date for biomass data, on corn and soybeans. Ten .25 m² areas were sampled for each date for orchardgrass and alfalfa. All agronomic data was adjusted to a square meter basis from counts of plants and forage per unit area. Green biomass measurements were made by harvesting the entire above ground portions of plants. Fresh green weight of the harvested material was recorded. Samples were oven dried, at a temperature of 68 C for 72 hours, to 0% moisture and reweighed to obtain dry biomass weight and water content. LAI measurements were not taken this year, due to instrument break down The results are summarized in Appendix C.

Table 4
Texture and Organic Content Data for BARC Test Sites

Area	Depth (cm)	Texture	Organic Matter	Sand	Silt	Clay
----- % -----						
Edmonston	0-5	Sandy Loam	1.4	67	19	15
	5-10	Sandy Loam	1.4	68	19	14
	10-15	Sandy Loam	1.4	67	19	15
	15-30	Sandy Loam	1.2	68	18	15

South Farm	0-5	Loam	1.3	31	45	25
	5-10	Loam	1.2	34	43	24
	10-15	Loam	1.2	34	42	24
	15-30	Loam	1.1	31	44	26

5. Summary

The data collected by microwave radiometers were processed in a similar manner to that described by Wang et al. (1980a), based on the calibration results of Figures I and 2 in Section 2. The calibrated brightness temperatures at all four frequencies, the soil moisture, and the soil temperature data are all listed in Appendices D and E. Appendix D contains the data obtained from the first site where the soil is Elinsboro sandy loam. The data collected from the second site with Mattapex silty loam are summarized in Appendix E. Both soil moisture and temperature data in these two appendices were taken concurrently with the radiometric measurements. The soil samples for moisture content determination were taken within the footprint of the sensors. The 0.6 GHz radiometer was operating only during the period from August 27 to September 30 of 1981. The measurements at this frequency were made only at the first site.

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FIGURE CAPTIONS

Figure 1. The calibration results of microwave radiometers at (a) 1.4 GHz, (b) 5 GHz, and (c) 10.7 GHz frequencies.

Figure 2. The calibration results of the 0.6 GHz microwave radiometer.

Figure 3. A sketch of field arrangement at test site no. 1.

Figure 4. A sketch of field arrangement at test site no. 2.

Table A
 Volumetric Soil
 Moisture

Field	Date	Depth (cm)							
		0 - 2 cm		2 - 4 cm		4 - 10 cm		10 - 16 cm	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
111	6/22/81	8.096	1.282	12.664	1.227	16.586	0.866	17.684	0.863
121	6/22/81	7.399	2.787	11.299	0.634	13.782	0.866	18.330	1.755
152	6/22/81	6.700	0.475	7.508	0.431	7.182	0.833	9.781	1.601
161	6/22/81	9.706	3.090	16.076	2.671	19.513	2.542	22.145	3.091
163	6/22/81	9.125	2.165	14.277	1.092	17.590	1.316	20.230	0.986
191	6/22/81	14.505	2.566	18.987	2.358	17.008	2.072	18.253	2.344
111	6/23/81	5.852	1.285	11.840	0.690	15.875	0.472	18.088	2.893
121	6/23/81	4.717	1.160	10.700	1.391	13.501	1.554	18.381	2.189
131	6/23/81	6.963	1.560	12.207	1.006	14.315	0.970	15.875	0.590
152	6/23/81	3.407	1.265	6.091	0.667	7.337	1.114	7.736	0.975
161	6/23/81	10.531	2.892	16.096	3.058	19.847	3.853	22.759	4.329
191	6/23/81	13.180	3.071	17.510	3.098	16.359	2.633	18.485	2.582
111	6/24/80	4.654	0.566	11.216	0.672	15.493	0.955	16.386	1.044
121	6/24/80	4.906	1.558	10.191	1.338	13.274	1.427	18.038	2.065
131	6/24/81	5.179	0.884	12.201	1.788	14.221	1.694	15.798	1.430
152	6/24/80	3.535	1.101	5.789	1.112	6.501	1.075	7.431	1.267
161	6/24/81	9.538	4.518	14.994	3.811	19.181	2.954	22.088	3.662
191	6/24/80	9.960	3.880	14.953	2.861	14.381	2.552	16.486	2.928
223	6/29/81	11.041	3.752	17.376	1.397	21.287	0.434	24.853	0.514
261	6/29/81	9.964	1.705	18.300	1.025	21.016	0.646	22.937	0.891
291	6/29/81	16.885	4.482	22.003	3.469	27.226	2.547	28.954	1.264
223	6/30/81	9.514	2.971	17.983	0.623	21.873	0.641	25.708	0.436
261	6/30/81	9.736	1.987	18.600	1.838	20.666	1.710	22.223	1.764
291	6/30/81	17.299	5.276	20.573	4.078	26.018	3.908	28.509	4.042
221	7/ 6/81	24.729	1.597	27.639	7.056	26.131	2.021	26.624	2.519
223	7/ 6/81	26.650	2.628	23.924	1.271	26.952	0.624	30.373	0.806
231	7/ 6/81	29.704	1.130	30.245	1.394	30.602	1.765	31.274	2.384
261	7/ 6/81	25.564	1.812	24.354	1.328	25.912	1.903	26.371	1.279
291	7/ 6/81	28.798	1.635	30.638	1.272	34.966	0.720	35.694	1.817
221	7/ 7/81	16.980	3.821	23.682	2.611	24.287	2.011	25.089	2.292
223	7/ 7/81	13.104	2.313	18.417	1.266	22.469	1.045	23.762	1.657
231	7/ 7/81	28.659	2.353	28.295	1.734	28.623	2.999	29.492	1.115
261	7/ 7/81	20.848	1.759	23.192	2.012	24.398	1.478	24.524	1.186
291	7/ 7/81	26.885	0.781	28.571	3.111	33.498	2.508	34.107	2.275
221	7/ 8/81	15.431	4.647	21.987	3.236	22.698	2.365	24.738	2.394

223	7/ 8/81	9.303	1.917	16.078	1.916	19.516	2.358	22.563	2.781
231	7/ 8/81	22.048	2.195	24.667	1.622	26.182	0.898	26.960	0.578
261	7/ 8/81	8.029	1.976	14.681	6.733	20.408	2.496	23.045	1.911
291	7/ 8/81	25.986	1.788	28.652	1.991	32.732	2.606	32.678	3.333
111	7/13/81	1.618	0.509	5.242	2.262	8.016	0.807	8.646	1.577
121	7/13/81	4.171	1.088	9.777	1.002	12.897	1.176	17.501	1.411
131	7/13/81	7.187	1.680	11.041	0.856	13.226	1.227	14.194	1.349
152	7/13/81	3.601	0.673	5.484	1.019	6.603	1.280	7.666	1.261
161	7/13/81	8.346	2.850	14.513	2.661	21.929	10.755	16.646	3.009

		0 - 2 cm		2 - 4 cm		4 - 10 cm		10 - 16 cm	
Field	Date	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
111	7/14/81	2.019	1.029	5.330	1.405	7.781	1.803	8.577	2.350
121	7/14/81	4.129	2.084	10.193	0.727	12.462	2.183	17.563	2.040
131	7/14/81	5.733	1.293	9.872	0.964	11.222	0.915	12.012	1.175
152	7/14/81	3.243	0.916	5.073	0.885	7.131	1.444	7.963	1.611
161	7/14/81	9.466	2.320	14.597	3.233	18.073	3.074	16.310	2.579
111	7/21/81	16.645	2.450	15.181	1.566	16.280	1.998	11.965	1.523
121	7/21/81	10.989	1.008	13.564	1.657	16.096	2.103	19.646	3.063
131	7/21/81	13.476	0.892	13.497	0.876	13.381	0.971	11.830	1.558
152	7/21/81	16.704	0.454	16.153	0.813	15.047	0.984	13.115	2.442
161	7/21/81	19.265	2.787	17.434	2.639	19.957	3.494	16.086	2.763
111	7/22/81	11.787	1.500	11.459	1.231	13.463	1.316	12.300	1.449
121	7/22/81	5.962	1.048	10.091	1.650	13.384	1.586	18.128	2.146
131	7/22/81	8.904	1.666	11.011	0.996	11.915	1.367	11.843	0.874
152	7/22/81	12.985	1.375	14.182	1.229	14.208	0.716	13.899	1.753
161	7/22/81	10.493	2.709	12.361	2.456	14.579	2.162	16.299	2.465
111	7/23/81	7.419	1.733	8.550	1.014	10.204	1.259	9.297	1.357
121	7/23/81	5.505	0.949	9.273	1.361	12.642	1.321	17.269	1.594
131	7/23/81	4.282	1.729	8.679	1.519	10.085	1.993	9.749	1.723
152	7/23/81	7.604	1.384	9.538	0.802	9.990	1.072	10.645	1.343
161	7/23/81	4.657	2.567	10.331	2.391	12.924	1.879	15.204	1.908
221	7/27/81	15.993	1.675	19.357	1.947	21.771	1.730	22.432	1.627
261	7/27/81	18.117	2.652	19.855	1.678	21.225	1.374	21.485	1.844
221	7/30/81	11.386	3.092	17.710	2.819	21.628	2.608	20.065	5.833
223	7/30/81	10.499	1.072	16.181	0.531	20.759	0.278	24.293	0.538
231	7/30/81	20.342	2.471	21.858	1.901	22.498	1.123	21.754	1.453
261	7/30/81	15.704	1.805	19.928	0.522	21.500	1.235	22.221	0.916
221	7/31/81	6.818	2.208	15.231	4.947	21.017	1.853	22.747	1.866
223	7/31/81	10.337	3.240	15.287	2.404	19.820	1.987	23.493	1.533
231	7/31/81	12.354	4.490	18.561	2.079	20.991	1.381	20.467	1.346
261	7/31/81	9.288	2.149	16.892	2.095	19.983	1.362	20.758	1.251
111	8/ 4/81	13.737	0.696	13.517	0.930	14.465	0.733	12.586	0.928
121	8/ 4/81	13.869	1.895	13.483	2.104	15.068	2.233	18.782	2.886

131	8/ 4/81	12.240	1.915	12.394	2.075	11.071	2.388	9.946	2.390
152	8/ 4/81	16.270	3.227	15.406	3.314	13.391	5.196	11.129	3.609
161	8/ 4/81	15.025	3.158	15.458	3.274	16.133	3.653	17.259	3.485
111	8/ 5/81	7.738	1.431	9.956	0.760	12.267	0.825	12.249	0.855
121	8/ 5/81	7.670	2.115	10.517	1.477	13.199	1.555	17.579	1.906
131	8/ 5/81	7.594	1.342	9.261	1.384	11.118	0.581	11.114	0.519
152	8/ 5/81	10.089	1.147	11.980	0.868	11.747	1.451	11.723	2.469
161	8/ 5/81	7.891	2.841	12.385	2.832	14.400	3.609	16.088	3.602
221	8/10/81	5.778	3.018	13.128	2.030	18.825	1.255	21.430	1.028
223	8/10/81	7.121	2.143	14.056	0.561	18.902	0.619	21.893	0.449
231	8/10/81	10.287	2.385	18.131	8.025	17.261	1.661	17.324	1.605
261	8/10/81	9.198	3.723	15.782	1.460	17.687	1.094	18.572	0.656

		0 - 2 cm		2 - 4 cm		4 - 10 cm		10 - 16 cm	
Field	Date	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
221	8/11/81	5.129	2.272	9.820	3.793	14.171	4.015	18.390	4.542
223	8/11/81	7.950	2.238	13.867	0.728	26.025	13.402	21.217	0.853
231	8/11/81	9.526	1.530	13.929	1.225	15.879	1.055	16.178	1.081
261	8/11/81	11.167	1.086	15.533	1.356	17.228	2.211	18.684	1.682
221	8/13/81	24.890	3.445	24.411	3.801	24.710	2.754	26.938	5.651
223	8/13/81	22.614	1.124	19.712	3.289	22.734	1.016	24.503	2.223
231	8/13/81	29.670	6.751	26.590	2.497	25.110	2.398	29.385	12.805
261	8/13/81	23.097	2.188	18.384	9.079	22.095	1.078	21.496	1.762
221	8/14/81	11.817	4.399	17.506	3.886	20.182	2.210	21.818	1.342
223	8/14/81	17.106	2.066	17.545	1.232	21.057	1.088	24.091	0.857
231	8/14/81	19.981	2.284	22.424	1.891	22.482	1.337	20.590	1.673
261	8/14/81	15.847	4.068	18.494	2.488	19.181	2.885	18.413	3.936
221	8/17/81	16.230	1.488	19.495	1.632	21.728	1.825	22.567	1.606
223	8/17/81	11.870	1.460	15.574	0.515	19.767	0.843	23.170	1.785
231	8/17/81	16.049	2.158	18.947	1.671	19.390	2.245	18.605	2.050
261	8/17/81	16.138	2.070	18.313	1.096	18.740	0.814	18.722	0.692
221	8/18/81	10.109	3.562	14.981	4.971	19.313	3.249	22.242	2.352
223	8/18/81	10.548	1.247	14.813	0.684	18.724	0.637	21.627	1.088
231	8/18/81	14.113	2.888	18.336	2.119	19.749	2.016	19.181	2.506
261	8/18/81	12.110	1.789	16.757	1.728	18.646	1.995	19.699	2.061
221	8/19/81	11.174	2.175	16.976	1.296	20.447	1.562	22.300	1.553
223	8/19/81	9.859	1.984	13.918	0.711	18.394	0.458	21.535	0.577
231	8/19/81	9.143	0.822	13.948	1.040	15.584	0.976	16.083	1.245
261	8/19/81	9.869	3.365	15.193	2.053	17.019	1.191	18.507	0.988
221	8/20/81	9.262	2.190	16.248	2.385	20.288	2.066	22.015	1.471
223	8/20/81	8.567	1.402	14.558	0.880	18.341	0.747	20.843	1.036
231	8/20/81	5.599	2.862	13.739	2.673	15.429	1.365	16.157	1.084
261	8/20/81	8.583	1.886	14.969	1.942	16.580	1.518	17.733	1.857
111	8/26/81	2.011	0.610	3.955	1.039	7.508	0.834	9.250	1.010

121	8/26/81	5.025	1.556	9.417	1.036	12.041	1.078	16.555	1.674
152	8/26/82	2.108	0.341	2.852	1.988	5.600	0.897	6.326	1.122
111	8/27/81	1.381	0.489	2.644	0.876	6.000	0.973	7.470	1.373
121	8/27/81	3.985	1.161	8.711	1.044	11.320	1.068	15.950	1.386
152	8/27/81	1.745	0.580	3.905	0.854	5.051	1.722	6.649	1.058
111	9/11/81	5.344	1.307	7.533	0.901	9.661	1.598	9.294	0.692
121	9/11/81	6.400	1.209	8.356	0.969	12.547	1.259	14.626	1.771
131	9/11/81	4.479	0.937	7.861	1.232	8.595	1.684	9.272	1.655
152	9/11/81	4.844	1.049	7.753	1.121	8.944	1.515	9.648	1.545
161	9/11/81	8.573	2.154	11.129	2.946	11.964	2.771	13.742	3.562
121	9/29/81	6.637	1.046	9.557	1.158	13.662	1.421	16.164	1.558
131	9/29/81	7.675	2.707	11.036	1.217	12.965	1.368	14.226	1.768
161	9/29/81	9.022	2.692	11.290	1.924	11.645	1.946	13.904	1.991
111	9/30/81	12.969	1.556	14.291	1.114	15.607	1.237	16.559	1.179
121	9/30/81	6.773	1.546	8.501	1.084	13.170	1.651	15.006	1.639
131	9/30/81	9.090	2.978	10.871	1.766	12.590	1.634	13.695	1.961
152	9/30/81	8.765	3.698	9.964	1.732	10.572	1.180	13.226	1.489
161	9/30/81	12.125	3.933	13.247	3.728	13.581	3.490	15.250	3.260

Table B-1
Climatic
Data
(Edmonst
on)

Date	Time	Rainfall (cm)	Evaporati on (cm/day)	Air Temperat ure (C)		Dry	Wet	Water Temperat ure (C)		Min	Average	Relative Humidity (Percent)	Suction at Depth (cm)			
				Max	Min			Max	Min				30*	30+	45+	75+
6/19/81	930	0.00	0.475	28.3	18.3	25.0	21.7	35.0	23.1	12.1	85	-	-	-	-	
6/20/81	-	0.305	0.24	27.8	18.3	-	-	-	-	-	-	-	-	-	-	
6/21/81	-	0.00	0.24	31.1	15.8	-	-	-	-	-	-	-	-	-	-	
6/22/81	945	0.00	0.240	32.5	18.9	28.1	24.2	35.7	21.1	15.6	88	-	-	-	-	
6/23/81	930	0.00	0.818	33.1	16.1	25.0	19.2	34.5	19.3	36.2	61	-	-	-	-	
6/24/81	1100	0.00	0.724	28.3	16.7	29.2	23.1	33.1	19.7	20.9	60	-	-	-	-	
6/25/81	930	0.737	0.709	30.0	23.1	28.3	24.7	32.5	22.8	43.9	90	-	-	-	-	
6/26/81	930	0.00	0.00	33.6	17.8	20.0	14.2	35.6	20.6	31.2	50	-	-	-	-	
6/27/81	-	0.00	0.745	24.4	8.9	-	-	-	-	-	-	-	-	-	-	
6/28/81	-	0.00	0.745	27.8	8.9	-	-	-	-	-	-	-	-	-	-	
6/29/81	930	0.00	0.745	29.4	9.3	25.0	18.3	33.7	16.8	21.2	60	-	-	-	-	
6/30/81	930	0.00	0.655	30.0	17.2	-	-	33.3	19.7	11.5	58	-	-	-	-	

8/16/81	-	0.00	0.216	29.2	18.9	-	-	-	-	-	-	-	-	-	-
8/17/81	930	0.00	0.216	23.9	10.5	18.3	14.7	33.4	17.4	21.5	60	12	21	15	12
8/18/81	930	0.00	0.582	24.4	6.7	19.2	15.6	28.5	14.2	24.1	53	13	21	15	13
8/19/81	930	0.00	0.523	26.0	6.7	19.4	18.1	29.2	16.2	13.5	94	13	22	15	14
8/20/81	930	0.00	0.483	24.7	14.8	21.1	18.7	26.6	16.2	44.0	70	16	22	16	16
8/21/81	930	0.00	0.770	25.6	8.3	20.0	16.1	28.4	14.4	41.2	62	16	22	16	17
8/22/81	-	0.00	0.466	20.0	13.3	-	-	-	-	-	-	-	-	-	-
8/23/81	-	0.00	0.466	27.2	8.9	-	-	-	-	-	-	-	-	-	-
8/24/81	930	0.00	0.466	30.3	11.1	23.2	19.4	31.1	14.4	17.8	67	19	25	16	22
8/25/81	930	0.00	0.503	30.8	13.9	20.8	18.3	31.1	18.3	23.4	72	20	24	16	22
8/26/81	930	0.00	0.467	26.7	11.9	21.1	19.2	29.0	22.8	21.2	97	21	25	16	23
8/27/81	930	0.00	0.493	26.7	15.3	21.4	18.3	30.3	18.3	18.7	80	22	26	17	24
8/28/81	930	0.00	0.495	29.5	14.6	22.5	20.3	31.9	20.6	19.9	92	23	26	17	25
8/29/81	-	0.00	-0.615	27.8	13.3	-	-	-	-	-	-	-	-	-	-
8/30/81	-	0.940	-0.615	26.1	18.9	-	-	-	-	-	-	-	-	-	-
8/31/81	930	1.727	-0.615	26.1	18.9	20.9	20.6	32.5	19.0	15.1	99	18	27	16	20
9/01/81	930	0.00	0.185	26.8	18.7	22.2	21.6	29.0	21.3	11.4	99	12	24	17	13
9/02/81	930	0.00	0.312	27.8	18.9	22.0	21.8	31.2	22.1	10.0	100	11	22	17	12
9/03/81	930	0.00	0.335	27.0	17.9	2.2	20.7	28.9	21.6	16.5	100	11	21	16	12
9/04/81	930	0.00	0.335	26.1	17.9	20.6	19.7	28.7	20.0	19.5	100	12	20	16	12
9/05/81	-	0.00	0.184	22.8	15.8	-	-	-	-	-	-	-	-	-	-
9/06/81	-	0.00	0.184	26.7	15.8	-	-	-	-	-	-	-	-	-	-
9/07/81	-	0.00	0.184	25.0	15.8	-	-	-	-	-	-	-	-	-	-
9/08/81	-	0.00	0.184	-	-	-	-	-	-	-	-	-	-	-	-
9/09/81	1050	0.00	0.184	27.3	9.4	21.0	16.6	28.5	14.8	64.4	64	18	23	17	18
9/10/81	1000	0.00	0.465	24.6	6.5	19.1	15.4	26.9	13.3	13.0	68	18	24	17	19
9/11/81	1020	0.00	0.503	26.0	11.2	24.7	16.9	27.6	16.0	20.7	44	18	24	18	20
9/12/81	-	0.00	0.452	-	-	-	-	-	-	-	-	-	-	-	-
9/13/81	-	0.00	0.452	-	-	-	-	-	-	-	-	-	-	-	-
9/14/81	950	0.00	0.452	31.2	14.1	25.8	22.4	32.9	19.2	39.8	75	22	26	18	25
9/15/81	950	4.953	0.457	32.6	18.2	21.8	20.7	33.7	21.7	11.6	99	22	27	17	24
9/16/81	1000	1.651	-3.023	26.6	15.3	15.9	15.5	27.4	16.8	35.7	100	6	24	16	7
9/17/81	955	0.127	0.097	19.6	15.6	18.2	17.1	21.3	17.9	12.3	100	6	18	16	7
9/18/81	1000	0.635	-0.551	22.3	13.3	15.2	13.2	24.1	16.6	12.3	86	4	17	14	6
9/19/81	-	0.127	-0.003	17.8	9.7	-	-	-	-	-	-	-	-	-	-
9/20/81	-	0.00	-0.003	16.7	9.7	-	-	-	-	-	-	-	-	-	-
9/21/81	1005	0.00	-0.003	23.90	12.50	19.40	15.20	21.30	11.80	44.30	61	8	17	14	10
9/22/81	1035	0.381	0.325	24.70	10.20	21.80	18.40	27.40	15.20	11.10	75	9	18	14	11
9/23/81	1000	0.00	-0.111	27.60	9.20	13.40	9.60	28.50	13.60	25.10	57	7	18	12	10
9/24/81	1030	0.00	0.493	17.80	7.60	16.00	11.10	21.90	9.20	38.10	55	9	18	14	10
9/25/81	1030	0.00	0.414	20.30	4.00	19.10	13.20	22.30	9.30	23.00	50	10	18	14	12
9/26/81	-	0.00	0.362	25.00	8.10	-	-	-	-	-	-	-	-	-	-
9/27/81	-	0.00	0.362	26.70	10.60	-	-	-	-	-	-	-	-	-	-
9/28/81	1000	0.00	1.087	27.60	8.60	18.40	11.80	28.10	14.30	46.30	41	10	19	14	12
9/29/81	950	0.00	0.528	20.40	2.40	15.20	10.70	24.80	9.60	21.70	57	10	20	14	13
9/30/81	1000	0.00	0.274	20.30	11.80	15.10	9.90	22.20	12.90	11.10	49	9	20	13	13

10/1/81	940	0.00	0.218	21.20	10.00	17.90	16.10	22.10	14.90	6.90	82	10	20	14	14
10/2/81	1000	0.584	-0.290	28.40	9.00	11.30	10.40	25.60	15.00	31.40	90	-	-	-	-

Table B-2
Climatic
Data
(South
Farm)

Date	Time	Rainfall (cm)	Air Temperature (C)		Relative Humidity (Percent)
			Max	Min	
6/19/81	930	0.479	28.33	18.33	80
6/20/81	930	0.202	28.33	20.55	94
6/21/81	930	-	28.33	17.22	74
6/22/81	930	-	31.66	19.44	84
6/23/81	930	-	33.88	17.22	54
6/24/81	930	-	28.33	17.22	70
6/25/81	930	1.058	30.55	22.77	86
6/26/81	930	-	33.00	18.33	49
6/27/81	930	-	23.33	11.66	50
6/28/81	930	-	26.11	10.55	40
6/29/81	930	-	28.33	11.66	52
6/30/81	930	-	30.55	17.77	54
7/01/81	930	2.822	29.44	20.00	98
7/02/81	930	0.630	27.77	18.33	98
7/03/81	930	1.386	27.22	20.00	98
7/04/81	930	1.638	26.11	19.44	88
7/05/81	930	-	26.11	17.22	98
7/06/81	930	-	26.66	20.55	94
7/07/81	930	-	30.55	19.44	79
7/08/81	930	-	31.66	20.55	68
7/09/81	930	-	32.77	25.00	77
7/10/81	930	-	35.00	22.77	70
7/11/81	930	-	32.77	17.22	53
7/12/81	930	-	31.66	16.66	64
7/13/81	930	-	32.77	21.66	64
7/14/81	930	-	31.66	21.66	62
7/15/81	930	-	31.66	12.77	55
7/16/81	930	-	28.88	15.00	54
7/17/81	930	-	26.11	16.11	73
7/18/81	930	-	30.55	15.55	64

7/19/81	930	-	32.77	17.22	64
7/20/81	930	1.890	34.44	23.88	90
7/21/81	930	-	33.88	20.55	78
7/22/81	930		32.77	20.55	79
7/23/81	930	-	29.44	15.55	50
7/24/81	930	0.882	27.77	15.00	64
7/25/81	930	0.378	30.55	19.44	98
7/26/81	930	-	25.00	19.44	97
7/27/81	930	-	30.55	21.66	88
7/28/81	930	1.260	30.55	20.55	70
7/29/81	930	-	28.33	21.66	82
7/30/81	930		29.44	11.66	64
7/31/81	930		28.33	13.33	60

**Air
Tempera
ture (C)**

Date	Time	Rainfall (cm)	Max	Min	Relative Humidity (Percent)
8/01/81	930		30.55	15.00	77
8/02/81	930	-	28.33	13.33	83
8/03/81	930	0.630	29.44	20.00	88
8/04/81	930	-	28.88	17.77	90
8/05/81	930	-	31.66	18.33	70
8/06/81	930	0.504	32.22	17.77	98
8/07/81	930	0.176	22.22	14.44	98
8/08/81	930	-	29.44	21.66	98
8/09/81	930		26.11	18.33	66
8/10/81	930	-	31.66	18.33	68
8/11/81	930	1.512	32.77	20.55	80
8/12/81	930	0.630	33.88	32.77	98
8/13/81	930	-	28.33	16.11	74
8/14/81	930	-	28.33	17.22	71
8/15/81	930	1.058	30.55	18.33	80
8/16/81	930	-	30.55	20.55	90
8/17/81	930	-	29.44	11.66	56
8/18/81	930	-	25.00	8.33	48
8/19/81	930	-	28.33	11.66	88
8/20/81	930	-	30.55	15.00	70
8/21/81	930	-	26.11	10.55	58
8/22/81	930	-	25.55	14.44	88
8/23/81	930	-	21.11	11.11	76
8/24/81	930	-	29.44	12.22	62
8/25/81	930	-	30.55	13.88	70

8/26/81	930	-	26.66	12.77	88
8/27/81	930	-	26.11	15.55	78
8/28/81	930	-	29.44	15.55	80
8/29/81	930	0.252	32.77	15.00	84
8/30/81	930	3.024	28.33	20.55	92
8/31/81	930	-	26.11	20.00	99
9/01/81	930	-	26.66	19.44	98
9/02/81	930	-	27.22	19.44	98
9/03/81	930	-	26.66	18.88	97
9/04/81	930	-	25.00	18.33	98
9/05/81	930	-	21.66	18.33	97
9/06/81	930	-	22.77	16.11	97
9/07/81	930	-	26.11	17.77	90
9/08/81	930	0.126	25.00	16.11	98
9/09/81	930	-	23.88	10.55	80
9/10/81	930	-	24.44	7.22	80
9/11/81	930	-	26.11	11.11	60
9/12/81	930	-	29.44	15.00	68
9/13/81	930	-	30.55	16.11	68
9/14/81	930	-	30.55	15.00	80

Date	Time	Rainfall (cm)	Air Temperature (C)		Relative Humidity (Percent)
			Max	Min	
9/15/81	930	5.746	32.22	18.33	96
9/16/81	930	-	26.66	15.00	98
9/17/81	930	0.630	20.00	16.11	98
9/18/81	930	0.378	22.77	12.77	86
9/19/81	930	-	17.77	10.55	66
9/20/81	930	-	18.33	9.44	72
9/21/81	930	-	17.22	14.44	62
9/22/81	930	0.630	24.44	10.55	98
9/23/81	930	-	27.22	8.88	66
9/24/81	930	-	17.22	7.22	62
9/25/81	930	-	19.44	5.00	58
9/26/81	930	-	23.88	9.44	60
9/27/81	930	-	25.00	12.22	68
9/28/81	930	-	27.22	15.00	37
9/29/81	930	-	20.55	2.77	60
9/30/81	930	-	19.44	11.66	60
10/1/81	930	0.504	20.55	10.00	93
10/2/81	930	-	28.33	8.83	96

Table C 1
 Biomass
 data for
 corn
 (plots
 #131 and
 #231)

Date	Height (cm)	Wet Biomass (gm/m2)	Dry Biomass (gm/m2)	Water Content (gm/m2)
6/25/81	28.4	41.3±9.5	6.2±1.3	35.1
7/20/81	144.4	2560±69	349±63	2211
7/30/81	242.7	3656±63	560±97	3096
8/ 5/81	230.9	3321±14	552±271	2769
8/11/81	254.8	4276±61	781±141	3495
8/18/81	252.1	5100±12	1054±25	4046
8/27/81	228.7	3811±13	1256±47	2555
9/ 1/81	231.6	3733±12	1216±44	2517
9/10/81	228.5	3094±95	1405±34	1689
9/21/81	234.3	2357±54	1324±14	1033

Table C2
 Biomass
 data for
 soybean*
 (plots
 #161 and
 #261)

Date	Wet Biomass s	Dry Biomass	Water Content
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	(gm/m2)	(gm/m2)	(gm/m2)
6/25/81	10.1±3.1	2.4±0.5	7.7
7/10/81	245±95	56±26	189
8/ 5/81	9.4±2.7	1.5±0.4	8
8/11/81	13.6±3.9	2.6±0.4	11
8/18/81	13±10	6.5±2.6	24
8/27/81	85±30	19.4±7.0	66
9/ 1/81	280±112	53±18	227
9/10/81	484±185	98±39	386
9/21/81	711±220	124±45	587

The plots were replanted on 7/29/81.

Table C3
Biomass data for alfalfa* (plot #111)

Date	Wet Biomass (gm/m2)	Dry Biomass (gm/m2)	Water Content (gm/m2)
7/27/81	1606±43	244	1362
	5		
8/27/81	510±189	136	374
9/ 3/81	1032±28	172	860
	6		
9/10/81	774±122	146	628
9/21/81	1320±26	231	1089
	1		
10/1/81	1252±33	376	876
	0		

Alfalfa was clipped on 7/30/81

Biomass
data for
orchard
grass
(plot
#152)

Date	Wet Biomass (gm/m ²)	Dry Biomass (gm/m ²)	Water Content (gm/m ²)
7/27/81	1465±20 2	339	1126
8/27/81	891±195	397	494
9/ 3/81	1167±23 5	367	800
9/10/81	940±231	264	676
9/21/81	1349±26 0	352	997
10/1/81	1326±23 5	298	1028

Orchardg
rass was
clipped
on
7/30/81

Appendix
D
Radiomet
ric Data
from Test
Site No. 1

Date:
6/24/81

Time:
1344-
1408

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	295.96	0.60	296.15	1.24
X	20	296.12	0.67	293.84	0.45
X	30	296.70	0.90	290.88	0.91

X	40	297.40	0.68	285.82	-
X	50	297.43	1.15	277.45	-
X	60	295.06	1.07	260.94	-
X	70	281.54	1.19	232.27	-
C	10	290.25	0.20	293.92	-
C	20	291.61	-	292.33	-
C	30	294.36	-	289.85	1.04
C	40	297.63	0.85	285.35	-
C	50	299.76	-	277.53	-
C	60	298.02	-	262.85	-
C	70	282.91	1.33	238.36	0.99
L	10	283.40	1.44	283.39	1.38
L	20	283.06	1.54	279.00	1.39
L	30	280.28	1.89	273.71	1.03
L	40	278.06	1.83	265.54	1.19
L	50	275.69	1.28	253.38	1.02
L	60	266.57	1.64	228.39	1.24
L	70	247.66	1.43	193.45	1.14
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
0.70	5.41	10.18	10.48

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.30	46.30	36.90	34.40	34.80	31.00

Date:
7/13/81

Time:
1323-
1348

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	289.83	1.09	292.06	0.77
X	20	290.60	0.74	289.32	0.83
X	30	292.64	-	284.84	-
X	40	294.70	0.91	277.41	-
X	50	296.74	0.88	266.97	0.84
X	60	295.60	1.04	249.00	0.62
X	70	284.92	-	220.49	0.81
C	10	288.03	0.40	289.13	0.92
C	20	289.42	-	286.52	0.69
C	30	292.53	-	281.99	-
C	40	296.32	0.60	275.06	-
C	50	299.43	-	264.20	0.91
C	60	298.47	0.77	246.13	-
C	70	284.94	0.21	220.55	0.78
L	10	279.66	1.51	276.47	1.26
L	20	278.70	1.92	271.76	1.36
L	30	277.93	1.73	264.81	1.57
L	40	276.46	1.76	256.38	0.94
L	50	274.50	1.78	243.81	1.54
L	60	267.88	2.07	220.33	1.23
L	70	249.32	1.26	186.97	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.25	5.49	7.74	9.29

**Soil
Tempera
ture Data**

(C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.30	41.00	35.50	35.80	35.70	33.40

Date: 7/14/81

Time: 1243-1307

Plot No.: 121

Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	292.68	-	292.34	-
X	20	293.00	0.48	288.41	-
X	30	294.97	0.52	283.78	-
X	40	298.37	0.24	276.63	-
X	50	300.76	1.02	265.20	0.85
X	60	300.11	1.00	243.15	0.70
X	70	289.45	0.41	211.46	0.49
C	10	287.97	-	288.60	0.40
C	20	289.80	0.55	286.38	0.71
C	30	292.77	-	282.35	0.79
C	40	296.72	-	276.82	-
C	50	299.35	0.86	265.65	0.49
C	60	297.94	-	247.70	-
C	70	283.24	-	221.05	-
L	10	282.09	1.05	280.75	1.52
L	20	280.98	1.60	274.47	1.17
L	30	279.89	1.89	267.12	1.21
L	40	277.83	1.95	258.34	1.31
L	50	276.10	1.39	245.60	0.95
L	60	267.88	1.49	220.59	1.18
L	70	248.16	1.56	184.97	1.01
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry

Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
0.95	4.47	7.12	9.72

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.20	41.70	36.40	36.20	34.60	31.50

Date:
7/21/81Time:
1330-
1357Plot No.:
121Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	231.81	0.99	225.83	0.80
X	20	236.97	-	222.50	-
X	30	239.69	0.36	211.14	-
X	40	248.93	0.31	201.00	0.70
X	50	261.27	1.09	187.59	-
X	60	274.77	-	166.01	0.47
X	70	281.16	-	137.66	0.69
C	10	236.69	0.52	237.51	0.44
C	20	238.88	0.74	232.20	0.47
C	30	244.47	0.72	222.45	-
C	40	254.12	0.58	210.42	-
C	50	265.73	-	193.43	0.28
C	60	0.279	0.91	171.28	0.19
C	70	281.18	-	144.62	0.58
L	10	249.35	1.80	237.34	0.93
L	20	250.63	1.18	232.99	1.29
L	30	249.65	1.77	223.31	1.00
L	40	251.80	1.54	212.74	0.98
L	50	254.58	1.98	197.57	1.43
L	60	255.05	0.97	173.53	1.55
L	70	245.67	1.55	139.45	1.62
P	10				
P	20				
P	30				
P	40				

P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.27	9.54	11.76	10.20

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.10	41.80	36.50	34.40	32.00	29.40

Date:
7/22/81

Time:
1316-
1337

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	291.03	-	291.31	-
X	20	291.92	0.80	288.90	0.70
X	30	293.46	0.49	284.94	0.77
X	40	294.66	-	279.05	0.91
X	50	297.45	0.79	266.25	0.41
X	60	295.29	1.04	257.39	0.45
X	70	286.10	-	226.64	0.82
C	10	282.42	-	284.55	0.57
C	20	284.16	-	282.47	0.38
C	30	287.01	0.37	277.73	0.39
C	40	291.92	0.71	273.19	0.76
C	50	297.48	-	265.68	-
C	60	295.50	-	246.72	0.34
C	70	278.89	-	216.89	0.23
L	10	276.40	1.72	271.11	1.68
L	20	273.59	2.04	265.86	1.36

L	30	274.21	2.16	258.30	1.61
L	40	273.28	1.66	249.43	1.35
L	50	272.66	1.66	235.50	1.09
L	60	266.96	1.87	211.63	1.12
L	70	248.93	1.48	175.89	1.11
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.50	3.58	8.18	9.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.30	43.00	33.30	34.30	31.80	28.30

Date:
7/23/81

Time:
0736-
0803

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	265.71	-	263.19	0.41
X	20	266.89	0.47	260.38	0.89
X	30	268.04	-	253.63	0.53
X	40	271.40	0.84	246.33	-
X	50	275.03	-	234.68	0.98
X	60	276.05	0.92	219.13	0.36
X	70	269.02	1.12	197.44	-
C	10	262.81	0.55	263.86	-

C	20	264.41	-	260.66	-
C	30	267.61	-	254.68	0.57
C	40	272.77	-	245.79	0.75
C	50	278.14	-	232.62	0.33
C	60	280.25	0.35	211.10	0.42
C	70	268.34	0.61	179.80	0.38
L	10	265.57	2.13	260.01	1.33
L	20	264.55	1.47	255.81	1.39
L	30	264.65	1.25	247.23	1.09
L	40	265.31	1.37	237.57	0.93
L	50	264.33	1.43	222.19	1.54
L	60	260.74	1.26	196.93	1.26
L	70	243.91	2.42	160.71	1.29
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

Scale	0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
Malfunction:	4.10	9.54	11.32	11.96

**Soil
Temperature
Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
18.20	23.70	20.80	21.10	22.10	22.10

Date:
7/23/81

Time:
1453-
1515

Plot No.:
121

Field:
Bare

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	294.99	0.67	296.56	0.22
X	20	295.74	0.97	294.43	-
X	30	297.21	0.45	290.66	-
X	40	298.81	1.01	285.27	0.71
X	50	300.57	0.37	274.72	0.92
X	60	299.36	0.83	258.65	0.79
X	70	288.70	0.91	234.71	-
C	10	291.94	0.56	292.61	-
C	20	293.43	0.74	290.30	0.54
C	30	295.83	0.31	287.27	0.19
C	40	299.07	-	281.86	-
C	50	301.99	-	271.54	0.96
C	60	299.47	-	253.10	-
C	70	282.58	0.74	224.82	-
L	10	282.18	2.14	277.59	1.15
L	20	281.71	1.58	273.55	1.03
L	30	281.39	1.69	267.81	1.29
L	40	279.37	1.89	259.31	1.42
L	50	275.59	1.65	246.25	0.93
L	60	268.63	1.78	222.73	1.42
L	70	249.34	1.60	187.98	1.50
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.04	2.12	9.43	9.86

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.30	38.50	38.50	39.70	35.80	32.00

Date: 8/3/81
 Time: 0807-0840
 Plot No.: 121
 Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.07	-	265.01	-
X	20	269.25	0.71	262.63	0.14
X	30	273.27	0.79	258.58	0.30
X	40	276.50	1.04	249.00	0.44
X	50	282.92	0.87	240.03	-
X	60	284.05	0.19	215.52	0.60
X	70	277.11	0.53	180.52	0.80
C	10	274.22	-	275.31	0.45
C	20	275.60	0.45	272.23	-
C	30	278.46	0.80	266.98	0.22
C	40	282.04	0.54	258.03	1.13
C	50	286.73	-	244.93	-
C	60	287.18	-	223.56	0.36
C	70	273.62	-	191.54	-
L	10	269.68	1.67	265.17	1.51
L	20	272.73	1.66	267.57	3.47
L	30	278.88	1.70	256.08	1.10
L	40	272.05	1.19	246.68	1.34
L	50	271.74	1.45	231.97	1.32
L	60	265.85	1.99	206.59	0.96
L	70	248.82	0.96	169.55	1.31
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.91	4.55	7.43	9.08

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.30	27.80	23.50	23.40	24.80	23.90

Date: 8/4/81

Time: 0905-0930

Plot No.: 121

Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	225.59	0.61	218.85	0.40
X	20	227.18	0.45	213.50	0.42
X	30	229.45	-	204.21	0.78
X	40	238.67	-	196.33	0.82
X	50	248.67	0.20	179.82	0.18
X	60	258.70	0.63	158.91	0.20
X	70	263.61	-	141.90	0.51
C	10	211.10	-	209.11	0.80
C	20	212.19	0.30	202.11	-
C	30	218.69	0.46	192.89	0.60
C	40	229.50	0.44	180.59	0.64
C	50	244.94	0.20	164.88	0.35
C	60	260.14	0.44	144.67	0.72
C	70	269.37	-	123.80	0.58
L	10	234.44	1.58	226.79	1.20
L	20	236.49	1.08	222.34	1.10
L	30	-	-	211.63	1.49
L	40	240.12	1.85	200.18	1.44
L	50	246.62	1.74	185.96	1.39
L	60	249.58	1.70	162.09	1.58
L	70	247.07	1.90	131.96	0.87
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.77	11.78	12.41	11.98

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.10	27.90	25.70	25.10	25.30	23.30

Date:
8/5/81

Time:

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	263.68	0.91	259.55	0.49
X	20	261.26	0.64	251.60	0.32
X	30	262.08	0.40	243.47	0.74
X	40	268.25	-	234.79	-
X	50	273.16	-	218.86	0.84
X	60	277.41	-	197.65	-
X	70	274.45	-	170.94	0.42
C	10	257.01	-	256.09	0.70
C	20	257.14	0.24	250.13	0.72
C	30	261.20	0.78	242.57	0.70
C	40	268.22	-	230.90	0.84
C	50	275.89	-	215.00	-
C	60	282.39	-	192.70	0.62
C	70	277.29	-	162.56	0.43
L	10	254.86	1.52	250.44	0.99
L	20	258.31	1.81	246.88	1.29
L	30	260.20	2.14	239.04	1.08
L	40	261.34	2.17	228.24	1.44
L	50	263.34	1.70	214.59	1.62
L	60	262.66	1.39	190.32	1.18
L	70	249.38	0.83	153.80	1.17
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.95	9.67	10.64	11.40

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.00	31.10	26.80	25.90	26.10	24.00

Date:
8/26/81

Time:
0950-
1018

Plot No.:
121

Field:
Bare

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	282.50	0.79	280.40	0.43
X	20	282.37	0.65	276.24	0.41
X	30	284.15	1.07	271.72	0.48
X	40	285.96	1.05	262.43	0.35
X	50	287.20	0.59	248.41	0.41
X	60	286.26	0.75	227.43	0.43
X	70	276.69	0.96	196.76	0.45
C	10	278.02	0.58	277.49	0.31
C	20	279.35	0.44	274.73	0.31
C	30	282.42	0.29	270.39	0.30
C	40	285.55	0.92	261.23	0.29
C	50	288.56	0.83	246.73	0.26
C	60	287.48	0.43	225.06	0.33
C	70	274.03	0.95	194.26	0.31

L	10	258.21	1.84	252.84	1.49
L	20	262.07	1.85	251.79	1.16
L	30	265.38	2.00	247.71	1.42
L	40	266.20	1.61	238.75	1.03
L	50	267.23	1.83	224.93	1.17
L	60	262.88	1.46	200.06	1.37
L	70	247.35	1.36	167.12	0.95
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
2.30	5.43	8.43	10.00

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	15.0 cm
24.90	34.00	25.10	23.40	24.00

Date:
8/27/81

Time:
0942-
1002

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	278.03	1.03	276.07	0.44
X	20	278.88	0.84	273.40	0.50
X	30	281.97	0.96	269.77	0.44
X	40	285.11	0.98	262.35	0.51
X	50	287.26	1.00	249.35	0.44
X	60	287.11	0.97	231.49	0.44

X	70	274.17	0.95	198.50	0.47
C	10	277.27	0.32	276.49	0.29
C	20	278.07	1.07	274.45	0.24
C	30	281.95	0.63	270.21	0.37
C	40	286.53	0.36	262.69	0.31
C	50	289.91	0.95	250.76	0.21
C	60	288.49	0.26	231.00	0.32
C	70	273.30	1.06	201.32	0.34
L	10	268.70	1.20	263.62	1.31
L	20	268.50	1.63	259.29	1.36
L	30	268.35	1.32	251.99	1.48
L	40	267.17	1.80	242.16	1.20
L	50	268.12	1.53	228.49	1.06
L	60	263.48	1.33	205.93	1.25
L	70	247.36	1.83	172.95	1.12
P	10	249.71	1.88	247.54	1.81
P	20	254.98	1.68	246.77	1.45
P	30	256.11	2.25	244.71	2.03
P	40	262.72	2.40	240.15	1.72
P	50	263.37	2.64	223.09	1.92
P	60	262.21	1.95	206.77	1.45
P	70	252.22	1.62	171.60	1.78

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
2.27	5.65	8.29	9.21

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	15.0 cm
23.60	30.00	28.10	24.50	22.60

*P-Band
measure
ments
made
during
1356-
1416

P.M.

Date:
8/28/81

Time:
0944-
1033

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.02	1.04	284.38	0.46
X	20	287.12	0.90	281.96	0.47
X	30	289.19	1.03	280.57	0.42
X	40	290.36	0.96	273.83	0.33
X	50	292.51	0.98	259.73	0.37
X	60	289.55	1.11	248.68	0.42
X	70	280.33	0.84	215.16	0.53
C	10	285.61	0.82	285.62	0.33
C	20	286.70	0.21	283.39	0.31
C	30	288.59	0.58	279.19	0.26
C	40	291.23	0.36	272.24	0.37
C	50	292.87	0.24	259.34	0.29
C	60	290.30	0.37	237.20	0.31
C	70	275.06	0.34	206.98	0.30
L	10	269.53	1.39	264.88	1.12
L	20	269.54	1.49	259.71	1.30
L	30	268.27	1.43	251.28	1.13
L	40	267.29	1.69	242.44	0.91
L	50	267.54	1.24	227.94	0.97
L	60	262.28	1.36	202.13	1.27
L	70	246.84	1.85	167.11	1.41
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture
Data (%
by Dry
Weight)

0-0.50 cm 1.81	0-2.50 cm 5.33	2.5-5.0 cm 7.94	5-10 cm 9.62
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**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.90	31.30	29.20	25.40	24.00	23.00

Date: 9/1/81	Time: 1043- 1104
Plot No.: 121	Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	212.87	0.60	205.44	0.59
X	20	214.48	0.60	197.20	0.57
X	30	219.48	0.66	184.99	0.56
X	40	228.42	0.60	168.06	0.64
X	50	243.53	0.69	157.62	0.64
X	60	258.78	0.72	131.52	0.67
X	70	270.34	0.77	108.58	0.66
C	10	197.32	0.47	192.44	0.42
C	20	202.59	0.23	187.90	0.00
C	30	213.68	0.46	181.36	0.45
C	40	226.19	0.26	169.60	0.55
C	50	240.80	0.41	153.66	0.51
C	60	259.61	0.30	136.31	0.53
C	70	271.78	0.37	112.75	0.59
L	10	210.15	1.83	201.82	1.20
L	20	215.77	1.69	199.23	1.32
L	30	219.55	1.39	191.37	1.17
L	40	224.14	1.76	179.72	0.96
L	50	234.49	1.15	168.11	1.09
L	60	240.07	1.63	146.55	1.09
L	70	241.57	1.38	118.98	1.60
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.35	14.92	13.91	13.69

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.10	26.80	24.60	24.20	25.00	23.30

Date:
9/2/81

Time:
0931-
0952

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	222.17	0.70	215.68	0.45
X	20	222.25	0.61	209.45	0.46
X	30	227.74	0.64	201.67	0.53
X	40	236.33	0.71	192.28	0.48
X	50	247.88	0.71	165.82	0.51
X	60	260.11	0.79	152.13	0.50
X	70	269.34	0.44	122.17	0.73
C	10	212.28	0.28	207.25	0.41
C	20	212.42	0.56	200.61	0.46
C	30	221.07	0.17	192.86	0.40
C	40	232.07	0.66	180.44	0.47
C	50	248.11	0.45	164.95	0.41
C	60	263.54	0.24	143.01	0.48
C	70	272.34	0.32	121.90	0.49
L	10	222.71	1.54	215.39	1.39
L	20	228.88	1.30	216.04	1.64
L	30	233.47	1.78	208.49	1.18
L	40	236.27	1.80	196.06	1.16

L	50	243.03	1.44	181.25	1.16
L	60	247.69	2.09	158.64	1.24
L	70	243.40	1.64	127.07	1.32
P	10	239.58	2.15	239.41	1.60
P	20	237.13	1.76	235.54	2.00
P	30	241.19	1.80	227.03	1.59
P	40	244.17	2.05	218.63	1.72
P	50	250.14	2.07	203.41	1.93
P	60	252.96	1.45	181.38	1.56
P	70	246.51	1.53	158.58	1.30

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.93	12.52	12.61	12.90

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.80	23.50	22.70	22.50	23.50	22.10
27.60	30.50	27.90	26.60	27.00	24.4*

*P-Band
measure
ments
made
during
1411-
1425

Date:
9/3/81

Time:
0925-
0946

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
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X	10	229.57	0.76	223.93	0.52
X	20	237.52	0.75	225.24	0.63
X	30	241.18	0.72	215.56	0.43
X	40	248.90	0.82	203.56	0.55
X	50	256.85	0.58	183.91	0.48
X	60	267.41	0.78	160.78	0.55
X	70	272.54	0.82	137.90	0.59
C	10	226.93	0.31	222.85	0.43
C	20	227.49	0.56	216.11	0.38
C	30	233.56	0.27	208.00	0.51
C	40	243.78	0.23	196.33	0.48
C	50	255.52	0.22	180.99	0.41
C	60	267.56	0.53	158.28	0.47
C	70	273.64	0.26	138.30	0.53
L	10	235.37	1.66	229.68	1.09
L	20	234.82	1.56	221.49	1.29
L	30	237.62	1.56	214.30	1.11
L	40	241.91	1.52	203.40	0.99
L	50	247.72	1.97	190.74	0.97
L	60	253.13	2.63	165.47	1.21
L	70	247.16	1.59	138.20	1.10
P	10	247.35	2.39	-	-
P	20	244.26	1.98	242.77	1.66
P	30	250.36	1.52	237.17	1.69
P	40	256.57	2.15	229.73	1.56
P	50	252.80	2.26	203.78	1.88
P	60	254.79	2.48	180.58	1.78
P	70	-	-	158.95	1.72

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
7.93	10.98	11.34	11.32
7.05	8.63	10.05	11.52*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.60	23.00	22.00	22.20	23.00	22.10
26.50	27.00	25.40	24.60	26.00	24.8*

*P-Band
measure
ments
made
during
1308-
1328
p.m.

Date: 9/4/81
Time: 0837-
0853
Plot No.: 121
Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	243.44	0.62	238.47	0.48
X	20	247.04	0.81	235.19	0.38
X	30	254.55	0.86	232.52	0.49
X	40	260.51	0.85	227.59	0.40
X	50	266.94	0.69	214.54	0.45
X	60	272.09	0.55	197.60	0.52
X	70	272.34	0.74	152.48	0.43
C	10	234.84	0.72	232.79	0.36
C	20	237.64	0.33	227.44	0.44
C	30	243.70	0.58	219.72	0.42
C	40	252.52	0.41	209.42	0.45
C	50	262.97	0.60	192.47	0.36
C	60	272.71	0.31	170.08	0.38
C	70	271.44	0.26	143.74	0.48
L	10	244.23	1.85	237.42	1.32
L	20	246.06	2.18	230.70	1.45
L	30	244.96	1.73	220.71	1.14
L	40	248.05	1.57	211.64	1.27
L	50	251.31	1.72	195.60	1.09
L	60	255.71	1.71	172.95	0.90
L	70	248.86	1.86	146.43	1.15
P	10	249.39	1.87	-	-
P	20	247.21	1.88	248.45	1.78
P	30	252.83	1.70	234.23	1.78
P	40	255.92	1.65	225.30	1.67
P	50	254.77	2.28	205.67	1.69
P	60	258.31	1.65	180.05	1.59

P 70 246.38 2.46 150.07 1.93

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
7.69	10.56	11.09	11.66

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
2.05	21.50	19.60	20.00	22.00	20.90

*P-Band
measure
ments
made
during 10
18-1031
a.m.

Date: 9/11/81 Time: 0949-1012

Plot No.: 121 Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.59	1.09	273.48	0.51
X	20	275.13	0.86	268.30	0.62
X	30	277.39	1.18	263.42	0.34
X	40	281.00	0.87	256.07	0.55
X	50	282.16	0.77	240.35	0.51
X	60	284.46	1.03	222.11	0.51
X	70	275.13	0.61	189.91	0.53
C	10	270.16	0.51	269.58	0.45
C	20	271.81	0.76	266.04	0.36
C	30	274.42	0.89	259.33	0.30

C	40	279.25	0.80	250.65	0.38
C	50	283.88	0.60	235.76	0.33
C	60	284.08	0.34	213.67	0.34
C	70	272.75	0.48	182.64	0.34
L	10	257.33	1.72	254.02	1.89
L	20	259.20	2.10	248.70	1.31
L	30	256.52	1.95	238.70	1.15
L	40	258.46	1.73	229.17	1.01
L	50	259.60	1.44	213.60	1.43
L	60	259.68	1.64	190.62	0.86
L	70	247.71	1.13	160.32	1.21
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
4.78	7.33	9.17	9.67

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.00	28.00	24.80	21.60	21.30	18.40

Date:
9/14/81

Time:
0944-
1004

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	281.81	0.99	280.19	0.41
X	20	282.18	0.89	276.26	0.43

X	30	283.55	1.06	270.57	0.41
X	40	285.69	0.59	262.73	0.52
X	50	288.58	0.99	249.83	0.49
X	60	287.03	1.04	227.50	0.46
X	70	275.41	1.01	195.91	0.49
C	10	277.57	0.27	277.51	0.32
C	20	278.06	0.34	273.68	0.31
C	30	280.85	0.56	267.76	0.30
C	40	284.93	0.54	259.03	0.26
C	50	289.28	0.64	244.48	0.29
C	60	288.62	0.28	222.33	0.30
C	70	274.61	0.42	191.08	0.40
L	10	260.88	1.96	257.79	1.52
L	20	260.55	1.44	251.58	1.38
L	30	260.73	1.49	243.40	1.24
L	40	261.36	1.76	232.82	1.50
L	50	263.58	1.37	215.20	0.99
L	60	262.91	1.65	191.27	1.11
L	70	247.95	1.67	158.07	1.45
P	10	242.78	2.06	241.83	1.67
P	20	243.74	2.23	235.70	2.10
P	30	246.46	2.59	233.05	2.12
P	40	250.46	2.14	219.81	1.95
P	50	253.53	2.25	204.13	2.63
P	60	254.44	2.32	181.17	2.21
P	70	236.22	1.84	147.59	1.41

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.84	5.28	7.83	8.96

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.50	32.00	26.70	23.90	24.00	21.20

*P-Band
measure

ments
made
during
1350-
1404
p.m.

Date:
9/15/81

Time:
0843-
0914

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10				
C	20				
C	30				
C	40				
C	50				
C	60				
C	70				
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10	247.43	1.87	240.13	1.82
P	20	247.99	2.15	235.57	2.20
P	30	252.45	2.01	231.59	1.93
P	40	257.21	1.78	221.49	1.82
P	50	260.06	2.19	206.37	1.51
P	60	258.47	2.29	182.02	1.87
P	70	251.00	1.92	153.35	1.97

Soil

Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.71	6.35	8.30	4.58

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.70	20.00	20.20	20.80	22.50	22.50

Date:
9/17/81

Time:
1204-
1222

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	204.24	0.65	197.65	0.51
X	20	209.11	0.60	193.05	0.59
X	30	216.60	0.74	183.59	0.56
X	40	225.45	0.67	169.96	0.64
X	50	239.15	0.66	153.41	0.51
X	60	256.04	0.82	130.75	0.64
X	70	267.55	0.66	104.98	0.75
C	10	191.28	0.24	186.73	0.46
C	20	192.65	0.49	180.19	0.43
C	30	200.91	0.22	171.34	0.45
C	40	213.20	0.27	158.66	0.42
C	50	229.44	0.36	143.07	0.50
C	60	251.50	0.56	122.04	0.55
C	70	267.69	0.71	103.62	0.61
L	10	201.98	1.84	193.13	1.75
L	20	204.13	1.23	188.49	1.04
L	30	207.81	1.80	179.10	1.00
L	40	214.62	1.16	167.69	1.18
L	50	223.22	1.71	153.07	1.22
L	60	233.06	1.58	128.96	1.14
L	70	236.23	1.27	102.38	1.06
P	10	216.27	2.09	204.45	1.97*

P	20	223.80	2.14	203.35	2.38
P	30	226.08	2.50	192.07	1.84
P	40	240.06	2.03	181.09	1.87
P	50	246.51	1.65	166.31	2.36
P	60	253.58	2.34	138.79	2.28
P	70	239.36	2.44	106.10	1.72

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
15.28	14.70	12.69	13.31
13.09	18.15	16.18	19.94*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.20	22.00	21.70	21.20	22.50	21.40
18.00	19.00	18.70	19.00	21.00	20.00*

* P-Band
measure
ments
made
during
0901-
0921
a.m.

Date:
9/18/81

Time:
1211-
1230

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	202.90	0.66	195.69	0.54
X	20	207.06	0.52	191.94	0.50
X	30	213.53	0.43	182.87	0.51

X	40	222.73	0.67	170.01	0.54
X	50	236.23	0.57	154.24	0.60
X	60	251.03	0.67	135.90	0.57
X	70	261.21	0.70	110.56	0.82
C	10	185.86	0.31	180.82	0.43
C	20	188.50	0.26	174.33	0.53
C	30	194.67	0.32	165.11	0.49
C	40	206.12	0.21	153.02	0.44
C	50	223.37	0.20	137.09	0.43
C	60	243.35	0.67	117.77	0.57
C	70	260.44	0.34	99.94	0.53
L	10	194.22	2.19	183.47	1.54
L	20	196.01	1.72	177.12	1.29
L	30	200.09	1.84	169.61	1.33
L	40	205.68	1.54	159.17	1.35
L	50	214.75	1.71	143.59	1.51
L	60	224.90	1.65	122.19	1.24
L	70	230.08	1.78	93.90	1.23
P	10	206.60	2.12	199.51	2.12*
P	20	213.67	1.75	201.06	2.09
P	30	220.06	2.11	183.97	1.68
P	40	228.45	2.54	171.78	1.63
P	50	239.47	2.00	160.71	2.82
P	60	249.82	1.77	130.60	2.18
P	70	239.07	2.55	101.19	1.85

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
16.49	15.97	14.83	15.46
15.22	15.46	14.33	14.82*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
16.50	15.30	16.10	16.30	18.30	17.50
15.80	15.80	15.70	16.00	18.00	18.00*

* P-Band
measure

ments
made
during
0901-
0921
a.m.

Date:
9/28/81

Time:
0942-
1002

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	272.94	0.88	271.28	0.50
X	20	273.53	0.86	269.17	0.47
X	30	275.84	1.02	265.41	0.45
X	40	277.38	0.82	252.97	0.41
X	50	279.24	0.95	246.61	0.41
X	60	278.99	0.95	221.95	0.43
X	70	266.61	0.73	182.83	0.41
C	10	263.34	0.40	262.10	0.30
C	20	263.97	0.29	257.85	0.33
C	30	267.55	0.35	250.85	0.31
C	40	272.04	0.74	240.46	0.39
C	50	277.38	0.30	224.24	0.35
C	60	278.90	0.63	198.92	0.32
C	70	266.68	0.30	171.97	0.35
L	10	243.93	1.87	239.15	1.31
L	20	244.20	1.37	234.44	1.48
L	30	245.34	1.34	224.88	1.18
L	40	248.24	1.87	215.41	1.21
L	50	249.88	1.45	198.10	1.40
L	60	249.81	1.83	171.65	1.18
L	70	238.46	1.46	142.29	1.31
P	10	242.24	2.00	238.37	2.26
P	20	245.64	2.91	237.69	2.48
P	30	248.98	2.09	232.78	2.59
P	40	252.73	2.60	221.19	1.91
P	50	256.62	2.87	208.25	2.06
P	60	265.10	3.41	-	-
P	70	244.74	2.64	149.32	2.38

Soil

Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.05	6.18	8.80	9.99

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
19.00	20.00	18.60	17.60	19.00	18.00

* P-Band measurements made during 1049-1112 a.m.

Date: 9/29/81

Time: 0946-1005

Plot No.: 121

Field: Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.06	0.76	265.87	0.43
X	20	267.31	0.81	261.60	0.45
X	30	269.73	0.81	255.78	0.47
X	40	272.35	0.90	246.56	0.51
X	50	275.98	0.81	234.73	0.41
X	60	276.54	0.74	211.19	0.44
X	70	267.33	0.55	177.77	0.53
C	10	259.80	0.45	258.42	0.39
C	20	260.79	0.61	254.63	0.35
C	30	264.68	0.23	248.65	0.34
C	40	268.76	0.42	236.76	0.36
C	50	274.59	0.42	221.09	0.26
C	60	276.45	0.64	197.85	0.38

C	70	266.29	0.26	169.80	0.44
L	10	241.51	1.57	236.44	1.06
L	20	244.88	1.66	234.54	1.14
L	30	246.05	1.22	227.14	1.01
L	40	244.92	1.52	213.30	1.22
L	50	246.81	1.43	196.15	0.98
L	60	247.85	1.77	172.47	1.14
L	70	238.51	1.24	143.14	1.13
P	10	236.94	2.29	234.60	2.33
P	20	236.37	2.04	225.88	1.79
P	30	245.83	2.61	227.18	2.31
P	40	250.49	2.33	219.47	2.42
P	50	251.32	2.56	202.09	2.61
P	60	252.96	2.76	179.30	2.33
P	70	242.63	2.79	148.58	3.03

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.01	7.00	8.74	10.27

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
14.80	19.30	17.80	13.50	14.80	14.10
15.50	25.00	20.00	16.20	16.00	15.40*

* P-Band
measure
ments
made
during
1053-
1117
a.m.

Date:
9/30/81

Time:
1137-
1152

Plot No.:
121

Field:
Bare

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	270.65	0.82	272.07	0.45
X	20	270.60	0.76	267.93	0.44
X	30	273.06	0.76	263.18	0.42
X	40	275.39	0.86	255.83	0.49
X	50	277.92	0.73	241.76	0.49
X	60	278.14	0.97	223.97	0.46
X	70	265.34	0.78	189.40	0.42
C	10	266.10	0.34	265.21	0.33
C	20	267.23	0.66	262.26	0.32
C	30	270.86	0.88	256.26	0.40
C	40	275.35	0.37	247.41	0.30
C	50	279.45	0.28	232.22	0.33
C	60	279.92	0.63	209.20	0.29
C	70	265.94	0.58	177.32	0.41
L	10	247.08	1.88	242.40	1.28
L	20	248.02	1.30	238.13	1.06
L	30	248.01	1.94	229.52	1.27
L	40	248.94	1.24	218.43	1.01
L	50	249.28	1.53	200.72	0.88
L	60	249.52	1.30	175.36	1.21
L	70	236.96	1.47	141.69	1.00
P	10	241.30	1.84	238.54	2.42*
P	20	248.93	2.32	226.26	2.61
P	30	253.01	2.34	231.64	2.22
P	40	254.76	2.53	225.05	2.76
P	50	257.88	2.98	212.92	4.00
P	60	259.32	2.32	186.40	2.56
P	70	247.79	2.71	153.21	2.49

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.30	5.76	8.43	9.67
3.10	8.39	9.87	11.01*

**Soil
Tempera**

**ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
16.30	21.00	18.20	17.30	18.00	17.80
15.30	16.00	15.00	15.10	17.00	17.00*

* P-Band
measure
ments
made
during
0837-
0902
a.m.

Date:
6/24/81

Time:
0930-
1000

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	288.67	0.36	286.28	-
X	20	289.36	0.59	284.37	-
X	30	289.39	1.29	280.47	0.49
X	40	290.73	-	275.58	0.77
X	50	291.21	0.54	268.59	0.61
X	60	289.61	0.83	259.67	-
X	70	282.78	1.13	242.48	-
C	10	289.60	-	290.12	0.90
C	20	289.80	0.86	288.10	-
C	30	290.91	-	285.32	-
C	40	292.65	0.98	281.20	0.78
C	50	293.49	0.74	273.84	0.45
C	60	291.09	-	260.22	0.33
C	70	277.69	0.48	233.57	-
L	10	272.85	2.09	270.54	1.34
L	20	272.99	1.71	267.74	0.83
L	30	271.54	1.54	259.73	1.01
L	40	271.59	1.27	251.49	1.06
L	50	269.40	1.32	238.48	1.26
L	60	263.90	1.53	215.02	1.19
L	70	246.20	1.37	179.92	1.18
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.84	6.32	10.92	10.48

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.90	34.70	28.50	25.80	25.80	25.20

Date:
7/13/81

Time:
0847-
0958

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	286.56	-	285.45	1.00
X	20	285.84	0.61	283.54	0.72
X	30	286.53	0.87	283.09	0.54
X	40	285.88	-	281.82	-
X	so	284.61	0.19	278.33	-
X	60	283.19	1.07	275.16	0.83
X	70	275.45	1.00	264.18	0.14
C	10	289.11	0.75	290.37	-
C	20	289.61	-	289.42	1.08
C	30	290.54	-	287.85	-
C	40	291.60	0.63	285.72	-
C	50	291.79	0.16	283.19	1.15
C	60	290.97	-	278.83	-
C	70	285.41	1.57	271.82	1.10

L	10	293.76	2.06	292.11	1.21
L	20	292.31	1.79	289.18	0.96
L	30	290.56	1.65	284.87	1.08
L	40	287.07	1.84	280.99	1.11
L	50	283.35	2.14	275.44	1.63
L	60	277.18	1.42	268.11	1.53
L	70				
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.14	3.31	6.46	6.93

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.30	27.10	25.40	24.60	25.50	23.80

Date:
7/14/81

Time:
0831-
0857

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.08	0.74	285.05	0.55
X	20	286.16	-	283.68	0.43
X	30	286.24	0.92	282.67	-
X	40	285.37	0.82	281.26	0.56
X	50	283.06	0.10	277.67	-
X	60	281.41	0.63	274.55	0.99

X	70	275.25	1.37	267.10	-
C	10	285.70	-	286.89	0.27
C	20	286.15	0.73	285.70	0.52
C	30	287.35	1.03	284.23	-
C	40	288.75	-	282.75	-
C	50	289.39	0.65	281.16	-
C	60	288.57	0.94	278.63	0.30
C	70	284.12	1.47	273.35	0.43
L	10	-	-	292.00	1.30
L	20	292.25	1.65	289.25	1.47
L	30	289.71	1.94	284.86	1.25
L	40	287.61	2.31	281.09	1.24
L	50	282.38	1.58	275.59	1.02
L	60	276.51	1.54	268.20	1.39
L	70	263.28	2.16	260.89	1.29
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.35	1.83	4.68	4.57

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.70	26.70	24.20	23.50	24.50	23.00

Date:
7/21/81

Time:
0831-
0901

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.52	1.28	278.71	0.43
X	20	281.18	-	278.52	0.84
X	30	280.25	-	276.75	0.78
X	40	280.30	1.02	275.48	0.32
X	50	280.53	0.48	275.30	0.28
X	60	278.40	-	270.83	-
X	70	273.23	0.54	264.47	-
C	10	271.15	-	272.47	-
C	20	272.48	0.33	272.26	0.45
C	30	274.38	-	272.22	0.75
C	40	277.32	-	272.92	0.40
C	50	279.61	-	272.28	0.99
C	60	280.40	-	272.30	0.27
C	70	277.18	0.54	267.68	0.36
L	10	262.87	2.46	257.52	1.09
L	20	263.14	1.94	254.53	1.66
L	30	268.52	2.89	250.72	1.92
L	40	265.78	1.99	244.68	1.08
L	50	266.67	1.54	241.76	1.88
L	60	264.85	1.90	240.23	1.49
L	70	251.96	2.05	237.46	0.77
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.00	12.03	10.84	10.32

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.00	27.00	26.00	25.10	24.80	24.00

Date:
7/22/81

Time:
0822-
0843

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.60	1.02	278.24	-
X	20	277.92	-	276.05	-
X	30	278.38	-	275.38	0.12
X	40	278.10	-	274.77	0.58
X	50	277.64	-	273.32	-
X	60	276.33	0.66	272.31	0.53
X	70	272.48	0.52	267.63	-
C	10	274.59	0.10	275.44	0.93
C	20	275.38	-	274.57	-
C	30	277.34	0.41	274.18	-
C	40	278.80	0.51	274.11	0.69
C	50	280.23	0.79	273.79	0.86
C	60	279.54	0.92	271.67	0.56
C	70	275.88	-	268.12	-
L	10	269.94	0.97	266.49	1.49
L	20	268.47	1.22	262.52	1.43
L	30	272.74	2.24	258.56	1.24
L	40	268.97	1.80	254.11	1.14
L	50	266.40	1.89	248.96	0.66
L	60	263.81	2.13	243.88	0.56
L	70	254.65	2.19	241.82	1.20
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
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8.72 8.20 8.32 7.55

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.50	23.50	22.30	23.20	23.90	23.00

Date: 7/23/81 Time: 1101-1125

Plot No.: 111 Field: Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.31	0.70	287.26	0.62
X	20	286.87	0.86	285.98	0.22
X	30	285.69	0.97	283.62	0.68
X	40	284.76	0.95	283.08	-
X	50	282.68	0.69	279.88	0.10
X	60	280.05	0.70	275.66	0.75
X	70	274.46	0.57	268.54	-
C	10	285.88	-	287.06	0.59
C	20	286.00	0.65	286.61	-
C	30	286.87	-	286.03	0.31
C	40	287.15	1.03	285.07	0.61
C	50	286.75	0.50	283.31	-
C	60	285.00	0.77	280.88	0.80
C	70	280.17	0.97	275.71	-
L	10	282.13	2.03	279.39	1.12
L	20	282.63	2.02	277.29	1.35
L	30	281.83	1.63	274.49	1.28
L	40	279.82	1.68	271.14	0.75
L	50	275.27	1.64	264.81	1.50
L	60	270.41	1.50	262.30	1.41
L	70	259.94	1.54	258.61	1.22
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	7.41	8.08	8.94

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.60	29.60	31.20	29.20	25.90	23.10

Date:
8/3/81

Time:
0920-
0945

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	282.52	-	282.39	-
X	20	283.37	0.48	282.30	-
X	30	282.66	1.17	278.33	0.73
X	40	284.26	0.89	275.13	0.93
X	50	286.46	0.37	271.85	0.72
X	60	283.69	0.70	264.76	-
X	70	278.50	0.42	255.18	-
C	10	283.66	-	284.04	0.47
C	20	284.70	0.78	283.41	-
C	30	286.39	-	280.43	-
C	40	289.06	-	275.22	0.71
C	50	290.54	0.72	268.72	0.22
C	60	290.07	0.37	259.06	0.91
C	70	282.97	-	242.23	-
L	10	278.70	2.24	276.61	1.48
L	20	279.94	1.99	275.58	1.55
L	30	281.34	1.79	271.37	1.21
L	40	279.20	1.91	264.20	1.41
L	50	275.31	1.67	254.63	0.77
L	60	267.11	2.12	234.23	1.56
L	70	253.74	4.78	200.88	1.50

P 10
P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	2.10	5.23	6.59

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.10	25.90	23.30	23.10	24.10	23.30

Date: 8/4/81 Time: 0810-0835
Plot No.: 111 Field: Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	276.23	-	273.37	-
X	20	273.87	0.74	268.98	0.33
X	30	275.60	0.64	267.51	0.49
X	40	275.74	0.73	263.96	-
X	50	273.69	0.84	250.86	0.57
X	60	278.31	0.64	263.07	-
X	70	273.80	1.09	252.90	-
C	10	248.94	0.52	247.50	-
C	20	249.62	-	243.86	0.31
C	30	253.63	-	239.59	-
C	40	259.86	-	234.16	-
C	50	267.14	0.32	228.43	-
C	60	272.17	-	223.41	0.82
C	70	269.77	0.84	216.94	0.48

L	10	242.29	1.73	236.79	1.21
L	20	239.37	1.97	227.44	1.13
L	30	241.90	1.50	218.50	1.07
L	40	244.53	1.75	207.86	1.18
L	50	248.09	1.21	190.52	0.91
L	60	251.65	1.71	171.80	0.97
L	70	243.38	1.78	140.20	1.02
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	15.66	12.54	9.55

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.10	25.10	22.60	22.40	23.60	22.40

Date:
8/5/81

Time:
0800-
0835

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	271.74	0.95	261.93	0.65
X	20	278.08	0.13	273.97	0.75
X	30	278.94	0.77	271.55	0.32
X	40	280.86	1.00	269.52	0.79
X	50	282.07	0.85	268.66	0.93
X	60	280.77	0.65	262.09	-

X	70	277.23	0.51	260.80	0.80
C	10	267.77	0.82	267.06	-
C	20	268.20	0.97	264.13	-
C	30	271.10	-	260.34	0.35
C	40	275.12	0.23	254.55	-
C	50	279.62	0.68	247.39	0.66
C	60	281.55	-	238.72	-
C	70	277.25	-	230.17	0.68
L	10	260.47	1.57	256.25	0.82
L	20	257.37	1.87	250.06	1.52
L	30	259.46	1.72	241.65	1.13
L	40	261.51	1.80	231.12	1.59
L	50	261.85	1.92	216.13	1.30
L	60	261.55	2.07	193.33	1.10
L	70	248.30	1.57	160.16	1.15
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	9.21	9.13	8.64

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.80	24.30	23.00	22.70	24.00	23.00

Date:
8/26/81

Time:
0847-
0915

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.83	0.83	278.79	0.44
X	20	278.71	1.00	277.16	0.52
X	30	278.59	0.97	275.75	0.44
X	40	277.69	0.78	274.05	0.48
X	50	275.97	0.86	270.98	0.48
X	60	273.01	0.81	266.23	0.51
X	70	269.53	0.68	260.04	0.45
C	10	279.00	0.46	280.32	0.29
C	20	279.32	0.41	278.71	0.41
C	30	279.49	0.80	277.16	0.32
C	40	280.70	0.35	275.58	0.36
C	50	280.64	0.27	273.04	0.27
C	60	278.75	0.94	270.24	0.29
C	70	275.89	0.27	267.18	0.29
L	10	286.30	1.51	283.68	1.23
L	20	284.45	1.59	280.21	1.46
L	30	282.64	1.90	276.08	1.26
L	40	278.47	1.71	271.11	1.42
L	50	282.99	8.16	266.66	1.19
L	60	270.39	1.69	257.92	1.07
L	70	259.22	2.08	248.98	1.50
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.15	4.18	4.58

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.00	21.00	18.50	18.20	19.30	18.80

Date:
8/27/81

Time:
0842-
0903

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	280.42	0.94	279.47	0.53
X	20	278.54	0.94	277.26	0.49
X	30	278.81	0.98	276.29	0.42
X	40	278.13	0.86	274.47	0.42
X	50	277.01	0.85	271.87	0.51
X	60	273.42	0.94	266.48	0.46
X	70	269.27	0.96	259.95	0.45
C	10	280.14	0.29	280.67	0.28
C	20	280.16	0.40	279.92	0.25
C	30	280.76	0.43	278.80	0.33
C	40	281.47	0.43	277.05	0.27
C	50	281.75	0.23	275.15	0.31
C	60	280.53	0.35	272.39	0.37
C	70	276.88	0.33	267.97	0.21
L	10	286.30	1.78	284.63	1.37
L	20	284.06	1.64	280.69	1.23
L	30	283.23	1.78	277.60	1.40
L	40	279.33	1.95	273.36	1.54
L	50	276.92	1.89	268.45	1.59
L	60	271.66	3.18	261.28	1.56
L	70	258.04	2.28	251.98	1.41
P	10	261.89	1.69	260.82	1.96
P	20	264.63	1.62	260.39	1.84
P	30	266.35	2.18	258.50	1.22
P	40	267.08	2.34	258.13	3.30
P	50	267.91	1.58	248.48	1.94
P	60	266.89	1.93	233.89	1.64
P	70	265.33	2.56	213.81	2.01

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
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2.76 3.18 4.17

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.00	21.00	20.80	19.70	20.50	20.60

* P-Band
measure
ments
made
during
1454-
1505
p.m.

Date:
8/28/81

Time:
0853-
0913

Plot No.:
111

Field:
Alfalfa

		Average	Standard	Average	Standard
Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	282.82	1.05	282.01	0.50
X	20	281.66	0.87	280.36	0.45
X	30	280.48	0.80	277.74	0.56
X	40	278.92	0.89	274.94	0.46
X	50	276.73	0.76	271.49	0.51
X	60	274.76	0.73	267.55	0.48
X	70	270.76	0.71	261.91	0.45
C	10	281.97	0.56	283.18	0.37
C	20	282.29	0.37	282.08	0.30
C	30	282.67	0.34	280.28	0.31
C	40	283.55	0.24	278.65	0.23
C	50	283.38	0.60	277.05	0.38
C	60	282.11	1.02	274.30	0.26
C	70	279.23	0.35	271.57	0.29
L	10	285.85	1.53	284.75	1.10
L	20	286.63	2.16	282.30	1.43
L	30	284.31	1.46	279.58	1.24
L	40	281.84	1.57	276.28	1.25
L	50	276.99	1.55	271.18	1.20

L	60	270.92	1.93	262.48	1.32
L	70	258.87	1.90	253.84	1.41
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.10	3.94	5.02

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.50	22.80	20.90	19.40	19.50	20.40

Date:
9/1/81

Time:
0947-
1009

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	277.47	0.77	276.52	0.44
X	20	275.14	0.87	273.11	0.42
X	30	277.31	0.81	274.53	0.44
X	40	276.47	0.75	272.31	0.40
X	50	276.00	1.02	269.89	0.41
X	60	275.19	0.94	266.69	0.49
X	70	272.17	0.95	259.39	0.55
C	10	272.60	0.80	272.79	0.27
C	20	269.68	0.56	266.82	0.33
C	30	272.10	0.29	266.86	0.34
C	40	276.22	0.41	267.74	0.30

C	50	278.39	0.43	268.28	0.29
C	60	278.73	0.42	269.53	0.31
C	70	275.49	0.21	268.77	0.42
L	10	252.31	1.53	247.59	1.76
L	20	251.13	1.47	241.99	1.10
L	30	252.49	1.61	236.45	1.39
L	40	255.04	1.54	233.07	1.15
L	50	256.95	1.83	229.73	1.06
L	60	257.82	1.84	226.87	2.08
L	70	251.45	2.02	223.52	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	14.32	12.78	11.66

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.00	21.80	21.90	21.70	23.00	22.00

Date:
9/2/81

Time:
0841-
0906

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	276.51	0.91	275.34	0.52
X	20	276.94	0.88	275.89	0.55
X	30	277.58	1.11	274.93	0.40

X	40	277.64	0.89	272.84	0.45
X	50	277.16	0.83	270.13	0.55
X	60	276.53	0.86	267.50	0.32
X	70	273.58	0.68	262.08	0.43
C	10	273.35	0.33	273.17	0.29
C	20	273.88	0.32	271.98	0.29
C	30	275.77	0.26	271.21	0.34
C	40	277.65	0.76	272.17	0.41
C	50	278.79	0.46	272.61	0.35
C	60	278.23	0.31	272.20	0.28
C	70	274.53	0.27	270.20	0.27
L	10	259.59	1.67	255.84	1.59
L	20	257.29	1.55	249.94	1.27
L	30	258.70	1.63	245.07	1.35
L	40	260.99	2.11	243.28	1.18
L	50	260.87	1.19	238.23	1.32
L	60	261.33	1.57	234.42	1.39
L	70	252.01	1.47	229.36	1.18
P	10	243.48	1.40	244.69	1.55
P	20	249.12	2.84	243.19	1.71
P	30	247.67	2.05	236.77	1.72
P	40	251.30	1.96	232.69	1.72
P	50	253.82	2.52	225.86	1.69
P	60	252.86	1.62	219.97	1.59
P	70	248.15	1.53	209.78	1.84

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	12.56	11.11	10.52

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.60	21.80	20.70	21.20	22.50	22.20

* P-Band
measure
ments
made

during
1450-
1503
p.m.

Date:
9/3/81

Time:
0845-
0901

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	278.37	0.85	277.79	0.41
X	20	278.27	0.92	276.32	0.47
X	30	278.88	0.89	276.37	0.45
X	40	279.31	0.86	274.93	0.51
X	50	278.58	0.98	271.86	0.51
X	60	277.12	0.94	268.28	0.45
X	70	274.11	0.80	264.79	0.43
C	10	276.17	0.51	276.35	0.34
C	20	277.08	0.33	275.77	0.37
C	30	278.94	0.33	275.45	0.24
C	40	280.77	0.32	275.98	0.25
C	50	281.43	0.72	275.79	0.26
C	60	280.72	0.30	275.47	0.32
C	70	277.30	0.32	273.84	0.36
L	10	261.50	1.92	257.46	1.13
L	20	262.25	1.75	255.22	1.14
L	30	262.94	1.75	250.68	1.25
L	40	264.75	1.49	248.26	1.42
L	50	265.15	1.46	243.46	1.01
L	60	263.42	1.84	236.25	1.22
L	70	255.43	2.03	232.90	0.97
P	10	248.26	1.57	249.43	2.04
P	20	249.50	1.95	246.69	2.04
P	30	252.75	2.42	242.39	1.44
P	40	255.28	2.59	238.63	1.41
P	50	257.24	2.66	229.38	2.40
P	60	255.81	1.75	224.37	1.85
P	70	244.31	1.97	214.31	1.86

**Soil
Moisture
Data (%)**

by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	10.65	9.66	9.63

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.30	20.50	20.80	22.00	22.80	23.00

* P-Band measurements made during 1407-1422 p.m.

Date: 9/4/81
Plot No.: 111
Time: 0914
Field: Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	280.17	0.95	279.74	0.45
X	20	279.51	0.90	278.08	0.50
X	30	280.11	0.90	277.63	0.45
X	40	279.47	0.91	275.62	0.44
X	50	277.87	1.03	272.22	0.49
X	60	276.41	0.75	269.38	0.53
X	70	272.93	0.81	262.67	0.39
C	10	276.43	0.24	276.34	0.28
C	20	276.92	0.39	275.41	0.29
C	30	279.11	0.90	275.71	0.31
C	40	280.57	0.94	275.51	0.26
C	50	281.55	0.39	275.32	0.37
C	60	280.42	0.22	274.51	0.25
C	70	275.92	0.28	273.02	0.25
L	10	262.36	1.75	255.72	1.29
L	20	264.78	1.97	258.71	1.07

L	30	265.21	1.96	252.82	1.27
L	40	266.13	1.53	250.27	1.11
L	50	266.56	1.95	244.91	1.27
L	60	264.85	1.37	238.64	1.11
L	70	254.24	1.57	233.53	1.01
P	10	249.34	2.17	251.01	1.92
P	20	251.30	1.81	250.53	1.63
P	30	251.73	1.86	244.18	1.53
P	40	253.13	1.91	238.53	1.96
P	50	255.49	1.58	230.29	1.72
P	60	252.59	2.04	228.58	1.39
P	70	244.12	1.97	214.50	2.03

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	8.69	8.58	8.61

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.60	21.00	20.60	20.60	22.00	20.90

* P-Band
measure
ments
made
during
1045-
1107
a.m.

Date:
9/11/81

Time:
0902-
0925

Plot No.:
111

Field:
Alfalfa

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	278.46	0.90	279.12	0.41
X	20	278.31	0.77	277.77	0.61
X	30	278.17	0.95	276.61	0.38
X	40	275.94	0.81	273.36	0.57
X	50	273.21	0.86	268.05	0.49
X	60	269.85	1.09	264.06	0.47
X	70	267.00	0.80	259.42	0.42
C	10	280.53	0.39	282.11	0.20
C	20	281.02	0.66	281.67	0.25
C	30	281.46	0.70	281.00	0.35
C	40	280.67	0.46	279.16	0.34
C	50	280.53	0.68	278.54	0.34
C	60	279.51	0.70	277.03	0.33
C	70	276.36	0.24	273.78	0.30
L	10	276.28	1.42	274.68	1.31
L	20	274.87	1.77	270.99	1.02
L	30	276.96	2.49	267.87	1.35
L	40	273.85	1.89	263.30	1.46
L	50	270.72	1.80	259.01	1.35
L	60	266.87	1.91	257.62	1.29
L	70	256.55	1.97	248.47	1.40
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	5.55	5.91	6.34

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.10	20.50	17.80	16.90	18.00	17.70

Date:
9/14/81

Time:
0852-
0919

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.13	0.87	280.03	0.41
X	20	279.83	1.02	278.97	0.53
X	30	277.99	0.76	275.67	0.44
X	40	277.15	0.85	274.00	0.51
X	50	277.28	1.01	272.96	0.41
X	60	275.30	0.97	269.01	0.53
X	70	271.20	0.85	263.36	0.44
C	10	283.19	0.45	284.42	0.37
C	20	283.29	0.50	283.98	0.31
C	30	284.28	0.23	283.13	0.30
C	40	284.22	0.78	282.53	0.36
C	50	283.29	1.08	281.24	0.27
C	60	281.92	0.33	279.25	0.25
C	70	277.83	0.24	275.42	0.29
L	10	282.75	1.85	281.02	1.31
L	20	282.06	1.40	278.03	1.34
L	30	280.81	1.53	275.79	1.36
L	40	278.19	1.61	271.53	1.03
L	50	275.70	1.69	268.77	1.27
L	60	270.35	1.86	263.79	1.50
L	70	259.32	1.53	256.00	1.36
P	10	256.73	2.01	253.86	1.88
P	20	257.67	2.07	252.29	1.85
P	30	257.91	2.52	250.39	2.08
P	40	261.62	2.13	248.13	2.42
P	50	262.37	2.23	246.98	2.21
P	60	259.66	2.30	241.75	1.93
P	70	251.00	2.10	243.89	1.93

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.48	4.67	4.85

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.40	20.30	19.90	18.50	20.00	18.70

* P-Band
measure
ments
made
during
1430-
1447
p.m.

Date:
9/15/81

Time:
0937-
0952

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10				
C	20				
C	30				
C	40				
C	50				
C	60				
C	70				
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				

L	70				
P	10	259.17	2.09	258.63	1.65
P	20	258.77	1.82	256.93	1.68
P	30	258.96	2.09	252.42	1.70
P	40	264.20	1.80	255.19	2.15
P	50	260.63	2.15	246.34	1.66
P	60	258.42	2.82	242.69	3.17
P	70	251.57	1.71	243.28	1.82

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.47	3.74	4.07

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.00	21.00	20.80	20.50	21.50	20.20

Date:
9/17/81

Time:
1101-
1134

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.29	0.91	278.78	0.53
X	20	281.18	0.73	280.23	0.59
X	30	280.84	1.14	279.53	0.40
X	40	278.14	0.86	275.66	0.40
X	50	277.40	0.90	274.10	0.44
X	60	275.38	0.92	269.60	0.48
X	70	272.12	0.85	265.16	0.56
C	10	278.46	0.48	279.63	0.28
C	20	279.64	0.35	280.26	0.38
C	30	280.85	0.91	279.89	0.35
C	40	280.25	0.36	278.26	0.37
C	50	280.19	0.43	277.96	0.29

C	60	278.94	0.83	277.06	0.39
C	70	275.59	0.71	273.97	0.35
L	10	250.81	1.51	246.29	1.30
L	20	251.83	2.07	246.12	1.44
L	30	257.33	1.38	244.77	1.16
L	40	257.50	2.20	242.71	1.24
L	50	257.08	1.87	241.30	1.63
L	60	257.75	1.35	240.16	1.22
L	70	250.24	1.73	239.35	1.18
P	10	231.54	2.00	233.97	2.41*
P	20	236.97	2.48	228.15	1.95
P	30	240.79	2.43	231.30	1.68
P	40	244.95	1.93	223.17	2.55
P	50	248.02	1.97	224.21	1.92
P	60	246.43	2.37	217.73	2.10
P	70	235.22	1.96	215.86	1.97

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	16.28	15.69	15.54
	16.83	15.82	14.64*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.20	22.00	21.10	19.90	21.00	20.20
19.00	19.00	19.30	19.10	20.50	19.60*

* P-Band
measure
ments
made
during
0937-
1004
a.m.

Date:

Time:

9/18/81 1134-
1149
Plot No.: Field:
111 Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	274.96	0.87	274.83	0.44
X	20	275.07	0.75	274.45	0.48
X	30	275.68	0.60	273.85	0.51
X	40	275.25	0.82	273.57	0.46
X	50	274.41	0.52	272.06	0.45
X	60	272.10	0.85	269.23	0.45
X	70	268.03	0.88	264.42	0.37
C	10	274.92	0.34	276.00	0.27
C	20	275.64	0.23	275.70	0.30
C	30	277.01	0.26	276.10	0.28
C	40	278.86	0.54	277.81	0.31
C	50	280.65	0.36	278.86	0.32
C	60	281.78	0.62	280.53	0.32
C	70	281.46	0.51	280.57	0.36
L	10	250.86	1.71	245.20	1.35
L	20	250.92	2.18	242.65	1.30
L	30	251.62	1.50	240.93	1.39
L	40	252.23	1.59	237.31	1.21
L	50	-	-	236.39	1.29
L	60	252.94	1.80	236.49	0.94
L	70	245.69	1.83	237.02	1.42
P	10	235.25	2.38	231.81	1.66*
P	20	232.91	1.96	226.10	2.18
P	30	237.43	2.07	222.21	1.90
P	40	244.31	1.85	222.26	2.46
P	50	242.83	2.30	215.30	1.78
P	60	241.92	1.85	214.47	1.41
P	70	229.98	2.06	211.06	2.11

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	17.61	18.35	17.32
	17.63	16.36	18.90*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
17.40	17.00	17.50	18.00	19.30	18.50
17.20	17.00	17.40	17.90	19.00	18.50*

* P-Band
measure
ments
made
during
1026-
1052
a.m.

Date:
9/28/81

Time:
0859-
0917

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	277.77	0.94	278.12	0.44
X	20	277.52	0.97	277.65	0.53
X	30	277.39	0.96	277.44	0.37
X	40	275.80	0.82	274.44	0.54
X	50	274.60	0.86	271.73	0.43
X	60	271.44	0.92	267.75	0.62
X	70	269.09	0.67	264.40	0.39
C	10	275.94	0.73	276.51	0.33
C	20	276.41	0.30	276.26	0.33
C	30	277.12	0.31	276.57	0.32
C	40	277.67	0.48	276.58	0.37
C	50	277.59	0.37	276.47	0.28
C	60	277.14	0.77	275.71	0.28
C	70	275.10	0.27	273.29	0.34
L	10	254.45	1.55	251.43	1.33
L	20	255.94	1.21	249.38	1.50
L	30	255.99	1.80	246.56	2.31
L	40	256.05	1.48	242.53	1.28
L	50	255.84	1.78	239.62	1.73
L	60	255.61	1.61	239.85	1.56

L	70	249.01	1.33	236.38	1.24
P	10	246.60	3.10	245.92	2.28
P	20	247.80	2.25	242.43	2.21
P	30	251.29	2.72	238.99	1.79
P	40	257.67	3.13	237.64	2.63
P	50	256.81	3.61	231.49	1.98
P	60	255.53	2.71	226.42	2.47
P	70	254.84	2.96	230.77	2.37

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	11.00	10.80	10.51

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
18.40	15.00	15.50	15.20	16.50	16.00

* P-Band
measure
ments
made
during
1155
a.m.-
1210
p.m.

Date:
9/29/81

Time:
0907-
0924

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	270.52	0.81	272.16	0.42
X	20	270.76	0.79	271.65	0.44

X	30	269.92	0.76	270.39	0.41
X	40	269.25	0.82	269.56	0.44
X	50	268.10	0.94	267.56	0.45
X	60	265.93	0.78	264.61	0.42
X	70	264.13	0.86	261.31	0.53
C	10	270.65	0.30	272.07	0.33
C	20	270.96	0.54	272.01	0.35
C	30	271.46	0.47	271.57	0.38
C	40	271.56	0.42	271.30	0.36
C	50	270.99	0.58	270.50	0.37
C	60	270.07	0.78	269.29	0.28
C	70	267.74	0.30	266.13	0.27
L	10	257.18	1.50	254.91	1.15
L	20	256.60	1.46	250.91	1.26
L	30	257.55	1.93	247.83	1.15
L	40	255.34	1.65	244.00	1.05
L	50	253.55	1.87	241.06	1.33
L	60	251.48	1.77	239.86	1.22
L	70	244.36	1.45	237.21	0.86
P	10	245.20	2.30	246.34	2.72*
P	20	245.90	2.77	243.14	2.00
P	30	249.48	2.55	239.50	2.76
P	40	252.65	2.60	240.85	2.47
P	50	252.64	2.11	231.84	2.61
P	60	252.91	2.63	231.62	2.32
P	70	247.84	2.67	231.23	2.36

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	10.83	9.75	9.82

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
12.80	12.00	11.70	11.90	13.50	13.90
16.20	17.00	20.70	16.00	15.50	15.80*

* P-Band
measure

ments
made
during
1137
a.m.-
1209
p.m.

Date:
9/30/81

Time:
1102-
1118

Plot No.:
111

Field:
Alfalfa

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.05	0.86	276.70	0.55
X	20	274.46	0.86	276.35	0.51
X	30	273.94	0.82	274.97	0.45
X	40	273.43	0.96	273.85	0.58
X	50	270.79	0.78	271.76	0.45
X	60	268.82	0.47	268.63	0.50
X	70	265.69	0.72	264.92	0.45
C	10	274.65	1.00	275.79	0.34
C	20	274.57	0.63	275.46	0.31
C	30	275.07	0.42	275.21	0.31
C	40	275.04	0.56	275.01	0.38
C	50	274.52	0.38	274.73	0.28
C	60	273.41	0.24	272.52	0.28
C	70	270.16	0.35	269.84	0.27
L	10	258.03	1.61	254.49	1.31
L	20	256.69	1.92	251.96	1.59
L	30	257.42	1.82	249.75	1.58
L	40	256.17	1.58	245.74	1.19
L	50	254.36	1.69	242.95	1.28
L	60	253.45	1.77	241.84	1.22
L	70	245.01	2.06	239.01	1.23
P	10	245.97	2.39	245.46	2.26*
P	20	245.62	2.33	244.07	2.27
P	30	248.99	2.62	240.65	2.74
P	40	251.56	2.37	239.57	2.19
P	50	252.59	2.57	231.07	2.69
P	60	252.61	2.86	229.83	2.61
P	70	247.46	2.85	227.49	2.39

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	9.91	9.87	9.89
	9.32	9.71	9.89*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
15.60	13.80	14.70	14.70	15.80	16.10
15.80	15.00	15.80	14.70	16.00	16.10*

* P-Band
measure
ments
made
during
0928-
0942
a.m.

Date:
6/24/81

Time:
1147-
1211

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	294.25	0.76	290.76	0.29
X	20	294.93	1.20	290.77	0.57
X	30	295.58	0.78	290.40	-
X	40	294.57	-	289.47	-
X	50	291.89	0.65	285.71	0.93
X	60	287.72	0.89	280.24	0.49
X	70	280.14	1.12	274.52	0.74
C	10	293.87	0.86	296.17	0.64
C	20	295.31	-	297.20	0.91
C	30	297.05	0.23	297.58	0.50

C	40	297.85	-	296.75	-
C	50	298.25	0.92	295.83	-
C	60	295.81	-	294.27	0.47
C	70	290.38	0.40	290.54	-
L	10	284.87	0.69	285.59	1.46
L	20	285.01	1.90	284.14	1.36
L	30	284.36	1.58	281.89	1.26
L	40	281.01	1.59	276.88	1.54
L	50	278.87	1.40	273.29	1.50
L	60	273.19	1.93	266.23	1.25
L	70	262.30	1.44	254.98	1.67
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.06	4.69	4.54

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.90	34.80	30.30	27.70	25.40	24.50

Date:
7/13/81

Time:
1104-
1126

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	295.18	0.64	293.83	0.46
X	20	295.41	-	294.12	-

X	30	296.42	0.43	294.59	-
X	40	295.24	0.23	291.84	0.76
X	50	294.58	0.39	289.63	0.31
X	60	289.65	0.46	284.94	0.40
X	70	284.41	0.35	279.96	1.04
C	10	294.66	-	297.09	0.41
C	20	295.63	0.56	296.30	-
C	30	297.93	-	296.48	-
C	40	300.09	0.47	295.58	-
C	50	301.44	-	295.28	0.71
C	60	300.44	0.35	293.21	1.02
C	70	294.59	0.59	288.54	-
L	10	286.68	1.59	285.49	1.24
L	20	285.56	1.39	281.51	1.19
L	30	284.80	1.84	278.42	1.42
L	40	283.04	1.34	274.73	1.60
L	50	280.13	0.71	269.57	1.35
L	60	273.75	1.76	259.25	1.82
L	70	260.68	1.32	242.98	1.46
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.52	4.50	4.98

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.60	34.50	31.40	27.70	25.50	23.40

Date:
7/14/81

Time:
0948-

Plot No.: 152
 Field: 1049
 Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	294.91	0.54	295.12	-
X	20	294.39	-	293.79	0.99
X	30	295.22	1.05	292.82	0.93
X	40	295.25	0.91	291.67	0.91
X	50	291.36	-	286.53	-
X	60	288.99	0.90	283.51	1.01
X	70	281.59	1.15	277.55	0.81
C	10	294.35	-	296.59	-
C	20	294.90	-	295.47	0.17
C	30	296.77	-	295.06	0.18
C	40	298.56	0.92	294.22	0.10
C	50	298.11	-	292.39	1.40
C	60	297.51	-	291.12	-
C	70	292.04	1.18	288.49	0.12
L	10	290.42	1.49	291.18	1.16
L	20	289.65	1.87	286.65	1.38
L	30	288.41	2.26	282.55	1.18
L	40	285.68	2.03	278.17	1.27
L	50	-	-	-	-
L	60	274.42	1.76	263.13	1.38
L	70	263.41	1.71	258.93	1.63
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	2.33	2.32	1.98

Soil Tempera

**ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.80	28.80	27.00	26.90	25.60	24.30

Date: 7/21/81
 Time: 1411-1438
 Plot No.: 152
 Field: Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.01	-	286.24	0.22
X	20	284.60	0.61	282.57	0.86
X	30	288.06	0.51	283.74	0.57
X	40	289.06	0.32	284.21	0.48
X	50	287.86	-	284.27	0.29
X	60	287.81	1.01	280.12	0.68
X	70	281.64	-	273.58	0.75
C	10	279.18	0.34	281.71	-
C	20	280.72	0.91	279.39	-
C	30	284.62	-	279.55	-
C	40	289.72	-	280.13	-
C	50	292.05	-	281.13	0.90
C	60	292.90	1.00	282.15	-
C	70	287.76	0.49	280.00	0.33
L	10	257.80	1.87	254.14	0.76
L	20	256.35	1.49	248.08	1.10
L	30	-	-	245.62	0.35
L	40	261.39	1.62	240.34	1.70
L	50	262.56	1.52	235.19	0.89
L	60	262.33	2.04	233.97	1.50
L	70	253.28	1.92	230.82	1.65
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%)**

by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	12.15	10.89	9.90

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
33.40	31.60	35.30	32.50	30.50	26.30

Date:
7/22/81

Time:
0932-
0957

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	282.48	0.50	283.19	0.38
X	20	282.94	0.70	282.59	0.31
X	30	283.52	0.57	281.10	0.83
X	40	283.67	-	280.47	0.62
X	50	283.01	0.90	279.07	1.04
X	60	280.39	0.84	276.31	0.93
X	70	276.47	0.95	271.79	0.77
C	10	278.71	-	280.83	-
C	20	281.54	-	280.33	-
C	30	284.68	0.75	279.75	0.28
C	40	287.83	-	279.54	0.63
C	50	290.38	-	280.84	1.14
C	60	290.10	0.41	280.29	-
C	70	285.04	0.43	277.57	-
L	10	262.36	1.78	259.53	1.26
L	20	263.35	1.61	257.04	1.42
L	30	265.66	1.53	252.16	1.08
L	40	266.15	1.76	247.29	1.44
L	50	266.34	1.85	241.34	0.97
L	60	263.81	1.67	234.08	1.45
L	70	255.96	1.26	234.00	1.45
P	10				
P	20				
P	30				

P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	8.72	6.78	5.97

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.90	25.50	27.10	25.70	24.70	23.30

Date:
7/23/81

Time:
0823-
0853

Plot No.:
152

Field:
Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	280.35	-	277.95	1.18
X	20	280.33	0.73	277.23	-
X	30	280.10	0.94	277.56	1.05
X	40	279.20	0.95	275.29	0.29
X	50	277.83	0.75	273.15	-
X	60	276.41	0.64	270.27	-
X	70	272.72	-	265.91	0.58
C	10	279.36	-	280.97	0.78
C	20	280.41	0.54	280.31	-
C	30	282.21	0.94	279.81	0.91
C	40	283.67	0.82	278.84	0.68
C	50	284.67	-	278.91	0.85
C	60	284.29	-	277.66	0.48
C	70	280.02	-	273.63	0.56
L	10	272.00	1.43	269.00	1.49
L	20	271.69	1.49	265.37	1.09

L	30	270.96	1.61	260.92	1.57
L	40	268.92	1.54	255.45	1.32
L	50	-	-	249.12	1.96
L	60	262.28	1.55	240.19	0.91
L	70	252.33	1.73	228.92	0.87
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
-	-	-	-

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
19.70	20.10	19.80	20.10	21.20	22.00

Date:
8/3/81

Time:
0852-
0916

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.94	1.04	287.91	0.74
X	20	285.63	-	284.46	-
X	30	285.61	0.84	282.89	1.13
X	40	284.85	0.95	281.97	0.40
X	50	285.28	0.48	281.02	1.01
X	60	282.46	0.57	278.07	0.56
X	70	279.44	0.69	275.02	-
C	10	287.40	0.29	288.38	-
C	20	286.56	0.64	285.59	1.98

C	30	288.47	-	285.43	0.53
C	40	289.26	0.63	283.92	-
C	50	288.03	0.63	280.29	-
C	60	288.09	-	278.80	-
C	70	284.44	0.62	275.03	-
L	10	280.50	1.73	279.63	1.19
L	20	282.68	1.84	278.13	1.78
L	30	282.38	1.43	274.98	0.92
L	40	278.93	1.83	269.63	1.28
L	50	274.37	1.64	261.93	1.07
L	60	266.99	1.43	253.39	1.40
L	70	250.98	1.75	241.25	0.28
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	4.21	5.19	5.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.60	24.50	23.50	23.20	24.10	23.20

Date:
8/4/81

Time:
0840-
0900

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.66	-	286.30	0.91

X	20	286.55	-	285.22	-
X	30	285.89	-	284.26	0.68
X	40	286.45	0.84	283.28	-
X	50	283.49	-	280.01	0.86
X	60	280.46	-	276.90	0.39
X	70	276.68	-	273.14	0.24
C	10	278.40	0.25	280.15	0.50
C	20	279.59	0.36	278.69	0.40
C	30	281.65	0.26	277.54	1.11
C	40	284.36	0.93	276.95	0.37
C	50	286.22	-	276.56	-
C	60	286.27	0.14	276.13	-
C	70	282.96	0.70	273.84	0.24
L	10	259.51	1.18	255.73	1.25
L	20	261.95	1.82	252.89	0.66
L	30	262.28	1.67	247.54	1.16
L	40	265.62	2.56	242.97	1.41
L	50	261.75	1.44	235.23	1.41
L	60	258.70	1.01	228.43	0.76
L	70	245.01	1.81	222.12	1.18
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	12.18	10.95	7.62

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.00	24.90	24.50	23.90	23.90	22.60

Date:

Time:

8/5/81 0840-0910
 Plot No.: Field:
 152 Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	288.41	0.56	288.18	0.72
X	20	288.58	-	287.09	0.20
X	30	288.53	1.08	286.26	0.66
X	40	287.67	-	284.32	0.77
X	50	286.12	0.29	282.24	0.87
X	60	283.64	0.50	280.22	0.87
X	70	278.36	0.56	274.58	0.71
C	10	283.59	0.64	284.54	-
C	20	284.62	-	284.11	-
C	30	286.18	-	282.84	-
C	40	287.90	0.95	281.27	0.71
C	50	289.03	0.94	279.97	0.39
C	60	288.70	-	277.89	0.53
C	70	285.36	-	275.88	0.51
L	10	271.79	1.89	270.04	1.09
L	20	270.79	1.09	264.11	1.32
L	30	271.34	1.59	258.46	1.00
L	40	271.03	1.48	253.29	1.18
L	50	269.06	2.22	246.66	1.39
L	60	264.17	1.69	238.77	0.86
L	70	250.09	1.35	229.98	0.99
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	8.37	8.19	6.82

Soil

**Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.60	24.20	24.20	23.40	24.00	22.80

Date: 8/26/81
 Time: 0919-0947
 Plot No.: 152
 Field: Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	285.13	1.01	285.21	0.39
X	20	285.91	0.93	285.09	0.32
X	30	285.25	0.94	283.58	0.50
X	40	285.24	0.97	283.18	0.50
X	50	283.83	0.99	280.14	0.48
X	60	281.40	0.99	277.17	0.42
X	70	277.73	1.05	273.48	0.46
C	10	284.58	0.33	285.79	0.26
C	20	282.28	0.95	285.51	0.32
C	30	286.36	0.60	285.21	0.33
C	40	287.66	0.81	284.74	0.32
C	50	287.67	0.29	283.18	0.30
C	60	286.91	0.42	282.01	0.33
C	70	283.48	0.97	279.02	0.27
L	10	282.81	1.69	280.53	1.60
L	20	282.42	1.47	278.73	1.13
L	30	283.38	1.74	276.92	0.98
L	40	280.09	1.68	272.58	1.56
L	50	275.53	1.78	266.19	1.37
L	60	270.35	1.95	261.31	1.16
L	70	256.90	1.54	258.24	1.29
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture**

**Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.52	4.82	5.05

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.80	26.00	-	-	24.00	24.00

Date:
8/27/81

Time:
0921-
0938

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.20	0.88	285.40	0.43
X	20	285.04	0.88	284.63	0.48
X	30	285.24	1.05	284.18	0.51
X	40	284.73	0.93	282.37	0.39
X	50	281.67	0.89	278.67	0.44
X	60	278.81	1.00	275.35	0.57
X	70	275.56	0.88	270.69	0.41
C	10	285.65	0.67	286.48	0.25
C	20	286.77	0.42	286.49	0.35
C	30	287.74	0.32	285.51	0.27
C	40	289.09	0.27	284.84	0.34
C	50	287.77	0.44	282.06	0.37
C	60	287.47	0.55	280.45	0.24
C	70	284.83	0.80	278.70	0.33
L	10	283.74	1.88	282.58	1.40
L	20	284.12	1.59	279.22	1.50
L	30	282.21	1.80	276.67	1.14
L	40	280.47	1.83	273.63	1.46
L	50	275.66	1.67	267.36	1.32
L	60	270.61	1.56	261.74	1.41
L	70	257.82	2.03	259.41	1.85
P	10	263.72	1.81	262.69	2.18
P	20	266.89	2.18	261.59	2.22

P	30	266.38	3.13	256.95	2.17
P	40	266.92	2.12	255.19	1.48
P	50	266.83	2.05	248.47	1.89
P	60	261.62	1.92	231.09	1.92
P	70	246.46	1.48	209.30	1.57

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	2.79	3.36	3.65

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.00	28.00	-	-	21.50	-

*P-Band
measure
ments
made
during
1429-
1442

Date:
8/28/81

Time:
0916-
0939

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	285.73	0.87	285.47	0.42
X	20	285.01	0.97	284.40	0.48
X	30	284.90	0.99	283.09	0.42
X	40	284.51	1.01	281.13	0.33
X	50	282.39	1.05	279.13	0.47
X	60	280.58	0.91	277.52	0.42
X	70	276.71	0.88	272.55	0.46

C	10	286.45	0.32	287.55	0.29
C	20	287.11	0.76	287.16	0.27
C	30	288.19	0.65	286.41	0.40
C	40	289.13	0.66	285.18	0.33
C	50	289.42	0.43	284.35	0.33
C	60	288.77	0.67	283.47	0.32
C	70	285.34	0.35	280.53	0.37
L	10	283.40	1.70	282.42	1.59
L	20	285.10	1.97	281.78	1.33
L	30	284.35	1.75	279.22	1.20
L	40	281.23	1.57	275.60	1.38
L	50	276.73	1.79	270.84	1.13
L	60	271.29	2.23	265.16	1.18
L	70	258.32	2.07	261.42	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	4.47	5.14	5.18

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.10	24.80	-	-	19.00	-

Date: 9/1/81
Time: 1014-1036
Plot No.: 152
Field: Grass

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	284.06	1.00	283.24	0.50
X	20	284.10	0.72	282.84	0.52
X	30	283.39	1.10	281.68	0.38
X	40	282.49	0.89	279.60	0.55
X	50	280.36	0.85	276.77	0.49
X	60	279.22	0.53	273.87	0.35
X	70	273.85	0.88	268.50	0.49
C	10	282.24	0.36	283.64	0.35
C	20	282.65	0.94	283.24	0.34
C	30	283.96	0.64	283.05	0.34
C	40	285.23	0.35	282.84	0.36
C	50	285.76	0.40	283.12	0.37
C	60	285.59	0.73	283.14	0.37
C	70	281.81	0.94	279.30	0.33
L	10	255.34	1.95	252.70	1.25
L	20	256.10	1.65	249.28	1.07
L	30	257.35	1.46	245.70	1.00
L	40	259.68	2.49	242.49	1.12
L	50	257.82	1.57	236.93	1.08
L	60	257.06	1.48	231.91	1.16
L	70	246.26	1.53	238.25	1.42
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	16.45	13.23	12.17

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
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Date:
9/2/81

Time:
0909-
0926

Plot No.:
152

Field:
Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	283.22	1.07	282.63	0.47
X	20	282.90	0.82	281.55	0.41
X	30	282.17	0.84	280.20	0.49
X	40	281.20	0.83	277.54	0.51
X	50	278.69	0.84	274.49	0.46
X	60	276.20	0.91	271.10	0.38
X	70	271.30	0.97	264.50	0.32
C	10	280.69	0.74	281.97	0.35
C	20	281.43	0.31	281.29	0.33
C	30	282.62	0.52	281.25	0.31
C	40	283.12	0.39	280.46	0.38
C	50	283.96	0.37	280.94	0.36
C	60	282.98	0.80	280.11	0.28
C	70	278.99	0.83	276.57	0.30
L	10	260.58	1.73	259.03	1.35
L	20	259.72	1.89	254.50	1.36
L	30	259.78	1.39	248.04	1.55
L	40	261.19	1.18	246.58	1.97
L	50	261.42	1.57	237.35	1.14
L	60	258.62	1.58	232.17	1.13
L	70	248.68	1.51	232.85	1.02
P	10	246.00	2.30	246.77	1.61
P	20	242.78	2.12	238.53	1.82
P	30	247.24	1.98	234.71	1.65
P	40	248.15	2.00	226.71	2.09
P	50	249.66	2.32	220.79	1.93
P	60	247.16	1.88	208.66	1.65
P	70	234.39	2.01	184.85	1.94

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	12.93	12.64	11.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.90	22.10	21.50	21.60	23.00	21.70

*P-Band
measure
ments
made
during
1426-
1438
p.m.

Date:
9/3/81

Time:
0905-
0923

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	282.97	0.95	283.33	0.47
X	20	282.79	0.92	281.64	0.47
X	30	281.25	1.07	280.51	0.44
X	40	280.52	0.85	279.08	0.46
X	50	279.49	0.85	276.58	0.42
X	60	277.29	0.95	274.45	0.58
X	70	274.21	0.93	270.24	0.53
C	10	283.05	0.29	284.05	0.31
C	20	283.30	0.39	282.83	0.32
C	30	284.47	0.39	282.24	0.30
C	40	285.78	0.26	281.83	0.34
C	50	286.26	0.99	281.59	0.29
C	60	285.85	0.50	281.54	0.32
C	70	281.89	1.02	278.73	0.29
L	10	263.19	1.67	262.21	1.11
L	20	263.77	1.72	258.86	1.13
L	30	264.48	1.56	253.93	1.03
L	40	264.18	1.53	249.59	1.22
L	50	263.41	1.72	244.54	1.10
L	60	259.92	1.51	238.98	1.28
L	70	250.12	1.43	239.11	1.19

P	10	247.72	2.29	251.97	1.99
P	20	246.27	2.56	240.53	2.05
P	30	248.07	2.35	240.47	1.72
P	40	250.87	2.35	231.65	1.61
P	50	260.14	2.72	223.17	1.50
P	60	246.16	1.66	207.46	1.57
P	70	228.99	1.66	187.73	1.89

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	11.25	9.93	9.47

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.40	21.30	21.10	21.60	22.30	21.90

*P-Band
measure
ments
made
during
1330-
1352
p.m.

Date: 9/4/81
Time: 0856-0911
Plot No.: 152
Field: Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	285.23	0.85	284.60	0.43
X	20	285.44	0.93	284.23	0.44
X	30	284.75	0.93	283.07	0.38
X	40	283.48	1.00	281.25	0.35

X	50	282.18	0.86	279.03	0.42
X	60	279.70	1.02	275.92	0.42
X	70	275.40	0.92	270.96	0.58
C	10	281.61	0.67	282.88	0.35
C	20	282.11	0.67	282.13	0.30
C	30	283.28	0.60	281.54	0.24
C	40	284.58	0.84	281.22	0.35
C	50	284.81	0.67	280.36	0.27
C	60	284.21	0.47	280.21	0.33
C	70	280.40	0.33	277.65	0.39
L	10	267.91	1.67	265.15	0.99
L	20	268.30	1.99	262.83	1.37
L	30	268.30	1.68	258.09	1.77
L	40	267.14	1.60	251.13	1.24
L	50	265.62	1.65	245.82	1.50
L	60	261.76	1.54	237.60	1.22
L	70	250.91	1.45	236.02	1.41
P	10	250.68	2.03	252.26	2.24
P	20	248.05	2.02	245.09	1.51
P	30	249.68	2.14	240.02	1.65
P	40	252.61	2.51	230.79	2.23
P	50	250.65	2.41	225.70	1.31
P	60	246.19	2.05	212.66	1.39
P	70	232.56	1.87	192.02	1.24

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	10.78	10.48	9.50

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.80	21.00	19.80	20.50	22.50	21.40

*P-Band
measure
ments
made
during

1032-
1044
a.m.

Date:
9/11/81

Time.:
0928-
0946

Plot No.:
152

Field:
Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	284.03	0.87	282.96	0.47
X	20	284.60	0.86	283.66	0.45
X	30	283.31	0.94	281.19	0.38
X	40	284.04	0.96	281.58	0.53
X	50	282.62	1.01	279.50	0.50
X	60	280.47	0.92	274.75	0.43
X	70	276.42	0.94	271.86	0.51
C	10	284.85	0.73	286.12	0.28
C	20	285.47	0.66	285.86	0.32
C	30	286.42	0.36	285.33	0.30
C	40	286.78	0.27	284.99	0.33
C	50	286.67	0.57	284.11	0.28
C	60	286.39	0.37	283.01	0.27
C	70	281.36	0.54	278.81	0.31
L	10	277.28	1.82	274.25	1.53
L	20	276.69	1.79	271.28	1.32
L	30	274.18	1.47	266.89	1.08
L	40	272.30	2.04	264.56	1.15
L	50	269.42	1.87	257.05	1.24
L	60	266.34	1.55	247.46	1.31
L	70	255.90	1.89	240.97	1.26
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture
Data (%
by Dry

Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	6.41	7.67	6.89

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.90	23.00	21.80	18.80	19.30	17.70

Date:
9/14/81Time:
0921-
0943Plot No.:
152Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.07	0.98	285.02	0.62
X	20	286.68	0.74	284.96	0.37
X	30	285.51	0.99	283.77	0.59
X	40	283.37	1.02	282.14	0.52
X	50	283.09	1.01	280.13	0.56
X	60	281.12	1.01	276.48	0.43
X	70	276.56	0.86	271.90	0.46
C	10	287.57	0.96	288.99	0.26
C	20	288.54	0.49	288.93	0.24
C	30	289.48	0.49	288.54	0.30
C	40	200.14	0.40	287.93	0.34
C	50	291.35	0.29	287.45	0.32
C	60	290.45	0.32	286.72	0.34
C	70	286.30	0.78	282.52	0.34
L	10	282.14	1.89	280.29	1.54
L	20	281.65	1.62	278.43	1.17
L	30	280.14	1.79	275.04	1.52
L	40	277.09	1.87	270.87	1.22
L	50	274.17	1.86	263.27	1.08
L	60	-	-	254.48	1.22
L	70	258.95	1.63	251.44	1.19
P	10	256.92	2.02	256.31	1.59
P	20	257.21	2.23	255.35	1.91
P	30	256.92	1.76	249.06	1.64
P	40	258.96	1.66	245.27	2.65

P	50	257.05	2.33	236.85	1.87
P	60	250.63	2.20	223.14	1.52
P	70	238.37	4.12	217.09	9.61

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	4.23	6.20	6.30

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.00	22.00	23.10	20.80	20.80	19.30

*P-Band
measure
ments
made
during
1405-
1421
p.m.

Date:
9/15/81

Time:
0915-
0927

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10				

C	20				
C	30				
C	40				
C	50				
C	60				
C	70				
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10	261.14	2.16	260.77	2.60
P	20	262.00	2.15	255.62	1.50
P	30	260.38	1.77	246.37	1.67
P	40	260.25	2.58	239.97	2.71
P	50	259.68	2.07	242.53	2.32
P	60	249.74	2.13	229.99	2.09
P	70	229.74	1.73	210.15	2.16

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	3.10	4.40	4.12

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.70	21.00			22.50	

Date:
9/17/81

Time:
1138-
1159

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
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X	10	282.46	0.99	282.41	0.50
X	20	281.89	0.75	281.58	0.51
X	30	281.67	0.83	280.61	0.51
X	40	281.82	0.78	279.83	0.49
X	50	280.91	0.94	277.96	0.40
X	60	277.75	0.88	272.62	0.45
X	70	274.12	0.80	268.60	0.41
C	10	283.56	0.46	285.06	0.32
C	20	284.13	0.38	285.12	0.33
C	30	284.50	1.07	284.70	0.30
C	40	285.22	0.75	284.78	0.26
C	50	286.22	0.32	284.98	0.29
C	60	285.30	0.83	283.64	0.38
C	70	280.28	0.52	278.24	0.40
L	10	256.79	1.42	254.56	1.21
L	20	257.68	1.41	252.11	1.30
L	30	257.12	1.41	248.31	0.97
L	40	257.64	1.87	246.15	1.40
L	50	257.50	1.35	240.70	1.28
L	60	254.52	1.74	233.10	1.15
L	70	246.89	1.71	233.47	1.29
P	10	240.81	1.94	238.21	1.84*
P	20	240.57	2.36	226.87	1.75
P	30	251.16	4.74	219.38	1.70
P	40	242.59	1.89	218.50	1.66
P	50	238.96	2.43	211.91	1.89
P	60	231.46	1.34	204.85	1.51
P	70	210.28	2.19	-	-

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	17.04	14.51	14.02
	10.19	17.75	14.31*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.90	22.00	20.80	21.00	22.00	21.20
18.00	19.00	18.70	19.00	21.00	20.00*

*P-Band
measure
ments
made
during
0922-
0935
a.m.

Date:
9/18/81

Time:
1151-
1209

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.49	0.92	277.67	0.44
X	20	275.05	1.09	274.36	0.44
X	30	274.73	0.87	274.21	0.50
X	40	273.00	0.99	271.94	0.50
X	50	272.50	0.86	270.17	0.50
X	60	270.19	0.95	266.18	0.47
X	70	266.92	0.93	261.61	0.46
C	10	280.65	0.90	281.94	0.29
C	20	280.88	0.28	281.43	0.32
C	30	281.06	0.44	281.54	0.28
C	40	281.18	0.41	281.13	0.30
C	50	281.27	0.51	280.81	0.24
C	60	280.02	0.27	279.09	0.32
C	70	276.42	0.34	274.66	0.25
L	10	257.05	1.39	254.17	1.18
L	20	255.24	1.81	250.63	1.19
L	30	254.34	1.38	247.33	1.21
L	40	253.41	2.10	244.15	1.20
L	50	252.39	2.09	240.73	1.21
L	60	250.81	1.97	236.16	1.05
L	70	245.13	1.58	236.73	1.49
P	10	232.13	1.72	229.27	1.96*
P	20	234.31	2.34	221.67	1.68
P	30	237.02	2.11	220.02	1.96
P	40	242.51	2.05	216.79	1.73
P	50	240.30	2.66	212.77	2.17
P	60	228.85	2.66	194.63	1.77

P 70 192.54 1.97 167.78 1.93

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	17.33	15.46	14.78
	16.10	15.05	15.56*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
17.30	16.30	17.20	18.10	19.50	18.80
15.80	15.80	16.30	17.50	19.50	18.70*

*P-Band
measure
ments
made
during
1005-
1022
a.m.

Date:
9/28/81

Time:
0921-
0939

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	281.28	0.95	281.04	0.51
X	20	281.72	0.92	280.83	0.45
X	30	281.01	0.81	280.05	0.63
X	40	279.78	0.90	278.13	0.49
X	50	277.15	0.88	275.24	0.44
X	60	275.07	1.01	272.82	0.45
X	70	269.91	1.02	267.40	0.48
C	10	280.48	0.30	281.54	0.39

C	20	281.03	0.29	281.27	0.38
C	30	282.30	0.37	281.06	0.33
C	40	282.11	0.81	280.54	0.31
C	50	282.20	0.76	279.83	0.37
C	60	281.83	0.22	278.30	0.30
C	70	276.97	0.86	274.02	0.26
L	10	262.09	1.83	260.32	1.37
L	20	262.97	1.44	258.63	1.39
L	30	263.76	1.80	255.38	1.17
L	40	261.95	2.22	250.88	1.22
L	50	259.54	1.46	243.01	0.98
L	60	255.92	1.38	233.36	1.30
L	70	247.43	1.55	221.49	1.17
P	10	248.98	2.69	251.16	1.76
P	20	247.47	2.86	243.32	1.98
P	30	249.77	2.47	233.93	2.47
P	40	252.76	2.45	232.11	2.77
P	50	254.47	2.53	231.23	2.48
P	60	247.06	2.59	222.08	2.64
P	70	229.93	2.35	207.17	2.87

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	11.41	10.96	10.32

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
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*P-Band
measure
ments
made
during
1118-
1139
a.m.

Date:
9/29/81

Time:
0926-
0944

Plot No.:
152

Field:
Grass

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	273.27	0.87	272.54	0.38
X	20	272.86	0.79	271.43	0.50
X	30	273.70	0.76	271.37	0.45
X	40	272.09	0.92	268.26	0.37
X	50	271.15	0.83	266.85	0.53
X	60	270.27	0.85	264.71	0.46
X	70	267.77	0.99	260.57	0.40
C	10	277.33	0.66	278.17	0.32
C	20	277.83	1.01	278.00	0.31
C	30	278.90	0.37	278.29	0.36
C	40	278.96	0.35	277.69	0.32
C	50	278.87	0.27	276.94	0.31
C	60	278.21	0.28	275.24	0.31
C	70	274.35	0.70	270.95	0.33
L	10	263.94	1.72	262.84	1.13
L	20	263.24	1.70	259.12	1.32
L	30	263.10	1.71	257.02	1.32
L	40	260.28	1.92	252.19	1.33
L	50	257.65	1.13	245.10	1.16
L	60	253.72	1.36	235.69	0.83
L	70	244.35	1.34	225.71	1.15
P	10	244.47	2.55	247.45	2.36
P	20	244.94	2.59	239.27	2.31
P	30	245.77	2.57	237.58	2.44
P	40	247.85	2.75	235.38	2.12
P	50	247.17	2.26	226.66	2.67
P	60	242.26	2.85	220.29	2.36
P	70	229.25	2.45	203.77	2.01

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	8.78	8.52	9.20

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
13.70	12.00	12.80	13.20	14.80	14.60

*P-Band
measure
ments
made
during
1118-
1136
a.m.

Date:
9/30/81

Time:
1119-
1135

Plot No.:
152

Field:
Grass

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	277.19	0.89	279.06	0.59
X	20	275.40	0.84	277.89	0.58
X	30	274.65	0.96	276.20	0.55
X	40	273.51	0.80	273.58	0.47
X	50	272.37	0.82	271.88	0.43
X	60	270.67	0.83	269.29	0.53
X	70	268.09	0.81	264.04	0.39
C	10	280.14	0.40	281.27	0.38
C	20	280.40	0.53	280.96	0.32
C	30	280.75	0.31	280.53	0.31
C	40	280.84	0.76	279.62	0.32
C	50	280.46	0.64	279.11	0.26
C	60	279.66	0.59	277.85	0.31
C	70	275.75	0.25	273.54	0.32
L	10	264.95	1.53	262.41	1.11
L	20	262.63	1.62	258.71	1.34
L	30	263.15	1.70	256.76	1.06
L	40	260.12	1.61	251.29	1.33
L	50	257.40	1.73	245.64	1.14
L	60	253.77	1.78	239.82	1.13
L	70	245.20	1.64	230.31	1.12

P	10	248.36	2.51	247.22	2.29*
P	20	248.11	2.67	243.00	2.64
P	30	250.54	2.75	241.52	3.72
P	40	251.80	2.57	235.00	2.84
P	50	251.27	2.67	229.46	2.65
P	60	242.49	2.71	221.44	2.45
P	70	228.97	2.51	208.87	2.38

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	9.73	8.88	8.55
	7.94	8.16	8.99*

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
15.70	15.80	15.50	15.70	17.00	17.10
15.30	16.00	15.80	15.40	17.00	17.00*

*P-Band
measure
ments
made
during
0904-
0919
a.m.

Date:
6/24/81

Time:
1110-
1140

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	290.67	-	290.47	0.70
X	20	290.60	-	288.12	0.68

X	30	290.95	0.86	284.36	0.77
X	40	291.83	0.67	279.48	0.44
X	50	291.59	0.95	272.02	-
X	60	288.64	0.82	258.96	-
X	70	279.63	0.32	234.94	0.45
C	10	292.92	-	293.69	0.35
C	20	291.74	0.86	292.53	-
C	30	293.73	-	291.20	0.10
C	40	295.13	0.97	287.55	-
C	50	296.11	-	280.49	0.70
C	60	292.55	-	267.77	-
C	70	278.94	-	246.73	0.28
L	10	270.80	1.43	270.44	1.61
L	20	271.77	1.69	268.98	1.48
L	30	271.52	1.23	262.84	1.40
L	40	268.16	0.65	247.59	1.15
L	50	266.77	1.48	232.55	0.54
L	60	262.28	1.77	211.12	1.02
L	70	245.61	1.98	179.34	1.20
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.33	9.03	11.85	12.84

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.10	39.40	30.30	29.90	30.00	27.60

Date:
6/24/81

Time:
1315-

Plot No.: 131
 131
 Field: 1340
 Corn
 (perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	297.02	0.55	295.94	0.96
X	20	291.89	0.65	285.71	0.93
X	30	293.69	0.37	286.02	0.94
X	40	295.71	-	284.54	0.82
X	50	295.77	-	278.67	0.78
X	60	294.14	-	273.41	0.67
X	70	287.45	0.45	260.54	0.63
C	10	296.98	-	297.04	-
C	20	298.25	0.92	295.83	-
C	30	297.82	-	294.53	0.72
C	40	299.37	0.75	292.11	-
C	50	300.33	-	289.00	-
C	60	297.93	0.59	281.92	0.86
C	70	286.72	-	264.10	-
L	10	284.51	1.88	287.16	0.24
L	20	286.61	1.69	286.70	0.89
L	30	275.34	1.55	267.09	1.39
L	40	272.28	1.43	253.26	1.05
L	50	270.11	1.73	238.96	1.22
L	60	264.30	1.62	215.59	1.01
L	70	243.03	1.72	182.72	1.34
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.08	7.33	11.00	11.85

Soil

**Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.50	39.50	32.90	33.30	32.80	30.50

Date: 7/13/81

Time: 1254-1316

Plot No.: 131

Field: Corn(per p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	284.86	0.82	286.63	1.11
X	20	284.06	0.40	283.54	-
X	30	281.96	0.12	279.67	0.72
X	40	282.01	0.39	275.71	0.64
X	50	274.37	0.29	266.14	-
X	60	269.16	-	259.93	-
X	70	265.15	0.18	255.04	0.50
C	10	286.42	-	287.12	-
C	20	286.69	-	286.14	1.12
C	30	287.11	-	284.75	-
C	40	287.52	-	282.01	0.54
C	50	286.58	0.24	277.70	0.31
C	60	284.35	-	272.45	-
C	70	277.39	-	261.84	-
L	10	291.10	1.53	290.17	1.25
L	20	288.62	1.67	282.10	1.04
L	30	285.46	1.92	275.78	1.64
L	40	281.89	1.75	272.20	1.23
L	50	277.32	2.08	264.84	1.49
L	60	269.64	1.87	256.67	0.90
L	70	254.88	1.62	246.79	1.25
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil

Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.62	5.51	7.53	8.25

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.20	40.80	33.90	31.50	32.00	30.00

Date:
7/13/81

Time:
1403-
1428

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	276.63	1.27	278.22	-
X	20	275.67	-	276.00	0.55
X	30	276.48	-	275.12	-
X	40	274.11	0.97	270.58	0.81
X	50	272.26	0.22	264.29	0.91
X	60	273.31	0.35	259.64	1.32
X	70	264.27	0.40	244.41	0.76
C	10	285.18	0.11	286.59	0.76
C	20	285.27	0.56	285.36	0.49
C	30	285.50	0.88	283.10	-
C	40	285.35	0.29	279.51	-
C	50	285.09	-	274.68	-
C	60	281.93	0.44	267.87	0.38
C	70	273.31	-	255.64	0.88
L	10	282.14	1.39	279.61	1.02
L	20	281.45	1.88	277.09	1.42
L	30	281.43	1.54	271.66	1.25
L	40	277.55	1.72	267.16	0.93
L	50	274.92	1.64	260.20	1.57
L	60	269.64	1.90	252.50	0.67
L	70	258.74	2.82	245.58	-
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.67	5.50	7.53	9.10

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.30	31.30	32.30	31.90	31.70	30.70

Date:
7/14/81

Time:
1312-
1340

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.20	1.07	280.30	0.74
X	20	279.03	-	278.12	1.13
X	30	279.16	1.18	276.40	-
X	40	277.78	0.76	272.65	0.72
X	50	278.24	-	270.47	-
X	60	275.46	0.60	266.09	0.76
X	70	270.96	0.97	258.83	1.10
C	10	286.89	-	288.32	-
C	20	287.48	-	287.05	-
C	30	287.22	-	284.53	-
C	40	287.33	0.42	282.39	0.32
C	50	286.48	0.69	277.93	0.55
C	60	283.79	0.54	270.48	0.57

C	70	277.33	-	260.84	0.95
L	10	294.48	1.64	293.03	1.41
L	20	288.83	1.50	282.86	1.76
L	30	286.47	1.88	277.95	1.58
L	40	283.79	1.37	273.83	1.09
L	50	280.04	1.92	268.08	0.97
L	60	272.81	1.93	259.63	0.67
L	70	260.75	1.81	253.06	1.42
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.07	2.76	7.13	6.53

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.30	35.40	34.60	34.70	32.00	29.40

Date: 7/21/81
 Plot No.: 131
 Time:104
 0-1107
 Field:
 Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	268.25	1.03	267.63	0.72
X	20	267.94	0.59	265.60	0.56
X	30	268.47	0.84	263.64	0.56
X	40	271.00	0.25	263.34	0.93
X	50	272.58	-	263.29	0.79
X	60	271.11	1.04	259.97	-

X	70	265.77	0.74	251.30	0.52
C	10	271.37	0.54	273.32	-
C	20	272.83	-	273.43	-
C	30	275.66	-	273.48	0.42
C	40	277.77	0.73	272.92	0.99
C	50	278.91	-	271.46	0.83
C	60	278.04	-	266.69	0.31
C	70	272.62	-	257.57	0.64
L	10	271.13	1.76	269.95	1.00
L	20	-	-	-	-
L	30	273.21	1.48	261.69	0.72
L	40	270.57	1.80	260.47	1.19
L	50	268.78	1.55	257.53	1.33
L	60	267.32	1.61	256.13	1.06
L	70	256.81	0.55	255.68	1.49
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
13.30	14.22	11.87	10.28

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.10	28.80	29.60	27.50	27.00	25.90

Date:
7/21/81

Time:
1145-
1212

Plot No.:
131

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	273.81	0.75	271.52	0.86
X	20	275.35	1.00	271.28	0.28
X	30	274.00	0.76	269.65	-
X	40	276.97	0.47	270.97	0.98
X	50	274.76	0.80	267.14	-
X	60	271.89	1.30	261.71	-
X	70	269.81	-	254.43	0.44
C	10	275.00	0.84	275.87	-
C	20	276.45	-	276.66	0.52
C	30	278.92	-	277.23	1.14
C	40	279.93	0.34	276.49	-
C	50	280.19	0.75	273.98	-
C	60	278.96	-	270.21	-
C	70	274.14	1.19	259.05	-
L	10	278.45	1.71	270.80	1.02
L	20	281.83	1.21	270.64	1.21
L	30	278.81	1.48	264.09	1.23
L	40	276.26	1.45	259.93	1.39
L	50	272.87	1.24	257.86	1.42
L	60	267.52	1.45	255.82	1.03
L	70	255.03	1.56	254.37	1.20
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.61	11.88	10.63	10.20

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
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29.70 28.30 27.50 27.20 26.60 25.40

Date: 7/22/81 Time: 1105-1130
 Plot No.: 131 Field: Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.33	0.47	275.67	0.87
X	20	271.79	-	269.69	-
X	30	272.11	0.83	268.36	0.93
X	40	2172.99	-	267.32	0.43
X	50	273.40	-	265.42	0.52
X	60	270.95	0.36	259.94	-
X	70	268.05	-	253.66	-
C	10	278.19	0.19	280.18	0.89
C	20	278.75	-	279.59	-
C	30	280.21	-	278.53	-
C	40	281.47	-	276.77	-
C	50	282.02	0.30	274.71	0.22
C	60	280.05	0.56	269.36	0.29
C	70	274.44	0.85	261.03	0.75
L	10	281.40	2.11	281.06	1.29
L	20	281.71	1.65	277.11	1.08
L	30	281.39	1.64	274.20	1.06
L	40	276.90	1.91	268.14	1.23
L	50	275.59	2.11	265.53	1.07
L	60	270.02	1.40	262.90	1.36
L	70	258.12	1.35	260.03	1.49
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)
 0-0.50 0-2.50 2.5-5.0 5-10 cm

cm	cm	cm	
7.04	6.80	8.55	8.74

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.50	26.90	26.10	25.50	25.20	24.00

Date:	Time:
7/22/81	1246-
	1313
Plot No.:	Field:
131	Corn
	(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.71	1.02	274.78	1.12
X	20	278.97	-	277.03	-
X	30	277.48	0.62	274.19	0.71
X	40	277.02	0.86	271.46	-
X	50	275.18	-	269.09	-
X	60	270.58	0.26	260.22	0.63
X	70	269.02	0.97	253.39	1.10
C	10	281.74	0.69	283.29	-
C	20	283.96	0.35	284.08	-
C	30	284.51	-	283.42	0.82
C	40	284.80	0.42	281.68	0.22
C	50	283.76	-	278.40	0.38
C	60	280.64	0.47	272.50	0.64
C	70	274.02	0.84	262.01	-
L	10	289.05	1.58	285.41	1.23
L	20	289.16	1.62	282.69	1.25
L	30	284.49	2.15	274.37	1.60
L	40	281.62	2.02	271.19	1.94
L	50	276.20	1.62	266.70	0.52
L	60	269.84	1.67	264.09	1.02
L	70	256.97	1.59	259.73	1.10
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.34	7.46	9.24	8.65

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.50	28.40	30.30	28.20	27.10	25.00

Date:
7/23/81

Time:
1325-
1351

Plot No.:
131

Field:
Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	281.17	0.69	281.84	0.65
X	20	277.54	0.63	277.18	-
X	30	279.88	-	278.63	1.09
X	40	276.94	0.54	273.53	-
X	50	276.34	0.59	271.12	-
X	60	274.42	-	267.65	-
X	70	268.74	0.65	258.50	0.80
C	10	284.45	0.84	286.67	0.97
C	20	284.69	0.58	286.26	0.78
C	30	284.77	0.25	284.49	0.31
C	40	285.20	0.50	282.57	-
C	50	284.50	-	278.95	-
C	60	281.96	0.63	272.96	-
C	70	274.83	-	263.73	-
L	10	286.87	1.84	285.83	0.81
L	20	285.42	1.80	281.99	0.26
L	30	283.66	2.04	278.69	1.62
L	40	280.76	2.07	274.79	1.33

L	50	277.51	2.29	270.67	1.43
L	60	270.65	1.49	265.14	1.38
L	70	257.66	1.91	260.84	1.56
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.67	5.84	7.60	9.28

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.40	29.80	27.50	27.00	25.80	24.10

Date:
7/23/81

Time:
1404-
1432

Plot No.:
131

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.54	1.02	275.97	0.93
X	20	277.16	-	276.90	0.81
X	30	276.28	0.53	273.79	0.47
X	40	275.32	0.54	270.96	0.90
X	50	276.46	-	272.23	0.95
X	60	275.92	0.62	270.57	0.36
X	70	269.25	0.80	258.62	0.69
C	10	286.89	0.36	288.43	0.59
C	20	287.17	-	287.90	-

C	30	287.48	0.52	286.40	-
C	40	286.93	0.81	284.42	0.10
C	50	285.09	0.42	281.32	-
C	60	282.72	-	276.00	0.67
C	70	275.30	0.42	264.72	-
L	10	286.28	1.71	281.67	1.58
L	20	288.57	2.00	281.87	1.21
L	30	287.04	1.72	278.68	1.46
L	40	283.85	1.67	275.87	1.37
L	50	281.91	2.11	271.98	1.31
L	60	272.48	1.32	268.30	1.36
L	70	257.82	1.29	261.19	0.70
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
3.15	6.47	9.76	8.07

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.80	31.30	29.30	27.70	26.70	25.00

Date:
8/3/81

Time:
1055-
1125

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.73	1.17	280.23	-

X	20	280.84	0.55	280.40	-
X	30	280.04	-	279.49	0.61
X	40	276.71	-	273.35	1.07
X	50	277.52	0.71	271.47	0.69
X	60	273.76	0.36	265.23	0.70
X	70	271.06	0.54	259.25	-
C	10	282.07	1.03	283.12	-
C	20	282.68	-	282.82	0.22
C	30	282.51	0.72	281.31	0.86
C	40	282.67	-	278.87	0.43
C	50	281.98	0.64	275.33	0.49
C	60	279.52	0.39	270.53	0.28
C	70	273.57	-	262.26	0.93
L	10	287.67	1.63	287.22	1.20
L	20	287.56	1.23	282.96	1.39
L	30	285.63	1.18	280.26	1.37
L	40	281.88	1.68	277.39	1.33
L	50	278.12	2.06	275.22	1.28
L	60	271.36	1.56	270.38	0.36
L	70	258.51	1.45	264.99	1.03
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.64	2.00	4.60	6.08

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.70	25.50	24.70	24.00	25.00	23.80

Date:

Time:

8/3/81 1125-
 1150
 Plot No.: Field:
 131 Corn(per
 p)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	280.68	0.80	278.78	0.33
X	20	279.40	0.18	278.01	0.72
X	30	277.19	0.34	274.23	0.93
X	40	275.28	-	270.33	0.72
X	50	273.43	0.50	266.62	0.93
X	60	270.08	0.91	259.98	0.77
X	70	267.13	-	253.26	-
C	10	281.98	-	283.08	0.10
C	20	282.68	-	282.51	-
C	30	282.90	0.59	280.99	0.62
C	40	281.63	1.04	278.39	1.03
C	50	281.01	-	275.06	0.37
C	60	279.28	0.92	270.07	0.43
C	70	272.60	-	260.88	-
L	10	289.38	1.91	284.25	1.42
L	20	290.26	1.34	283.46	1.06
L	30	287.65	1.87	280.40	0.58
L	40	283.93	2.25	277.55	1.21
L	50	279.00	1.52	276.09	1.62
L	60	271.20	1.71	270.25	1.20
L	70	257.62	1.31	263.48	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.34	3.03	4.93	5.59

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.80	25.30	24.40	23.90	25.00	23.80

Date: 8/4/81

Time: 1050-1120

Plot No.: 131

Field: Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.06	0.57	274.45	-
X	20	278.91	-	276.48	-
X	30	279.69	0.55	275.84	-
X	40	277.08	-	270.42	-
X	50	278.17	-	270.41	0.84
X	60	278.24	-	270.06	0.32
X	70	274.84	-	263.80	0.28
C	10	275.09	0.74	276.59	0.78
C	20	276.08	0.16	276.47	-
C	30	277.56	0.38	275.25	-
C	40	279.17	-	274.47	0.58
C	50	279.81	-	272.28	-
C	60	278.63	-	267.78	0.97
C	70	273.06	-	259.81	0.97
L	10	279.72	1.88	276.38	1.47
L	20	280.11	1.98	272.31	1.30
L	30	281.12	1.99	269.05	1.38
L	40	275.50	0.99	265.28	1.45
L	50	273.00	1.54	263.20	1.48
L	60	268.56	1.68	261.01	1.15
L	70	255.39	1.72	256.94	1.61
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil

Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.42	10.39	9.96	8.10

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.10	24.10	24.00	23.70	24.50	23.50

Date: 8/4/81

Time: - 1140

Plot No.: 131

Field: Corn(per p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	277.08	-	273.30	0.50
X	20	277.32	1.06	272.47	0.52
X	30	272.46	-	271.58	0.84
X	40	275.57	-	268.49	0.38
X	50	275.60	0.63	267.68	-
X	60	271.74	-	261.93	0.84
X	70	266.80	0.56	254.15	0.79
C	10	275.90	0.20	277.25	0.54
C	20	277.42	1.15	277.58	0.29
C	30	279.28	0.85	277.36	-
C	40	280.48	-	275.37	-
C	50	280.87	1.09	273.92	0.65
C	60	279.81	-	272.28	-
C	70	272.90	0.96	260.60	0.53
L	10	279.32	1.80	272.83	1.70
L	20	283.31	1.84	271.88	0.97
L	30	282.27	1.30	268.13	1.42
L	40	279.31	1.64	266.32	0.87
L	50	276.33	2.08	264.52	1.63
L	60	268.46	1.54	260.78	1.48
L	70	255.75	1.66	258.09	0.79
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.44	10.81	9.87	8.40

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.90	23.80	23.90	23.60	24.50	23.50

Date: 8/5/81
Time: 1050-1115
Plot No.: 131
Field: Corn(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	275.52	0.64	276.18	1.17
X	20	276.59	0.91	275.23	0.74
X	30	281.16	1.14	277.39	1.28
X	40	280.48	0.52	273.13	1.19
X	50	278.24	-	269.21	-
X	60	274.28	1.26	266.87	0.40
X	70	274.24	1.20	263.06	0.63
C	10	281.70	-	282.84	0.58
C	20	282.71	0.99	282.90	-
C	30	283.78	0.43	282.43	0.91
C	40	284.70	-	281.04	0.55
C	50	284.42	0.55	278.02	-
C	60	283.07	0.70	274.04	-
C	70	275.41	0.75	265.19	0.71

L	10	284.44	1.58	282.05	0.96
L	20	285.03	1.45	278.75	1.12
L	30	286.05	1.85	280.69	1.68
L	40	282.13	1.70	275.46	1.33
L	50	278.32	1.37	271.54	1.34
L	60	273.46	1.79	268.19	0.94
L	70	260.63	0.72	264.89	1.53
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
5.65	6.53	7.89	6.78

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.40	26.70	25.90	24.60	24.80	23.90

Date:
8/5/81

Time:
1115-
1145

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	281.56	1.21	279.75	0.28
X	20	282.26	0.78	279.15	-
X	30	279.37	0.86	276.12	0.46
X	40	282.08	-	277.14	1.36
X	50	274.92	-	267.64	0.26

X	60	273.59	0.67	263.54	-
X	70	270.40	-	258.32	-
C	10	282.79	-	284.26	-
C	20	283.95	0.42	284.35	-
C	30	285.33	1.12	283.80	0.64
C	40	284.17	-	281.21	0.19
C	50	284.26	0.77	278.17	0.50
C	60	285.04	0.79	276.14	-
C	70	277.67	-	264.93	-
L	10	284.26	1.34	279.52	0.96
L	20	289.00	1.92	279.51	1.54
L	30	287.08	1.66	275.91	1.71
L	40	284.25	1.70	274.29	1.14
L	50	280.37	1.38	271.93	1.38
L	60	274.95	1.64	269.07	1.07
L	70	261.35	1.56	265.34	1.17
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
4.90	5.77	7.73	7.56

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.50	26.40	26.10	24.80	25.10	23.90

Date:
8/28/81

Time:
1325-
1344

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	284.56	0.85	284.82	0.43
X	20	284.81	0.94	283.63	0.59
X	30	284.20	0.90	281.68	0.31
X	40	285.35	0.96	280.25	0.51
X	50	284.90	1.06	277.05	0.43
X	60	284.07	0.90	275.37	0.43
X	70	281.02	0.90	271.83	0.45
C	10	286.65	0.98	287.98	0.36
C	20	287.67	0.59	287.51	0.33
C	30	288.21	0.96	285.53	0.29
C	40	289.85	0.38	284.02	0.31
C	50	289.84	0.29	280.46	0.28
C	60	288.50	0.99	275.87	0.58
C	70	283.48	0.21	268.33	0.35
L	10	287.19	1.36	285.96	1.19
L	20	287.33	2.14	282.77	1.39
L	30	283.37	1.69	279.37	1.38
L	40	281.33	1.96	278.44	1.62
L	50	276.74	2.11	273.32	1.46
L	60	270.64	1.87	267.92	1.53
L	70	257.40	1.78	258.83	1.22
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
0.87	1.61	3.91	4.51

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm

32.00 35.00 33.10 29.50 26.00 23.20

Date:
8/28/81

Time:
1350-
1408

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	283.83	1.05	283.24	0.48
X	20	283.76	0.92	281.28	0.52
X	30	283.56	0.83	279.55	0.56
X	40	282.51	0.93	276.51	0.64
X	50	280.60	0.99	274.10	0.46
X	60	278.90	0.92	268.27	0.51
X	70	274.80	0.48	261.59	0.39
C	10	286.55	0.64	287.76	0.34
C	20	287.73	0.84	287.63	0.29
C	30	288.61	0.81	286.49	0.31
C	40	289.26	0.47	285.22	0.44
C	50	287.97	0.36	280.68	0.31
C	60	286.04	0.82	275.62	0.38
C	70	281.11	0.28	266.65	0.48
L	10	289.16	1.60	285.73	1.17
L	20	289.10	1.79	282.18	1.39
L	30	287.42	1.37	281.01	1.24
L	40	284.97	1.62	279.67	1.20
L	50	279.87	1.70	276.22	1.60
L	60	273.13	1.48	269.31	1.18
L	70	259.28	1.47	261.05	1.08
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture
Data (%
by Dry
Weight)

0-0.50 cm 0.80	0-2.50 cm 1.68	2.5-5.0 cm 3.72	5-10 cm 4.48
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**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.60	34.50	33.20	29.60	26.00	23.30

Date: 9/1/81 Time: 1220-1237

Plot No.: 131 Field: Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	270.19	0.83	269.23	0.46
X	20	271.66	0.92	269.19	0.52
X	30	271.19	0.88	264.32	0.49
X	40	272.60	0.83	262.55	0.59
X	50	274.85	0.99	261.52	0.45
X	60	276.11	0.77	262.17	0.42
X	70	273.78	0.94	260.36	0.42
C	10	264.45	0.29	264.84	0.32
C	20	266.45	0.32	264.07	0.34
C	30	269.82	0.83	263.55	0.31
C	40	273.84	0.34	262.78	0.33
C	50	277.44	0.89	261.63	0.32
C	60	279.79	0.37	260.47	0.33
C	70	277.54	0.51	256.77	0.51
L	10	267.86	1.49	265.39	0.91
L	20	269.28	1.60	261.91	1.04
L	30	268.88	1.49	257.65	1.13
L	40	269.25	1.33	254.76	1.30
L	50	268.82	1.53	253.18	1.29
L	60	265.74	1.64	251.30	1.54
L	70	254.95	1.52	248.57	1.60
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.34	13.23	12.61	12.08

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.40	27.30	25.40	24.60	25.00	23.60

Date:
9/1/81

Time:
1251-
1312

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	271.65	0.90	270.09	0.41
X	20	274.96	0.69	272.57	0.40
X	30	274.68	0.90	269.62	0.37
X	40	276.20	0.78	268.81	0.44
X	50	276.80	0.90	268.00	0.58
X	60	275.74	0.86	266.50	0.61
X	70	272.41	1.24	261.33	1.18
C	10	267.75	0.98	268.46	0.31
C	20	273.09	0.26	271.52	0.34
C	30	276.39	0.76	272.05	0.34
C	40	278.85	0.20	271.29	0.30
C	50	281.32	0.58	270.20	0.55
C	60	280.07	0.52	267.18	0.32
C	70	275.26	0.79	259.25	0.38
L	10	268.70	1.79	260.46	1.26
L	20	276.95	2.06	262.08	1.46
L	30	-	-	-	-

L	40	275.10	1.23	258.73	1.07
L	50	272.72	1.81	257.08	1.19
L	60	268.37	1.54	252.87	1.03
L	70	255.60	1.41	247.89	1.22
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.65	12.92	12.26	11.59

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.70	27.80	25.60	24.80	25.00	23.90

Date:
9/2/81

Time:
1059-
1118

Plot No.:
131

Field:
Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	268.81	0.94	268.25	0.42
X	20	269.31	0.88	267.89	0.49
X	30	269.13	1.00	263.54	0.60
X	40	270.77	0.83	261.26	0.55
X	50	272.65	0.87	261.05	0.48
X	60	272.55	0.99	259.02	0.47
X	70	268.35	0.86	252.52	0.48
C	10	268.42	0.56	268.72	0.27
C	20	269.81	0.23	267.50	0.27

C	30	273.52	0.49	267.61	0.31
C	40	276.58	0.70	267.02	0.25
C	50	279.15	0.38	264.95	0.35
C	60	279.72	0.77	262.37	0.37
C	70	276.03	0.41	257.64	0.30
L	10	272.53	1.56	271.31	0.94
L	20	273.27	2.09	265.61	1.51
L	30	273.10	1.52	263.67	1.43
L	40	270.65	1.46	260.19	1.50
L	50	270.65	1.91	257.62	1.07
L	60	267.16	1.63	255.50	1.65
L	70	255.10	1.53	251.32	0.99
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
12.28	11.35	11.42	11.21

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.50	25.50	24.30	23.60	24.80	23.40

Date:
9/2/81

Time:
1127-
1144

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
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X	10	272.14	0.46	269.84	0.41
X	20	275.73	0.92	272.98	0.50
X	30	276.06	1.02	271.68	0.48
X	40	273.95	0.93	266.25	0.58
X	50	274.15	0.62	265.23	0.56
X	60	272.85	1.11	261.46	0.41
X	70	269.25	0.74	254.78	0.55
C	10	269.38	0.40	269.72	0.35
C	20	272.78	0.69	270.82	0.31
C	30	275.87	0.62	271.37	0.41
C	40	278.28	0.26	270.37	0.32
C	50	279.48	0.66	269.01	0.35
C	60	279.11	0.74	265.78	0.33
C	70	274.36	0.62	258.15	0.38
L	10	274.02	1.28	264.71	1.29
L	20	278.94	1.35	264.53	1.21
L	30	279.34	1.67	263.26	1.62
L	40	276.28	1.82	261.73	1.11
L	50	272.94	1.79	257.41	1.29
L	60	267.51	1.82	254.12	1.51
L	70	253.97	1.57	248.42	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.85	11.50	11.32	11.27

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.70	25.80	24.30	23.50	24.50	23.30

Date:
9/3/81

Time:
1040-
1057

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	269.37	0.83	268.25	0.44
X	20	268.52	0.87	266.29	0.55
X	30	270.08	0.49	264.55	0.57
X	40	272.62	0.93	262.85	0.44
X	50	273.22	1.11	260.77	0.49
X	60	273.37	0.92	258.59	0.58
X	70	269.76	0.90	254.26	0.51
C	10	266.97	0.64	267.80	0.35
C	20	269.13	0.27	267.12	0.36
C	30	271.61	0.40	265.66	0.37
C	40	274.46	0.71	264.24	0.24
C	50	276.72	0.46	261.81	0.36
C	60	277.69	0.39	259.15	0.32
C	70	274.25	0.38	254.16	0.38
L	10	274.00	1.65	270.72	1.26
L	20	273.52	1.90	266.77	1.18
L	30	273.62	1.77	263.01	1.40
L	40	271.94	1.59	261.34	1.06
L	50	270.04	1.92	256.92	1.11
L	60	265.27	1.75	252.39	1.14
L	70	254.53	1.58	249.80	1.05
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.44	10.33	10.22	10.26

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.90	22.50	23.20	22.90	23.50	22.90

Date: 9/3/81
Time: 1105-1120

Plot No.: 131
Field: Corn (perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.46	0.92	273.94	0.55
X	20	273.20	0.84	270.03	0.42
X	30	272.49	1.04	266.90	0.43
X	40	272.91	0.87	265.56	0.53
X	50	274.64	0.87	265.38	0.43
X	60	271.70	0.93	259.96	0.45
X	70	267.70	0.85	254.87	0.49
C	10	272.82	0.24	272.91	0.31
C	20	275.17	0.89	273.23	0.33
C	30	277.46	0.71	272.74	0.30
C	40	279.41	0.25	271.88	0.37
C	50	280.20	0.38	269.81	0.31
C	60	278.95	0.28	266.07	0.31
C	70	273.29	0.28	257.62	0.29
L	10	276.91	1.93	268.73	1.07
L	20	280.19	2.06	267.50	1.08
L	30	279.41	1.58	265.61	1.44
L	40	276.27	1.93	262.08	1.32
L	50	273.44	1.75	257.50	0.90
L	60	266.78	1.46	253.39	1.11
L	70	253.17	1.81	246.24	1.25
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.44	10.70	10.60	10.37

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.40	23.30	23.30	23.00	23.80	23.10

Date:
9/11/81

Time:
1117-
1135

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	284.87	0.90	283.78	0.38
X	20	284.27	0.77	282.50	0.58
X	30	286.26	0.48	281.50	0.47
X	40	284.68	0.94	274.89	0.52
X	50	286.14	1.05	270.88	0.41
X	60	284.51	0.91	267.27	0.59
X	70	273.90	0.87	260.84	0.50
C	10	283.08	0.30	284.40	0.29
C	20	284.54	0.91	283.64	0.27
C	30	285.95	0.39	282.62	0.34
C	40	287.40	0.35	280.05	0.29
C	50	287.40	0.37	275.81	0.25
C	60	286.11	0.29	270.56	0.29
C	70	279.35	0.39	263.81	0.36
L	10	279.26	1.91	277.61	0.92
L	20	280.86	2.01	273.70	1.30
L	30	279.39	1.68	269.57	1.49
L	40	276.72	1.28	264.56	1.28
L	50	272.63	1.69	258.05	1.35
L	60	267.40	1.79	251.81	1.54
L	70	255.33	1.30	241.03	1.28

P 10
P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.21	4.77	6.98	7.68

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.60	26.30	24.30	21.70	21.50	18.90

Date:
9/14/81

Time:
1107-
1126

Plot No.:
131

Field:
Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.45	0.96	287.50	0.69
X	20	286.55	0.84	284.09	0.53
X	30	281.52	0.82	276.12	0.57
X	40	281.98	1.05	272.23	0.33
X	50	287.12	0.96	275.19	0.34
X	60	283.91	0.90	264.37	0.59
X	70	281.50	0.77	259.95	0.59
C	10	285.75	0.67	286.92	0.29
C	20	286.91	0.58	285.93	0.29
C	30	288.96	0.27	284.53	0.29
C	40	290.60	0.59	281.16	0.28
C	50	292.06	0.32	276.71	0.28
C	60	290.51	0.66	269.44	0.41

C	70	285.24	0.21	262.23	0.37
L	10	283.17	2.08	281.15	1.20
L	20	282.26	1.46	276.27	1.52
L	30	280.83	1.47	271.89	1.11
L	40	277.77	1.58	267.75	1.12
L	50	274.40	1.47	261.85	1.20
L	60	269.18	1.73	253.98	1.29
L	70	256.99	1.42	243.25	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.26	4.70	6.57	7.15

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.60	26.80	27.10	24.60	24.00	21.00

Date:
9/14/81

Time:
1136-
1153

Plot No.:
131

Field:
Corn(per
p)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	289.40	0.71	288.84	0.62
X	20	287.83	0.80	285.15	0.51
X	30	288.19	0.98	283.21	0.40
X	40	287.74	0.79	279.26	0.54

X	50	288.51	1.11	277.86	0.54
X	60	286.47	1.06	272.54	0.52
X	70	282.59	1.07	270.45	0.62
C	10	290.72	0.37	292.91	0.30
C	20	289.31	0.37	287.74	0.28
C	30	291.77	0.48	286.54	0.28
C	40	292.67	0.40	283.58	0.39
C	50	292.95	0.65	280.62	0.32
C	60	291.10	0.43	275.11	0.24
C	70	285.81	0.29	269.85	0.33
L	10	283.64	2.09	279.77	1.55
L	20	283.91	1.91	277.20	1.34
L	30	283.10	1.72	273.65	1.19
L	40	280.51	1.81	269.70	1.43
L	50	277.41	1.82	265.91	1.36
L	60	269.13	1.48	250.89	1.23
L	70	256.58	1.85	237.92	0.98
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.11	4.85	6.37	6.59

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.80	27.30	27.50	24.80	24.50	21.30

Date:
6/24/81

Time:
0900-
0925

Plot No.:

Field:

Soybean*
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.40	-	285.57	0.37
X	20	287.57	1.11	283.88	-
X	30	288.22	0.70	281.58	0.80
X	40	288.29	1.01	277.69	-
X	50	287.93	0.14	273.85	-
X	60	287.20	0.91	271.09	-
X	70	282.08	0.30	260.23	-
C	10	283.39	-	284.87	-
C	20	284.15	0.56	283.88	-
C	30	285.53	-	281.13	0.60
C	40	287.46	0.69	278.13	0.44
C	50	288.83	0.27	273.74	-
C	60	286.84	0.51	264.92	-
C	70	273.55	-	243.77	1.21
L	10	273.48	-	270.46	1.39
L	20	272.60	1.49	266.82	1.00
L	30	270.58	1.41	259.57	1.24
L	40	269.03	1.46	251.91	1.41
L	50	264.20	1.59	238.65	1.21
L	60	258.02	1.62	218.85	1.33
L	70	235.92	1.78	178.25	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.19	9.59	11.99	12.27

**Soil
Tempera
ture Data**

(C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.50	30.20	25.80	24.80	24.50	24.40

*~2" tall

Date:	Time:
6/24/81	1040-
	1105
Plot No.:	Field:
161	Soybean*
	(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	292.52	0.45	292.19	0.69
X	20	292.98	0.18	290.90	0.98
X	30	292.51	-	288.07	-
X	40	293.23	0.56	285.01	0.19
X	50	292.54	0.76	280.70	0.41
X	60	289.12	1.19	273.72	0.59
X	70	282.05	-	255.95	0.20
C	10	292.92	-	293.69	0.35
C	20	293.27	0.89	292.25	0.81
C	30	293.89	-	289.43	-
C	40	295.09	0.70	286.21	0.77
C	50	295.20	0.47	280.09	0.60
C	60	292.39	0.47	268.60	0.68
C	70	282.60	-	255.19	-
L	10	275.45	3.11	273.89	1.47
L	20	271.78	2.03	272.58	5.91
L	30	271.15	1.59	259.47	1.35
L	40	270.59	1.71	250.60	1.01
L	50	272.19	3.71	238.26	1.19
L	60	264.54	1.81	220.55	1.49
L	70	248.87	1.60	185.88	1.21
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture

**Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.11	8.82	12.35	13.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.40	36.30	30.20	28.10	28.00	26.20

*~2" tall

Date:
7/13/81

Time:
1020-
1049

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	290.03	0.29	288.09	0.85
X	20	290.20	-	284.61	0.78
X	30	292.35	0.51	280.94	0.25
X	40	293.14	1.17	273.12	-
X	50	293.50	1.00	263.70	0.58
X	60	290.47	0.98	256.06	0.47
X	70	281.62	-	243.02	0.58
C	10	283.84	0.53	283.34	0.44
C	20	284.37	-	280.15	0.37
C	30	286.49	-	276.22	0.94
C	40	289.29	-	270.68	0.20
C	50	291.90	-	263.70	-
C	60	290.20	0.14	251.16	0.43
C	70	278.69	-	227.85	-
L	10	275.36	1.43	271.74	1.44
L	20	274.70	1.59	267.07	1.32
L	30	274.57	0.97	259.46	1.52
L	40	272.64	1.28	249.88	1.54
L	50	272.12	1.27	238.54	0.95
L	60	264.94	1.72	216.29	1.06
L	70	246.75	1.33	178.52	1.03

P 10
P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
1.49	6.77	10.91	12.11

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.30	35.50	33.50	31.30	30.80	27.30

Date:
7/14/81

Time:
0907-
0931

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	273.05	0.82	268.11	0.57
X	20	277.78	1.13	268.60	-
X	30	278.73	1.07	263.36	0.65
X	40	283.23	0.64	258.69	-
X	50	286.10	0.26	252.59	0.82
X	60	288.32	-	247.25	-
X	70	280.98	-	237.56	-
C	10	273.07	0.82	271.96	-
C	20	274.78	0.58	269.78	-
C	30	277.98	-	265.96	-
C	40	281.79	-	260.15	0.63
C	50	285.77	0.71	252.94	-

C	60	286.93	0.51	245.95	0.38
C	70	276.15	0.80	223.08	0.46
L	10	271.44	1.65	267.48	0.96
L	20	273.27	1.92	264.36	1.16
L	30	272.69	1.34	257.47	1.71
L	40	274.07	2.31	248.96	0.64
L	50	271.29	2.11	235.08	1.49
L	60	265.42	1.33	213.01	0.93
L	70	247.84	1.50	176.00	1.16
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
3.24	6.86	10.00	11.30

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.30	30.40	31.60	27.90	27.70	26.30

Date:
7/21/81

Time:
0911-
0938

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	221.37	0.80	213.68	0.68
X	20	224.63	1.05	208.39	-
X	30	235.50	0.71	208.72	0.70

X	40	243.96	0.30	200.61	-
X	50	250.69	-	187.10	0.64
X	60	259.48	-	183.01	0.46
X	70	263.20	0.51	180.84	-
C	10	209.86	0.41	206.98	
C	20	211.05	0.48	200.43	-
C	30	218.34	0.61	194.73	0.67
C	40	230.06	-	188.40	-
C	50	244.92	0.91	183.04	0.45
C	60	257.87	-	176.36	0.70
C	70	263.54	-	170.87	0.25
L	10	219.76	1.34	208.61	1.13
L	20	222.24	1.72	204.65	0.80
L	30	226.73	1.86	196.49	0.88
L	40	231.93	1.19	188.74	1.19
L	50	239.14	1.37	178.30	1.22
L	60	243.28	-	157.68	-
L	70	239.07	1.68	133.82	1.32
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
17.20	14.89	12.11	15.18

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.90	32.90	30.70	29.90	28.20	25.90

Date:
7/21/81

Time:
1004-
1035

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	232.69	0.40	226.71	0.82
X	20	231.84	0.90	218.48	-
X	30	234.81	0.17	213.35	0.42
X	40	244.09	0.55	205.02	-
X	50	254.46	0.69	199.25	0.45
X	60	262.50	0.62	194.02	-
X	70	266.60	-	181.09	0.54
C	10	215.30	-	213.48	0.39
C	20	216.05	-	207.28	0.47
C	30	222.73	-	201.76	0.81
C	40	233.84	-	194.23	-
C	50	246.71	-	184.74	0.58
C	60	259.63	0.98	171.94	-
C	70	270.02	0.10	168.87	0.50
L	10	233.44	1.74	228.56	0.87
L	20	236.63	2.28	222.73	2.08
L	30	241.47	2.28	213.14	1.22
L	40	242.39	1.52	202.14	1.04
L	50	249.41	2.25	189.87	1.52
L	60	255.09	3.08	169.24	2.23
L	70	251.65	1.09	147.63	0.76
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.35	13.33	13.36	11.86

**Soil
Tempera**

**ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.30	31.70	30.60	31.00	29.40	26.70

Date: 7/22/81
 Time: 0850-0918
 Plot No.: 161
 Field: Soybean(perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	255.81	-	253.11	1.40
X	20	257.57	0.25	249.34	-
X	30	260.66	0.39	243.07	0.66
X	40	264.90	0.85	235.06	-
X	50	268.99	0.28	220.48	-
X	60	271.40	-	212.26	0.36
X	70	269.71	-	214.60	0.95
C	10	243.13	0.74	239.31	0.57
C	20	245.28	-	235.06	0.53
C	30	251.38	0.83	230.61	0.73
C	40	259.93	0.59	224.58	-
C	50	267.58	0.56	217.98	-
C	60	271.60	-	208.97	1.14
C	70	269.96	0.51	198.69	-
L	10	249.60	1.82	244.86	1.04
L	20	251.11	1.47	239.76	1.42
L	30	253.68	1.93	231.43	1.28
L	40	255.45	1.13	222.19	1.03
L	50				
L	60	258.24	1.54	187.63	1.23
L	70	245.79	1.31	163.44	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture**

**Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.88	7.77	10.45	11.57

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.10	25.50	24.50	24.30	24.30	23.80

Date:
7/22/81

Time:
1036-
1100

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	272.00	0.80	270.10	0.58
X	20	271.78	-	264.74	0.91
X	30	276.29	1.00	260.68	0.82
X	40	280.51	-	253.32	0.99
X	50	283.40	-	242.16	0.75
X	60	285.22	-	226.65	0.92
X	70	280.49	0.82	207.72	0.75
C	10	269.70	-	267.95	0.45
C	20	269.53	0.31	263.20	0.26
C	30	273.35	-	258.71	0.79
C	40	277.37	1.00	250.34	0.42
C	50	281.71	-	239.58	0.95
C	60	284.18	0.44	226.39	0.63
C	70	280.20	-	215.67	0.90
L	10	261.46	2.26	259.21	1.38
L	20	262.34	1.44	255.08	1.25
L	30	264.04	1.38	246.08	0.68
L	40	265.05	1.78	236.38	1.53
L	50	266.69	1.45	224.21	1.44
L	60	266.46	1.67	202.93	1.49
L	70	257.62	1.45	177.68	0.73
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.02	6.39	10.76	11.86

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.40	32.40	30.30	28.90	27.30	25.30

Date:
7/23/81

Time:
1132-
1154

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	289.26	0.63	287.60	0.27
X	20	290.90	-	285.65	1.00
X	30	291.98	0.10	281.80	0.97
X	40	295.04	-	275.94	0.71
X	50	295.46	-	268.19	0.77
X	60	293.75	-	256.80	-
X	70	284.00	0.65	248.70	0.70
C	10	283.27	0.52	282.87	0.48
C	20	284.71	-	281.27	0.22
C	30	287.70	-	277.86	0.87
C	40	290.33	-	272.49	0.52
C	50	292.93	0.65	265.22	0.33
C	60	291.12	-	252.19	-
C	70	279.52	-	235.92	0.54

L	10	270.26	1.71	266.19	1.05
L	20	270.71	2.08	260.98	1.25
L	30	271.91	1.68	254.89	1.42
L	40	271.36	1.80	243.82	0.83
L	50	271.93	1.35	230.97	1.05
L	60	267.72	1.55	207.16	1.35
L	70	250.98	1.71	180.19	1.41
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.10	6.20	9.32	12.52

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.20	40.90	38.10	35.10	30.30	26.80

Pate:
7/23/81

Time:
1253-
1318

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	293.44	-	295.20	0.33
X	20	294.04	0.90	291.96	-
X	30	296.22	0.96	289.23	0.75
X	40	297.85	-	282.16	1.19
X	50	298.44	0.33	271.33	0.63
X	60	298.15	0.14	256.81	0.63

X	70	288.37	0.48	234.37	1.00
C	10	291.50	0.84	292.93	0.53
C	20	291.68	-	290.34	0.24
C	30	293.51	0.60	287.47	0.96
C	40	296.30	1.11	282.68	0.66
C	50	297.15	0.52	274.61	0.80
C	60	295.15	0.30	263.26	-
C	70	285.78	0.88	249.02	0.74
L	10	276.70	1.42	273.26	1.42
L	20	274.11	1.66	265.88	1.02
L	30	275.10	1.03	261.89	3.72
L	40	277.58	3.47	259.23	3.86
L	50	274.50	1.57	238.91	1.13
L	60	272.56	1.42	217.69	0.88
L	70	259.64	1.39	190.70	1.00
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
2.31	6.97	10.03	11.80

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.20	45.80	36.60	37.00	33.50	28.60

Date:
8/3/81

Time:
1020-
1050

Plot No.:
161

Field:
Soybean*
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	286.05	0.96	286.37	0.54
X	20	285.95	0.91	284.13	0.94
X	30	286.62	-	281.52	0.48
X	40	288.38	0.38	277.89	-
X	50	288.40	0.88	272.89	0.52
X	60	287.34	-	262.62	0.60
X	70	280.81	-	246.07	-
C	10	287.16	0.61	288.72	0.74
C	20	287.76	0.86	287.27	-
C	30	289.18	0.60	284.71	0.29
C	40	291.26	-	281.01	0.24
C	50	292.21	-	274.15	-
C	60	290.33	0.64	261.18	1.02
C	70	281.07	0.43	241.11	0.82
L	10	279.82	1.90	277.67	1.28
L	20	278.80	1.97	273.21	1.41
L	30	279.96	1.32	267.23	1.69
L	40	278.83	1.64	260.91	1.31
L	50	276.50	1.39	248.53	1.04
L	60	271.14	2.08	227.63	1.36
L	70	255.94	1.53	197.03	1.01
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.66	5.29	9.30	9.98

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm.	15.0 cm
---------	---------	---------	--------	---------	---------

25.60 29.40 26.60 25.90 26.20 24.50
 *replanted
 soybean
 just
 coming
 up.

Date: 8/4/81 Time: 1020-1050
 Plot No.: 161 Field: Soybean*
 (II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	250.97	0.40	249.77	0.64
X	20	251.50	0.77	246.44	-
X	30	255.72	0.70	240.85	0.81
X	40	259.21	1.02	233.66	0.70
X	50	264.01	-	223.31	-
X	60	267.25	0.37	208.09	-
X	70	265.57	0.15	186.17	-
C	10	235.03	0.69	237.12	-
C	20	236.62	-	233.24	-
C	30	241.74	0.16	226.22	-
C	40	249.31	-	218.32	0.81
C	50	259.95	0.34	205.02	1.02
C	60	270.04	0.91	187.51	-
C	70	273.05	1.16	171.31	0.41
L	10	257.68	1.75	256.35	1.43
L	20	259.28	1.43	252.44	1.36
L	30	260.84	1.46	244.12	1.31
L	40	262.04	1.55	235.15	1.05
L	50	264.38	1.60	220.04	1.46
L	60	264.71	1.42	194.72	1.12
L	70	255.82	1.82	162.28	1.31
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.32	11.03	11.38	11.52

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.60	27.20	26.70	26.50	26.50	24.30

*Soybean
just
coming
up

Date:
8/5/81

Time:
1015-
1045

Plot No.:
161

Field:
Soybean*
(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	287.34	0.70	286.87	-
X	20	285.28	-	281.81	0.96
X	30	286.43	0.80	277.40	0.63
X	40	287.65	0.89	273.24	-
X	50	289.32	-	261.24	0.23
X	60	289.00	0.66	249.41	0.54
X	70	283.69	-	231.99	0.91
C	10	277.76	-	275.37	0.49
C	20	277.65	1.23	271.85	-
C	30	280.46	0.92	271.07	0.56
C	40	284.27	-	263.91	-
C	50	288.41	0.83	253.09	-
C	60	289.58	0.28	235.97	-
C	70	283.48	-	135.19	-
L	10	272.48	1.80	273.68	3.00

L	20	271.42	1.33	267.07	0.70
L	30	274.39	2.63	258.75	1.11
L	40	274.19	1.97	253.53	0.95
L	50	273.48	1.87	240.51	1.28
L	60	269.88	1.64	217.48	1.45
L	70	256.57	1.77	188.90	0.95
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.06	8.30	10.60	11.47

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.90	36.20	30.80	27.90	28.80	25.30

*~1 1/2"
tall

Date:
8/28/81

Time:
1111-
1130

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	287.86	0.90	285.74	0.47
X	20	288.13	1.19	283.14	0.49
X	30	289.10	0.99	279.01	0.47
X	40	290.04	0.90	274.29	0.49

X	50	291.58	0.84	269.37	0.53
X	60	287.98	1.04	259.64	0.38
X	70	279.84	0.66	251.16	0.45
C	10	284.80	0.87	285.09	0.33
C	20	286.17	0.62	283.70	0.29
C	30	287.82	0.30	279.55	0.27
C	40	289.46	0.38	274.83	0.38
C	50	290.66	0.51	268.62	0.32
C	60	288.53	0.36	259.34	0.24
C	70	280.34	0.73	250.49	0.26
L	10	275.84	1.58	272.56	1.63
L	20	278.61	2.13	270.08	1.36
L	30	278.32	1.47	265.93	1.16
L	40	277.54	1.91	257.57	0.95
L	50	275.70	1.40	244.45	1.23
L	60	269.10	1.85	223.99	1.44
L	70	256.53	1.42	206.70	1.17
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
0.86	3.65	8.38	10.56

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.60	42.00	30.40	26.80	25.50	22.30

Date:
9/1/81

Time:
1156-
1216

Plot No.:

Field:

Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	247.13	0.81	244.04	0.54
X	20	248.18	0.76	242.96	0.46
X	30	251.15	0.75	238.45	0.40
X	40	256.78	0.91	235.89	0.41
X	50	260.10	0.86	229.38	0.55
X	60	267.49	0.86	229.41	0.41
X	70	267.15	0.83	225.35	0.73
C	10	224.29	0.63	224.76	0.43
C	20	226.54	0.33	220.24	0.56
C	30	231.82	0.38	218.31	0.30
C	40	240.05	0.26	216.06	0.41
C	50	250.09	0.53	213.40	0.38
C	60	260.16	0.81	211.61	0.38
C	70	266.95	0.34	217.61	0.36
L	10	236.27	2.23	230.99	1.58
L	20	232.77	1.49	222.63	0.95
L	30	238.82	1.63	216.15	0.93
L	40	243.40	1.81	205.79	1.15
L	50	248.33	1.33	198.05	1.21
L	60	254.16	1.45	183.71	1.06
L	70	251.64	1.68	177.17	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
15.37	14.94	14.19	15.05

**Soil
Tempera
ture Data**

(C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.70	26.00	26.40	26.30	26.00	23.20

Date:
9/1/81

Time:
1322-
1343

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	238.21	0.67	234.98	0.40
X	20	247.78	0.87	239.53	0.40
X	30	251.16	0.67	237.37	0.35
X	40	258.77	0.73	238.53	0.36
X	50	266.97	0.80	247.44	0.51
X	60	269.14	0.99	246.48	0.55
X	70	269.32	0.79	246.18	0.47
C	10	227.90	0.20	223.62	0.44
C	20	227.94	0.30	218.11	0.37
C	30	235.53	0.27	217.38	0.43
C	40	247.16	0.26	217.28	0.36
C	50	258.19	0.43	216.51	0.28
C	60	265.60	0.36	220.59	0.22
C	70	267.56	0.24	225.79	0.41
L	10	241.00	2.22	233.51	1.41
L	20	239.32	1.93	217.63	1.30
L	30	-	-	-	-
L	40	248.71	1.75	210.82	1.20
L	50	257.13	1.44	203.85	1.16
L	60	254.85	1.50	187.35	1.11
L	70	250.40	1.78	176.88	1.18
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture
Data (%)

by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.56	14.07	14.00	14.78

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.00	26.00	26.30	25.90	26.00	23.40

Date: 9/2/81
Time: 1037-1056

Plot No.: 161
Field: Soybean(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	256.22	0.94	254.01	0.46
X	20	256.96	0.70	250.98	0.47
X	30	259.79	0.80	249.07	0.47
X	40	264.30	0.97	243.83	0.51
X	50	269.65	1.02	244.12	0.46
X	60	270.95	0.97	232.38	0.49
X	70	270.91	0.83	223.97	0.43
C	10	233.64	0.23	233.29	0.39
C	20	234.29	0.32	230.02	0.34
C	30	240.30	0.40	228.71	0.29
C	40	247.72	0.17	226.44	0.37
C	50	256.19	0.72	224.62	0.35
C	60	264.98	0.30	223.90	0.27
C	70	269.04	0.37	227.94	0.32
L	10	246.70	1.89	243.88	1.24
L	20	248.06	1.85	238.90	1.17
L	30	250.70	1.83	231.72	0.94
L	40	253.56	1.46	223.11	0.96
L	50	257.82	1.32	213.63	1.41
L	60	259.70	1.70	205.86	1.28
L	70	254.41	1.50	198.95	1.14
P	10				
P	20				

P 30
 P 40
 P 50
 P 60
 P 70

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
12.69	12.34	13.17	13.26

**Soil
 Tempera
 ture Data
 (C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.10	26.00	24.00	23.30	23.80	22.90

Date:
 9/2/81

Time:
 1154-
 1210

Plot No.:
 161

Field:
 Soybean(
 perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	252.20	0.82	248.05	0.98
X	20	249.42	0.91	243.63	0.60
X	30	253.82	0.85	244.45	0.40
X	40	261.07	0.74	248.70	0.34
X	50	265.40	0.87	247.93	0.40
X	60	267.10	0.80	247.40	0.59
X	70	267.00	0.96	246.10	0.47
C	10	241.96	0.23	238.70	0.28
C	20	245.31	0.36	238.10	0.30
C	30	249.44	0.85	235.03	0.38
C	40	255.58	0.29	233.77	0.31
C	50	262.17	0.27	231.82	0.38
C	60	267.83	0.36	232.76	0.35
C	70	267.85	0.37	235.65	0.32

L	10	246.37	2.06	237.73	1.30
L	20	253.77	2.24	236.37	1.14
L	30	252.69	1.63	232.97	1.20
L	40	256.38	1.57	224.24	1.14
L	50	259.18	1.28	212.00	1.06
L	60	258.42	1.57	194.73	1.22
L	70	251.18	1.41	181.14	1.03
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
12.94	13.39	13.38	13.82

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.00	25.00	24.60	24.10	25.00	23.90

Date:
9/3/81

Time:
1020-
1040

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	253.90	0.83	253.19	0.52
X	20	253.05	0.61	250.03	0.57
X	30	257.26	0.94	250.21	0.45
X	40	259.46	0.94	246.88	0.51
X	50	265.03	0.85	246.10	0.43

X	60	267.88	0.72	240.89	0.50
X	70	269.27	0.81	236.28	0.57
C	10	244.44	0.25	244.56	0.39
C	20	245.96	0.64	241.88	0.31
C	30	249.97	0.23	239.27	0.29
C	40	256.69	0.84	237.71	0.39
C	50	264.14	0.21	235.78	0.39
C	60	269.35	0.33	234.84	0.26
C	70	270.43	0.26	235.11	0.36
L	10	253.04	1.66	250.01	1.64
L	20	251.45	1.77	244.23	1.27
L	30	255.64	1.46	238.65	1.17
L	40	255.47	1.30	226.84	0.93
L	50	259.21	1.27	216.87	1.14
L	60	261.93	1.37	211.07	0.91
L	70	255.80	1.49	200.56	1.39
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
10.35	11.72	12.05	12.65

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.20	23.50	23.80	23.40	24.00	22.80

Date:
9/3/81

Time:
1130-
1150

Plot No.:
161

Field:
Soybean(

perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	249.25	0.76	245.81	0.49
X	20	256.67	0.76	251.95	0.39
X	30	257.20	0.92	245.42	0.70
X	40	261.35	0.75	242.05	0.48
X	50	266.73	1.15	240.21	0.51
X	60	268.35	0.91	249.24	0.34
X	70	266.38	0.84	247.44	0.47
C	10	250.84	0.76	247.27	0.39
C	20	252.26	0.32	245.25	0.36
C	30	258.46	0.24	247.93	0.34
C	40	263.32	0.28	245.62	0.35
C	50	268.04	0.87	243.65	0.28
C	60	270.56	0.64	241.45	0.31
C	70	268.58	0.28	241.48	0.32
L	10	254.40	1.82	248.47	1.48
L	20	257.07	1.57	244.54	1.02
L	30	259.27	1.48	237.72	1.33
L	40	260.48	1.47	230.97	1.03
L	50	264.44	2.28	221.36	1.23
L	60	260.50	1.77	203.49	1.11
L	70	252.43	1.94	187.20	1.09
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.47	11.41	12.30	12.78

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.00	25.00	24.60	24.20	24.80	23.40

Date:
9/11/81

Time:
1054-
1111

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	277.00	1.01	277.61	0.44
X	20	276.97	0.86	276.46	0.58
X	30	276.84	0.77	274.64	0.39
X	40	277.60	0.87	273.83	0.49
X	50	279.86	1.06	273.07	0.33
X	60	278.71	1.12	269.08	0.41
X	70	273.76	0.93	263.58	0.53
C	10	275.28	0.38	276.10	0.34
C	20	276.32	0.69	275.47	0.39
C	30	277.35	0.37	274.69	0.32
C	40	279.62	0.30	273.27	0.37
C	50	280.34	0.74	271.14	0.27
C	60	280.31	0.66	268.79	0.32
C	70	276.37	0.40	265.71	0.28
L	10	275.04	1.76	273.13	1.09
L	20	276.16	1.63	270.55	1.11
L	30	276.76	1.51	266.34	0.83
L	40	276.67	1.88	262.30	1.10
L	50	275.41	2.96	255.87	1.50
L	60	271.27	2.11	248.90	1.14
L	70	261.03	1.63	246.12	1.41
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture
Data (%
by Dry

Weight)

0-0.50 cm 0-2.50 cm 2.5-5.0 cm 5-10 cm

**Soil
Tempera
ture Data
(C)**

Ambient +2.5 cm 1.25 cm 2.5 cm 7.5 cm 15.0 cm

Date:
9/11/81

Time:
1142-
1159

Plot No.:
161

Field:
Soybean(
perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.34	0.84	279.14	0.45
X	20	279.62	0.90	278.72	0.53
X	30	279.99	0.82	277.20	0.51
X	40	277.45	0.83	271.15	0.46
X	50	274.87	1.03	265.91	0.41
X	60	277.77	0.53	263.39	0.87
X	70	273.00	0.91	264.40	0.52
C	10	280.31	0.67	281.50	0.31
C	20	280.37	0.54	280.50	0.32
C	30	281.96	0.33	279.24	0.39
C	40	282.92	0.53	277.93	0.28
C	50	282.92	0.87	275.34	0.26
C	60	280.13	0.71	271.20	0.33
C	70	271.85	0.54	265.28	0.30
L	10	278.31	1.90	274.97	1.34
L	20	278.49	2.39	271.63	1.44
L	30	278.12	1.78	267.18	1.43
L	40	276.63	1.90	262.25	1.43
L	50	275.59	1.40	258.08	1.12
L	60	271.67	1.60	246.93	1.41
L	70	258.10	1.53	239.95	1.18
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm 0-2.50 cm 2.5-5.0 cm 5-10 cm

**Soil
Tempera
ture Data
(C)**

Ambient +2.5 cm 1.25 cm 2.5 cm 7.5 cm 15.0 cm

Date:
9/14/81

Time:
1046-
1104

Plot No.:
161

Field:
Soybean(
||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.55	0.89	281.03	0.58
X	20	280.09	0.86	279.97	0.51
X	30	279.69	0.48	278.11	0.46
X	40	277.93	0.99	275.04	0.51
X	50	273.47	0.89	268.57	0.43
X	60	271.72	1.04	261.44	0.40
X	70	271.54	0.89	259.07	0.43
C	10	282.68	0.55	283.51	0.36
C	20	283.55	0.38	282.38	0.33
C	30	284.77	0.36	281.21	0.45
C	40	286.15	0.35	279.41	0.28
C	50	286.42	0.37	276.20	0.36
C	60	285.41	0.72	273.69	0.27
C	70	279.16	0.35	269.14	0.32
L	10	281.79	3.76	277.95	1.39
L	20	278.72	1.84	274.73	1.30
L	30	277.84	1.54	275.07	1.32
L	40	275.91	1.48	264.35	1.24
L	50	274.65	2.01	258.70	1.32

L	60	270.91	1.80	250.19	1.15
L	70	261.59	1.60	242.83	0.91
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.76	6.11	8.02	8.37

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.70	23.80	25.90	23.10	22.50	20.40

Date: 9/14/81 Time: 1157-1223

Plot No.: 161 Field: Soybean(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.32	0.95	280.24	0.41
X	20	280.32	1.02	279.39	0.48
X	30	280.19	0.52	277.97	0.39
X	40	280.08	0.92	276.49	0.47
X	50	279.80	0.89	274.73	0.49
X	60	278.71	0.91	271.58	0.46
X	70	275.56	0.84	267.54	0.51
C	10	285.91	0.55	289.45	0.31
C	20	285.01	0.68	286.45	0.35
C	30	284.34	0.75	284.03	0.32

C	40	284.69	0.58	282.85	0.36
C	50	284.15	0.29	280.97	0.32
C	60	281.20	0.28	276.63	0.34
C	70	275.03	0.33	271.16	0.28
L	10	281.35	1.80	276.26	1.06
L	20	280.89	1.58	273.54	1.17
L	30	279.56	2.03	271.12	1.42
L	40	277.65	2.07	266.66	1.72
L	50	275.57	2.10	259.80	1.40
L	60	269.76	2.34	249.95	1.32
L	70	258.57	1.75	242.00	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
1.89	5.20	7.61	8.57

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.40	27.50	28.10	24.30	24.50	21.00

Appendix
E
Radiomet
ric Data
from Test
Site No. 2

Date:
6/29/81

Time:
0914-

Plot No.: 0949
 221 Field:
 Bare
 (smooth)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	280.81	0.62	278.96	0.27
X	20	281.37	-	276.21	0.31
X	30	282.55	-	272.06	-
X	40	283.80	-	264.41	1.30
X	50	285.39	0.62	254.62	0.60
X	60	285.17	0.20	248.61	-
X	70	281.40	0.42	236.09	-
C	10	269.78	-	269.41	-
C	20	271.70	0.74	266.80	-
C	30	276.52	0.13	264.88	0.27
C	40	280.88	0.97	258.44	-
C	50	284.24	1.14	249.42	-
C	60	283.56	0.21	235.88	1.05
C	70	269.71	0.65	212.03	-
L	10	262.47	1.33	260.79	1.38
L	20	260.08	1.56	253.19	1.60
L	30	260.88	1.56	245.61	1.41
L	40	261.00	1.64	233.55	1.24
L	50	260.17	1.76	218.29	0.70
L	60	255.81	1.22	193.89	0.87
L	70	248.52	1.59	166.40	0.87
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.15	10.80	13.95	15.43

Soil

**Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.80	23.40	26.00	23.30	23.30	21.00

Date: 7/30/81

Time: 1252-1311

Plot No.: 221

Field: Bare (smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	264.09	0.54	261.95	-
X	20	266.65	-	258.69	0.16
X	30	272.08	0.39	254.57	0.16
X	40	277.25	1.09	248.93	1.00
X	50	281.22	-	236.51	-
X	60	284.83	1.13	226.29	-
X	70	278.38	0.53	205.98	0.81
C	10	262.68	0.52	260.94	0.59
C	20	263.27	-	256.06	0.58
C	30	268.08	-	250.89	0.34
C	40	274.78	-	242.82	-
C	50	281.52	0.55	229.41	-
C	60	284.50	-	211.44	0.12
C	70	274.07	0.52	186.92	0.40
L	10	256.40	1.48	250.67	1.05
L	20	256.64	1.66	244.66	1.45
L	30	258.87	1.95	238.86	1.03
L	40	259.92	1.37	227.65	0.71
L	50	261.44	1.29	211.16	1.15
L	60	261.79	1.30	187.23	0.90
L	70	245.32	1.77	154.30	1.03
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil

**Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5- 5.0cm	5-10 cm
7.10	9.75	15.37	18.22

**Soil
Tempera
ture Data
(C)**

Ambient	Surface				
28.90	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
	39.60	27.80	26.90	27.00	23.60

Date:
7/31/81

Time:
0906-
0927

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.16	0.62	265.25	0.73
X	20	271.18	-	265.21	0.98
X	30	273.14	0.35	261.25	0.86
X	40	274.06	1.01	253.35	0.42
X	50	276.64	0.68	249.08	0.46
X	60	277.44	-	235.52	0.89
X	70	269.29	1.05	215.07	-
C	10	253.98	0.85	252.97	0.83
C	20	256.92	0.53	250.77	0.52
C	30	260.92	0.45	243.86	0.64
C	40	267.19	0.79	234.14	0.46
C	50	273.76	0.95	220.89	0.12
C	60	277.49	-	202.54	1.02
C	70	268.49	0.34	174.77	0.44
L	10	252.83	1.12	246.30	1.35
L	20	256.64	0.89	244.63	1.13
L	30	256.45	1.92	237.53	1.17
L	40	257.83	1.81	225.21	1.29
L	50	258.60	2.00	211.88	1.25
L	60	255.85	1.64	187.90	1.06

L	70	240.35	1.73	151.99	0.90
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5 -10 cm
9.99	14.72	18.50	19.10

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.90	28.00	21.60	20.20	20.80	19.50

Date:
8/10/81

Time:
0913-
0935

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.05	1.06	272.80	0.50
X	20	276.75	0.58	269.71	0.39
X	30	278.64	1.07	265.39	0.28
X	40	280.42	-	257.05	0.92
X	50	282.54	0.34	245.92	0.52
X	60	283.04	0.34	228.02	0.49
X	70	275.37	0.65	216.48	0.43
C	10	269.30	0.72	268.94	1.00
C	20	270.80	-	264.91	0.91
C	30	273.96	0.36	258.75	0.98
C	40	277.71	1.06	251.04	0.20

C	50	282.17	0.41	238.03	-
C	60	282.43	-	220.47	0.73
C	70	271.76	0.43	196.57	0.56
L	10	261.29	1.65	255.48	1.30
L	20	265.22	1.90	255.82	1.26
L	30	263.90	2.23	246.12	1.57
L	40	263.71	1.87	234.84	1.24
L	50	261.96	1.55	218.39	1.18
L	60	256.62	1.85	194.58	1.29
L	70	242.45	1.62	161.63	1.01
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.47	11.38	16.09	17.08

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.60	27.30	24.60	23.30	23.80	22.60

Date:
8/11/81

Time:
0905-
0933

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.39	0.14	263.84	0.65
X	20	271.53	0.82	263.44	0.90

X	30	279.83	1.27	269.96	-
X	40	273.06	0.57	245.80	0.57
X	50	277.86	0.81	241.49	0.25
X	60	278.38	0.72	229.27	0.71
X	70	272.22	0.32	218.91	0.41
C	10	263.61	1.01	262.78	0.15
C	20	265.81	-	259.41	0.18
C	30	269.01	0.41	251.94	0.53
C	40	274.16	0.55	245.64	-
C	50	278.83	0.25	234.18	0.75
C	60	280.23	-	214.15	0.76
C	70	270.98	-	189.72	0.56
L	10	263.34	1.55	258.35	1.33
L	20	267.96	1.72	257.16	1.77
L	30	268.50	1.68	250.79	1.26
L	40	268.03	1.28	240.68	1.46
L	50	266.54	1.95	226.84	1.10
L	60	260.37	1.46	201.68	1.17
L	70	243.55	1.90	168.06	0.88
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.03	10.17	15.20	16.60

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.70	27.30	25.20	24.70	25.50	23.90

-

Date:
8/13/81

Time:
0838-

Plot No.: 0859
 221 Field:
 Bare
 (smooth)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	213.46	0.64	206.21	0.75
X	20	212.61	0.91	194.71	0.30
X	30	219.07	0.17	188.55	0.74
X	40	228.52	-	183.14	-
X	50	240.10	0.46	176.46	0.60
X	60	249.72	-	175.72	0.34
X	70	252.00	-	156.68	0.47
C	10	190.90	0.45	189.52	0.65
C	20	196.13	0.78	185.81	0.67
C	30	203.53	0.16	179.00	0.49
C	40	214.36	0.32	170.84	-
C	50	229.27	0.44	160.77	0.60
C	60	242.43	-	145.51	0.67
C	70	248.36	0.85	145.82	1.25
L	10	204.38	1.42	194.51	1.37
L	20	205.48	1.58	188.06	0.85
L	30	209.76	1.44	179.12	1.00
L	40	215.77	1.14	168.33	0.86
L	50	224.23	1.45	154.91	0.88
L	60	230.16	1.56	131.70	1.42
L	70	232.53	1.55	109.52	1.30
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

	0-2.50 cm	2.5-5.0 cm	5-10 cm
	23.98	20.01	19.82
			20.48

Soil

**Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.30	21.50	20.00	19.60	21.10	20.20

Date: 8/13/81

Time: 1342-1400

Plot No.: 221

Field: Bare (smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	230.83	1.11	225.46	-
X	20	237.00	0.51	224.98	0.66
X	30	235.37	0.64	210.86	0.63
X	40				
X	50	253.90	0.23	198.35	-
X	60	260.88	0.47	167.40	0.62
X	70	265.45	-	159.62	0.59
C	10	211.29	-	210.96	0.44
C	20	214.77	0.45	205.58	0.44
C	30	222.88	0.69	198.31	0.52
C	40	234.30	0.42	188.23	0.34
C	50	247.24	-	180.53	0.42
C	60	262.18	0.98	165.74	0.66
C	70	266.74	0.98	153.58	0.63
L	10	225.26	1.55	217.68	1.45
L	20	225.61	1.69	211.24	1.72
L	30	227.28	1.57	198.52	0.91
L	40	231.44	1.65	186.09	1.02
L	50	238.41	2.05	176.71	0.89
L	60	244.22	1.58	152.60	1.08
L	70	240.08	1.71	127.06	3.20
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil

**Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
18.88	18.03	19.24	20.48

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.80	27.50	28.90	27.60	29.50	25.00

Date:
8/14/81

Time:
0835-
0902

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	231.24	-	224.66	0.62
X	20	240.13	0.47	229.23	-
X	30	240.04	-	218.58	-
X	40	253.21	0.34	224.08	-
X	50	257.19	0.60	213.23	0.64
X	60	257.88	0.95	194.67	0.69
X	70	257.07	0.40	183.18	0.78
C	10	213.35	0.28	212.45	0.41
C	20	217.87	0.93	207.40	0.48
C	30	224.68	-	100.86	0.25
C	40	233.68	-	195.22	0.60
C	50	246.51	-	184.16	0.77
C	60	257.04	0.54	169.15	0.48
C	70	259.79	-	155.35	0.20
L	10	223.50	0.96	216.89	0.81
L	20	227.35	1.42	212.67	0.96
L	30	230.07	1.35	200.00	0.96
L	40	233.91	1.54	194.68	1.04
L	50	241.02	0.98	178.97	1.15
L	60	243.98	1.32	153.07	1.19
L	70	240.24	0.21	126.76	6.39

P 10
P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
17.03	19.00	18.54	19.27

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.30	22.30	21.30	20.60	21.90	22.10

Date:
8/14/81

Time:
1337-
1401

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T. (H)	Standard Dev. (H)
X	10	268.50	-	265.53	0.48
X	20	264.71	-	256.88	0.44
X	30	268.13	1.34	254.17	0.57
X	40	272.39	0.69	249.40	1.02
X	50	274.73	-	237.52	-
X	60	276.09	-	224.5S	0.34
X	70	272.41	-	206.77	0.69
C	10	247.06	0.71	246.22	0.39
C	20	249.91	0.40	241.69	-
C	30	255.32	0.86	235.91	1.02
C	40	263.56	-	228.13	-
C	50	273.21	0.65	217.60	0.66

C	60	280.01	0.37	202.83	-
C	70	276.14	0.29	185.83	0.34
L	10	246.37	1.47	239.21	1.36
L	20	246.90	1.67	233.69	1.30
L	30	248.83	1.72	225.76	1.14
L	40	251.07	1.82	215.38	1.47
L	50	253.22	1.92	201.06	1.47
L	60	253.38	1.82	177.58	0.68
L	70	242.54	1.85	148.00	1.20
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.84	15.37	17.49	18.86

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1. 25 cm	2.5 cm	7.5 cm	15.0 cm
31.90	34.40	33.80	31.60	30.70	29.60

Date:
8/17/81

Time:
0843-
0906

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	231.94	0.42	226.89	0.91
X	20	231.12	0.62	219.09	0.41
X	30	236.06	0.72	213.54	0.90

X	40	245.47	-	207.21	0.76
X	50	252.94	-	196.26	0.65
X	60	261.16	-	184.43	0.76
X	70	259.09	-	169.01	0.49
C	10	215.78	0.25	214.35	0.46
C	20	222.05	0.74	214.41	0.75
C	30	228.79	-	208.05	-
C	40	237.14	-	199.26	-
C	50	250.77	-	189.34	0.50
C	60	259.21	-	175.91	0.30
C	70	261.24	-	165.91	0.22
L	10	228.11	1.44	220.78	0.92
L	20	229.76	1.67	215.48	1.26
L	30	233.07	1.81	207.39	1.36
L	40	235.86	1.74	196.95	1.33
L	50	241.58	1.59	182.68	1.16
L	60	241.58	1.36	160.21	0.81
L	70	235.79	1.53	131.96	1.02
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
15.16	17.52	17.01	18.35

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
18.80	17.90	16.60	16.10	17.70	19.10

Date:
8/18/81

Time:
1022-
1051

Plot No.:
221

Field:
Bare
(smooth)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	261.42	0.62	258.42	0.42
X	20	269.13	-	263.07	0.67
X	30	269.13	0.53	253.35	0.52
X	40	272.50	-	244.36	0.34
X	50	276.64	1.08	236.13	0.67
X	60	277.93	1.03	225.08	0.14
X	70	273.58	0.83	207.28	0.81
C	10	255.78	-	256.10	1.00
C	20	264.50	0.85	259.08	-
C	30	266.69	0.44	252.60	1.15
C	40	270.25	-	243.97	0.28
C	50	273.92	0.83	233.52	-
C	60	279.04	0.97	219.99	-
C	70	270.78	0.99	202.15	0.79
L	10	249.47	1.25	243.09	0.97
L	20	252.74	1.59	241.63	1.52
L	30	253.07	1.54	232.01	1.12
L	40	253.26	2.12	221.06	1.30
L	50	253.90	2.07	206.03	1.53
L	60	251.09	1.58	181.72	1.09
L	70	236.71	1.46	150.93	1.41
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.15	14.06	15.72	18.15

**Soil
Tempera**

**ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.20	24.50	21.90	20.40	20.10	17.60

Date: 8/19/81

Time: 0851-0924

Plot No.: 221

Field: Bare (smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	253.33	0.39	250.79	0.92
C	20	256.56	0.37	250.99	0.23
C	30	260.82	0.27	240.94	0.39
C	40	265.47	0.34	236.68	0.31
C	50	271.69	0.37	225.66	0.35
C	60	273.36	0.31	207.74	0.35
C	70	263.98	0.33	183.06	0.39
L	10	252.91	2.25	249.91	1.76
L	20	255.75	1.32	242.71	1.43
L	30	254.71	1.50	233.89	1.23
L	40	254.44	2.01	221.89	1.21
L	50	256.09	2.01	207.67	1.20
L	60	251.45	1.77	182.37	1.08
L	70	240.12	5.73	151.38	1.18
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%)**

by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.98	12.30	16.01	17.32

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.10	18.90	17.90	17.60	19.00	18.00

Date: 8/20/81
Plot No.: 221
Time: 0836-
Field: Bare
(smooth)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	262.82	0.80	259.78	0.57
X	20	269.88	0.86	264.90	0.40
X	30	268.88	0.78	255.34	0.41
X	40	271.39	0.86	247.55	0.37
X	50	274.51	0.88	243.20	0.49
X	60	274.36	0.84	230.89	0.51
X	70	265.99	0.73	205.03	0.38
C	10	257.89	0.28	258.63	0.34
C	20	262.66	0.30	258.64	0.31
C	30	265.14	0.28	252.55	0.37
C	40	269.28	0.34	244.51	0.36
C	50	274.87	0.31	234.27	0.34
C	60	275.94	0.36	217.23	0.32
C	70	264.54	0.35	190.97	0.31
L	10	253.62	1.48	246.91	1.21
L	20	255.85	1.75	244.11	1.26
L	30	254.85	2.20	234.02	1.05
L	40	254.11	1.80	222.92	1.16
L	50	255.93	1.47	209.34	1.31
L	60	252.94	1.85	185.20	1.23
L	70	237.79	1.57	152.21	1.25
P	10				
P	20				
P	30				

P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.52	10.49	15.02	16.35

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.30	18.80	17.60	16.90	18.10	18.50

Date:
7/30/81

Time:
1226-
1248

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	287.19	0.92	287.46	0.49
X	20	287.77	0.36	287.66	0.78
X	30	289.02	-	287.47	0.41
X	40	289.11	0.25	285.90	0.64
X	50	289.35	1.08	284.02	-
X	60	289.38	0.83	282.35	-
X	70	287.11	1.17	277.38	0.72
C	10	276.85	0.21	280.62	0.83
C	20	282.81	0.54	284.34	0.83
C	30	284.53	0.74	283.85	1.00
C	40	285.46	0.56	281.76	-
C	50	286.39	-	279.36	1.20
C	60	287.74	0.51	276.79	-
C	70	283.11	-	268.24	0.33
L	10	267.75	1.77	266.64	1.25

L	20	269.74	1.81	265.47	1.10
L	30	269.08	1.88	260.71	1.38
L	40	266.82	1.60	254.81	1.20
L	50	264.53	1.33	248.62	1.24
L	60	259.15	1.45	240.14	1.28
L	70	245.44	1.48	215.12	1.68
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.24	11.73	14.56	20.72

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.20	39.20	31.80	27.80	27.30	23.70

Date:
7/31/81

Time:
0841-
0900

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	279.22	0.62	279.20	-
X	20	274.54	0.43	275.25	0.54
X	30	276.27	-	274.73	1.09
X	40	277.97	0.59	273.62	-
X	50	280.04	0.94	273.51	-
X	60	280.23	-	271.27	-

X	70	279.42	0.94	269.13	0.73
C	10	271.06	-	272.86	-
C	20	276.25	-	277.12	-
C	30	277.92	0.74	276.23	0.74
C	40	279.21	0.90	274.03	-
C	50	280.03	-	270.95	-
C	60	279.87	-	266.56	0.66
C	70	277.36	0.85	260.86	0.79
L	10	268.86	1.98	267.79	1.36
L	20	271.26	1.65	267.40	1.35
L	30	269.72	1.69	262.75	1.06
L	40	266.96	1.81	257.16	0.63
L	50	262.89	2.37	249.79	1.27
L	60	255.78	1.43	238.08	1.10
L	70	241.96	1.35	217.25	1.11
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
11.27	21.00	15.45	23.97

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.70	22.80	22.80	20.60	20.80	19.90

Date:
8/10/81

Time:
0815-
0840

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	283.24	0.45	281.83	0.79
X	20	284.63	0.87	283.42	0.82
X	30	285.23	0.35	282.44	-
X	40	283.97	-	275.73	0.68
X	50	284.26	1.13	273.74	-
X	60	283.43	1.05	274.32	0.98
X	70	280.74	-	266.94	0.73
C	10	278.28	0.51	279.59	0.67
C	20	280.13	0.56	279.91	0.74
C	30	281.54	0.30	279.16	-
C	40	279.22	-	274.11	-
C	50	281.15	0.23	272.00	0.99
C	60	282.62	0.92	269.75	1.04
C	70	278.60	-	259.72	0.28
L	10	274.38	1.99	272.84	1.20
L	20	273.86	1.45	269.14	1.61
L	30	272.85	2.25	265.01	1.29
L	40	268.77	1.74	257.35	1.47
L	50	265.57	1.49	252.16	1.28
L	60	260.24	1.42	244.49	1.60
L	70	245.62	1.84	220.35	1.25
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
(% by
Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
7.53	9.13	14.89	18.06

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
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27.60 23.90 23.20 22.10 23.60 22.70

Date: 8/11/81 Time: 0808-0835
 Plot No.: 223 Field: Bare (rough)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	278.41	0.10	276.65	-
X	20	278.30	0.99	274.54	-
X	30	280.14	-	275.22	0.48
X	40	280.64	0.57	274.27	0.86
X	50	279.88	0.66	269.31	0.35
X	60	278.95	0.45	266.96	-
X	70	276.51	0.80	256.40	-
C	10	268.09	0.61	271.06	-
C	20	273.56	0.70	273.90	-
C	30	275.87	0.62	273.08	-
C	40	277.23	-	271.25	0.88
C	50	278.42	0.81	269.06	-
C	60	278.64	-	262.42	-
C	70	273.77	-	249.33	-
L	10	276.07	1.50	274.18	1.19
L	20	278.44	2.05	274.82	1.88
L	30	276.99	1.70	270.34	1.40
L	40	275.08	1.90	265.91	1.19
L	50	270.78	1.89	260.37	1.07
L	60	264.06	1.65	252.58	0.97
L	70	247.94	1.70	224.60	0.89
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
 Moisture
 Data (%
 by Dry
 Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.03	10.49	15.19	18.46

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.50	24.20	22.6	23.10	24.70	23.80

Date:
8/13/81

Time:
0812-
0835

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	247.40	0.79	244.83	-
X	20	247.04	0.85	240.44	0.50
X	30	247.15	0.56	237.51	0.41
X	40	248.43	-	233.73	0.59
X	50	250.30	-	231.46	1.10
X	60	252.61	0.62	229.56	0.32
X	70	252.84	-	225.82	0.75
C	10	226.17	-	227.43	-
C	20	229.16	0.72	227.79	0.91
C	30	233.47	-	227.11	0.27
C	40	238.11	0.93	226.07	0.62
C	50	243.63	0.38	224.52	0.95
C	60	247.82	-	219.65	-
C	70	248.43	-	211.94	0.32
L	10	235.16	1.58	232.83	1.24
L	20	236.13	2.06	228.32	1.21
L	30	237.81	1.52	223.30	1.35
L	40	-	-	-	-
L	50	239.30	1.94	214.97	1.38
L	60	237.73	1.58	204.35	0.98
L	70	226.29	1.67	177.31	0.88
P	10				
P	20				
P	30				
P	40				

P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 c m	5-10 cm
24.31	23.47	22.24	21.71

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.50	20.40	19.60	19.30	20.90	20.20

-

Date:
8/13/81

Time:
1310-
1340

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	263.74	-	261.68	0.28
X	20	257.63	0.49	253.03	0.70
X	30	260.94	0.15	252.35	-
X	40	267.83	0.94	257.44	1.09
X	50	268.94	0.89	254.45	-
X	60	269.89	0.50	247.38	0.58
X	70	270.39	-	242.07	0.55
C	10	249.13	-	251.53	0.76
C	20	253.29	0.41	253.64	-
C	30	256.53	0.82	252.53	0.25
C	40	260.87	-	251.40	-
C	50	265.00	0.51	249.40	0.92
C	60	266.61	1.17	241.97	-
C	70	265.19	-	230.82	-
L	10	251.58	2.01	245.69	1.38
L	20	255.14	1.37	246.29	1.34

L	30	252.66	2.07	240.88	1.29
L	40	255.73	2.32	240.15	1.42
L	50	253.47	1.49	233.13	1.46
L	60	247.85	2.03	217.24	0.43
L	70	230.19	1.60	189.41	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-1.50 cm	2.5-5.0 cm	5-10 cm
21.99	21.00	22.22	22.10

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.90	28.10	27.20	26.20	27.40	24.20

Date:
8/14/81

Time:
0808-
0832

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (V)	Standard Dev.(H)
X	10	256.06	-	252.68	0.50
X	20	250.97	-	244.69	-
X	30	254.77	0.27	244.53	-
X	40	261.03	0.73	248.19	-
X	50	262.22	1.08	244.01	-
X	60	263.97	0.49	239.77	-
X	70	262.61	-	237.70	-

C	10	244.40	-	245.14	-
C	20	248.50	-	247.53	0.23
C	30	251.60	-	246.10	-
C	40	254.07	-	243.61	-
C	50	257.56	0.80	240.22	0.42
C	60	260.02	0.17	234.59	-
C	70	261.45	-	230.01	0.10
L	10	246.27	0.99	243.38	1.25
L	20	251.17	1.16	242.94	1.70
L	30	251.06	1.36	237.70	0.96
L	40	250.37	1.60	231.03	1.30
L	50	249.79	1.29	225.16	1.25
L	60	245.36	1.45	211.31	1.04
L	70	234.88	1.46	191.38	1.11
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.63	16.54	17.61	20.42

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	15 cm	7.5 cm	15.0 cm
31.60	35.50	31.10	28.90	29.30	28.10

Date:
8/14/81

Time:
1313-
1335

Plot No.:
223

Field:
Bare
(rough)

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	270.75	-	269.29	0.57
X	20	269.62	0.53	265.62	-
X	30	272.73	0.97	265.63	0.68
X	40	275.33	0.83	263.83	0.66
X	50	279.00	0.87	263.84	0.60
X	60	282.00	-	265.46	0.91
X	70	280.71	0.40	259.47	-
C	10	271.99	-	273.78	-
C	20	273.86	-	273.71	0.14
C	30	276.73	0.44	273.18	0.85
C	40	277.84	0.45	270.30	0.56
C	50	280.09	-	268.03	-
C	60	283.04	-	265.13	0.50
C	70	280.18	0.60	258.05	-
L	10	264.06	1.16	256.77	1.01
L	20	261.08	2.02	253.29	1.11
L	30	263.27	1.67	250.26	1.17
L	40	260.10	1.26	242.88	1.25
L	50	257.08	1.40	236.62	1.02
L	60	253.65	1.21	227.90	1.17
L	70	241.65	1.48	206.09	1.15
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
16.66	19.57	19.77	21.72

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.30	21.20	21.00	20.20	21.60	22.80

Date:
8/17/81

Time:
0808-
0841

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	252.03	-	250.68	-
X	20	249.21	0.75	245.03	0.40
X	30	250.36	-	241.42	0.94
X	40	255.90	0.29	243.31	0.46
X	50	257.19	0.55	239.66	0.48
X	60	259.27	0.62	238.82	0.35
X	70	260.39	1.03	237.97	0.45
C	10	239.85	1.00	242.98	0.82
C	20	245.24	-	243.80	0.79
C	30	249.37	0.86	243.90	-
C	40	251.45	-	241.11	0.69
C	50	254.92	0.82	238.15	0.39
C	60	257.69	-	233.28	-
C	70	257.51	-	225.95	0.46
L	10	242.67	1.57	240.78	1.43
L	20	247.74	1.90	241.30	0.80
L	30	247.64	1.65	236.62	1.17
L	40	244.70	1.74	228.69	1.03
L	50	243.66	2.55	221.97	1.05
L	60	239.56	2.18	208.69	1.40
L	70	228.76	1.69	185.44	0.99
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
(% by
dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
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14.82 16.74 16.61 21.68

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
17.80	16.00	18.10	16.30	18.30	16.40

Date: 8/18/81 Time: 0956-1020

Plot No.: 223 Field: Bare (rough)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.40	0.87	274.75	-
X	20	275.81	0.89	273.55	-
X	30	276.55	0.62	270.78	-
X	40	277.79	-	268.09	0.64
X	50	280.56	0.61	269.42	-
X	60	279.98	0.62	262.82	-
X	70	280.14	1.47	262.66	-
C	10	269.89	-	270.74	0.60
C	20	272.79	-	272.12	-
C	30	274.70	0.34	271.14	-
C	40	276.72	-	269.59	-
C	50	276.11	0.36	264.32	-
C	60	279.47	0.40	263.20	0.91
C	70	276.93	0.52	256.90	0.91
L	10	258.09	1.86	255.21	1.29
L	20	260.45	1.91	254.90	1.44
L	30	258.44	1.04	250.46	1.31
L	40	256.26	1.58	243.67	1.44
L	50	252.82	1.69	233.28	1.18
L	60	248.76	1.66	225.86	1.38
L	70	235.51	2.09	203.59	1.40
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				

P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.22	12.40	17.42	19.54

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.40	19.80	21.20	18.50	20.90	

Date:
8/19/81

Time:
0820-
0849

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dcv.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	262.69	0.53	263.87	0.45
C	20	266.20	0.29	265.87	0.32
C	30	267.72	0.33	264.46	0.32
C	40	269.72	0.26	262.66	0.32
C	50	269.28	0.25	256.66	0.31
C	60	272.10	0.28	255.17	0.24
C	70	269.24	0.22	248.26	0.38
L	10	259.48	1.83	257.23	1.38
L	20	260.82	1.76	255.02	1.31
L	30	259.71	1.77	251.03	1.30
L	40	257.76	2.39	246.04	1.11

L	50	253.85	1.79	236.01	1.11
L	60	249.46	1.71	230.73	1.27
L	70	234.33	1.26	210.33	1.09
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
7.97	15.06	18.72	19.96

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
19.50	18.00	17.10	16.80	18.40	16.80

Date:
8/20/81

Time:
0809-
0834

Plot No.:
223

Field:
Bare
(rough)

Freq.	Angle	Average A.T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	271.48	0.81	270.35	0.47
X	20	270.03	0.85	266.25	0.47
X	30	271.56	0.89	264.62	0.35
X	40	273.60	0.91	262.54	0.78
X	50	273.55	0.85	258.50	0.55
X	60	273.64	0.77	257.06	0.44
X	70	272.60	0.71	252.26	0.51
C	10	267.96	0.28	270.03	0.33
C	20	270.04	0.35	270.18	0.35

C	30	271.54	0.29	268.99	0.32
C	40	272.49	0.36	266.39	0.32
C	50	274.84	0.30	263.98	0.23
C	60	275.39	0.44	260.71	0.32
C	70	271.96	0.27	251.86	0.39
L	10	265.12	2.22	261.24	1.19
L	20	264.70	2.34	259.55	1.67
L	30	264.10	2.22	255.83	1.01
L	40	260.36	1.57	248.71	1.14
L	50	257.38	1.23	243.83	1.09
L	60	253.42	1.56	236.47	1.35
L	70	236.64	1.68	213.12	1.49
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.60	11.95	16.73	19.04

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.00	17.10	18.40	16.90	18.70	17.50

Date:
6/29/81

Time:
0823-
0907

Plot No.:
291

Field:
Wheat

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	276.56	0.93	273.95	0.31

X	20	278.12	0.74	273.89	1.15
X	30	280.45	0.59	274.33	-
X	40	281.59	1.40	274.50	0.82
X	50	280.62	-	270.56	-
X	60	278.87	0.44	268.36	-
X	70	280.31	0.30	268.50	0.71
C	10	260.54	-	259.59	-
C	20	263.50	-	257.43	-
C	30	267.26	1.01	254.31	-
C	40	272.14	0.95	251.16	-
C	50	276.11	0.43	248.13	0.70
C	60	279.47	-	248.24	0.95
C	70	279.82	-	250.26	0.50
L	10	240.10	1.89	233.85	1.21
L	20	238.93	1.20	227.92	1.04
L	30	241.35	1.20	219.74	0.79
L	40	243.05	1.79	209.36	1.41
L	50	240.22	1.61	186.45	1.15
L	60	242.90	1.78	171.76	1.37
L	70	239.77	1.98	158.67	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	14.12	15.96	16.11

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.30	21.00	19.40	18.40	19.70	19.70

Date:

Time:

6/30/81

0959-1045

Plot No.: 291

Field: Wheat

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.71	0.45	278.21	0.73
X	20	278.17	1.45	278.39	0.77
X	30	282.48	1.04	275.26	0.62
X	40	281.02	0.90	270.78	0.82
X	50	279.64	0.56	261.22	0.43
X	60	279.86	0.46	259.37	0.89
X	70	281.84	0.40	257.79	0.63
C	10	265.11	0.63	260.13	0.13
C	20	266.30	0.73	257.92	0.34
C	30	269.14	0.54	252.88	0.70
C	40	271.93	0.42	246.96	0.59
C	50	276.14	1.11	240.62	-
C	60	280.34	0.56	239.21	-
C	70	282.67	0.54	238.77	-
L	10	245.63	1.76	238.11	1.02
L	20	246.47	1.62	233.53	1.59
L	30	243.12	1.54	216.43	1.55
L	40	242.96	1.44	205.40	0.74
L	50	244.15	2.12	189.19	0.97
L	60	245.12	2.02	171.50	1.25
L	70	243.74	1.64	156.74	1.31
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	10.69	13.18	14.52

Soil

Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.00	27.00	25.80	23.10	23.70	212.40

Date: 7/2/81
 Time: 1000-
 Plot No.: 291
 Field: Wheat

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	288.09	-	286.20	0.95
X	20	288.40	0.12	286.28	-
X	30	287.49	0.72	285.54	0.59
X	40	286.15	0.20	284.71	0.69
X	50	282.60	-	280.94	1.05
X	60	279.07	0.88	278.29	1.00
X	70	271.84	-	268.25	-
C	10	279.66	-	278.71	-
C	20	280.14	-	278.32	0.76
C	30	281.80	1.05	277.87	-
C	40	281.98	0.80	277.14	-
C	50	280.14	0.73	276.41	0.71
C	60	277.61	-	276.02	0.28
C	70	271.80	-	271.57	0.85
L	10	234.78	1.73	226.84	1.41
L	20	234.79	1.72	219.33	1.12
L	30	239.20	1.68	212.97	0.78
L	40	241.99	1.96	205.65	0.95
L	50	244.00	1.34	200.26	1.20
L	60	245.41	1.21	193.49	0.93
L	70	241.62	1.76	189.90	1.40
P	10				
P	20				
p	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (%)

by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	24.02	22.63	22.91

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.90	24.20	22.50	21.80	22.50	20.70

Date:
7/7/81Time:
1320-
1345Plot No.:
291Field:
Wheat

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	277.24	-	272.06	0.65
X	20	279.51	0.77	273.26	-
X	30	280.96	-	270.88	1.12
X	40	282.60	0.46	269.33	0.44
X	50	283.61	0.62	269.28	0.52
X	60	283.72	0.89	270.97	0.62
X	70	281.78	0.10	267.88	-
C	10	262.56	0.52	259.36	0.36
C	20	263.95	-	258.09	0.56
C	30	267.31	0.45	254.72	-
C	40	271.45	-	251.07	0.48
C	50	276.47	0.73	247.62	-
C	60	281.02	-	245.97	0.54
C	70	281.46	-	245.90	0.49
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10				
P	20				
P	30				

P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	18.03	19.66	17.74

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.20	28.80	29.60	26.20	25.80	22.60

Date: 7/30/81
Plot No.: 291
Time: - 1345
Field: Wheat
(cut down)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	269.64	0.87	266.95	0.70
X	20	271.31	0.50	265.46	-
X	30	272.74	0.71	262.07	1.03
X	40	274.88	-	259.98	0.55
X	50	277.07	-	258.76	0.67
X	60	278.73	0.97	258.91	0.28
X	70	276.19	0.84	257.21	0.80
C	10	255.29	0.52	253.60	0.96
C	20	257.50	0.64	251.20	-
C	30	259.65	-	24,719	1.15
C	40	264.94	-	243.84	-
C	50	271.49	0.78	242.12	0.51
C	60	276.03	-	239.13	-
C	70	273.77	0.52	234.28	0.58
L	10	227.38	1.11	215.22	1.44
L	20	230.16	1.53	210.98	1.13

L	30	230.36	1.72	201.22	1.24
L	40	233.38	1.58	191.46	1.22
L	50	235.34	1.46	179.98	1.31
L	60	236.70	1.07	156.18	1.22
L	70	232.90	1.78	128.75	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	15.43	16.21	18.84

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.90	31.10	29.90	27.60	27.90	24.40

Date:
7/31/81

Time:
0815-
0840

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	279.59	0.98	279.05	-
X	20	279.80	0.52	278.30	-
X	30	279.57	0.85	276.33	-
X	40	279.23	0.48	274.22	0.79
X	50	279.20	-	273.52	0.69
X	60	277.56	0.63	269.02	1.10
X	70	273.94	-	262.81	-
C	10	274.85	-	272.04	0.12

C	20	275.25	0.29	271.18	0.20
C	30	276.26	0.41	270.62	-
C	40	277.89	0.77	270.06	-
C	50	279.19	-	269.76	-
C	60	279.38	0.93	266.41	0.15
C	70	273.74	0.10	258.82	-
L	10	242.57	0.89	234.05	0.81
L	20	238.62	1.61	221.28	0.76
L	30	239.59	1.71	214.19	1.55
L	40	240.33	1.75	205.60	0.63
L	50	241.46	1.36	199.01	1.00
L	60	237.69	1.60	172.90	1.42
L	70	226.18	2.23	146.02	1.37
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (5
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	18.76	18.46	18.41

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.80	22.40	20.30	19.70	21.00	20.10

*Wheat
was cut

Date:
8/10/81

Time:
0843-
0905

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	285.12	-	283.37	-
X	20	284.57	-	282.47	-
X	30	284.60	0.64	281.86	0.84
X	40	283.87	-	280.27	0.27
X	50	282.40	0.47	277.42	1.19
X	60	279.76	0.66	273.86	0.39
X	70	276.59	-	269.30	1.19
C	10	274.58	1.04	273.12	0.47
C	20	275.14	-	271.63	0.32
C	30	276.25	-	269.92	-
C	40	278.07	-	268.32	0.32
C	50	279.85	0.44	265.71	-
C	60	281.13	-	263.79	0.19
C	70	278.32	-	260.50	0.52
L	10	246.09	1.45	237.83	1.41
L	20	245.21	1.59	231.74	1.33
L	30	245.88	1.63	225.74	1.01
L	40	245.43	1.92	217.74	0.94
L	50	244.46	1.55	206.28	1.53
L	60	240.93	1.22	185.17	1.20
L	70	229.17	1.43	155.30	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	13.17	15.53	15.31

**Soil
Tempera
ture Data
(C)**

Arnbient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.00	26.40	24.90	22.90	24.40	23.30

* Wheat
was cut
and
removed.
Only
grass
remained
.

Date: 8/11/81
Time: 0838-0900
Plot No.: 291
Field: Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	277.02	-	277.58	0.53
X	20	278.13	0.55	276.96	0.24
X	30	280.25	1.11	276.91	0.76
X	40	280.75	0.51	274.85	-
X	50	280.58	1.26	272.28	0.86
X	60	278.84	0.80	268.82	-
X	70	275.57	0.79	264.25	-
C	10	280.02	0.10	278.53	-
C	0	280.06	0.44	277.34	0.81
C	30	282.34	0.33	278.51	0.29
C	40	283.47	0.98	276.27	0.60
C	50	284.57	0.49	275.50	0.25
C	60	284.44	0.85	273.46	0.48
C	70	279.52	0.78	267.52	-
L	10	263.66	1.91	252.03	1.27
L	20	267.09	1.74	251.53	1.35
L	30	265.75	1.62	246.88	1.22
L	40	262.21	1.56	236.59	0.98
L	50	258.47	1.22	228.41	0.61
L	60	251.88	1.60	213.09	1.60
L	70	235.36	1.63	182.38	1.00
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	15.26	15.64	16.37

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.40	25.30	23.80	23.50	24.80	23.50

Grass
cover
only

Date:
8/13/81

Time:
0900-
0928

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.07	-	271.82	-
X	20	274.28	0.75	271.35	-
X	30	276.34	-	272.61	-
X	40	275.73	0.92	269.69	-
X	50	275.29	-	268.05	-
X	60	271.80	0.59	263.68	-
X	70	270.30	-	259.08	-
C	10	272.62	-	272.87	0.49
C	20	273.14	0.70	271.95	-
C	30	274.84	-	271.23	0.68
C	40	275.67	0.80	269.79	-
C	50	277.53	0.35	268.97	-
C	60	277.35	0.76	268.38	0.39
C	70	275.20	0.99	264.65	0.35
L	10	249.98	1.37	234.88	1.14
L	20	249.55	1.40	231.61	1.14
L	30	248.58	1.81	227.27	1.12

L	40	246.10	1.52	220.43	1.25
L	50	243.06	1.37	213.03	1.07
L	60	237.25	1.75	198.56	1.15
L	70	225.29	1.34	170.37	1.04
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-12.50 cm	2.5-5.0 cm	5-10 cm
	19.87	19.95	20.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.00	21.70	21.50	21.3	22.30	20.9

*Grass
cover
only

Date:
8/14/81

Time:
0904-
0940

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	276.27	-	273.75	-
X	20	275.38	0.96	272.60	0.36
X	30	277.82	0.83	274.39	0.61
X	40	277.31	-	271.50	0.39
X	50	275.80	0.43	268.07	-
X	60	274.84	0.96	265.34	0.72

X	70	271.25	0.52	259.80	-
C	10	271.55	0.27	270.68	-
C	20	272.48	0.57	270.26	-
C	30	273.55	0.31	268.89	0.78
C	40	275.11	0.31	267.71	-
C	50	277.45	-	267.83	-
C	60	278.63	0.10	266.19	0.96
C	70	276.25	0.58	263.08	-
L	10	245.65	1.97	233.03	1.30
L	20	249.63	1.79	237.37	157
L	30	250.74	1.25	230.81	1.25
L	40	249.19	1.42	224.80	1.37
L	50	247.76	1.38	219.82	0.91
L	60	240.91	1.48	201.96	1.52
L	70	226.33	1.45	175.14	1.16
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data
(%by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	19.90	21.04	20.32

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.70	22.00	21.70	21.20	22.40	22.10

*Grass
cover
only

Date:
8/17/81

Time:
0915-
0940

Plot No.:

Field:

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	274.84	-	273.63	-
X	20	274.92		273.75	0.16
X	30	272.94	-	271.27	0.70
X	40	272.54	0.85	169.23	0.73
X	50	273.00	0.97	267.91	0.35
X	60	270.36	-	265.31	0.79
X	70	268.50	0.99	262.35	-
C	10	264.92	0.82	264.79	-
C	20	267.73	0.65	266.03	1.03
C	30	269.50	-	265.51	-
C	40	271.11	0.62	264.11	-
C	50	272.44	-	261.22	-
C	60	274.93	-	263.42	0.50
C	70	276.36	0.58	263.85	0.99
L	10	241.37	1.72	232.06	1.01
L	10	244.24	1.87	234.71	1.31
L	30	246.45	1.37	233.60	1.13
L	40	245.52	1.81	226.50	1.35
L	50	241.95	1.65	213.02	1.24
L	60	237.85	1.41	204.90	1.09
L	70	223.27	1.83	183.74	1.25
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	17.71	17.93	18.61

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
19.20	16.70	16.90	17.40	20.10	19.80

*Grass
cover
only

Date:	Time:
8/18/81	1050-
	1120
Plot No.:	Field:
291	Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	282.28	-	283.55	0.66
X	20	281.68	0.65	281.55	0.68
X	30	281.19	0.67	280.76	0.80
X	40	278.80	0.23	274.91	0.63
X	50	278.90	-	276.51	0.68
X	60	276.99	0.50	273.79	-
X	70	271.87	1.06	268.27	-
C	10	270.16	0.75	271.29	0.24
C	20	269.53	-	268.75	-
C	30	270.99	0.67	267.79	0.64
C	40	272.21	0.87	264.02	0.65
C	50	279.06	-	269.43	0.62
C	60	280.45	-	270.29	0.82
C	70	278.55	-	267.18	0.90
L	10	252.11	1.19	248.17	0.95
L	20	250.04	1.32	241.77	0.94
L	30	249.88	1.73	236.88	0.71
L	40	247.40	1.77	227.21	1.47
L	50	248.89	1.51	227.66	1.02
L	60	244.23	1.42	216.55	1.16
L	70	230.17	1.78	194.16	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
Moisture

**Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	13.35	16.27	17.17

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.50	21.50	25.30	22.60	21.60	19.60

*Grass
cover
only

Date:
8/19/81

Time:
0910-
0930

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	274.45	0.33	274.42	0.33
C	20	275.64	0.34	273.72	0.38
C	30	275.91	0.31	273.22	0.35
C	40	276.45	0.31	271.77	0.25
C	50	277.59	0.29	272.06	0.23
C	60	277.87	0.37	271.94	0.28
C	70	274.73	0.34	265.90	0.32
L	10	259.01	1.31	250.28	1.47
L	20	259.55	1.85	249.64	1.26
L	30	258.97	1.54	246.39	1.17
L	40	255.89	1.91	241.30	1.27
L	50	253.88	1.51	238.99	1.44
L	60	246.71	2.25	231.29	1.20

L	70	228.82	1.61	200.58	1.15
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	11.83	14.63	16.41

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.00	18.90	19.20	18.70	20.00	18.50

*Grass
cover
only

Date:
8/20/81

Time:
0907-
0932

Plot No.:
291

Field:
Wheat*

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	277.36	0.93	276.97	0.46
X	20	277.50	0.84	276.87	0.56
X	30	277.19	0.86	276.05	0.55
X	40	275.38	0.90	273.09	0.54
X	50	274.59	0.82	270.55	0.49
X	60	272.78	0.77	267.88	0.52
X	70	269.75	0.77	263.81	0.58
C	10	271.21	0.26	271.58	0.30
C	20	273.07	0.26	271.40	0.33

C	30	274.12	0.40	271.00	0.30
C	40	275.28	0.29	269.69	0.31
C	50	277.72	0.25	269.79	0.34
C	60	278.37	0.38	270.06	0.32
C	70	275.30	0.29	267.18	0.37
L	10	255.36	1.95	248.10	1.29
L	20	258.04	1.79	248.31	1.23
L	30	257.50	1.35	244.17	1.23
L	40	256.60	2.18	239.39	1.69
L	50	254.11	1.22	239.72	1.52
L	60	247.65	1.50	221.03	1.00
L	70	231.64	1.54	205.49	1.09
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
	11.51	14.44	15.40

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
21.80	18.10	19.60	18.10	19.20	18.70

*Grass
cover
only

Date:
6/29/81

Time:
1127-
1155

Plot No.:
231

Field:
Corn

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	292.90	0.78	293.27	-
X	20	293.03	0.94	290.22	-
X	30	293.56	-	286.00	-
X	40	295.12	1.05	280.09	0.74
X	50	295.42	-	271.91	0.89
X	60	292.27	0.16	258.06	-
X	70	282.14	-	240.09	-
C	10	286.51	-	288.15	0.68
C	20	287.78	0.72	285.39	-
C	30	289.62	0.86	281.10	-
C	40	292.06	-	275.05	-
C	50	293.48	-	266.09	0.35
C	60	290.73	-	250.37	0.71
C	70	278.23	0.90	131.17	0.44
L	10	266.47	2.12	264.24	1.51
L	20	265.72	1.86	257.38	0.67
L	30	266.85	1.66	248.48	1.37
L	40	266.76	1.43	236.76	0.95
L	50	266.49	1.75	222.57	1.54
L	60	261.45	1.76	190.03	0.90
L	70	247.62	1.37	166.75	1.14
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.64	9.17	14.83	15.66

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1. 2 5 cm	2.5 cm	7.5 cm	15.0 cm
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29.70 40.30 32.80 31.20 29.90 25.80

Date: 6/29/81 Time: 1345-1414
 Plot No.: 231 Field: Corn (perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	288.58	0.42	287.31	1.01
X	20	293.23	1.12	288.47	0.79
X	30	293.12	0.25	284.91	-
X	40	293.41	0.86	279.07	0.48
X	50	293.79	1.04	270.12	0.51
X	60	291.14	-	259.79	0.58
X	70	284.10	0.80	250.86	0.32
C	10	291.49	-	292.20	0.66
C	20	293.31	0.44	290.92	0.18
C	30	294.46	-	288.33	-
C	40	295.98	-	284.19	-
C	50	297.83	0.79	278.97	0.43
C	60	296.24	-	270.06	0.63
C	70	287.94	-	255.34	-
L	10	271.00	1.43	267.70	1.51
L	20	272.81	1.53	267.13	0.85
L	30	271.77	1.29	260.00	1.07
L	40	270.05	1.85	250.52	1.17
L	50	267.84	1.74	236.85	0.91
L	60	261.74	2.05	215.21	1.38
L	70	249.58	1.79	184.71	0.98
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
3.93	8.90	12.57	14.95

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.80	34.00	37.80	35.50	34.60	30.00

Date: 6/30/181
Time: 0854-0919
Plot No.: 231
Field: Corn (perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	276.82	-	274.75	1.08
X	20	275.87	1.17	270.62	-
X	30	277.73	0.85	267.02	0.57
X	40	281.04	0.70	263.29	0.92
X	50	282.86	0.54	259.33	-
X	60	282.99	0.54	255.55	0.44
X	70	277.68	0.62	247.33	0.93
C	10	273.56	0.41	272.58	0.76
C	20	274.60	0.47	270.49	0.62
C	30	277.21	0.43	268.18	-
C	40	280.92	0.69	264.77	0.57
C	50	284.06	0.44	259.35	0.41
C	60	284.84	0.40	250.78	-
C	70	278.39	-	239.04	0.17
L	10	268.97	1.21	265.14	1.57
L	20	267.14	1.63	259.18	1.16
L	30	268.10	1.45	252.34	1.08
L	40	266.37	1.98	242.90	0.95
L	50	264.27	2.00	228.63	1.35
L	60	259.56	1.66	207.55	1.24
L	70	248.32	1.72	175.99	1.07
P	10				
P	20				
P	30				
P	40				

P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.10	9.84	13.41	15.36

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.00	25.40	24.20	23.00	24.10	23.60

Date:
7/2/81

Time:
0854-
0921

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	226.93	0.24	219.92	0.68
X	20	227.05	-	213.08	0.56
X	30	232.75	1.11	209.62	0.71
X	40	241.27	0.61	209.17	1.18
X	50	249.50	-	204.81	0.31
X	60	256.71	0.53	199.12	-
X	70	259.33	-	200.09	0.56
C	10	217.94	-	214.86	0.22
C	20	218.94	0.41	211.66	-
C	30	224.49	-	207.68	0.53
C	40	230.95	-	203.24	0.51
C	50	241.29	1.08	197.53	0.33
C	60	250.77	-	195.06	-
C	70	255.56	-	194.47	-
L	10	220.94	1.68	213.47	1.21
L	20	222.93	1.80	206.71	0.93

L	30	225.88	1.77	196.43	1.04
L	40	229.41	1.24	186.42	1.25
L	50	232.42	1.62	171.91	1.43
L	60	237.09	1.45	158.70	1.14
L	70	235.64	1.27	134.24	1.13
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
20.89	19.35	19.25	18.07

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.70	25.30	22.70	22.50	23.70	21.80

Date:
7/6/81

Time:
1330-
1405

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	238.35	0.88	232.56	0.87
X	20	245.57	0.39	235.57	-
X	30	249.89	0.64	236.01	-
X	40	254.93	0.47	233.63	0.71
X	50	258.80	0.72	232.11	0.65
X	60	262.61	-	235.03	0.44
X	70	262.92	0.87	235.40	-

C	10	228.70	0.31	226.68	0.25
C	20	232.85	-	226.24	0.60
C	30	239.48	0.71	224.22	-
C	40	247.17	-	222.89	-
C	50	256.23	0.92	222.64	0.68
C	60	264.99	0.79	224.92	0.39
C	70	267.95	-	227.26	-
L	10	224.60	1.69	218.81	1.33
L	20	226.43	1.72	214.42	1.25
L	30	233.74	2.21	204.42	1.08
L	40	235.20	1.48	196.63	1.19
L	50	240.58	1.07	188.94	1.03
L	60	247.78	2.27	176.73	1.21
L	70	243.17	1.65	162.44	1.14
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
21.37	21.24	21.47	21.43

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.10	31.90	29.30	27.70	28.80	25.60

Date:
7/7/81

Time:
1420-
1445

Plot No.:
231

Field:
Corn(II)

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	249.45	0.16	244.13	0.80
X	20	252.83	-	243.20	0.51
X	30	260.33	-	240.63	0.27
X	40	267.30	0.72	233.82	0.59
X	50	274.02	0.88	228.18	-
X	60	278.38	0.57	220.22	-
X	70	278.74	-	214.03	0.19
C	10	252.57	0.21	251.78	0.80
C	20	254.09	0.48	249.58	0.84
C	30	259.94	0.66	246.73	0.52
C	40	266.66	0.99	243.62	0.64
C	50	273.10	0.42	237.78	0.74
C	60	278.19	0.61	234.15	0.81
C	70	277.12	-	231.66	-
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.25	12.36	16.02	16.99

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.60	38.50	0.31	31.10	32.40	29.60

Date: 7/8/81
 Time: 1215-1244
 Plot No.: 231
 Field: Corn (II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.50	0.48	271.90	0.88
X	20	278.72	0.85	275.07	0.98
X	30	278.42	-	272.76	-
X	40	281.50	0.47	270.28	1.09
X	50	280.59	1.11	264.69	0.89
X	60	280.62	0.82	263.44	-
X	70	276.62	-	259.27	0.47
C	10	269.44	-	268.08	-
C	20	272.97	0.39	268.14	-
C	30	276.35	0.30	267.45	-
C	40	280.35	0.54	266.16	0.83
C	50	283.51	0.53	263.32	0.38
C	60	284.87	-	259.85	-
C	70	282.60	-	257.55	-
L	10	264.47	1.65	257.25	1.23
L	20	260.40	1.80	250.93	1.38
L	30	267.45	-	245.00	-
L	40	263.74	1.51	237.13	0.89
L	50	263.94	1.81	227.51	1.56
L	60	263.16	-	214.16	-
L	70	256.16	1.74	203.09	1.23
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.75	12.97	14.27	14.33

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.20	37.00	32.50	31.70	29.60	26.40

Date: 7/8/81

Time: 1258-1321

Plot No.: 231

Field: Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	259.86	0.60	256.20	-
X	20	260.47	0.80	250.91	0.99
X	30	267.99	0.23	250.93	0.65
X	40	275.55	0.88	248.74	-
X	50	280.11	0.71	248.00	0.49
X	60	282.70	0.65	241.66	0.61
X	70	274.88	-	239.06	0.94
C	10	265.15	0.84	265.26	-
C	20	266.82	0.93	263.26	-
C	30	270.82	0.85	261.23	0.26
C	40	275.68	-	257.92	0.66
C	50	280.33	0.31	253.65	0.93
C	60	281.72	-	248.07	-
C	70	277.79	-	244.15	-
L	10	262.03	0.94	258.01	1.37
L	20	258.47	1.46	251.09	2.18
L	30	260.82	1.44	243.76	1.09
L	40	262.62	1.40	236.62	0.89
L	50	265.52	2.01	228.61	1.09
L	60	264.83	2.05	216.46	0.98
L	70	253.52	1.79	210.43	1.22
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.75	12.97	14.27	14.33

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.20	37.00	32.50	31.70	29.60	26.40

Date:
7/30/81

Time:
0859-
0930

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	266.20	0.93	266.29	-
X	20	270.79	0.40	269.76	-
X	30	269.77	-	267.52	0.78
X	40	270.48	0.91	266.20	-
X	50	269.73	-	264.10	0.71
X	60	266.50	1.01	260.15	0.68
X	70	261.54	1.11	252.91	0.69
C	10	264.91	0.67	266.10	0.55
C	20	267.73	0.10	268.84	-
C	30	269.64	0.69	269.40	-
C	40	271.34	-	268.56	-
C	50	272.79	-	268.30	0.27
C	60	271.32	0.97	265.10	0.55
C	70	265.95	-	258.51	0.63
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				

L 70
 P 10
 P 20
 P 30
 P 40
 P 50
 P 60
 P 70

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
15.66	16.95	16.76	16.70

**Soil
 Tempera
 ture Data
 (C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.50	21.70	19.70	19.80	20.50	19.70

Date:
 7/30/81

Time:
 1010-
 1041

Plot No.:
 231

Field:
 Corn(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	266.14	0.66	266.92	-
X	20	269.50	0.10	267.80	1.21
X	30	272.38	-	269.64	-
X	40	271.57	0.88	265.82	0.24
X	50	274.15	1.13	266.65	0.55
X	60	269.37	1.28	261.43	-
X	70	264.70	0.63	253.56	1.07
C	10	270.55	-	271.53	0.76
C	20	271.67	0.54	271.30	0.23
C	30	273.33	-	270.78	-
C	40	275.38	0.48	269.76	-
C	50	275.79	-	268.24	0.43

C	60	274.30	0.94	265.10	0.23
C	70	269.11	-	258.37	-
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.38	15.11	14.45	15.49

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.20	26.40	21.40	21.10	21.00	19.80

Date:
7/30/81

Time:
1430-
1455

Plot No.:
231

Field:
Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.88	-	259.98	0.55
X	20	272.74	0.71	262.07	1.03
X	30	271.31	0.50	265.46	-
X	40	269.64	0.87	266.95	0.70

X	50	277.25	1.09	248.93	1.00
X	60	281.22	-	236.51	-
X	70	-	-	-	-
C	10	276.98	-	278.69	0.72
C	20	277.32	-	277.26	0.46
C	30	279.04	0.61	277.10	0.78
C	40	280.84	0.70	276.35	-
C	50	281.48	-	274.25	-
C	60	279.22	-	270.48	-
C	70	-	-	-	-
L	10	277.37	1.27	275.14	1.42
L	20	275.53	1.89	268.31	1.20
L	30	276.34	1.83	264.54	1.27
L	40	275.69	1.71	264.23	1.46
L	50	275.27	1.68	260.68	1.37
L	60	270.00	1.53	259.77	1.22
L	70	-	-	-	-
P	10	-	-	-	-
P	20	-	-	-	-
P	30	-	-	-	-
P	40	-	-	-	-
P	50	-	-	-	-
P	60	-	-	-	-
P	70	-	-	-	-

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.48	11.83	13.50	14.49

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.30	30.90	32.80	29.80	29.00	25.10

Date:
7/30/81

Time:
1457-
1522

Plot No.:

Field:

Corn
(perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	278.25	-	279.08	0.83
C	20	279.15	-	279.25	-
C	30	280.80	-	279.38	0.59
C	40	282.49	-	279.06	-
C	50	281.63	0.85	276.61	0.36
C	60	279.33	0.71	272.74	0.48
C	70	274.85	0.54	266.00	-
L	10	278.99	1.35	272.85	1.68
L	20	280.04	1.66	268.79	1.37
L	30	279.70	2.21	265.64	1.39
L	40	275.79	1.58	261.17	1.08
L	50	271.57	1.16	257.39	1.32
L	60	266.67	1.62	253.72	1.18
L	70	258.21	1.55	252.01	1.28
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.56	9.74	10.57	13.35

**Soil
Tempera
ture Data**

(C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.00	25.50	27.50	25.40	26.00	24.20

Date: 7/31 /81

Time: 1015-1040

Plot No.: 231

Field: Corn (II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.80	-	274.02	0.49
X	20	270.96	0.59	269.88	1.06
X	30	273.45	0.83	269.70	0.78
X	40	273.45	0.61	267.99	-
X	50	273.19	0.24	265.82	0.30
X	60	271.94	-	263.09	-
X	70	267.63	0.71	258.04	-
C	10	277.40	-	277.36	-
C	20	278.07	0.94	276.49	-
C	30	278.92	0.39	275.82	0.30
C	40	280.46	0.25	274.80	0.10
C	50	280.59	0.82	273.13	-
C	60	278.94	0.72	269.16	0.58
C	70	272.50	0.39	261.84	0.85
L	10	273.20	1.62	271.21	1.82
L	20	271.86	1.23	262.78	1.58
L	30	273.00	0.90	260.72	1.16
L	40	273.44	1.78	258.87	0.61
L	50	271.77	1.04	256.92	1.08
L	60	266.81	2.18	255.28	1.33
L	70	257.63	1.46	256.42	1.18
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture Data (% by Dry

Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.02	10.30	11.21	12.37

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	1.5 cm	7.5 cm	15.0 cm
27.10	23.60	23.80	21.60	22.10	20.90

Date:
7/31/81Time:
1046-
1100Plot No.:
231Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	276.47	0.88	276.74	0.62
X	20	277.04	-	276.73	0.84
X	30	276.93	0.40	274.09	0.38
X	40	273.95	-	269.69	-
X	50	271.64	0.44	265.51	-
X	60	268.31	1.17	261.64	0.63
X	70	261.22	0.56	250.77	0.82
C	10	276.97	1.00	278.34	-
C	20	279.47	-	279.74	0.38
C	30	281.20	-	280.05	0.96
C	40	282.07	0.35	278.73	0.63
C	50	281.95	0.81	276.35	-
C	60	279.35	0.79	272.68	0.33
C	70	274.67	-	265.72	0.75
L	10	273.20	1.97	266.63	1.74
L	20	277.49	1.78	268.33	1.14
L	30	277.71	1.91	265.90	1.32
L	40	274.71	1.55	261.76	1.40
L	50	271.04	1.30	256.93	1.71
L	60	265.55	1.68	253.86	1.30
L	70	257.38	1.23	249.89	0.79
P	10				
P	20				
P	30				

P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.27	8.70	10.30	10.60

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.20	26.10	27.10	26.30	25.80	22.10

Date:
8/10/81

Time:
1015-
1038

Plot No.:
231

Field:
Corn (||)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	277.40	0.36	275.19	0.87
X	20	279.99	-	276.31	1.10
X	30	280.88	0.60	275.72	-
X	40	280.90	0.35	275.31	0.23
X	50	281.24	0.56	272.54	-
X	60	278.71	1.09	269.97	-
X	70	274.19	0.38	264.47	1.02
C	10	282.98	-	283.28	0.88
C	20	283.44	0.66	282.84	0.67
C	30	284.53	0.74	281.68	-
C	40	285.97	0.59	279.73	-
C	50	286.63	-	278.00	-
C	60	284.76	0.92	273.15	0.94
C	70	278.99	-	266.29	0.50
L	10	278.10	4.72	274.75	1.05
L	20	277.32	1.97	270.48	1.40

L	30	277.76	1.69	268.37	1.55
L	40	276.96	1.64	264.58	1.10
L	50	275.04	1.53	262.83	1.28
L	60	272.01	2.11	261.34	1.27
L	70	261.78	1.63	259.64	1.18
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
4.86	8.15	11.03	10.64

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 ern	2.5 cm	7.5 cm	15.0 cm
30.60	27.70	25.70	24.20	24.50	23.50

Date:
8/10/81

Time:
1150-
1220

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	288.41	-	287.72	-
X	20	288.51	0.92	286.15	1.01
X	30	288.62	0.85	284.45	0.95
X	40	287.29	0.45	281.67	0.95
X	50	285.02	-	278.47	0.50
X	60	282.91	1.20	273.95	-
X	70	277.32	0.95	264.40	-

C	10	284.64	0.82	285.52	1.20
C	20	285.13	0.89	284.31	-
C	30	286.17	-	283.66	0.45
C	40	287.01	1.06	282.98	-
C	50	287.36	-	280.82	-
C	60	285.28	-	275.94	0.76
C	70	279.69	-	269.61	-
L	10	280.93	1.76	275.79	1.50
L	20	281.39	1.67	273.68	0.50
L	30	281.71	1.57	271.12	1.07
L	40	277.90	1.45	267.22	1.30
L	50	273.89	1.39	263.76	1.23
L	60	268.43	1.70	259.60	1.41
L	70	259.49	1.52	253.97	1.07
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
5.37	8.09	10.19	12.84

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.90	34.90	31.60	28.20	28.20	24.80

Date:
8/11/81

Time:
1035-
1100

Plot No.:
231

Field:
Corn (||)

Average Standard Average Standard

Freq.	Angle	A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	283.17	-	280.99	-
X	20	281.46	0.91	277.36	0.54
X	30	286.05	0.74	279.97	0.54
X	40	286.63	0.83	277.60	0.81
X	50	285.59	0.56	275.61	-
X	60	282.88	1.06	273.17	0.33
X	70	279.37	0.21	268.67	0.48
C	10	282.60	0.53	284.94	0.75
C	20	285.33	0.46	284.94	0.32
C	30	286.53	-	284.08	0.98
C	40	287.58	0.31	282.25	0.12
C	50	288.52	-	280.05	-
C	60	286.85	0.19	276.28	0.89
C	70	280.44	-	268.58	0.96
L	10	278.28	1.30	275.15	1.20
L	20	278.91	1.75	272.35	1.19
L	30	280.01	1.41	269.37	1.40
L	40	277.37	1.28	266.31	1.58
L	50	276.74	1.87	264.95	0.94
L	60	270.65	1.72	261.75	1.59
L	70	258.56	1.64	257.87	1.79
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.04	6.89	8.74	9.30

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.80	29.90	29.40	26.60	26.30	24.30

Date:
8/11/81

Time:
1107-
1130

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	284.76	-	283.44	0.67
X	20	281.42	0.91	278.54	0.91
X	30	282.44	0.97	278.47	0.30
X	40	281.39	-	275.64	-
X	50	281.26	0.91	274.73	1.19
X	60	281.05	0.70	273.09	-
X	70	274.74	-	263.95	0.42
C	10	282.38	-	283.86	0.78
C	20	284.20	1.08	283.82	-
C	30	285.89	0.73	284.20	0.21
C	40	287.36	-	283.50	0.75
C	50	287.70	0.69	281.39	0.53
C	60	287.10	0.54	279.19	-
C	70	281.54	0.75	271.06	0.53
L	10	277.85	2.30	272.83	1.22
L	20	278.75	1.29	271.33	0.79
L	30	278.27	1.29	267.90	1.01
L	40	277.91	1.48	266.33	1.40
L	50	275.39	2.13	264.31	0.31
L	60	271.39	1.62	261.18	1.10
L	70	258.93	1.80	256.13	1.43
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
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5.52 7.00 9.42 11.40

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.80	30.60	30.90	28.20	28.10	25.30

Date:	Time:
8/13/81	1035-
	1103
Plot No.:	Field:
231	Corn ()

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10				
X	20				
X	30	273.73	0.37	265.76	-
X	40	271.95	-	263.09	0.85
X	50	274.73	-	263.16	0.35
X	60	274.56	0.98	262.26	0.63
X	70	269.94	0.97	258.10	1.00
C	10				
C	20				
C	30	272.54	-	267.17	0.92
C	40	275.86		268.19	-
C	50	277.97	-	268.25	-
C	60	278.95	0.55	267.57	0.78
C	70	274.40	0.20	262.19	-
L	10				
L	20				
L	30	266.84	1.39	255.37	1.08
L	40	267.95	1.82	252.93	0.81
L	50	270.02	2.25	252.58	1.20
L	60	268.93	2.88	256.70	2.42
L	70	257.91	1.73	254.43	1.07
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
16.92	16.64	15.72	13.29

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.50	25.10	23.50	22.60	23.20	21.30

Date:
8/13/81

Time:
1108-
1136

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	273.17	1.34	270.25	0.98
X	20	274.91	0.99	270.73	0.95
X	30	275.44	-	269.29	-
X	40	275.93	1.07	268.48	0.59
X	50	277.46	1.14	270.43	-
X	60	276.39	0.77	268.20	0.86
X	70	271.69	0.72	264.17	0.81
C	10	268.43	0.10	267.95	0.25
C	20	272.09	-	270.64	0.39
C	30	275.20	0.80	271.22	0.54
C	40	277.69	-	271.80	0.92
C	50	279.90	0.92	272.42	1.06
C	60	279.85	-	269.87	0.80
C	70	275.61	0.56	264.35	-
L	10	267.47	2.46	257.39	1.35
L	20	272.00	1.50	257.85	1.45
L	30	271.83	1.13	254.78	1.33
L	40	276.15	2.97	250.52	1.02
L	50	268.98	1.78	251.43	1.15

L	60	264.69	2.11	250.16	1.40
L	70	257.31	1.77	248.69	1.10
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm		
16.82	15.64	15.33	12.80		

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.80	25.60	26.60	25.20	25.50	22.60

Date:
8/14/81

Time:
0730-
0802

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	264.47	1.05	262.83	0.81
X	20	262.93	0.50	259.33	0.56
X	30	262.75	-	257.67	0.89
X	40	262.89	0.69	256.63	-
X	50	262.63	0.70	253.90	0.51
X	60	258.56	0.86	247.30	-
X	70	254.58	0.26	242.39	-
C	10	264.22	0.92	264.49	0.64
C	20	266.21	-	265.89	
C	30	267.74	0.71	265.18	0.55

C	40	269.30	0.93	263.79	0.65
C	50	269.02	0.55	260.84	-
C	60	267.29		255.54	
C	70	261.56	-	247.59	0.62
L	10	268.33	1.30	260.24	1.13
L	20	269.29	1.77	257.94	1.39
L	30	269.06	1.90	254.70	1.20
L	40	266.95	1.31	252.36	1.62
L	50	262.90	2.16	248.27	1.27
L	60	257.38	1.51	244.54	1.13
L	70	247.71	1.44	240.93	1.14
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
15.10	16.04	16.54	16.41

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.60	19.90	19.60	19.90	22.00	22.10

Date:
8/14/81

Time:
1030-
1050

Plot No.:
231

Field:
Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	270.93	0.91	268.17	0.54
X	20	270.51	-	266.06	-

X	30	273.72	0.56	266.83	0.84
X	40	276.55	0.79	267.48	0.55
X	50	276.17	0.66	263.96	0.84
X	60	275.32	0.79	262.74	0.68
X	70	269.98	-	255.33	0.79
C	10	270.63	-	271.99	0.37
C	20	274.34	0.65	273.23	-
C	30	276.81	-	272.83	0.79
C	40	280.31	0.10	272.41	0.43
C	50	282.45	0.77	271.70	1.03
C	60	281.61	1.13	269.14	0.92
C	70	277.46	0.28	264.34	-
L	10	266.37	1.67	261.98	0.26
L	20	269.15	1.54	258.84	1.44
L	30	271.32	1.81	259.11	0.95
L	40	270.48	1.38	255.12	1.24
L	50	271.37	1.77	253.73	1.03
L	60	-	-	253.17	1.12
L	70	259.33	1.35	254.95	1.03
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.36	14.10	15.65	15.67

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.90	25.50	23.50	23.00	213.50	24.40

Date:
8/14/81

Time:
1045-

Plot No.: 1020
 231 Field:
 Corn
 (perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	272.84	0.89	271.33	1.07
X	20	278.36	0.74	274.82	0.63
X	30	278.44	0.42	272.43	0.76
X	40	278.08	0.77	271.88	-
X	50	278.93	0.62	270.75	0.27
X	60	277.42	0.77	267.93	0.91
X	70	273.86	0.40	264.14	-
C	10	273.15	-	274.35	0.44
C	20	277.13	0.23	277.36	0.36
C	30	279.45	-	277.35	0.85
C	40	282.48	-	277.61	0.41
C	50	283.67	0.43	276.15	0.37
C	60	283.40	-	273.58	0.96
C	70	278.52	0.63	266.93	-
L	10	272.76	1.67	263.97	1.25
L	20	278.05	1.78	265.84	0.81
L	30	277.12	1.91	264.03	1.42
L	40	275.05	1.49	261.51	1.54
L	50	272.11	1.61	257.17	1.02
L	60	267.40	1.58	254.44	1.55
L	70	259.52	2.23	251.81	1.54
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
14.65	15.26	15.65	14.82

Soil

Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.90	28.30	28.10	26.40	27.00	24.00

Date: 8/17/81

Time: 1050-1115

Plot No.: 231

Field: Corn (||)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	267.72	0.56	266.93	0.66
X	20	273.16	-	270.84	0.80
X	30	274.99	0.53	270.57	0.89
X	40	275.60	-	268.39	-
X	50	274.55	-	265.09	0.56
X	60	271.97	-	262.53	0.68
X	70	272.92	1.18	258.01	1.15
C	10	270.94	0.41	272.11	-
C	20	272.71	-	271.50	0.76
C	30	274.40	0.27	271.15	-
C	40	276.78	-	269.84	0.46
C	50	278.29	-	267.88	0.86
C	60	277.66	-	265.61	0.27
C	70	272.57	1.08	262.77	0.83
L	10	267.91	1.27	265.69	0.80
L	20	269.26	1.54	262.73	1.08
L	30	270.22	1.87	260.02	1.25
L	40	269.25	1.58	256.67	1.17
L	50	268.48	2.01	254.08	1.24
L	60	264.53	1.71	252.24	1.56
L	70	258.99	1.65	251.17	0.94
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil Moisture

**Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.60	12.85	15.38	15.20

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.70	20.70	20.20	19.80	20.80	21.60

Date:
8/17/81

Time:
1115-
1140

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	270.91	0.89	270.70	0.80
X	20	275.33	0.76	272.92	0.76
X	30	275.72	0.83	272.76	0.50
X	40	276.57	-	271.69	0.84
X	50	274.12	0.12	268.79	0.83
X	60	272.38	-	265.76	0.49
X	70	268.52	-	262.59	-
C	10	273.64	-	274.26	-
C	20	275.76	0.29	274.32	-
C	30	277.77	-	274.64	0.16
C	40	279.71	-	274.57	0.61
C	50	280.19	0.95	272.39	-
C	60	278.06	-	268.55	0.73
C	70	273.15	-	262.03	0.81
L	10	270.98	1.76	265.50	1.04
L	20	274.92	1.71	264.60	-
L	30	274.32	1.51	262.67	1.31
L	40	272.01	1.67	258.81	1.78
L	50	267.65	1.80	254.26	1.16
L	60	262.80	1.28	250.55	1.17
L	70	253.57	1.32	247.03	1.40
P	10				

P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
10.07	11.68	13.45	13.67

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
217	21.3	21.80	20.70	21.70	21.80

Date:
8/18/81

Time:
1310-
1340

Plot No.:
231

Field:
Corn (||)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	279.57	1.10	278.06	0.38
X	20	283.72	0.41	280.60	-
X	30	281.40	0.56	276.09	-
X	40	281.86	0.65	274.63	-
X	50	281.09	0.76	270.64	-
X	60	279.40	0.62	268.77	-
X	70	275.89	0.74	263.20	0.40
C	10	281.23	-	282.89	0.55
C	20	283.00	-	282.10	-
C	30	284.05	0.55	281.41	0.21
C	40	286.06	0.58	279.56	0.76
C	50	286.39	0.37	276.91	0.74
C	60	284.33	0.28	272.80	-
C	70	278.85	0.74	266.42	-

L	10	272.33	2.01	269.69	1.01
L	20	274.24	1.54	269.18	1.51
L	30	272.66	1.52	264.02	1.64
L	40	272.35	2.47	260.14	1.18
L	50	270.30	1.85	257.99	0.93
L	60	266.16	1.51	255.21	1.73
L	70	254.54	1.69	251.39	1.03
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
4.92	10.50	12.75	13.00

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
6.50	26.30	25.90	23.40	23.90	24.00

Date:
8/18/81

Time:
1338-
1358

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.02	0.93	278.46	-
X	20	283.91	-	282.68	0.45
X	30	283.67	1.10	280.69	0.12
X	40	282.67	0.39	277.80	-
X	50	279.19	0.69	273.07	0.77

X	60	275.99	-	267.80	1.44
X	70	272.27	-	261.47	1.25
C	10	282.92	-	283.59	0.71
C	20	284.60	-	284.24	-
C	30	285.97	-	283.95	0.61
C	40	286.58	-	282.04	-
C	50	286.46	0.42	279.93	0.70
C	60	283.84	-	274.33	-
C	70	279.58	-	269.10	0.75
L	10	273.47	1.98	267.65	1.70
L	20	276.02	1.81	268.17	0.96
L	30	276.81	1.70	266.35	1.45
L	40	273.34	2.35	263.17	1.67
L	50	270.62	1.51	259.48	1.37
L	60	264.50	1.48	254.20	1.34
L	70	255.04	1.37	248.76	1.16
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
4.00	8.89	12.15	12.21

**Soil
Tempera
ture Data
(C)**

Ambient	+21.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.80	26.40	27.20	24.20	25.60	24.60

Date:
8/19/81

Time:
1050-
1115

Plot No.:
231

Field:
Corn (II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.86	1.04	279.11	0.46
X	20	274.27	0.91	271.64	0.56
X	30	276.22	0.87	271.97	0.50
X	40	277.43	0.88	270.38	0.45
X	50	277.61	1.26	269.62	0.49
X	60	273.70	1.41	268.34	0.57
X	70	270.78	0.73	259.68	0.75
C	10	279.31	0.38	280.75	0.34
C	20	280.47	0.37	280.02	0.29
C	30	281.41	0.33	278.52	0.22
C	40	283.01	0.31	277.45	0.35
C	50	283.02	0.37	274.48	0.29
C	60	283.05	0.38	271.83	0.30
C	70	277.46	0.44	265.31	0.22
L	10	275.76	1.65	274.43	1.41
L	20	277.41	2.07	270.56	1.30
L	30	275.46	1.23	266.56	0.97
L	40	274.25	2.04	263.77	1.20
L	50	272.89	1.52	261.56	1.04
L	60	269.34	1.94	258.94	1.34
L	70	258.30	1.42	257.50	1.49
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.10	6.73	10.00	10.78

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
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23.40 26.50 24.40 21.70 21.80 19.40

Date: Time:
 8/19/81 1115-
 1145
 Plot No.: Field:
 231 Corn
 (perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	278.35	0.99	276.95	0.33
X	20	278.43	0.74	275.44	0.56
X	30	277.14	0.88	273.49	0.50
X	40	275.96	0.98	270.62	0.45
X	50	276.14	1.01	269.30	0.45
X	60	275.30	0.88	265.90	0.50
X	70	272.41	0.78	260.73	0.47
C	10	280.90	0.34	281.90	0.38
C	20	281.27	0.30	280.45	0.36
C	30	282.91	0.33	280.35	0.26
C	40	283.90	0.31	278.56	0.35
C	50	283.88	0.26	276.54	0.33
C	60	282.01	0.39	273.07	0.26
C	70	277.95	0.28	267.10	0.22
L	10	280.89	1.63	275.96	1.19
L	20	281.46	1.49	274.23	1.09
L	30	280.46	1.90	270.09	1.35
L	40	276.46	1.73	266.41	1.28
L	50	272.74	2.04	262.43	1.38
L	60	267.64	2.01	258.04	1.24
L	70	256.80	1.53	252.44	1.02
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil
 Moisture
 Data (%
 by Dry
 Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.30	6.29	9.35	10.15

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
25.80	26.30	24.20	21.80	22.40	21.40

Date:
8/20/81

Time:
1049-
1120

Plot No.:
231

Field:
Corn (||)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	280.30	0.90	279.20	0.79
X	20	279.64	0.85	277.58	0.48
X	30	281.03	0.87	276.52	0.54
X	40	279.40	0.96	273.05	1.06
X	50	277.43	0.99	268.75	0.65
X	60	274.65	0.51	265.40	0.35
X	70	270.80	0.82	261.88	0.51
C	10	278.79	0.31	279.98	0.28
C	20	279.85	0.36	279.04	0.36
C	30	281.43	0.36	278.70	0.36
C	40	283.28	0.35	278.39	0.32
C	50	282.41	0.44	274.11	0.35
C	60	280.97	0.39	270.61	0.38
C	70	276.06	0.43	264.94	0.34
L	10	276.67	1.73	274.89	1.51
L	20	278.36	2.12	273.33	1.10
L	30	277.33	1.86	269.53	1.53
L	40	276.64	1.81	266.10	1.28
L	50	273.49	1.65	261.54	1.43
L	60	267.91	1.72	258.47	1.17
L	70	257.38	2.00	256.99	1.28
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.87	7.00	10.96	11.79

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.50	23.50	22.80	21.80	21.50	19.60

Date:
8/20/81

Time:
1122-
1144

Plot No.:
231

Field:
Corn
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	284.19	0.96	283.12	0.64
X	20	283.07	0.88	280.94	0.51
X	30	280.62	0.88	277.64	0.43
X	40	280.39	0.92	275.65	0.47
X	50	278.61	0.95	272.70	0.48
X	60	277.47	0.88	269.50	0.59
X	70	273.06	0.82	265.57	0.74
C	10	283.23	0.38	283.80	0.32
C	20	284.29	0.27	283.42	0.28
C	30	284.72	0.47	283.24	0.37
C	40	285.39	0.34	281.13	0.30
C	50	285.37	0.36	278.90	0.33
C	60	284.00	0.31	275.53	0.43
C	70	278.25	0.47	268.40	0.28
L	10	281.33	1.72	278.08	1.43
L	20	282.42	2.34	276.42	1.07
L	30	281.64	1.63	274.36	1.36

L	40	277.97	1.83	269.30	1.20
L	50	273.36	2.13	264.56	1.51
L	60	269.16	1.61	259.63	1.25
L	70	258.55	1.49	254.07	1.15
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.60	7.16	11.03	11.88

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.80	24.90	25.20	22.90	22.80	20.70

Date:
6/29/81

Time:
1056-
1118

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	288.48	-	288.09	-
X	20	288.73	0.48	285.76	0.16
X	30	290.39	-	283.05	-
X	40	292.21	-	278.61	0.99
X	50	293.25	0.68	271.14	-
X	60	292.22	0.76	261.34	-
X	70	284.97	0.42	242.85	0.82
C	10	286.95	0.29	288.47	-

C	20	288.13	-	287.28	0.95
C	30	290.69	0.57	286.11	1.01
C	40	293.05	0.72	282.82	0.52
C	50	294.82	1.01	276.43	0.49
C	60	292.88	0.53	264.60	-
C	70	282.38	-	244.01	0.49
L	10	266.57	1.88	264.79	1.55
L	20	265.61	1.89	259.70	1.52
L	30	266.06	2.44	254.19	1.59
L	40	265.28	1.69	244.31	1.70
L	50	263.52	1.48	229.94	1.41
L	60	258.37	1.78	210.06	1.05
L	70	242.56	1.60	176.78	1.26
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
4.68	10.12	16.73	18.40

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.20	29.50	30.80	26.70	26.90	23.50

Date:
6/29/81

Time-
1431-
1452

Plot No.:
261

Field:
Soybean
(perp)

Average Standard Average Standard

Freq.	Angle	A. T. (V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	291.55	-	289.99	0.36
X	20	292.11	-	287.81	-
X	30	293.21	0.68	284.00	0.84
X	40	294.15	1.29	280.23	-
X	50	294.35	-	274.07	0.51
X	60	292.68	0.82	266.97	-
X	70	286.28	0.85	255.74	0.14
C	10	293.37	-	294.22	0.06
C	20	294.29	-	292.74	0.65
C	30	295.53	-	290.15	-
C	40	297.77	0.77	286.61	0.67
C	50	299.08	0.13	282.15	1.16
C	60	297.91	-	273.83	0.96
C	70	284.92	-	251.67	0.81
L	10	274.05	1.43	271.77	1.51
L	20	272.83	1.27	266.25	0.68
L	30	271.27	2.02	260.30	1.07
L	40	269.83	1.34	251.50	1.03
L	50	266.12	1.62	239.99	0.99
L	60	260.38	1.69	220.71	1.34
L	70	241.38	1.44	185.85	0.97
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
2.04	11.06	17.69	17.54

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.20	37.30	39.10	34.80	33.00	29.40

Date:
6/30/81

Time:
0757-
0838

Plot No.:
261

Field:
Soybean
(perpendi
cular)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	278.17	-	275.15	0.50
X	20	277.18	0.75	272.35	-
X	30	277.48	0.85	269.51	0.54
X	40	278.60	0.44	265.22	0.79
X	50	279.55	0.09	260.49	1.14
X	60	278.37	1.05	254.68	-
X	70	272.52	0.66	235.26	-
C	10	274.89	-	273.57	-
C	20	275.33	0.36	270.85	0.37
C	30	277.40	-	267.30	0.34
C	40	280.08	0.71	262.98	0.42
C	50	282.49	-	257.14	0.82
C	60	281.45	1.04	246.79	0.71
C	70	270.06	0.43	225.10	0.43
L	10	268.32	1.48	264.18	1.66
L	20	267.57	1.51	260.52	1.36
L	30	267.12	1.41	253.78	1.33
L	40	265.76	1.79	244.79	1.45
L	50	263.64	1.61	231.49	1.37
L	60	255.48	1.82	208.16	1.33
L	70	240.28	-	174.67	1.01
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 0-2.50 2.5-5.0 5-10 cm

cm	cm	cm	
6.44	9.83	15.09	17.14

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
23.80	24.80	22.40	21.80	23.30	23.40

Date:	Time:
7/2/81	0816-0845
Plot No.:	Field:
261	Soybean (perpendicular)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	225.38	0.78	218.74	0.62
X	20	220.00	-	206.00	0.72
X	30	221.31	-	197.32	0.29
X	40	231.48	-	194.40	0.17
X	50	237.74	0.77	176.75	0.55
X	60	246.36	0.55	177.02	0.84
X	70	253.17	0.58	167.01	0.72
C	10	198.56	-	197.44	-
C	20	196.14	0.13	186.64	0.13
C	30	201.96	-	180.39	-
C	40	212.46	0.74	172.51	0.46
C	50	226.73	-	164.13	0.46
C	60	236.95	0.62	154.31	0.61
C	70	245.74	0.53	137.41	0.34
L	10	201.32	1.49	191.38	1.07
L	20	199.13	1.66	181.58	0.96
L	30	202.22	1.61	174.64	1.02
L	40	206.52	1.35	162.06	0.93
L	50	215.05	1.40	149.28	1.27
L	60	221.52	1.65	132.57	1.28
L	70	224.70	1.64	109.10	1.24
P	10				
P	20				
P	30				
P	40				

P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
22.12	23.63	21.64	21.34

**Soil
Temperature Data
(C)**

Ambient	+2.5 cm.	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.70	25.10	23.10	22.70	23.00	22.60

Date:
7/6/81

Time:
1101-
1130

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	233.09	0.53	227.24	0.31
X	20	227.29	0.41	215.78	0.24
X	30	227.40	0.29	205.19	0.44
X	40	232.28	0.78	195.31	0.62
X	50	237.76	-	171.00	0.55
X	60	251.07	0.85	174.97	0.70
X	70	255.71	-	166.83	0.86
C	10	213.55	-	206.26	-
C	20	208.56	-	198.29	0.34
C	30	213.49	-	191.32	0.52
C	40	223.15	-	183.64	0.63
C	50	237.24	-	174.67	0.35
C	60	248.84	0.51	164.09	0.76
C	70	256.28	0.40	149.81	0.65
L	10	216.01	1.87	208.09	3.07
L	20	200.80	1.58	186.55	1.00

L	30	204.20	1.33	178.41	0.98
L	40	210.73	1.68	169.19	1.22
L	50	219.05	1.49	156.56	1.49
L	60	225.67	1.43	136.94	1.20
L	70	228.76	1.35	111.15	1.12
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
21.28	21.23	20.29	21.02

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.40	32.00	26.30	24.90	26.50	23.70

Date:
7/7/81

Time:
1447-
1506

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	261.84	0.99	259.38	0.46
X	20	263.25	-	255.04	0.35
X	30	271.06	0.75	254.25	1.10
X	40	273.28	-	242.95	0.74
X	50	279.51	0.53	233.06	0.18
X	60	283.53	-	214.24	-
X	70	283.61	-	210.92	-

C	10	264.50	0.61	265.01	-
C	20	266.96	0.60	263.56	0.29
C	30	270.92	-	259.39	-
C	40	277.35	0.70	252.84	0.80
C	50	282.06	-	243.72	0.80
C	60	286.54	0.31	226.95	-
C	70	279.67	1.07	205.64	0.22
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50	0-2.50	2.5-5.0	5-10 cm
cm	cm	cm	
7.48	9.72	14.10	16.89

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.22	33.50	31.40	31.80	33.00	28.00

Date:
7/8/81

Time:
0935-
1016

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	259.86	0.88	255.40	-
X	20	258.55	-	248.75	-
X	30	263.51	-	243.71	0.55
X	40	268.49	-	235.76	-
X	50	274.94	0.55	225.56	0.92
X	60	278.88	0.56	212.43	-
X	70	278.76	-	203.01	0.91
C	10	257.54	0.90	254.79	0.91
C	20	257.36	0.55	249.07	-
C	30	261.72	-	243.28	0.31
C	40	268.18	0.21	235.49	0.75
C	50	275.23	-	225.89	-
C	60	279.72	-	212.54	0.60
C	70	275.39	-	191.73	-
L	10	254.89	1.77	250.53	1.30
L	20	252.71	1.24	243.04	1.02
L	30	252.89	1.88	233.76	0.85
L	40	254.98	2.11	223.95	1.15
L	50	257.17	1.68	211.89	1.23
L	60	255.38	0.90	188.90	0.64
L	70	244.93	0.92	154.99	1.00
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.45	9.12	10.21	12.56

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.70	26.40	23.30	22.70	23.90	23.20

Date:
7/8/81

Time:
1320-
1410

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average	Standard	Average	Standard
		A.T.(V)	Dev.(V)	A.T.(H)	Dev.(H)
X	10	284.25	0.77	283.83	-
X	20	283.27	0.68	278.67	0.23
X	30	286.45	0.86	276.99	-
X	40	288.81	0.69	266.28	-
X	50	292.40	-	257.69	0.75
X	60	293.04	0.62	242.75	-
X	70	286.56	0.88	221.81	0.59
C	10	280.27	-	280.43	0.85
C	20	281.39	-	275.68	-
C	30	282.91	0.61	273.17	1.01
C	40	286.62	-	264.82	0.65
C	50	291.16	0.57	255.52	1.12
C	60	292.43	0.21	239.63	0.54
C	70	284.73	-	216.39	-
L	10	263.02	1.29	259.67	1.12
L	20	270.31	1.93	265.42	1.23
L	30	266.89	5.38	252.24	3.37
L	40	261.66	1.40	234.82	1.38
L	50	265.11	4.04	221.11	1.31
L	60	268.47	3.99	200.03	1.16
L	70	250.09	1.41	168.67	1.38
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 0-2.50 2.5-5.0 5-10 cm

cm	cm	cm	
5.14	11.12	14.32	15.22

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
33.80	38.00	32.00	31.50	31.90	28.90

Date: 7/8/81

Time: 1325-1350

Plot No.: 261

Field: Soybean (II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	284.25	0.77	283.83	-
X	20	283.27	0.68	278.67	0.23
X	30	286.45	0.86	276.99	-
X	40	288.81	0.69	266.28	-
X	50	292.40	-	257.69	0.75
X	60	293.04	0.62	242.75	-
X	70	286.56	0.88	221.81	0.59
C	10	280.27	-	280.43	0.85
C	20	281.39	-	275.68	-
C	30	282.91	0.61	273.17	1.01
C	40	286.62	-	264.82	0.65
C	50	291.16	0.57	255.52	1.12
C	60	292.43	0.21	239.63	0.54
C	70	284.73	-	216.39	-
L	10	263.02	1.29	259.67	1.22
L	20	270.31	1.93	265.42	1.23
L	30	266.89	5.38	252.24	3.37
L	40	261.66	1.40	234.82	1.38
L	50	265.11	4.04	221.11	1.31
L	60	268.47	3.99	200.03	1.16
L	70	250.09	1.41	168.67	1.38
P	10				
P	20				
P	30				
P	40				
P	50				

P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.14	11.12	14.32	15.27

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
33.80	38.00	32.00	31.50	31.90	28.90

Date:
7/30/81

Time:
0821-
0850

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	247.21	-	243.00	0.65
X	20	251.84	-	243.28	0.27
X	30	252.41	-	235.45	-
X	40	263.17	0.61	249.39	0.52
X	50	265.70	0.50	238.63	0.86
X	60	265.95	0.97	230.37	0.91
X	70	264.86	0.83	245.50	0.39
C	10	240.50	0.97	237.19	0.61
C	0	242.29	0.92	236.24	0.31
C	30	249.57	-	236.77	0.71
C	40	257.01	-	237.39	0.62
C	50	262.77	0.22	232.24	0.48
C	60	267.12	0.81	229.87	-
C	70	264.73	1.34	227.45	0.58
L	10	205.69	3.82	225.18	2.73
L	20	203.33	3.31	217.38	2.43
L	30	204.75	3.98	211.30	3.05

L	40	206.70	3.86	203.86	2.80
L	50	208.15	3.64	190.04	2.82
L	60	209.54	3.92	173.42	2.46
L	70	203.02	-	157.84	-
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.38	15.40	14.53	16.25

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
17.90	16.20	17.90	16.40	18.10	18.50

Date:
7/30/81

Time:
1045-
1110

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	260.48	1.27	259.34	1.24
X	20	259.74	1.07	253.93	1.28
X	30	264.64	0.69	252.05	-
X	40	271.37	0.42	251.95	-
X	50	275.53	0.81	242.49	-
X	60	277.33	0.32	235.08	0.94
X	70	278.74	1.07	214.91	-
C	10	253.85	-	253.08	

C	20	254.58	1.17	250.85	0.34
C	30	258.99	-	249.02	-
C	40	266.05	0.81	245.34	0.17
C	50	271.50	-	240.46	-
C	60	276.42	0.23	235.03	-
C	70	274.57	0.48	231.80	-
L	10				
L	20				
L	30				
L	40				
L	50				
L	60				
L	70				
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.00	11.06	15.38	15.29

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
24.60	27.10	26.70	25.30	24.30	21.70

Date:
7/30/81

Time:
1405-
1425

Plot No.:
261

Field:
Soybean
(II)

Average Standard Average Standard

Freq.	Angle	A. T. (V)	Dev.(V)	A.T.(H)	Dev,(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	277.29	0.88	278.71	0.22
C	20	278.48	1.01	275.85	0.61
C	30	279.20	0.76	272.47	-
C	40	282.31	0.63	267.03	1.06
C	50	285.37	0.70	260.39	0.26
C	60	285.96	0.25	252.70	0.95
C	70	280.31	-	243.92	0.61
L	10	263.89	1.68	260.39	1.32
L	20	268.13	1.70	254.90	-
L	30	-	-	-	-
L	40	267.61	1.48	238.08	1.50
L	50	265.70	1.94	226.06	0.87
L	60	265.09	1.62	211.05	1.24
L	70	255.70	1.48	193.61	1.25
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
8.83	-	15.23	17.41

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.50	34.60	29.10	28.70	29.00	25.70

Date:
7/30/81

Time:
1520-
1545

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10				
X	20				
X	30				
X	40				
X	50				
X	60				
X	70				
C	10	279.39	-	279.75	-
C	20	281.24	0.87	277.65	0.37
C	30	283.76	-	274.59	-
C	40	287.26	0.26	271.56	-
C	50	288.95	-	267.26	-
C	60	287.71	-	262.62	0.86
C	70	280.13	0.45	254.07	-
L	10	264.41	0.87	258.41	1.52
L	20	263.59	1.41	254.17	1.11
L	30	266.69	1.59	249.30	1.06
L	40	267.37	1.90	240.79	1.06
L	50	266.95	1.59	229.80	5.95
L	60	263.68	1.84	212.21	1.19
L	70	253.65	1.72	191.32	1.06
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
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6.01 10.18 14.00 17.11

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.40	39.20	36.50	32.90	32.00	27.40

Date: 7/31/81 Time: 0950-1015

Plot No.: 261 Field: Soybean (II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	274.32	0.79	275.59	0.24
X	20	272.89	0.44	271.82	0.53
X	30	274.77	0.85	269.60	0.94
X	40	-	-	-	-
X	50	275.40		255.72	0.48
X	60	275.77	0.43	246.35	0.74
X	70	274.15	0.46	236.97	0.49
C	10	266.00	0.66	267.09	0.90
C	20	266.26	-	263.97	0.26
C	30	269.57	0.78	261.22	-
C	40	-	-	-	-
C	50	278.72	0.78	250.92	0.63
C	60	281.67	0.44	245.57	-
C	70	278.01	0.69	238.89	0.75
L	10	259.88	1.25	257.99	1.20
L	20	258.41	1.72	250.62	0.78
L	30	260.23	2.06	245.70	1.12
L	40	-	-	-	-
L	50	261.70	1.37	226.90	1.32
L	60	261.21	0.94	213.03	1.12
L	70	253.53	1.78	203.06	0.89
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				

P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.10	11.38	15.79	15.67

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.50	25.80		24.20	24.30	21.80

Date:
7/31/81

Time:
1110-
1135

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	282.26	0.86	281.79	1.13
X	20	281.54	-	280.13	0.60
X	30	281.72	0.71	278.16	0.72
X	40	282.63	-	276.58	1.13
X	50	283.31	0.85	274.56	1.15
X	60	279.06	0.67	269.01	0.84
X	70	276.21	0.75	261.26	-
C	10	272.09	-	273.13	-
C	20	274.62	0.60	271.44	-
C	30	278.52	0.41	269.83	-
C	40	282.27	-	267.88	-
C	50	284.75	0.99	264.97	1.07
C	60	285.49	0.19	260.31	0.54
C	70	277.97	0.38	254.20	0.66
L	10	259.81	2.00	254.12	1.30
L	20	256.63	1.74	246.06	1.20
L	30	263.08	1.64	244.27	0.62
L	40	263.58	1.53	237.70	1.50

L	50	265.22	1.58	228.81	1.10
L	60	261.12	1.32	213.91	1.49
L	70	251.53	1.30	195.90	0.80
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
7.07	8.56	13.13	15.03

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.60	26.30		27.30	26.30	24.00

Date:
8/10/81

Time:
1045-
1105

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	281.53	-	280.48	0.72
X	20	281.15	-	278.06	-
X	30	283.20	1.01	276.42	0.52
X	40	283.09	0.81	273.12	-
X	50	283.40	-	268.51	-
X	60	282.50	0.64	264.58	-
X	70	279.53	0.57	256.98	0.62
C	10	276.51	0.50	277.73	0.86
C	20	277.38	0.82	275.91	0.30

C	30	279.67	-	275.24	-
C	40	281.91	-	273.52	0.68
C	50	283.70	0.69	270.23	0.65
C	60	283.59	-	267.81	0.75
C	70	279.27	0.98	265.06	0.62
L	10	267.67	1.72	265.64	1.34
L	20	267.63	1.67	260.69	1.46
L	30	-	-	-	-
L	40	270.50	1.47	250.65	1.04
L	50	269.20	1.66	242.31	1.16
L	60	267.21	1.62	233.22	0.83
L	70	257.19	1.20	225.94	0.87
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.29	8.69	11.65	12.68

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
31.60	30.40	31.00	28.40	28.90	25.30

Date:
8/10/81

Time:
1116-
1137

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T. (H)	Standard Dev.(H)
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X	10	282.28	-	281.54	0.88
X	20	284.38	0.44	2921.03	0.55
X	30	285.29	-	281.05	0.50
X	40	285.19	0.97	280.55	0.56
X	50	283.91	1.01	277.21	-
X	60	280.74	-	270.12	0.51
X	70	276.94	0.55	263.48	0.45
C	10	278.96	0.65	279.08	0.78
C	20	281.21	0.41	279.14	0.72
C	30	283.46	-	279.53	0.59
C	40	285.39	-	277.56	-
C	50	286.04	-	275.45	-
C	60	284.13	-	172.59	0.33
C	70	277.19	-	266.98	-
L	10	266.95	1.59	202.22	1.02
L	20	268.94	1.71	200.21	1.74
L	30	270.32	1.74	255.33	1.01
L	40	269.41	1.76	248.09	1.18
L	50	267.99	1.71	238.67	1.20
L	60	264.61	1.60	230.21	1.25
L	70	254.26	1.81	215.72	0.97
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
4.14	8.27	12.17	13.31

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
32.50	32.90	34.80	31.60	30.20	26.60

Date:
8/11/81

Time:
1010-
1032

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	275.32	-	273.63	0.54
X	20	274.34	0.95	269.68	-
X	30	276.57	0.66	267.91	0.57
X	40	279.75	0.98	264.74	-
X	50	278.65	0.81	260.40	0.59
X	60	282.03	0.41	250.01	-
X	70	277.82	1.35	241.89	0.63
C	10	276.51	-	276.79	-
C	20	275.60	0.72	273.58	0.34
C	30	277.52	-	272.60	-
C	40	280.21	0.88	270.35	-
C	50	282.06	-	267.87	0.88
C	60	282.29	-	265.81	-
C	70	277.58	-	262.20	0.46
L	10	270.02	1.79	268.66	1.73
L	20	269.25	2.13	261.48	1.39
L	30	270.75	0.88	256.84	1.58
L	40	271.41	1.46	250.70	1.45
L	50	270.59	2.06	244.37	1.16
L	60	267.80	1.60	234.06	1.31
L	70	257.02	1.67	226.22	1.33
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
6.25	6.73	10.56	11.47

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
29.80	32.10	28.70	216.10	26.80	24.60

Date: 8/11/81

Time: 1136-1200

Plot No.: 261

Field: Soybean (perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev. (H)
X	10	273.23	0.76	272.19	0.79
X	20	275.46	1.02	273.32	-
X	30	276.93	0.40	273.35	0.67
X	40	277.62	0.41	271.28	0.55
X	50	277.92	1.14	269.08	0.69
X	60	275.72	0.46	264.68	1.24
X	70	272.02	0.94	258.32	-
C	10	272.37	-	272.22	-
C	20	274.71	0.22	273.11	0.43
C	30	277.94	-	272.50	-
C	40	281.23	-	272.76	0.82
C	50	282.59	0.97	271.35	0.15
C	60	281.31	-	269.80	0.58
C	70	275.34	0.53	262.98	0.72
L	10	268.35	2.09	264.89	1.53
L	20	271.88	1.72	262.95	0.91
L	30	271.73	1.48	257.47	1.48
L	40	271.56	1.38	252.20	1.17
L	50	270.15	1.72	242.65	1.36
L	60	265.05	2.03	233.90	1.32
L	70	255.88	1.42	219.94	1.19
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
5.17	9.06	13.85	15.50

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
30.60	30.60	29.90	28.90	29.50	26.50

Date:
8/13/81

Time:
1005-
1032

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	253.14	0.10	252.07	-
X	20	250.35	1.17	245.44	0.80
X	30	253.88	0.54	244.74	-
X	40	261.46	0.54	247.39	-
X	50	262.17	0.38	240.30	-
X	60	267.24	0.62	240.26	-
X	70	268.23	-	245.11	0.75
C	10	244.21	-	244.38	-
C	20	244.86	0.90	241.64	-
C	30	249.10	0.55	242.30	-
C	40	263.76	-	243.64	-
C	50	261.91	0.26	244.29	-
C	60	267.33	0.72	247.28	-
C	70	268.13	0.48	249.09	0.61
L	10	234.53	1.68	234.47	1.03
L	20	231.60	1.67	222.08	1.13
L	30	236.25	1.76	216.77	1.10
L	40	246.52	1.64	219.43	0.90
L	50	248.38	1.55	205.61	1.73

L	60	250.47	2.01	202.29	1.37
L	70	248.20	1.71	206.42	1.15
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
17.38	16.78	15.07	14.96

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
26.80	24.50	25.00	23.00	23.80	21.70

Date:
8/13/81

Time:
1145-
1210

Plot No.:
261

Field:
Soybean
(perp)

Freq.	Angle	Average A.T.(V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	252.03	-	247.95	0.81
X	20	262.06	-	257.66	0.94
X	30	270.08	-	266.00	
X	40	271.05	0.50	263.96	85.00
X	50	273.19	0.36	264.31	-
X	60	274.43	-	263.26	1.30
X	70	272.00	0.41	257.85	0.10
C	10	248.69	0.91	246.42	0.63
C	20	251.99	0.86	248.57	0.41
C	30	259.49	0.88	254.27	-

C	40	266.37	0.82	257.96	-
C	50	270.92	-	258.72	0.30
C	60	273.63	-	260.23	0.37
C	70	270.28	0.45	258.67	0.47
L	10	238.66	1.22	229.73	1.29
L	20	236.83	1.94	221.31	0.75
L	30	243.31	1.34	217.76	1.14
L	40	247.84	1.61	212.65	1.04
L	50	252.21	1.69	205.51	1.42
L	60	251.59	1.81	198.56	1.49
L	70	248.29	1.63	195.11	1.01
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
17.61	16.84	17.37	17.51

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
28.60	29.40	28.70	26.90	27.70	23.80

Date:
8/14/81

Time:
1005-
1025

Plot No.:
261

Field:Soy
bean (||)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.65	-	266.29	1.05
X	20	253.22	0.52	247.63	-

X	30	260.13	0.68	250.08	-
X	40	266.14	0.63	250.23	-
X	50	271.98	0.80	249.32	0.64
X	60	275.91	0.85	250.09	-
X	70	274.60	0.58	254.01	0.24
C	10	261.41	0.18	263.89	-
C	20	262.02	0.69	261.11	-
C	30	264.73	-	260.16	-
C	40	268.15	-	260.04	0.33
C	50	272.17	0.66	259.28	1.12
C	60	276.46	0.39	258.33	1.06
C	70	273.17	0.81	258.89	0.91
L	10	251.46	1.43	249.43	0.99
L	20	249.86	1.37	242.78	1.18
L	30	254.20	2.08	238.41	1.34
L	40	256.47	1.71	230.42	1.24
L	50	258.76	1.89	223.71	0.78
L	60	258.63	1.39	218.81	1.37
L	70	251.48	1.71	218.79	0.91
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
13.77	14.20	13.07	14.36

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
27.80	27.00	23.60	22.70	24.20	23.40

Date:
8/14/81

Time:
1130-

Plot No.: 1150
 261 Field: Soybean
 (perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A. T. (H)	Standard Dev.(H)
X	10	267.78	-	266.22	-
X	20	271.15	0.96	269.03	-
X	30	279.19	-	276.49	0.95
X	40	279.32	0.96	273.21	0.56
X	50	277.47	0.85	271.26	0.44
X	60	276.09	-	268.41	0.76
X	70	272.18	1.14	260.86	-
C	10	260.98	0.24	260.03	0.87
C	0	263.56	-	259.81	-
C	30	270.54	-	263.99	0.65
C	40	274.34	0.65	264.70	0.34
C	50	277.06	0.95	264.10	-
C	60	278.31	-	265.08	-
C	70	273.65	0.45	262.44	0.95
L	10	252.35	0.82	245.94	1.20
L	20	252.89	1.62	238.53	1.24
L	30	260.39	1.77	239.12	1.06
L	40	261.41	1.99	232.37	0.94
L	50	259.83	1.27	222.06	1.07
L	60	258.46	1.73	216.63	0.70
L	70	252.41	1.53	210.27	0.88
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
 Moisture
 Data (%
 by Dry
 Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
15.52	13.68	15.27	14.17

Soil

**Temperature Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7,5 cm	15.0 cm
30.60	28.90	30.60	27.90	28.20	26.00

Date: 8/17/81

Time: 1020-1045

Plot No.: 261

Field: Soybean (II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	267.66	1.00	266.58	0.47
X	20	264.78	-	262.86	0.62
X	30	267.47	1.17	261.90	0.77
X	40	270.85	-	261.05	0.34
X	50	272.92	1.18	258.01	1.15
X	60	273.28	1.04	254.69	0.55
X	70	270.90	-	255.36	0.75
C	10	265.32	-	266.45	-
C	20	266.04	-	265.37	0.56
C	30	268.19	0.68	264.53	0.73
C	40	270.30	-	263.57	-
C	50	272.57	1.08	202.77	0.83
C	60	272.87	0.85	261.89	0.99
C	70	268.19	1.03	259.26	0.79
L	10	254.61	1.21	254.46	1.43
L	20	256.10	1.49	250.53	1.49
L	30	258.12	0.97	244.66	0.45
L	40	259.08	2.01	238.36	1.32
L	50	258.99	1.65	232.53	0.94
L	60	257.86	1.89	224.96	1.08
L	70	246.87	3.32	224.33	1.07
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

Soil

Moisture Data (% by Dry Weight)

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.02	14.05	15.25	16.40

Soil Temperature Data (C)

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
20.30	19.70	17.80	18.00	20.90	21.10

Date:
8/17/81

Time:
1150-
1215

Plot No.:
261

Field.-
Soybean
(perp)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average A.T.(H)	Standard Dev.(H)
X	10	271.04	-	271.54	0.76
X	20	271.65	1.14	271.91	
X	30	273.49	-	272.28	
X	40	272.55	0.54	270.37	0.60
X	50	273.81	0.75	267.38	0.49
X	60	272.54	1.24	265.39	0.75
X	70	267.53	0.54	258.93	1.45
C	10	267.23	0.79	267.74	0.87
C	20	270.50	0.86	268.30	0.71
C	30	272.80	-	268.62	-
C	40	276.00	0.39	269.55	0.48
C	50	276.82	0.70	269.45	-
C	60	276.44	0.91	268.15	-
C	70	270.44	-	262.42	1.01
L	10	260.10	1.59	254.10	1.35
L	20	259.42	2.06	248.10	1.16
L	30	263.21	1.80	245.32	1.11
L	40	261.90	1.93	239.93	1.39
L	50	263.21	1.65	234.67	1.48
L	60	259.41	1.83	226.69	1.34
L	70	250.25	1.38	219.72	1.11

P 10
P 20
P 30
P 40
P 50
P 60
P 70

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
11.90	13.70	14.04	13.77

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	2.5 cm	7.5 cm	15.0 cm
22.30	23.50	26.70	25.50	26.50	24.50

Date:
8/18/81

Tinic:
1140-
1308

Plot No.:
261

Field:
Soybean
(II)

Freq.	Angle	Average A. T. (V)	Standard Dev.(V)	Average AT .(H)	Standard Dev.(H)
X	10	284.25	0.96	283.44	-
X	20	283.78	1.07	281.97	-
X	30	284.25	-	279.72	0.49
X	40	285.46	-	278.32	0.32
X	50	283.54	-	275.75	0.65
X	60	283.48	0.92	271.48	0.71
X	70	278.97	-	268.59	0.51
C	10	279.24	-	280.80	0.67
C	20	279.95	0.75	280.57	0.38
C	30	281.90	-	280.21	-
C	40	282.69	-	278.48	0.73
C	50	283.00	0.73	276.32	-

C	60	281.12	-	273.47	-
C	70	276.27	-	269.86	-
L	10	264.03	1.83	263.62	1.47
L	20	265.27	1.45	263.32	1.53
L	30	266.20	1.43	255.35	1.10
L	40	266.25	1.74	249.89	1.35
L	50	265.01	1.55	243.05	1.42
L	60	262.45	1.31	237.47	1.20
L	70	252.83	2.12	234.30	1.30
P	10				
P	20				
P	30				
P	40				
P	50				
P	60				
P	70				

**Soil
Moisture
Data (%
by Dry
Weight)**

0-0.50 cm	0-2.50 cm	2.5-5.0 cm	5-10 cm
9.35	11.49	13.45	13.97

**Soil
Tempera
ture Data
(C)**

Ambient	+2.5 cm	1.25 cm	15 cm	7.5 cm	15.0 cm
26.90	25.50	22.70	21.30	22.80	25.50