Appendix G

ASTM E1598
Plant Toxicity Test

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ASTM E1598 Plant Toxicity Test

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Chemistry and Chemical Engineering Division
Department of Analytical and Environmental Chemistry

December 21, 2004

INEEL
2525 North Fremont
Idaho Falls, ID 83415-3960

Attn: Kathleen A. Otter

Subject:	INEEL Contract No.:	50157
	INEEL SOW No.:	ER-SOW-473
	SDG Number:	ECR111019A
	SwRI Project Number:	06355.38.00X
	SwRI Task Order Number:	040825-11, 040826-13, 040827-11, 040915-3
	SwRI Sample Receipt Number:	26410, 26431, 26438, 26520
	Samples Received:	August 25, 26, 27, and September 10, 2004
	Plant Toxicity Test	

Dear Ms. Otter:

Enclosed please find the cover page and analytical data for the above referenced project. If you should have any questions, please do not hesitate to call me at (210) 522-5428.

Sincerely,

for Michael J. Dammann
Manager

APPROVED:

Reza Karimi, Ph.D.
Director

MJD:mar

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ASTM E1598
Plant Toxicity Test

Analytical Report

Southwest Research Institute
Project 06355.38.006
Task Orders 040825-11, 040826-13, 040827-11, 040915-3

Prepared by

Michael Dammann
Radonna Spies
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Prepared for

IDAHO NATIONAL ENGINEERING AND
ENVIRONMENTAL LABORATORY
ER-SOW-444

Sample Identification

Thirty-four soil samples were received at Southwest Research Institute. The samples were logged in to the Laboratory Information Management System (LIMS), and each sample was assigned a unique identification number, referred to as the SwRI Lab System ID. See Table 1 for cross-reference to the client ID.

Table 1

SwRI Lab System ID	Client ID	Date Received
250022	ECR111019A	08/25/04
250023	ECR111029A	08/25/04
250024	ECR112019A	08/25/04
250025	ECR113019A	08/25/04
250026	ECR114019A	08/25/04
250027	ECR115019A	08/25/04
250028	ECR116019A	08/25/04
250029	ECR117019A	08/25/04
250030	ECR118019A	08/25/04
250031	ECR119019A	08/25/04
250032	ECR120019A	08/25/04
250152	ECX111019A	08/26/04
250153	ECX111029A	08/26/04
250154	ECX112019A	08/26/04
250155	ECX113019A	08/26/04
250156	ECX114019A	08/26/04
250157	ECX115019A	08/26/04
250158	ECX116019A	08/26/04
250159	ECX117019A	08/26/04
250160	ECX118019A	08/26/04
250161	ECX119019A	08/26/04
250162	ECX120019A	08/26/04

Table 1 (cont.)

SwRI Lab System ID	Client ID	Date Received
250231	ECT111019A	08/27/04
250232	ECT111029A	08/27/04
250233	ECT112019A	08/27/04
250234	ECT113019A	08/27/04
250235	ECT114019A	08/27/04
250236	ECT115019A	08/27/04
250237	ECT116019A	08/27/04
250238	ECT117019A	08/27/04
250239	ECT118019A	08/27/04
250240	ECT119019A	08/27/04
250241	ECT120019A	08/27/04
251336	ECT126019A	09/10/04

Introduction

For the INEEL Long-Term Ecological Monitoring FY-04 project, the toxicity of site soils to representative seedlings was evaluated using ASTM E1598 *Standard Practice for Determining Early Seedling Growth Tests*. At the conclusion of the 30-day test period, the survival and growth of the test seedlings were compared to a control soil; the results were analyzed statistically for adverse effects.

Test Procedure

Control Soils

1) Originally Controls were prepared with – Potting Soil – Packaged by D.C. Organics, Inc. 3101 FM 2331, Godley, TX 76044
2) Due to poor performance of the plants in the original control soil, a second set of control samples were started using – Garden Plus® - Enriched Top Soil, Packaged by the Letco Group, Dallas, Texas 15220.

Test Soils

Each soil, including the controls, were thoroughly mixed and passed through a 2.0 mm sieve until a sufficient amount was attained to fill the test containers.

Test Trays

Each tray held three 6-pack test container inserts, ten individual containers and two 6-pack empty containers. This was an optimum design since each tray only held one sample with five test species (see Figure 1 below, and Image 2 in Appendix A). This allowed for the use of larger "pots" for better root growth and reduction of possible cross contamination. Thirty-four samples and three duplicates and three controls resulted in a total of forty trays.

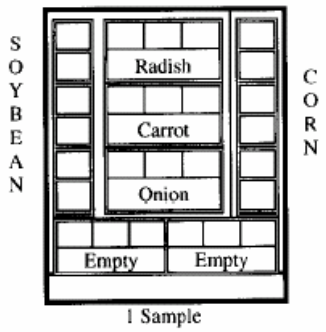


Figure 1. Tray Configuration

Test Species

The certified organic seeds were purchased from High Mowing Seed Company in Northern Vermont. The company provides lot numbers and germination rates with their seeds. Appendix B includes photocopies of the seed packets, and Appendix A contains images of the actual seeds. Table 2 indicates the five species of plants selected for testing.

Table 2. Five Plant Species Used for Testing

Group	Family	Species	Common Name	Lot #	Germ. Rate
Dicotyledons	Cruciferae	Raphanus sativum	Radish	TER8-70	86%
Dicotyledons	Luguminosae	Glycine mas	Soybean	MHM9-04	96%
Dicotyledons	Umbelliferae	Daucus carota	Carrot	TER8-03	89%
Monocotyledons	Amaryllidaceae	Allium cepa	Onion	TER9-19	89%
Monocotyledons	Gramineae	Zea mays	Corn	BF8-06.1	94%

Seed Planting

The onion, carrot and radish seeds were small; five seeds were planted 1.0–1.5 cm deep in each container. Due to their larger size, three soybean and corn seeds were planted 2.5–4.0 cm deep in each test container. Images 3a-e in Appendix A show the relative size of the seeds. Table 3 is the breakdown of the total number of seeds planted.

Table 3. Number of Seeds Planted per Replicate

Plant	Replicates	Seeds/Replicate	Total Seeds
Radish	6	5	30
Soybean	6	3	18
Carrot	6	5	30
Onion	6	5	30
Corn	6	3	18

Facility

An indoor growth chamber was prepared in a separate building from the analytical laboratories to prevent toxic contamination or vapors. A table, measuring 2.89m by 2.12m, was made to support the sample planting trays; it allowed space for 40 trays.

Planting

The amount of seeds to be planted and then plants to be harvested at the end of the growing period required that the samples and controls be planted in three groupings. One control and one duplicated sample were planted with each grouping of samples. The original control sample planted with each of the planting sets developed a hard crusty layer on the surface that suffocated the plant seeds; this was possibly due to manure present in the soil mix. The initial controls were therefore rejected and new controls were started using a new soil while the samples were still growing. The sample groupings start dates and end dates are listed in Table 11.

Light Requirements

The only light source found to produce the minimum light requirements was a 400-Watt metal halide HID lamp. Twelve lamps were positioned in 4 rows of 3 lights over the 40 trays (see Image 1 in Appendix A). The light intensity was monitored daily using a recording photometer, the meter was placed at the distance from the lights equal to that of the soil surface and along the very outside of the growth region. This arrangement leads to the light measurements showing the absolute minimum

exposure the plants would see. The light cycle was controlled using a programmable timer, which turned lights on at 6:30 AM and turned turn off at 8:30 PM. The approximate light intensity averaged 2000fc during the duration of the test. The standard recommends 2000fc, with a range of 300-400 $\mu mol/m^2/s$. Graph 1 illustrates the light output for the duration of the 30-day test. The height of the lamps was adjusted twice during the 30-days test period to accommodate the growing plants. The initial height adjustment occurred on September 22 with a second height adjustment on September 28. Occasional dips below the 300 $\mu mol/m^2/s$ were due to plant leaves getting between the lights and the photometer.

Temperature and Humidity Requirements

The air temperature and humidity were also continuously monitored using a computer program. Graph 2 illustrates the environmental conditions during the 30-day test. The minimum and maximum temperatures for the duration of the test were 18.5 °C and 34.1°C, respectively. There was one night that the temperature dropped below the ideal minimum temperature of 20°C, due to a cold front. There were multiple occasions that the temperature exceeded the recommended 30°C due to outside temperatures and the heat output from the lights. The humidity ranged from 32.6 to 73.6 %.

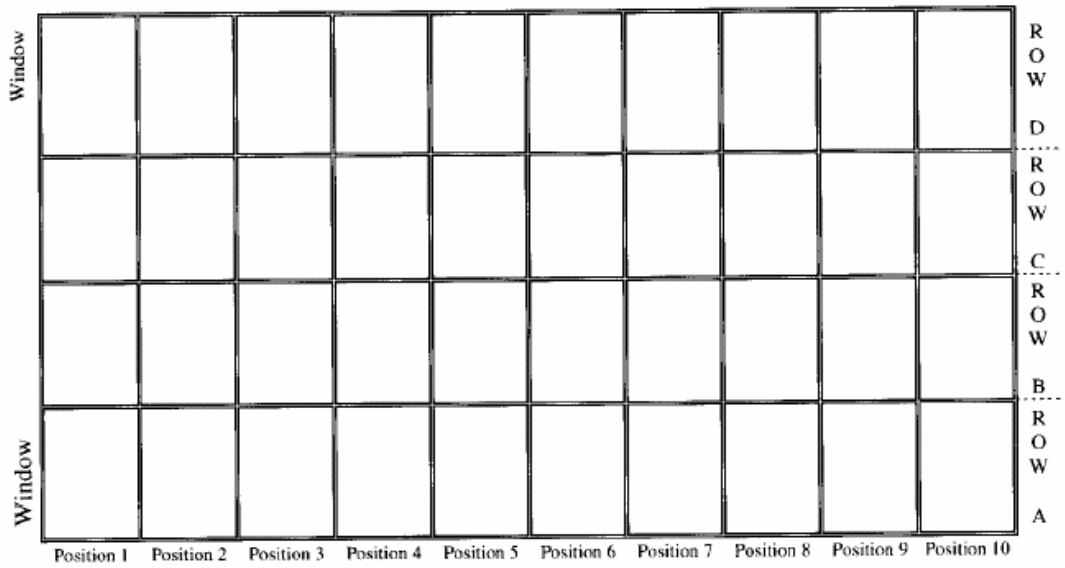
Watering Schedule

The seeds were initially watered with 20 ml of tap water for the 6-packs and 40 for the individual containers, and then monitored daily. Daily watering was necessary to keep the soil moist. Watering was performed using a hose connected to a metering peristaltic pump. The pump was calibrated to deliver a set amount of water per foot petal trigger. No nutrients were added during the test.

Rotating Schedule

To ensure that test species received average uniform lighting, the trays were rotated daily.

1) The trays in position A8-A10 and B8-B10 were removed, all remaining trays in Rows A & B were moved to the right three positions, and the trays from positions A8-A10 were placed in positions B1-B3. The trays from B8-B10 were placed in positions A1-A3.
2) The trays in position C8-C10 and D8-D10 were removed, all remaining trays in Row C & D were moved to the left three positions, and the trays from positions C8-C10 were placed in positions D1-D3. The trays from D8-D10 were placed in positions C1-C3.



Seedlings

The total number of seedlings emerging for each species per sample was recorded daily. The germination rates are calculated in Table 5a-e.

End of Test

At the conclusion of the study, the above ground plants were harvested and measured. The remaining below ground roots were washed to remove the soil and measured. The above ground seedling and the below ground roots were dried in an oven at 70±5°C for a minimum of 48 hours. The number of plants recovered in the harvesting process can be found in Table 5a-e.

Plant Deaths

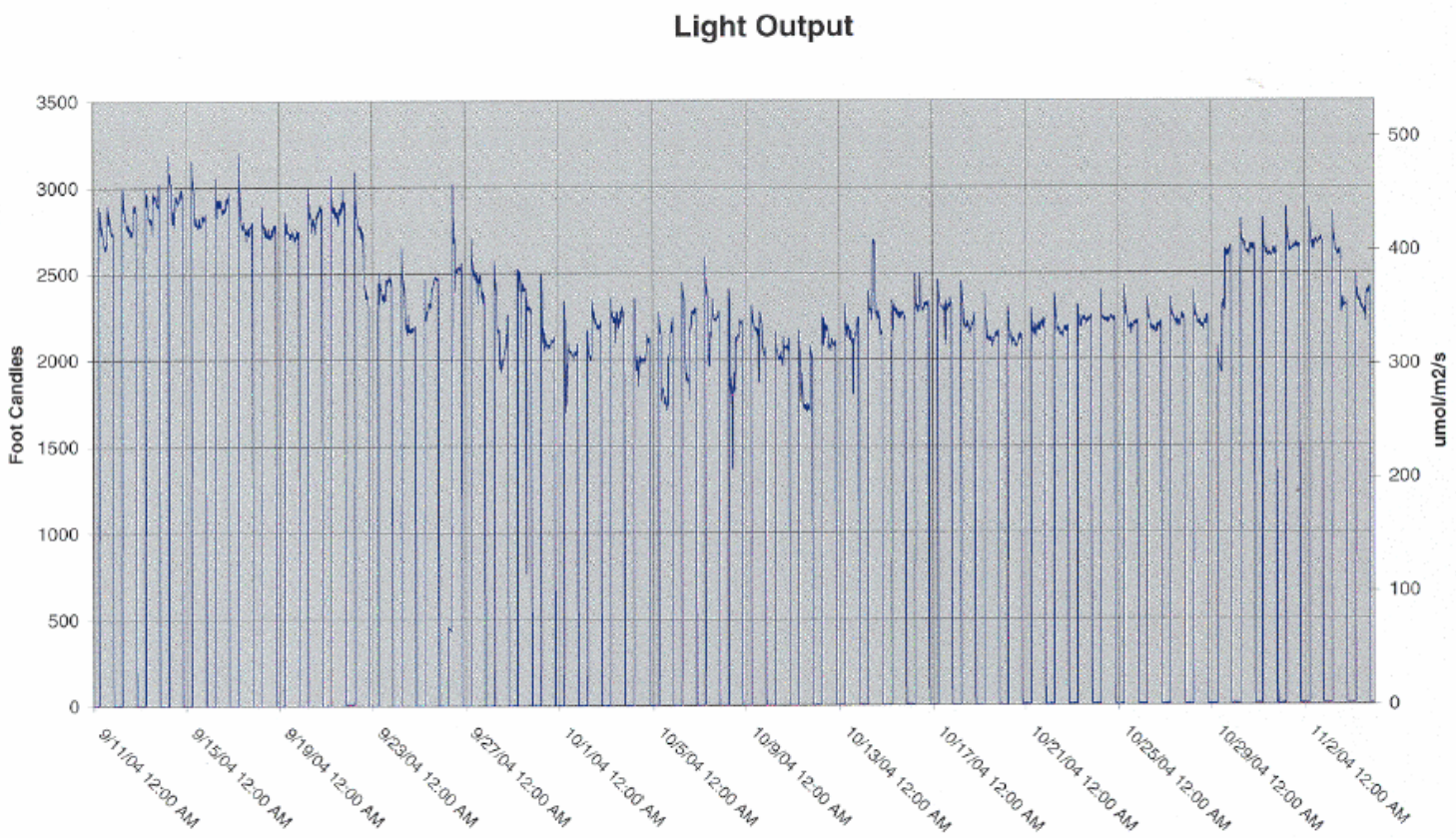
Table 4 contains the number of the plants that died during the 30-day test. Statistical Analysis Data acquired at the end of the test include seedling emergence data by species for each container, see Tables 6a-e; dry above ground plant weight by species and container, see Tables 7a-e; dry root weight for each species and container, see Table 8a-e; plant height by species and container, see Table 9a-e; and root length by species and container, see Table 10a-e. Each of the above-mentioned tables contains the data for each parameter by container (discrete test replicate) plus the total sum of each of the containers. Each table also contains a sample labeled "Combined" that is the three control sets treated as a single sample. The mean and standard deviation for the combined control sample was used for all statistical

analysis except the calculation of the pooled standard deviation, which used all samples except the combined control. The pooled standard deviation (shown at the bottom of each table) was calculated as the square root of the sum of the sum of the squares of deviations from the means divided by the degree of freedom. This pooled STD was used in calculating any data during the T-test analysis. The right hand side of the tables contains statistical information concerning each sample. Number of measurements (n), mathematical average (mean) and standard deviation data were derived in the normal manner on the data from each sample using each container as the individual replicates for calculations. The column labeled "Difference from Control" contains the variance of the sample mean from the combined control mean. The column labeled "Least Significant Difference @ 95%" contains the calculated least significant difference at the single tailed 95% confidence limit using the T-test, based upon the pooled standard deviation for the set, for each sample and the combined control. The final column shows a "Yes" if the sample mean and the control mean are statistically different.

Observations

1) A number of plants died during the test period; see Table 4. The some of the plants that died showed signs of wilting around the middle of the test period. Some of the smaller plants (onions, carrots) were soon indistinguishable from the soil and were not harvestable. Most of the rest of the plants had developed to the point were they were recoverable at harvest time and are included in the height, length and weight data.
2) Most of the soil samples developed a green tinge (fungus) on the surface of some of the individual containers. This is noted in Table 4.
3) In some instances in Table 5a-e, there were discrepancies in the number of plants emerged and number of plants recovered. Some of these differences were attributed to plant deaths; see Table 4. The remaining differences were probably due to loss of plants during the harvesting process. The number of inconsistencies was greatest in the carrots and onions, which were the smallest plants, and the most difficult to separate from the soil. Images 6a and 6b (Appendix A) show the relative size of the radishes, carrots and onions.

Graph 1. Light Out During the 30-day Test



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Graph 2. Environmental Conditions During the 30-day Test

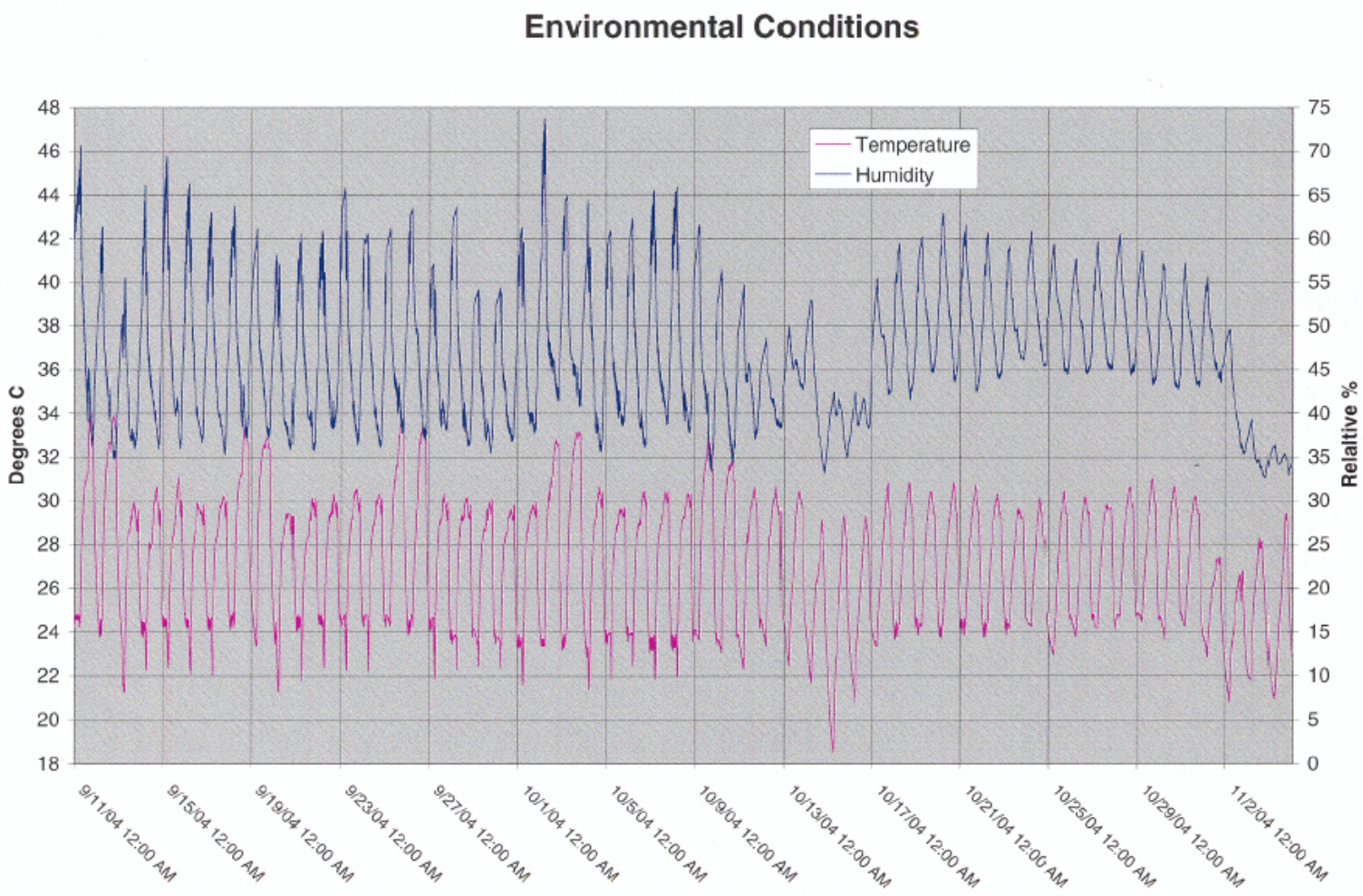

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Table 4: Number of Deaths

Sample ID	Client ID	Developed Surface Fungus	Corn	Onion	Carrot	Radish	Bean
250022	ECR111019A	X		2	10		
250022D	ECR111019AD			2	1		11
250023	ECR111029A	X					
250024	ECR112019A	X			11		13
250025	ECR113019A			2	1		
250026	ECR114019A	X		1	16	1	3
250027	ECR115019A	X		1	4		3
250028	ECR116019A	X	1	3		1	
250029	ECR117019A				1		1
250030	ECR118019A	X		1		1	
250031	ECR119019A	X		2			1
250032	ECR120019A	X		1			1
250152	ECX111019A	X		1			
250152D	ECX111019AD	X			1		
250153	ECX111029A	X		3	1		2
250154	ECX112019A	X		12	11	11	4
250155	ECX113019A	X	1			2	
250156	ECX114019A	X		1		1	
250157	ECX115019A	X					1
250158	ECX116019A	X					3
250159	ECX117019A	X		1			1
250160	ECX118019A	X					2
250161	ECX119019A	X	1	1		1	4
250162	ECX120019A	X					1
250231	ECT111019A	X				2	
250232	ECT111029A	X	1				
250233	ECT112019A	X	1			1	
250234	ECT113019A			3			
250235	ECT114019A	X				1	11
250236	ECT115019A	X					
250237	ECT116019A	X				2	
250238	ECT117019A	X		2		1	
250239	ECT118019A	X	1			1	
250240	ECT119019A	X					
250241	ECT120019A	X	1				1
251336	ECT126019A	X					3
251336D	ECT126019AD	X					1
Control-1R		X					
Control-2R		X					
Control-3R		X					

G-16

Table 5a : Corn Emergence, Germination Rates, and Percent Recovery

Day	ECR11A019A 290823	ECR11A019A 290823D	ECR11A019AB 290824	ECR11A019A 290825	ECR11A019A 290826	ECR11A019A 290827	ECR11A019A 290828	ECR11A019A 290829	ECR11A019A 290830	ECR11A019A 290831	ECR11A019A 290832	ECR11A019A 290833	ECR12A019A 290142	ECR11A019A 290152D	ECR11A019AB 290153	ECR11A019A 290154	ECR11A019A 290155	ECR11A019A 290156	ECR11A019A 290157	ECR11A019A 290158	ECR11A019A 290159	ECR11A019A 290160	ECR11A019A 290161	ECR11A019A 290162	ECR12A019A 290271	ECT11A019A 290232	ECT11A019A 290233	ECT11A019A 290234	ECT11A019A 290235	ECT11A019A 290236	ECT11A019A 290237	ECT11A019A 290238	ECT11A019A 290239	ECT11A019A 290240	ECT11A019A 290241	ECT11A019A 251336	ECT12A019A 251336D	ECT11A019ABD	CONTROL-1R	CONTROL-2R	CONTROL-3R
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	13	14	11	16	10	11	13	11	1	0	3	1	1	7	2	2	2	4	1	6	6	1	4	3	11	3	13	4	0	0	0	1	1	0	0	4	1	0	0	2
4	16	18	13	18	13	16	17	16	14	0	13	6	10	17	8	6	12	16	8	13	17	14	9	8	18	12	15	16	5	0	0	2	1	0	0	9	2	8	9	10
5	16	18	14	18	14	16	18	17	16	14	16	14	16	17	17	18	16	17	13	16	17	16	14	10	18	15	15	17	10	0	8	3	3	0	3	13	11	11	12	10
6	16	18	14	18	14	16	18	17	16	17	17	13	16	17	17	13	16	17	13	16	17	17	14	14	18	16	15	17	10	0	6	9	2	0	3	13	12	14	14	12
7	16	18	14	18	15	16	18	17	16	17	17	16	16	17	17	16	16	17	14	16	17	17	16	14	18	16	15	17	10	0	6	9	3	0	5	13	12	14	15	13
8	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	16	16	17	14	16	17	17	16	14	18	16	15	17	10	0	6	9	3	0	5	13	12	14	15	13
9	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	16	16	17	14	16	18	17	16	14	18	16	15	17	10	0	6	9	3	0	5	13	12	14	15	13
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11	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	6	11	3	0	5	13	12	14	15	13
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13	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	6	11	3	0	5	13	12	14	15	13
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20	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
21	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
22	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
23	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
24	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
25	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
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28	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
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30	17	18	14	18	15	16	18	17	16	17	17	16	16	17	18	17	16	17	14	16	18	17	17	14	18	16	15	17	10	0	7	11	3	0	5	13	12	14	15	13
#Seeds Planted	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Germ. Rate	94.4	100	77.8	100	83.3	88.9	100	94.4	88.9	94.4	94.4	88.9	88.9	94.4	100	94.4	88.9	94.4	77.8	88.9	100	94.4	94.4	77.8	100	88.9	83.3	94.4	55.6	0.0	38.9	61.1	16.7	0.0	27.8	72.2	66.7	77.8	83.3	72.2
Plants Rec.	17	18	14	18	15	16	18	16	16	17	17	16	16	17	18	17	16	17	14	16	18	17	16	14	18	15	14	16	11	0	7	10	2	0	4	13	12	14	15	13
% Rec	94.4	100	77.8	100	83.3	88.9	100	88.9	88.9	94.4	94.4	88.9	88.9	94.4	100	94.4	88.9	94.4	77.8	88.9	100	94.4	88.9	77.8	100	83.3	77.8	88.9	61.1	0.0	38.9	55.6	11.1	0.0	22.2	72.2	66.7	77.8	83.3	72.2

010011

Table 5b: Onion Emergence, Germination Rates, and Percent Recovery

| Day | 29002 | ICR11819A 29002D | ICR11819AD 29003 | ICR11819A 29004 | ICR11819A 29005 | ICR11819A 29006 | ICR11819A 29007 | ICR11819A 29008 | ICR11819A 29009 | ICR11819A 29010 | ICR11819A 29011 | ICR11819A 29012 | ICR11819A 29013 | ICR11819A 29014 | ICR11819A 29015 | ICR11819A 29016 | ICR11819AD 29017 | ICR11819A 29018 | ICR11819A 29019 | ICR11819A 29020 | ICR11819A 29021 | ICR11819A 29022 | ICR11819A 29023 | ICR11819A 29024 | ICR11819A 29025 | ICR11819A 29026 | ICR11819A 29027 | ICR11819A 29028 | ICR11819A 29029 | ICR11819A

Table 5c: Carrot Emergence, Germination Rates, and Percent Recovery

Day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	3	3	1	1	3	8	0	1	0	0	0	0	0	0	0	0	1	1	0	1
6	18	15	4	19	20	19	9	16	0	3	3	0	1	0	0	0	3	3	0	4
7	23	31	13	21	23	23	31	33	0	16	10	0	5	0	1	4	12	21	0	14
8	26	24	18	23	23	23	28	24	3	12	11	0	6	6	5	8	20	28	0	19
9	27	25	24	25	23	26	26	24	8	14	14	0	7	14	12	11	20	29	1	20
10	28	27	26	26	24	26	26	25	10	15	15	0	9	26	25	13	21	29	1	21
11	29	27	25	26	26	28	26	26	12	15	16	0	9	26	27	14	21	29	2	21
12	29	30	26	26	24	28	26	24	16	15	16	0	12	26	25	17	21	29	2	21
13	29	28	26	26	24	28	26	24	16	15	16	0	13	26	26	17	21	29	3	21
14	30	30	30	30	30	30	28	25	18	15	16	0	13	30	28	17	21	29	3	21
15	29	29	26	26	26	29	26	25	19	15	16	0	14	26	27	18	21	29	3	21
16	29	29	26	26	27	29	26	26	20	15	16	0	14	26	29	18	21	29	3	21
17	29	29	26	26	27	29	26	26	20	15	16	0	14	26	29	19	21	29	3	21
18	29	29	26	26	27	29	26	28	20	15	16	0	14	26	27	18	21	29	3	21
19	29	29	26	26	27	29	26	26	20	15	16	0	14	26	27	18	21	29	3	21
20	29	29	26	26	27	29	28	26	20	15	16	0	14	26	28	18	21	29	3	21
21	29	29	26	26	27	29	26	26	20	15	15	0	13	27	27	18	21	29	3	21
22	29	29	26	26	27	29	26	26	20	15	16	0	13	27	29	18	21	29	3	21
23	29	29	26	26	27	29	28	26	20	15	16	0	13	27	28	18	21	29	3	21
24	29	29	26	27	27	29	26	26	20	15	16	0	13	27	27	18	21	29	3	21
25	29	29	26	27	27	29	28	26	20	15	16	0	13	27	29	18	21	29	4	21
26	29	29	26	27	27	29	26	26	20	15	16	0	13	27	27	18	21	29	4	21
27	29	29	26	27	27	29	26	26	20	15	16	0	13	27	27	18	21	29	4	21
28	29	29	26	27	27	29	26	26	20	15	16	0	13	27	27	18	21	29	4	21
29	29	29	26	27	27	29	27	26	20	15	16	0	13	27	27	18	21	29	4	21
30	29	29	26	27	27	29	27	28	20	15	16	0	13	27	27	18	21	29	4	21
All Seeds Planted	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Germ. Rate	96.7	96.7	86.7	90.0	90.0	96.7	90.0	86.7	66.7	50.0	53.3	0.0	43.3	90.0	90.0	60.0	70.0	96.7	13.3	70.0
Plants Rec.	28	28	26	26	28	27	27	26	19	15	16	0	13	26	27	6	19	29	4	21
% Rec.	93.3	93.3	86.7	86.7	93.3	90.0	90.0	86.7	63.3	50.0	53.3	0.0	43.3	86.7	90.0	20.0	63.3	96.7	13.3	70.0

Day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	CONTROL-1R	CONTROL-2R	CONTROL-3R
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
5	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
6	4	6	0	2	0	0	0	3	1	0	0	0	1	0	0	0	1	4	1	0
7	18	14	4	22	1	0	14	10	1	0	0	0	1	0	0	1	1	10	10	0
8	18	21	9	26	5	0	20	19	1	0	0	0	1	0	0	1	1	10	10	0
9	20	25	13	26	11	3	24	20	1	0	0	0	1	0	0	1	1	12	17	1
10	22	25	21	26	17	9	25	24	1	0	0	0	1	0	0	1	1	12	18	1
11	22	26	24	26	17	11	25	26	2	0	0	0	1	0	1	1	2	13	18	1
12	22	26	24	26	19	11	25	26	2	0	0	0	1	0	1	1	2	13	18	1
13	22	26	24	26	19	11	25	26	2	0	0	0	1	0	1	1	2	13	18	1
14	22	26	24	26	19	11	25	26	2	0	0	0	1	0	1	1	2	13	18	1
15	22	26	24	26	19	11	25	27	2	0	0	0	1	0	1	1	2	13	18	3
16	22	26	24	26	19	11	25	27	2	0	0	0	1	0	1	1	2	13	18	3
17	22	26	24	26	19	11	25	27	2	2	0	0	1	0	1	1	2	13	18	3
18	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
19	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
20	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
21	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
22	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
23	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
24	21	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
25	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
26	23	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
27	23	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
28	23	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
29	23	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
30	23	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
All Seeds Planted	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Germ. Rate	76.7	86.7	80.0	86.7	63.3	36.7	83.3	90.0	6.7	6.7	0.0	3.3	3.3	0.0	3.3	3.3	6.7	43.3	60.0	10.0
Plants Rec.	22	26	24	26	19	11	25	27	2	2	0	1	1	0	1	1	2	13	18	3
% Rec.	73.3	86.7	80.0	86.7	63.3	36.7	83.3	90.0	6.7	6.7	0.0	3.3	3.3	0.0	3.3	3.3	6.7	43.3	60.0	10.0

Table 5d. Radish Emergence, Germination Rates, and Percent Recovery

Day	29882	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	10	9	2	19	9	21	4	5	1	3	6	0	1	0	1	0	0	3	0	1
3	29	28	29	28	25	28	23	19	7	5	20	16	14	23	17	4	18	27	0	20
4	30	28	27	30	28	29	28	24	19	24	29	18	15	29	25	8	23	29	1	24
5	30	29	30	30	30	29	30	24	27	25	29	20	16	30	28	9	26	29	1	24
6	30	30	30	30	30	30	30	27	30	26	30	20	16	30	30	13	26	29	1	28
7	30	29	30	30	30	29	30	28	29	26	30	20	16	30	29	13	26	29	2	28
8	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	14	26	29	2	30
9	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	15	26	29	3	30
10	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
11	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
12	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
13	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
14	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
15	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
16	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
17	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
18	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
19	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
20	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
21	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
22	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
23	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
24	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
25	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
26	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
27	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
28	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
29	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
30	30	29	30	31	30	29	30	29	29	26	30	20	16	30	29	16	26	29	3	30
# Seeds Planted	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Germ. Rate	100	96.7	100	103	100	96.7	100	96.7	96.7	86.7	100	66.7	53.3	100	96.7	53.3	86.7	96.7	10.0	100
Plants Rec.	30	29	30	31	30	28	30	28	27	25	30	20	16	30	29	5	26	28	2	30
% Rec.	100	96.7	100	103	100	93.3	100	93.3	90.0	83.3	100	66.7	53.3	100	96.7	16.7	86.7	93.3	6.7	100

Day	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	CONTROL-1R	CONTROL-2R	CONTROL-3R
1	0	0	0	0	0	0	0	4	8	8	0	0	9	0	0	0	0	0	0	0
2	1	2	2	1	1	1	3	3	4	9	1	9	9	3	1	18	9	0	0	0
3	22	21	18	20	7	16	29	23	23	19	17	23	14	3	0	27	28	15	30	15
4	25	30	23	22	21	21	30	30	27	19	14	24	14	3	12	28	29	29	30	28
5	28	30	27	26	26	27	30	30	27	19	21	26	14	5	14	28	29	29	30	27
6	28	30	28	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
7	29	30	28	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
8	29	30	28	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
9	29	30	28	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
10	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
11	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
12	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
13	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
14	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
15	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
16	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
17	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
18	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
19	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
20	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
21	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
22	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
23	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
24	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
25	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
26	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
27	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
28	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
29	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
30	29	30	29	27	28	28	30	30	27	19	21	26	15	5	14	28	29	29	30	27
# Seeds Planted	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Germ. Rate	96.7	100	96.7	90.0	93.3	93.3	100	100	90.0	63.3	70.0	86.7	50.0	16.7	46.7	93.3	96.7	96.7	100	90.0
Plants Rec.	27	30	28	27	25	27	29	30	25	19	19	21	14	5	14	27	29	29	30	27
% Rec.	90.0	100	93.3	90.0	83.3	90.0	96.7	100	83.3	63.3	63.3	70.0	46.7	16.7	46.7	90.0	96.7	96.7	100	90.0

010014

Table 5c: Soybean Emergence, Germination Rates, and Percent Recovery

Day	290-021	ECT1110-01A 290-022	ECT1110-01D 290-023	ECT1110-02A 290-024	ECT1110-02D 290-025	ECT1110-03A 290-026	ECT1110-03D 290-027	ECT1110-04A 290-028	ECT1110-04D 290-029	ECT1110-05A 290-030	ECT1110-05D 290-031	ECT1110-06A 290-032	ECT1110-06D 290-033	ECT1110-07A 290-034	ECT1110-07D 290-035	ECT1110-08A 290-036	ECT1110-08D 290-037	ECT1110-09A 290-038	ECT1110-09D 290-039	ECT1110-10A 290-040	ECT1110-10D 290-041	ECT1110-11A 290-042	ECT1110-11D 290-043	ECT1110-12A 290-044	ECT1110-12D 290-045	ECT1110-13A 290-046	ECT1110-13D 290-047	ECT1110-14A 290-048	ECT1110-14D 290-049	ECT1110-15A 290-050	ECT1110-15D 290-051	ECT1110-16A 290-052	ECT1110-16D 290-053	ECT1110-17A 290-054	ECT1110-17D 290-055	ECT1110-18A 290-056	ECT1110-18D 290-057	ECT1110-19A 290-058	ECT1110-19D 290-059	ECT1110-20A 290-060	CONTROL-1X	CONTROL-2X
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	5	2	3	0	6	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	14	11	14	16	4	18	15	1	0	0	2	1	3	0	2	0	3	2	0	3	3	6	0	6	3	2	5	1	0	0	0	0	0	1	3	6	10	3	0	0	0
4	18	16	15	18	5	18	17	14	0	2	9	4	16	12	17	0	14	10	2	13	9	12	4	16	11	3	15	3	3	6	0	0	0	0	3	8	8	16	17	8	0
5	18	17	15	18	12	18	17	18	7	12	14	12	16	18	17	0	15	13	6	13	17	16	12	17	15	13	17	13	11	7	4	12	1	0	4	13	12	17	17	10	0
6	18	17	15	18	14	18	17	18	13	14	15	13	17	18	18	0	16	16	6	18	18	16	15	18	16	17	18	18	12	10	7	13	1	0	9	15	12	17	18	11	0
7	18	17	15	18	14	18	17	18	16	13	18	17	17	18	18	10	16	17	8	15	18	17	16	18	18	17	18	18	12	10	8	15	1	0	9	15	12	17	18	11	0
8	18	17	15	18	14	18	17	18	16	13	18	18	17	18	18	13	16	17	9	18	18	17	17	18	18	19	18	18	12	10	8	15	1	0	9	15	12	17	18	11	0
9	18	17	15	18	14	18	17	18	16	13	18	18	17	18	18	13	16	17	10	18	18	17	17	18	18	18	18	18	12	10	8	15	1	0	9	15	12	17	18	11	0
10	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	17	16	17	10	18	18	17	18	18	18	19	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
11	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	17	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
12	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
13	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
14	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
15	18	17	15	18	14	18	17	17	17	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
16	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
17	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
18	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
19	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
20	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
21	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
22	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
23	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
24	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
25	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
26	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
27	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
28	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	15	1	0	9	16	12	17	18	11	0
29	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	16	1	0	9	16	12	17	18	11	0
30	18	17	15	18	14	18	17	17	18	13	18	18	17	18	18	18	16	17	10	18	18	18	18	18	18	18	18	18	12	10	8	16	1	0	9	16	12	17	18	11	0
Number Planted	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Germ. Rate	100	94.4	83.3	100	77.8	100	94.4	94.4	100	100	100	100	94.4	100	100	100	88.9	94.4	33.3	100	100	100	100	100	100	100	100	100	66.7	55.6	44.4	88.9	5.6	0.0	50.0	88.9	77.8	94.4	100	61.1
Plants Rec	18	17	15	18	14	18	17	17	18	18	18	18	18	18	18	17	16	17	10	18	18	16	16	18	18	18	18	18	12	10	8	16	1	0	9	16	14	17	18	11	0
% Rec	100	94.4	83.3	100	77.8	100	94.4	94.4	100	100	100	100	88.9	100	100	94.4	88.9	94.4	33.3	100	100	88.9	88.9	100	100	100	100	100	66.7	55.6	44.4	88.9	5.6	0.0	50.0	88.9	77.8	94.4	100	61.1

010015

Table 6a. CORN Plant Emergence Numbers

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	3	3	3	3	3	2	17	6	2.83	0.41	0.50	0.48	YES
250022D	ECR111019AD	3	2	3	4	3	3	18	6	3.00	0.63	0.67	0.48	YES
250023	ECR111029A	2	2	2	3	3	2	14	6	2.33	0.52	0.00	0.48	
250024	ECR112019A	3	3	3	3	3	3	18	6	3.00	0.00	0.67	0.48	YES
250025	ECR113019A	2	3	2	2	3	3	15	6	2.50	0.55	0.17	0.48	
250026	ECR114019A	2	3	3	2	3	3	16	6	2.67	0.52	0.33	0.48	
250027	ECR115019A	3	3	3	3	3	3	18	6	3.00	0.00	0.67	0.48	YES
250028	ECR116019A	2	3	3	3	3	3	17	6	2.83	0.41	0.50	0.48	YES
250029	ECR117019A	3	3	3	3	2	2	16	6	2.67	0.52	0.33	0.48	
250030	ECR118019A	3	3	3	3	3	2	17	6	2.83	0.41	0.50	0.48	YES
250031	ECR119019A	3	3	3	3	3	2	17	6	2.83	0.41	0.50	0.48	YES
250032	ECR120019A	3	3	2	3	3	2	16	6	2.67	0.52	0.33	0.48	
250152	ECX111019A	3	2	3	2	3	3	16	6	2.67	0.52	0.33	0.48	
250152D	ECX111019AD	3	3	3	3	3	2	17	6	2.83	0.41	0.50	0.48	YES
250153	ECX111029A	3	3	3	3	3	3	18	6	3.00	0.00	0.67	0.48	YES
250154	ECX112019A	3	2	3	3	3	3	17	6	2.83	0.41	0.50	0.48	YES
250155	ECX113019A	3	3	2	2	3	3	16	6	2.67	0.52	0.33	0.48	
250156	ECX114019A	3	3	2	3	3	3	17	6	2.83	0.41	0.50	0.48	YES
250157	ECX115019A	2	2	3	2	2	3	14	6	2.33	0.52	0.00	0.48	
250158	ECX116019A	3	3	3	3	2	2	16	6	2.67	0.52	0.33	0.48	
250159	ECX117019A	3	3	3	3	3	3	18	6	3.00	0.00	0.67	0.48	YES
250160	ECX118019A	3	2	3	3	3	3	17	6	2.83	0.41	0.50	0.48	YES
250161	ECX119019A	3	3	3	3	3	2	17	6	2.83	0.41	0.50	0.48	YES
250162	ECX120019A	3	3	3	1	2	2	14	6	2.33	0.82	0.00	0.48	
250231	ECT111019A	3	3	3	3	3	3	18	6	3.00	0.00	0.67	0.48	YES
250232	ECT111029A	2	2	3	3	3	3	16	6	2.67	0.52	0.33	0.48	
250233	ECT112019A	3	3	1	2	3	3	15	6	2.50	0.84	0.17	0.48	
250234	ECT113019A	2	3	3	3	3	3	17	6	2.83	0.41	0.50	0.48	YES
250235	ECT114019A	1	1	1	2	2	3	10	6	1.67	0.82	-0.67	0.48	YES
250236	ECT115019A	0	0	0	0	0	0	0	6	0.00	0.00	-2.33	0.48	YES
250237	ECT116019A	0	3	1	2	1	0	7	6	1.17	1.17	-1.17	0.48	YES
250238	ECT117019A	3	3	0	1	2	2	11	6	1.83	1.17	-0.50	0.48	YES
250239	ECT118019A	1	1	0	0	1	0	3	6	0.50	0.55	-1.83	0.48	YES
250240	ECT119019A	0	0	0	0	0	0	0	6	0.00	0.00	-2.33	0.48	YES
250241	ECT120019A	2	0	3	0	0	0	5	6	0.83	1.33	-1.50	0.48	YES
251336	ECT126019A	2	2	2	2	2	3	13	6	2.17	0.41	-0.17	0.48	
251336D	ECT126019AD	3	1	1	3	3	1	12	6	2.00	1.10	-0.33	0.48	
Control-1R		3	2	2	2	2	3	14	6	2.33	0.52	0.00	0.48	
Control-2R		2	3	3	2	3	2	15	6	2.50	0.55	0.17	0.48	
Control-3R		2	2	3	3	2	1	13	6	2.17	0.75	-0.17	0.48	
Combined								42	18	2.33	0.59	0.00	0.33	
Pooled STD	0.59													

Table 6b. ONION Plant Emergence Numbers

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	4	4	3	5	4	5	25	6	4.17	0.75	2.39	0.82	YES
250022D	ECR111019AD	5	3	3	2	6	4	23	6	3.83	1.47	2.06	0.82	YES
250023	ECR111029A	3	1	2	3	2	4	15	6	2.50	1.05	0.72	0.82	
250024	ECR112019A	4	3	5	3	1	3	19	6	3.17	1.33	1.39	0.82	YES
250025	ECR113019A	2	3	4	4	3	4	20	6	3.33	0.82	1.56	0.82	YES
250026	ECR114019A	3	3	4	4	3	4	21	6	3.50	0.55	1.72	0.82	YES
250027	ECR115019A	2	4	5	4	3	6	24	6	4.00	1.41	2.22	0.82	YES
250028	ECR116019A	3	4	1	5	3	3	19	6	3.17	1.33	1.39	0.82	YES
250029	ECR117019A	4	0	3	2	4	2	15	6	2.50	1.52	0.72	0.82	
250030	ECR118019A	4	3	3	4	4	5	23	6	3.83	0.75	2.06	0.82	YES
250031	ECR119019A	1	3	1	2	2	0	9	6	1.50	1.05	-0.28	0.82	
250032	ECR120019A	2	1	2	2	5	2	14	6	2.33	1.37	0.56	0.82	
250152	ECX111019A	2	4	1	1	3	0	11	6	1.83	1.47	0.06	0.82	
250152D	ECX111019AD	3	4	3	4	3	1	18	6	3.00	1.10	1.22	0.82	YES
250153	ECX111029A	0	3	2	0	3	3	11	6	1.83	1.47	0.06	0.82	
250154	ECX112019A	3	4	3	5	3	5	23	6	3.83	0.98	2.06	0.82	YES
250155	ECX113019A	1	4	0	1	2	2	10	6	1.67	1.37	-0.11	0.82	
250156	ECX114019A	5	5	4	4	4	4	26	6	4.33	0.52	2.56	0.82	YES
250157	ECX115019A	0	1	0	0	0	0	1	6	0.17	0.41	-1.61	0.82	YES
250158	ECX116019A	3	5	2	3	4	4	21	6	3.50	1.05	1.72	0.82	YES
250159	ECX117019A	3	3	5	1	4	3	19	6	3.17	1.33	1.39	0.82	YES
250160	ECX118019A	3	3	4	4	4	4	22	6	3.67	0.52	1.89	0.82	YES
250161	ECX119019A	3	3	4	4	1	4	19	6	3.17	1.17	1.39	0.82	YES
250162	ECX120019A	4	3	5	5	3	4	24	6	4.00	0.89	2.22	0.82	YES
250231	ECT111019A	0	1	0	1	2	3	7	6	1.17	1.17	-0.61	0.82	
250232	ECT111029A	1	0	2	2	1	0	6	6	1.00	0.89	-0.78	0.82	
250233	ECT112019A	2	3	4	2	2	3	16	6	2.67	0.82	0.89	0.82	YES
250234	ECT113019A	4	5	3	3	2	3	20	6	3.33	1.03	1.56	0.82	YES
250235	ECT114019A	0	2	1	1	0	0	4	6	0.67	0.82	-1.11	0.82	YES
250236	ECT115019A	0	3	0	1	1	0	5	6	0.83	1.17	-0.94	0.82	YES
250237	ECT116019A	0	0	0	0	0	0	0	6	0.00	0.00	-1.78	0.82	YES
250238	ECT117019A	3	1	0	3	2	1	10	6	1.67	1.21	-0.11	0.82	
250239	ECT118019A	0	0	0	0	1	0	1	6	0.17	0.41	-1.61	0.82	YES
250240	ECT119019A	0	0	1	0	0	0	1	6	0.17	0.41	-1.61	0.82	YES
250241	ECT120019A	0	0	0	1	1	0	2	6	0.33	0.52	-1.44	0.82	YES
251336	ECT126019A	0	0	1	0	0	0	1	6	0.17	0.41	-1.61	0.82	YES
251336D	ECT126019AD	1	0	1	0	0	1	3	6	0.50	0.55	-1.28	0.82	YES
Control-1R		3	2	2	2	2	3	14	6	2.33	0.52	0.56	0.82	
Control-2R		3	2	4	1	2	0	12	6	2.00	1.41	0.22	0.82	
Control-3R		1	1	1	1	0	2	6	6	1.00	0.63	-0.78	0.82	
Combined								32	18	1.78	1.06	0.00	0.57	
Pooled STD	1.02													

Table 6c. CARROT Plant Emergence Numbers

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	5	5	5	6	4	4	29	6	4.83	0.75	2.94	0.78	YES
250022D	ECR111019AD	4	5	5	4	6	5	29	6	4.83	0.75	2.94	0.78	YES
250023	ECR111029A	4	5	4	4	4	5	26	6	4.33	0.52	2.44	0.78	YES
250024	ECR112019A	5	4	4	4	5	5	27	6	4.50	0.55	2.61	0.78	YES
250025	ECR113019A	5	4	5	5	4	4	27	6	4.50	0.55	2.61	0.78	YES
250026	ECR114019A	5	5	5	5	5	4	29	6	4.83	0.41	2.94	0.78	YES
250027	ECR115019A	5	4	5	5	4	4	27	6	4.50	0.55	2.61	0.78	YES
250028	ECR116019A	1	5	5	5	5	5	26	6	4.33	1.63	2.44	0.78	YES
250029	ECR117019A	3	2	3	3	4	5	20	6	3.33	1.03	1.44	0.78	YES
250030	ECR118019A	4	4	3	4	5	5	25	6	4.17	0.75	2.28	0.78	YES
250031	ECR119019A	1	3	3	2	4	3	16	6	2.67	1.03	0.78	0.78	
250032	ECR120019A	0	0	0	0	0	0	0	6	0.00	0.00	-1.89	0.78	YES
250152	ECX111019A	0	4	3	2	5	1	15	6	2.50	1.87	0.61	0.78	
250152D	ECX111019AD	5	5	4	5	3	5	27	6	4.50	0.84	2.61	0.78	YES
250153	ECX111029A	4	4	5	5	5	4	27	6	4.50	0.55	2.61	0.78	YES
250154	ECX112019A	4	0	4	4	0	6	18	6	3.00	2.45	1.11	0.78	YES
250155	ECX113019A	2	4	4	4	5	2	21	6	3.50	1.22	1.61	0.78	YES
250156	ECX114019A	5	4	5	5	5	5	29	6	4.83	0.41	2.94	0.78	YES
250157	ECX115019A	0	1	1	0	1	1	4	6	0.67	0.52	-1.22	0.78	YES
250158	ECX116019A	4	4	3	2	3	5	21	6	3.50	1.05	1.61	0.78	YES
250159	ECX117019A	4	5	5	3	3	3	23	6	3.83	0.98	1.94	0.78	YES
250160	ECX118019A	5	4	4	4	5	4	26	6	4.33	0.52	2.44	0.78	YES
250161	ECX119019A	4	2	5	5	4	4	24	6	4.00	1.10	2.11	0.78	YES
250162	ECX120019A	5	5	2	5	4	5	26	6	4.33	1.21	2.44	0.78	YES
250231	ECT111019A	4	2	4	0	5	4	19	6	3.17	1.83	1.28	0.78	YES
250232	ECT111029A	0	3	4	2	1	1	11	6	1.83	1.47	-0.06	0.78	
250233	ECT112019A	5	5	3	4	4	4	25	6	4.17	0.75	2.28	0.78	YES
250234	ECT113019A	4	4	5	5	4	5	27	6	4.50	0.55	2.61	0.78	YES
250235	ECT114019A	0	1	0	0	1	0	2	6	0.33	0.52	-1.56	0.78	YES
250236	ECT115019A	2	0	0	0	0	0	2	6	0.33	0.82	-1.56	0.78	YES
250237	ECT116019A	0	0	0	0	0	0	0	6	0.00	0.00	-1.89	0.78	YES
250238	ECT117019A	0	0	0	0	0	1	1	6	0.17	0.41	-1.72	0.78	YES
250239	ECT118019A	0	0	0	0	1	0	1	6	0.17	0.41	-1.72	0.78	YES
250240	ECT119019A	0	0	0	0	0	0	0	6	0.00	0.00	-1.89	0.78	YES
250241	ECT120019A	0	0	0	0	0	1	1	6	0.17	0.41	-1.72	0.78	YES
251336	ECT126019A	0	0	0	1	0	0	1	6	0.17	0.41	-1.72	0.78	YES
251336D	ECT126019AD	0	0	1	1	0	0	2	6	0.33	0.52	-1.56	0.78	YES
Control-1R		4	3	3	1	2	0	13	6	2.17	1.47	0.28	0.78	
Control-2R		5	3	3	3	2	2	18	6	3.00	1.10	1.11	0.78	
Control-3R		1	0	1	0	0	1	3	6	0.50	0.55	-1.39	0.78	
Combined								34	18	1.89	1.49	0.00	0.54	
Pooled STD	0.96													

Table 6d. RADISH Plant Emergence Numbers

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250022D	ECR111019AD	5	5	5	5	5	4	29	6	4.83	0.41	0.06	0.67	
250023	ECR111029A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250024	ECR112019A	5	5	6	5	5	5	31	6	5.17	0.41	0.39	0.67	
250025	ECR113019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250026	ECR114019A	5	5	4	5	5	5	29	6	4.83	0.41	0.06	0.67	
250027	ECR115019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250028	ECR116019A	4	5	6	5	4	5	29	6	4.83	0.75	0.06	0.67	
250029	ECR117019A	5	4	5	5	4	6	29	6	4.83	0.75	0.06	0.67	
250030	ECR118019A	4	5	4	3	5	5	26	6	4.33	0.82	-0.44	0.67	
250031	ECR119019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250032	ECR120019A	3	5	3	2	5	2	20	6	3.33	1.37	-1.44	0.67	YES
250152	ECX111019A	1	4	0	2	5	4	16	6	2.67	1.97	-2.11	0.67	YES
250152D	ECX111019AD	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250153	ECX111029A	5	5	5	4	5	5	29	6	4.83	0.41	0.06	0.67	
250154	ECX112019A	1	5	0	4	4	2	16	6	2.67	1.97	-2.11	0.67	YES
250155	ECX113019A	5	3	5	4	5	4	26	6	4.33	0.82	-0.44	0.67	
250156	ECX114019A	5	6	4	4	5	5	29	6	4.83	0.75	0.06	0.67	
250157	ECX115019A	0	3	0	0	0	0	3	6	0.50	1.22	-4.28	0.67	YES
250158	ECX116019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250159	ECX117019A	4	5	5	5	6	4	29	6	4.83	0.75	0.06	0.67	
250160	ECX118019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250161	ECX119019A	5	5	5	5	5	4	29	6	4.83	0.41	0.06	0.67	
250162	ECX120019A	4	5	5	5	4	4	27	6	4.50	0.55	-0.28	0.67	
250231	ECT111019A	5	4	5	4	5	4	27	6	4.50	0.55	-0.28	0.67	
250232	ECT111029A	5	5	5	5	5	3	28	6	4.67	0.82	-0.11	0.67	
250233	ECT112019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250234	ECT113019A	5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
250235	ECT114019A	4	5	4	5	5	4	27	6	4.50	0.55	-0.28	0.67	
250236	ECT115019A	5	2	4	2	3	3	19	6	3.17	1.17	-1.61	0.67	YES
250237	ECT116019A	4	5	5	2	4	1	21	6	3.50	1.64	-1.28	0.67	YES
250238	ECT117019A	5	4	4	3	5	5	26	6	4.33	0.82	-0.44	0.67	
250239	ECT118019A	4	4	0	2	4	1	15	6	2.50	1.76	-2.28	0.67	YES
250240	ECT119019A	1	0	1	1	1	1	5	6	0.83	0.41	-3.94	0.67	YES
250241	ECT120019A	1	2	3	4	3	1	14	6	2.33	1.21	-2.44	0.67	YES
251336	ECT126019A	5	5	5	4	5	4	28	6	4.67	0.52	-0.11	0.67	
251336D	ECT126019AD	5	5	5	5	5	4	29	6	4.83	0.41	0.06	0.67	
Control-1R		5	4	5	5	5	5	29	6	4.83	0.41	0.06	0.67	
Control-2R		5	5	5	5	5	5	30	6	5.00	0.00	0.22	0.67	
Control-3R		5	5	4	4	4	5	27	6	4.50	0.55	-0.28	0.67	
Combined								86	18	4.78	0.43	0.00	0.47	
Pooled STD	0.83													

Table 6e. ***SOYBEAN Plant Emergence Numbers***

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95% Statistical Difference
250022	ECR111019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250022D	ECR111019AD	2	3	3	3	3	3	17	6	2.83	0.41	0.28	0.51	
250023	ECR111029A	3	3	3	3	3	0	15	6	2.50	1.22	-0.06	0.51	
250024	ECR112019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250025	ECR113019A	3	0	3	3	2	3	14	6	2.33	1.21	-0.22	0.51	
250026	ECR114019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250027	ECR115019A	3	3	3	3	2	3	17	6	2.83	0.41	0.28	0.51	
250028	ECR116019A	2	3	3	3	3	3	17	6	2.83	0.41	0.28	0.51	
250029	ECR117019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250030	ECR118019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250031	ECR119019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250032	ECR120019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250152	ECX111019A	3	3	3	3	3	2	17	6	2.83	0.41	0.28	0.51	
250152D	ECX111019AD	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250153	ECX111029A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250154	ECX112019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250155	ECX113019A	1	3	3	3	3	3	16	6	2.67	0.82	0.11	0.51	
250156	ECX114019A	2	3	3	3	3	3	17	6	2.83	0.41	0.28	0.51	
250157	ECX115019A	2	1	1	1	2	3	10	6	1.67	0.82	-0.89	0.51	YES
250158	ECX116019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250159	ECX117019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250160	ECX118019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250161	ECX119019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250162	ECX120019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250231	ECT111019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250232	ECT111029A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250233	ECT112019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250234	ECT113019A	3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
250235	ECT114019A	1	3	2	3	0	3	12	6	2.00	1.26	-0.56	0.51	YES
250236	ECT115019A	1	3	2	3	1	0	10	6	1.67	1.21	-0.89	0.51	YES
250237	ECT116019A	3	0	2	1	0	2	8	6	1.33	1.21	-1.22	0.51	YES
250238	ECT117019A	2	3	3	3	2	3	16	6	2.67	0.52	0.11	0.51	
250239	ECT118019A	0	1	0	0	0	0	1	6	0.17	0.41	-2.39	0.51	YES
250240	ECT119019A	0	0	0	0	0	0	0	6	0.00	0.00	-2.56	0.51	YES
250241	ECT120019A	3	1	2	3	0	0	9	6	1.50	1.38	-1.06	0.51	YES
251336	ECT126019A	3	3	3	3	1	3	16	6	2.67	0.82	0.11	0.51	
251336D	ECT126019AD	3	2	3	3	2	1	14	6	2.33	0.82	-0.22	0.51	
Control-1R		3	3	3	2	3	3	17	6	2.83	0.41	0.28	0.51	
Control-2R		3	3	3	3	3	3	18	6	3.00	0.00	0.44	0.51	
Control-3R		3	3	0	3	2	0	11	6	1.83	1.47	-0.72	0.51	
Combined								46	18	2.56	0.98	0.00	0.35	
Pooled STD	0.63													

Table 7a. CORN Total Plant Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.9600	0.9434	1.2232	1.3908	0.9672	1.0294	6.5140	6	1.086	0.182	0.320	0.204	YES
250022D	ECR111019AD	2.0863	1.2393	1.5599	1.0965	1.2389	1.3634	8.5843	6	1.431	0.357	0.665	0.204	YES
250023	ECR111029A	0.9167	0.9437	0.9388	1.3514	1.3233	1.1268	6.6007	6	1.100	0.199	0.334	0.204	YES
250024	ECR112019A	1.2369	1.7727	0.9956	1.5537	1.2811	1.2800	8.1200	6	1.353	0.271	0.587	0.204	YES
250025	ECR113019A	0.5868	1.1794	0.7745	0.6250	1.0343	1.3059	5.5059	6	0.918	0.299	0.152	0.204	
250026	ECR114019A	0.8933	1.6393	1.0949	0.8968	1.2018	1.1755	6.9016	6	1.150	0.274	0.384	0.204	YES
250027	ECR115019A	1.5166	1.1907	1.1965	1.1079	1.4786	1.5892	8.0795	6	1.347	0.204	0.581	0.204	YES
250028	ECR116019A	0.7608	1.4029	1.2381	0.8766	1.3155	0.9309	6.5248	6	1.087	0.265	0.321	0.204	YES
250029	ECR117019A	1.4720	0.7590	1.3667	1.5325	1.1219	1.0148	7.2669	6	1.211	0.299	0.445	0.204	YES
250030	ECR118019A	0.8683	0.8267	1.2368	1.4256	1.1382	1.0132	6.5088	6	1.085	0.228	0.319	0.204	YES
250031	ECR119019A	0.9906	0.7623	1.3669	1.3026	1.6136	1.2250	7.2610	6	1.210	0.298	0.444	0.204	YES
250032	ECR120019A	0.8813	0.9063	0.8768	1.1639	1.0712	0.8736	5.7731	6	0.962	0.124	0.196	0.204	
250152	ECX111019A	0.5925	0.5412	0.9179	0.5540	1.0937	1.0481	4.7474	6	0.791	0.258	0.025	0.204	
250152D	ECX111019AD	1.3134	1.2085	0.7700	1.1619	1.3281	1.0448	6.8267	6	1.138	0.208	0.372	0.204	YES
250153	ECX111029A	0.8299	1.1366	1.4039	1.2063	0.5155	1.4488	6.5410	6	1.090	0.358	0.324	0.204	YES
250154	ECX112019A	0.8674	0.8715	1.2130	0.6417	1.1613	0.8503	5.6052	6	0.934	0.215	0.168	0.204	
250155	ECX113019A	1.2731	0.9024	1.0873	1.3829	1.2738	1.6426	7.5621	6	1.260	0.253	0.494	0.204	YES
250156	ECX114019A	0.7874	0.9861	0.7766	1.2342	1.2550	1.2209	6.2602	6	1.043	0.225	0.277	0.204	YES
250157	ECX115019A	0.6736	0.8106	1.1047	1.0242	1.1065	1.3292	6.0488	6	1.008	0.234	0.242	0.204	YES
250158	ECX116019A	0.6466	1.2196	1.0404	1.2236	0.9355	0.9359	6.0016	6	1.000	0.216	0.234	0.204	YES
250159	ECX117019A	0.9889	0.9887	1.0659	1.3783	1.4587	1.3294	7.2099	6	1.202	0.211	0.436	0.204	YES
250160	ECX118019A	1.3179	1.0991	1.2635	1.3968	1.6118	1.5709	8.2600	6	1.377	0.193	0.611	0.204	YES
250161	ECX119019A	1.0908	0.4236	1.0810	1.3715	1.1124	0.9479	5.9672	6	0.995	0.314	0.229	0.204	YES
250162	ECX120019A	1.2025	1.4898	1.1139	0.8653	0.7367	1.0936	6.5018	6	1.084	0.264	0.318	0.204	YES
250231	ECT111019A	1.3600	1.4035	1.3660	1.2520	1.1691	1.2346	7.7852	6	1.298	0.092	0.531	0.204	YES
250232	ECT111029A	0.7854	0.8595	1.0549	0.9968	0.9052	0.8482	5.4500	6	0.908	0.100	0.142	0.204	
250233	ECT112019A	1.1782	1.4113	0.8727	1.2601	0.9388	1.4800	7.1411	6	1.190	0.246	0.424	0.204	YES
250234	ECT113019A	1.0364	1.6166	1.2901	1.9296	1.6774	1.1820	8.7321	6	1.455	0.340	0.689	0.204	YES
250235	ECT114019A	0.5105	0.4834	0.2604	0.3664	0.6664	0.6616	2.9487	6	0.491	0.161	-0.275	0.204	YES
250236	ECT115019A							0.0000	0	0.000	0.000	-0.766	NA	YES
250237	ECT116019A		0.7662	0.4870	0.5640	0.1577		1.9749	4	0.494	0.253	-0.272	0.240	YES
250238	ECT117019A	0.9146	1.1415		0.6614	0.4403	0.6810	3.8388	5	0.768	0.268	0.002	0.219	
250239	ECT118019A		0.5623			0.3819		0.9442	2	0.472	0.128	-0.294	0.326	
250240	ECT119019A							0.0000	0	0.000	0.000	-0.766	NA	YES
250241	ECT120019A	0.2950		1.2339				1.5289	2	0.764	0.664	-0.002	0.326	
251336	ECT126019A	0.7658	1.0253	0.8200	1.0727	0.8680	1.0344	5.5862	6	0.931	0.129	0.165	0.204	
251336D	ECT126019AD	0.8883	0.5719	0.4699	0.8768	0.9813	0.5103	4.2985	6	0.716	0.223	-0.050	0.204	
Control-1R		0.6420	0.5013	0.0736	0.6509	0.8219	0.8574	3.5471	6	0.591	0.285	-0.175	0.204	
Control-2R		1.0569	1.2322	0.9848	0.5720	1.2483	0.8347	5.9289	6	0.988	0.256	0.222	0.204	
Control-3R		0.8416	0.8071	1.1973	0.7975	0.3489	0.3202	4.3126	6	0.719	0.335	-0.047	0.204	
Combined								13.7886	18	0.766	0.324	0.000	0.142	
Pooled STD	0.25													

Table 7b. ONION Total Plant Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.0370	0.0433	0.0222	0.0444	0.0389	0.0680	0.2538	6	0.042	0.015	0.029	0.013	YES
250022D	ECR111019AD	0.0362	0.0444	0.0419	0.0303	0.0764	0.0643	0.2935	6	0.049	0.018	0.035	0.013	YES
250023	ECR111029A	0.0215		0.0318	0.0223	0.0307	0.0535	0.1598	5	0.032	0.013	0.018	0.014	YES
250024	ECR112019A	0.0615	0.0787	0.0959	0.0742	0.0404	0.0821	0.4328	6	0.072	0.019	0.059	0.013	YES
250025	ECR113019A	0.0231	0.0216	0.0287	0.0396	0.0506	0.0298	0.1934	6	0.032	0.011	0.019	0.013	YES
250026	ECR114019A	0.0304	0.0286	0.0568	0.0400	0.0466	0.0489	0.2513	6	0.042	0.011	0.028	0.013	YES
250027	ECR115019A	0.0308	0.0613	0.0666	0.0560	0.0544	0.0730	0.3421	6	0.057	0.015	0.043	0.013	YES
250028	ECR116019A	0.0135	0.0195	0.0181	0.0676	0.0613	0.0156	0.1956	6	0.033	0.025	0.019	0.013	YES
250029	ECR117019A	0.0473		0.0188	0.0173	0.0211	0.0082	0.1127	5	0.023	0.015	0.009	0.014	
250030	ECR118019A	0.0271	0.0306	0.0287	0.0595	0.0255	0.0682	0.2396	6	0.040	0.019	0.026	0.013	YES
250031	ECR119019A	0.0182	0.0374		0.0434	0.0569		0.1559	4	0.039	0.016	0.025	0.015	YES
250032	ECR120019A	0.0351	0.0084	0.0483	0.0219	0.0889		0.2026	5	0.041	0.031	0.027	0.014	YES
250152	ECX111019A	0.0218	0.0432	0.0014	0.0020	0.0583		0.1267	5	0.025	0.025	0.012	0.014	
250152D	ECX111019AD	0.0286	0.0558	0.0297	0.0202	0.0498	0.0122	0.1963	6	0.033	0.017	0.019	0.013	YES
250153	ECX111029A		0.0085	0.0219		0.0089	0.0186	0.0579	4	0.014	0.007	0.001	0.015	
250154	ECX112019A	0.0159	0.0039		0.0200	0.0038	0.0200	0.0636	5	0.013	0.008	-0.001	0.014	
250155	ECX113019A	0.0039	0.0514		0.0048	0.0300	0.0361	0.1262	5	0.025	0.021	0.012	0.014	
250156	ECX114019A	0.0425	0.0349	0.0368	0.0320	0.0441	0.0309	0.2212	6	0.037	0.005	0.023	0.013	YES
250157	ECX115019A		0.0099					0.0099	1	0.010	0.000	-0.004	0.028	
250158	ECX116019A	0.0193	0.0401	0.0166	0.0246	0.0498	0.0555	0.2059	6	0.034	0.016	0.021	0.013	YES
250159	ECX117019A	0.0322	0.0327	0.0526	0.0084	0.0418	0.0139	0.1816	6	0.030	0.017	0.017	0.013	YES
250160	ECX118019A	0.0323	0.0412	0.0451	0.0523	0.0440	0.0402	0.2551	6	0.043	0.007	0.029	0.013	YES
250161	ECX119019A	0.0232	0.0205	0.0282	0.0180	0.0073	0.0325	0.1297	6	0.022	0.009	0.008	0.013	
250162	ECX120019A	0.0388	0.0241	0.0550	0.0446	0.0346	0.0580	0.2551	6	0.043	0.013	0.029	0.013	YES
250231	ECT111019A		0.0049		0.0169	0.0397	0.0348	0.0963	4	0.024	0.016	0.011	0.015	
250232	ECT111029A	0.0135		0.0250	0.0225	0.0146		0.0756	4	0.019	0.006	0.005	0.015	
250233	ECT112019A	0.0195	0.0205	0.0239	0.0204	0.0092	0.0376	0.1311	6	0.022	0.009	0.008	0.013	
250234	ECT113019A	0.0386	0.0569	0.0134	0.0220	0.0328	0.0268	0.1905	6	0.032	0.015	0.018	0.013	YES
250235	ECT114019A		0.0265	0.0117	0.0124			0.0506	3	0.017	0.008	0.003	0.017	
250236	ECT115019A		0.0389		0.0092	0.0032		0.0513	3	0.017	0.019	0.004	0.017	
250237	ECT116019A							0.0000	0	0.000	0.000	-0.014	NA	YES
250238	ECT117019A	0.0350			0.0819	0.0644	0.0395	0.2208	4	0.055	0.022	0.042	0.015	YES
250239	ECT118019A					0.0209		0.0209	1	0.021	0.000	0.007	0.028	
250240	ECT119019A			0.0065				0.0065	1	0.007	0.000	-0.007	0.028	
250241	ECT120019A				0.0036	0.0193		0.0229	2	0.011	0.011	-0.002	0.020	
251336	ECT126019A			0.0112				0.0112	1	0.011	0.000	-0.002	0.028	
251336D	ECT126019AD	0.0060		0.0109			0.0103	0.0272	3	0.009	0.005	-0.004	0.017	
Control-1R		0.0140	0.0104	0.0080	0.0082	0.0152	0.0231	0.0789	6	0.013	0.006	0.000	0.013	
Control-2R		0.0086	0.0136	0.0369		0.0130		0.0721	4	0.018	0.013	0.004	0.015	
Control-3R		0.0090	0.0070	0.0081	0.0083		0.0199	0.0523	5	0.010	0.005	-0.005	0.014	
Combined								0.2033	15	0.014	0.008	0.000	0.009	
Pooled STD	0.015													

Table 7c. CARROT Total Plant Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.0522	0.0685	0.0667	0.0732	0.0555	0.0503	0.3664	6	0.061	0.010	0.055	0.018	YES
250022D	ECR111019AD	0.0066	0.0528	0.0573	0.0697	0.0799	0.0743	0.3406	6	0.057	0.027	0.051	0.018	YES
250023	ECR111029A	0.0292	0.0299	0.0378	0.0417	0.0288	0.0542	0.2216	6	0.037	0.010	0.031	0.018	YES
250024	ECR112019A	0.0580	0.0505	0.0728	0.0647	0.0734	0.0707	0.3901	6	0.065	0.009	0.059	0.018	YES
250025	ECR113019A	0.0790	0.0368	0.0487	0.0640	0.0499	0.0511	0.3295	6	0.055	0.015	0.049	0.018	YES
250026	ECR114019A	0.0529	0.0288	0.0578	0.0313	0.0397	0.0487	0.2592	6	0.043	0.012	0.037	0.018	YES
250027	ECR115019A	0.0511	0.0618	0.0526	0.0850	0.0647	0.0550	0.3702	6	0.062	0.013	0.056	0.018	YES
250028	ECR116019A	0.0129	0.1172	0.0933	0.0718	0.0920	0.0685	0.4557	6	0.076	0.036	0.070	0.018	YES
250029	ECR117019A	0.0270	0.0231	0.1235	0.0833	0.0677	0.0690	0.3936	6	0.066	0.037	0.060	0.018	YES
250030	ECR118019A	0.0839	0.0799	0.0665	0.0764	0.1080	0.0887	0.5034	6	0.084	0.014	0.078	0.018	YES
250031	ECR119019A	0.0926	0.1255	0.1066	0.0614	0.1288	0.1231	0.6380	6	0.106	0.026	0.100	0.018	YES
250032	ECR120019A							0.0000	0	0.000	0.000	-0.006	NA	YES
250152	ECX111019A		0.1034	0.0353	0.0678	0.1292	0.0142	0.3499	5	0.070	0.051	0.064	0.020	YES
250152D	ECX111019AD	0.0738	0.0738	0.0417	0.0601	0.0302	0.0759	0.3555	6	0.059	0.019	0.053	0.018	YES
250153	ECX111029A	0.0626	0.0443	0.1138	0.1003	0.0600	0.0878	0.4688	6	0.078	0.027	0.072	0.018	YES
250154	ECX112019A	0.0349		0.0008	0.0272		0.0140	0.0769	4	0.019	0.015	0.013	0.022	
250155	ECX113019A	0.0907	0.1326	0.1416	0.1118	0.1567	0.1062	0.7396	6	0.123	0.025	0.117	0.018	YES
250156	ECX114019A	0.0579	0.0706	0.0778	0.0591	0.0880	0.0556	0.4090	6	0.068	0.013	0.062	0.018	YES
250157	ECX115019A		0.0045	0.0042		0.0180	0.0012	0.0279	4	0.007	0.007	0.001	0.022	
250158	ECX116019A	0.0743	0.0727	0.0841	0.0568	0.0469	0.1101	0.4449	6	0.074	0.022	0.068	0.018	YES
250159	ECX117019A	0.0330	0.1009	0.0617	0.0307	0.0528	0.0409	0.3200	6	0.053	0.026	0.047	0.018	YES
250160	ECX118019A	0.0800	0.0622	0.0651	0.0330	0.0751	0.0631	0.3785	6	0.063	0.016	0.057	0.018	YES
250161	ECX119019A	0.0381	0.0304	0.0176	0.0593	0.0570	0.0329	0.2353	6	0.039	0.016	0.033	0.018	YES
250162	ECX120019A	0.0774	0.0751	0.0354	0.0818	0.0690	0.0699	0.4086	6	0.068	0.017	0.062	0.018	YES
250231	ECT111019A	0.0532	0.0784	0.0940		0.0943	0.0889	0.4088	5	0.082	0.037	0.076	0.020	YES
250232	ECT111029A		0.0538	0.0563	0.0418	0.0272	0.0282	0.2073	5	0.041	0.021	0.035	0.020	YES
250233	ECT112019A	0.0580	0.0552	0.0308	0.0215	0.0422	0.0305	0.2382	6	0.040	0.015	0.034	0.018	YES
250234	ECT113019A	0.0573	0.0512	0.0630	0.0573	0.0419	0.0731	0.3438	6	0.057	0.011	0.051	0.018	YES
250235	ECT114019A		0.0080			0.0638		0.0718	2	0.036	0.039	0.030	0.029	YES
250236	ECT115019A	0.0152						0.0152	1	0.015	0.006	0.009	0.040	
250237	ECT116019A							0.0000	0	0.000	0.000	-0.006	NA	YES
250238	ECT117019A						0.0031	0.0031	1	0.003	0.000	-0.003	0.040	
250239	ECT118019A					0.0009		0.0009	1	0.001	0.000	-0.005	0.040	
250240	ECT119019A							0.0000	0	0.000	0.000	-0.006	NA	YES
250241	ECT120019A						0.0123	0.0123	1	0.012	0.000	0.006	0.040	
251336	ECT126019A				0.0521			0.0521	1	0.052	0.000	0.046	0.040	YES
251336D	ECT126019AD			0.0019	0.0401			0.0420	2	0.021	0.027	0.015	0.029	
Control-1R		0.0106	0.0042	0.0065	0.0039	0.0039		0.0291	5	0.006	0.004	0.000	0.020	
Control-2R		0.0109	0.0084	0.0053	0.0094	0.0047	0.0083	0.0470	6	0.008	0.002	0.002	0.018	
Control-3R		0.0046		0.0022			0.0012	0.0080	3	0.003	0.002	-0.003	0.024	
Combined								0.0841	14	0.006	0.003	0.000	0.014	
Pooled STD	0.022													

Table 7d. RADISH Total Plant Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.2310	0.2446	0.2399	0.2275	0.3184	0.2890	1.5504	6	0.258	0.037	0.067	0.045	YES
250022D	ECR111019AD	0.3210	0.2753	0.3373	0.3009	0.2475	0.2737	1.7557	6	0.293	0.033	0.101	0.045	YES
250023	ECR111029A	0.2567	0.3637	0.3758	0.2383	0.2826	0.3112	1.8283	6	0.305	0.056	0.113	0.045	YES
250024	ECR112019A	0.2942	0.3367	0.3345	0.3066	0.3421	0.2479	1.8620	6	0.310	0.046	0.119	0.045	YES
250025	ECR113019A	0.3213	0.2629	0.2840	0.2737	0.2482	0.2729	1.6630	6	0.277	0.025	0.086	0.045	YES
250026	ECR114019A	0.2061	0.2252	0.2410	0.1827	0.2284	0.2336	1.3170	6	0.220	0.021	0.028	0.045	
250027	ECR115019A	0.2713	0.3030	0.2270	0.2332	0.2534	0.2311	1.5190	6	0.253	0.030	0.062	0.045	YES
250028	ECR116019A	0.1961	0.2929	0.3354	0.2737	0.2119	0.2799	1.5899	6	0.265	0.052	0.074	0.045	YES
250029	ECR117019A	0.4942	0.3649	0.3996	0.3566	0.2908	0.3228	2.2289	6	0.371	0.071	0.180	0.045	YES
250030	ECR118019A	0.2704	0.2931	0.2149	0.2237	0.3292	0.2605	1.5918	6	0.265	0.043	0.074	0.045	YES
250031	ECR119019A	0.4813	0.3110	0.3875	0.3763	0.3119	0.4235	2.2915	6	0.382	0.066	0.190	0.045	YES
250032	ECR120019A	0.2027	0.3110	0.3346	0.1552	0.3023	0.2254	1.5312	6	0.255	0.071	0.064	0.045	YES
250152	ECX111019A	0.2568	0.5939		0.3754	0.4449	0.4904	2.1614	5	0.432	0.126	0.241	0.048	YES
250152D	ECX111019AD	0.2336	0.2838	0.2553	0.2333	0.2170	0.2587	1.4817	6	0.247	0.024	0.056	0.045	YES
250153	ECX111029A	0.2658	0.3358	0.4687	0.3418	0.2833	0.3411	2.0365	6	0.339	0.071	0.148	0.045	YES
250154	ECX112019A	0.1957	0.2875				0.1530	0.6362	3	0.212	0.069	0.021	0.060	
250155	ECX113019A	0.2979	0.2887	0.4136	0.3646	0.3990	0.3428	2.1066	6	0.351	0.051	0.160	0.045	YES
250156	ECX114019A	0.2564	0.3583	0.1491	0.2199	0.3206	0.2450	1.5493	6	0.258	0.074	0.067	0.045	YES
250157	ECX115019A		0.2433					0.2433	1	0.243	0.000	0.052	0.099	
250158	ECX116019A	0.2763	0.2837	0.2944	0.2433	0.2609	0.2566	1.6152	6	0.269	0.019	0.078	0.045	YES
250159	ECX117019A	0.2218	0.2622	0.3387	0.1973	0.3069	0.2687	1.5956	6	0.266	0.052	0.074	0.045	YES
250160	ECX118019A	0.3186	0.3909	0.3503	0.4022	0.3633	0.3925	2.2178	6	0.370	0.032	0.178	0.045	YES
250161	ECX119019A	0.2006	0.2804	0.1878	0.2035	0.2931	0.2035	1.3689	6	0.228	0.046	0.037	0.045	
250162	ECX120019A	0.2036	0.2222	0.2902	0.2629	0.2306	0.3022	1.5117	6	0.252	0.039	0.061	0.045	YES
250231	ECT111019A	0.3423	0.2139	0.3055	0.2599	0.3041	0.2608	1.6865	6	0.281	0.045	0.090	0.045	YES
250232	ECT111029A	0.3185	0.4081	0.3967	0.2515	0.2727	0.2666	1.9141	6	0.319	0.068	0.128	0.045	YES
250233	ECT112019A	0.3194	0.3335	0.3530	0.3220	0.3008	0.3307	1.9594	6	0.327	0.017	0.135	0.045	YES
250234	ECT113019A	0.1735	0.2883	0.2551	0.2080	0.2646	0.3338	1.5233	6	0.254	0.057	0.062	0.045	YES
250235	ECT114019A	0.3373	0.3482	0.2575	0.2613	0.3076	0.3835	1.8954	6	0.316	0.050	0.124	0.045	YES
250236	ECT115019A	0.3062	0.1832	0.2784	0.1817	0.2230	0.2913	1.4638	6	0.244	0.055	0.053	0.045	YES
250237	ECT116019A	0.3158	0.3675	0.4035	0.1149	0.2666	0.1370	1.6053	6	0.268	0.119	0.076	0.045	YES
250238	ECT117019A	0.4856	0.3718	0.5720	0.3282	0.4491	0.4467	2.6534	6	0.442	0.086	0.251	0.045	YES
250239	ECT118019A	0.3586	0.2935		0.2093	0.2968	0.1373	1.2955	5	0.259	0.086	0.068	0.048	YES
250240	ECT119019A	0.1312		0.1459	0.1927	0.2581	0.1546	0.8825	5	0.177	0.051	-0.015	0.048	
250241	ECT120019A	0.2273	0.1847	0.2216	0.2712	0.2726	0.1907	1.3681	6	0.228	0.038	0.037	0.045	
251336	ECT126019A	0.3420	0.4314	0.4198	0.4126	0.3768	0.3718	2.3544	6	0.392	0.034	0.201	0.045	YES
251336D	ECT126019AD	0.3162	0.3633	0.3935	0.3852	0.2948	0.3093	2.0623	6	0.344	0.042	0.152	0.045	YES
Control-1R		0.2002	0.1644	0.1641	0.2591	0.2112	0.1795	1.1785	6	0.196	0.036	0.005	0.045	
Control-2R		0.1896	0.1902	0.1749	0.1697	0.2254	0.2089	1.1587	6	0.193	0.021	0.002	0.045	
Control-3R		0.1997	0.1595	0.1896	0.2174	0.1518	0.1909	1.1089	6	0.185	0.025	-0.007	0.045	
Combined								3.4461	18	0.191	0.027	0.000	0.031	
Pooled STD	0.055													

Table 7e. ***SOYBEAN Total Plant Weights (g)***

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.5312	0.9130	0.9486	1.1729	1.2535	1.2150	6.0342	6	1.006	0.272	-1.159	0.271	YES
250022D	ECR111019AD	0.5576	0.8647	0.6094	0.8086	0.9382	1.1605	4.9390	6	0.823	0.221	-1.341	0.271	YES
250023	ECR111029A	0.6821	1.0748	0.9548	1.1228	1.7661		5.6006	5	1.120	0.400	-1.045	0.291	YES
250024	ECR112019A	0.8372	0.8242	0.7480	0.7922	1.0861	0.8139	5.1016	6	0.850	0.120	-1.314	0.271	YES
250025	ECR113019A	0.6821		1.7164	0.8420	0.6789	0.7642	4.6836	5	0.937	0.441	-1.228	0.291	YES
250026	ECR114019A	1.0425	0.8734	1.0699	0.7725	1.7802	1.5211	7.0596	6	1.177	0.392	-0.988	0.271	YES
250027	ECR115019A	0.5869	0.9108	0.7070	0.7820	0.7729	1.9279	5.6875	6	0.948	0.492	-1.217	0.271	YES
250028	ECR116019A	0.8874	1.4775	1.1237	1.2884	1.2332	1.2908	7.3010	6	1.217	0.198	-0.948	0.271	YES
250029	ECR117019A	0.8774	1.1517	1.2265	1.1855	0.9295	1.5200	6.8906	6	1.148	0.231	-1.016	0.271	YES
250030	ECR118019A	1.0195	1.2036	1.2840	1.1655	1.1843	0.9017	6.7586	6	1.126	0.140	-1.038	0.271	YES
250031	ECR119019A	1.2682	1.5047	1.8141	1.6026	1.1882	1.1537	8.5315	6	1.422	0.262	-0.743	0.271	YES
250032	ECR120019A	0.9962	1.3383	1.5571	1.4024	1.1707	1.8384	8.3031	6	1.384	0.295	-0.781	0.271	YES
250152	ECX111019A	1.6367	1.3295	1.3745	1.6642	1.4139	1.2436	8.6624	6	1.444	0.170	-0.721	0.271	YES
250152D	ECX111019AD	0.8415	0.8999	1.2818	1.3779	0.9852	1.0454	6.4317	6	1.072	0.214	-1.093	0.271	YES
250153	ECX111029A	0.8929	1.3894	1.1079	1.1253	1.5377	1.5538	7.6070	6	1.268	0.267	-0.897	0.271	YES
250154	ECX112019A	0.9085	1.3509	0.7523	0.9180	1.0512	1.1240	6.1049	6	1.017	0.208	-1.147	0.271	YES
250155	ECX113019A	0.7416	1.3943	1.2058	1.3449	1.3306	1.2262	7.2434	6	1.207	0.249	-0.957	0.271	YES
250156	ECX114019A	1.0551	1.4902	1.6150	1.2477	1.6306	1.4504	8.4890	6	1.415	0.224	-0.750	0.271	YES
250157	ECX115019A	0.5373	0.5110	0.6438	0.2296	0.6082	1.8290	4.3589	6	0.726	0.560	-1.438	0.271	YES
250158	ECX116019A	0.7725	1.6919	0.9923	1.0147	1.5697	1.5101	7.5512	6	1.259	0.378	-0.906	0.271	YES
250159	ECX117019A	0.9034	1.6056	1.7318	1.1881	1.3966	1.7501	8.5756	6	1.429	0.335	-0.735	0.271	YES
250160	ECX118019A	1.0165	1.2329	1.2577	1.2216	1.1918	1.9599	7.8804	6	1.313	0.328	-0.851	0.271	YES
250161	ECX119019A	0.5571	0.9860	0.8893	0.8242	2.0023	0.2469	5.5058	6	0.918	0.595	-1.247	0.271	YES
250162	ECX120019A	1.2680	1.0337	1.3810	0.8932	1.2338	1.6768	7.4865	6	1.248	0.273	-0.917	0.271	YES
250231	ECT111019A	1.0407	1.4869	1.3914	1.4213	0.9699	1.2954	7.6056	6	1.268	0.214	-0.897	0.271	YES
250232	ECT111029A	1.0523	1.5220	1.0687	0.8622	1.1618	1.2770	6.9440	6	1.157	0.225	-1.007	0.271	YES
250233	ECT112019A	0.9463	1.6986	1.3405	1.3853	1.5020	1.5157	8.3884	6	1.398	0.254	-0.767	0.271	YES
250234	ECT113019A	1.1423	1.3233	1.5075	1.4046	1.6199	1.7248	8.7224	6	1.454	0.210	-0.711	0.271	YES
250235	ECT114019A	0.2170	0.7262	0.6824	0.9152		0.8421	3.3829	5	0.677	0.273	-1.488	0.291	YES
250236	ECT115019A	0.8256	1.2587	1.0063	1.1373	1.0091		5.2370	5	1.047	0.162	-1.117	0.291	YES
250237	ECT116019A	1.0715		0.9865	1.0396		0.7989	3.8965	4	0.974	0.122	-1.191	0.318	YES
250238	ECT117019A	0.8308	1.2309	0.9794	1.4062	1.0195	1.4817	6.9485	6	1.158	0.257	-1.007	0.271	YES
250239	ECT118019A		1.3725					1.3725	1	1.373	0.000	-0.792	0.593	YES
250240	ECT119019A							0.0000	0	0.000	0.000	-2.165	NA	YES
250241	ECT120019A	1.0503	0.5884	0.8326	1.7267			4.1980	4	1.050	0.489	-1.115	0.318	YES
251336	ECT126019A	0.8718	1.1420	0.8008	1.3057	0.9706	1.1980	6.2889	6	1.048	0.198	-1.117	0.271	YES
251336D	ECT126019AD	0.8617	0.4091	1.3940	0.7882	0.4045	0.8820	4.7395	6	0.790	0.367	-1.375	0.271	YES
Control-1R		1.5071	1.4931	1.1403	0.6111	2.5954	0.9316	8.2786	6	1.380	0.686	-0.785	0.271	
Control-2R		2.7015	2.0128	3.4735	2.4333	2.4571	2.4285	15.5067	6	2.584	0.489	0.420	0.271	
Control-3R		2.6740	2.7327		2.5874	2.8550		10.8491	4	2.712	0.112	0.548	0.318	
Combined								34.6344	16	2.165	0.798	0.000	0.197	
Pooled STD	0.33													

TABLE 8a. CORN Total Root Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	1.1142	1.1857	1.2762	2.9318	0.9128	1.2734	8.6941	6	1.449	0.739	0.799	0.293	YES
250022D	ECR111019AD	1.3615	3.0236	3.6426	1.3929	1.9285	0.9493	12.2984	6	2.050	1.050	1.399	0.293	YES
250023	ECR111029A	0.6719	0.5451	0.8178	0.9572	0.7876	0.6506	4.4302	6	0.738	0.146	0.088	0.293	
250024	ECR112019A	1.0321	2.1085	0.5714	0.8639	0.8230	0.9523	6.3512	6	1.059	0.538	0.408	0.293	YES
250025	ECR113019A	0.5310	0.6671	0.6752	3.7093	0.6534	0.9898	7.2258	6	1.204	1.237	0.554	0.293	YES
250026	ECR114019A	0.5726	1.3779	0.6194	0.7799	1.3878	1.2841	6.0217	6	1.004	0.387	0.353	0.293	YES
250027	ECR115019A	0.9003	1.5099	1.0264	2.2719	1.2123	1.1512	8.0720	6	1.345	0.498	0.695	0.293	YES
250028	ECR116019A	0.6257	0.6218	0.5812	0.7342	0.6264	0.7085	3.8978	6	0.650	0.059	-0.001	0.293	
250029	ECR117019A	0.7525	0.7666	0.7061	0.7128	0.5104	0.8639	4.3123	6	0.719	0.117	0.068	0.293	
250030	ECR118019A	0.6798	0.5126	0.7623	0.7317	0.6856	0.5817	3.9537	6	0.659	0.094	0.008	0.293	
250031	ECR119019A	0.9796	0.7002	0.8118	0.6434	1.2139	0.6405	4.9894	6	0.832	0.227	0.181	0.293	
250032	ECR120019A	0.5766	0.7497	0.6039	0.9689	0.5158	1.1072	4.5221	6	0.754	0.237	0.103	0.293	
250152	ECX111019A	0.5550	0.2613	0.5124	0.4968	0.7242	0.6284	3.1781	6	0.530	0.156	-0.121	0.293	
250152D	ECX111019AD	0.5993	0.5112	0.5401	0.5426	0.5531	0.8953	3.6416	6	0.607	0.144	-0.044	0.293	
250153	ECX111029A	0.5512	0.6912	0.6768	0.6360	0.3700	0.9988	3.9240	6	0.654	0.206	0.004	0.293	
250154	ECX112019A	0.5689	0.5236	0.6919	0.5732	0.6975	0.6223	3.6774	6	0.613	0.071	-0.038	0.293	
250155	ECX113019A	0.4796	0.9198	0.9451	1.0399	0.8299	0.7240	4.9383	6	0.823	0.200	0.173	0.293	
250156	ECX114019A	0.6082	0.8597	0.5237	0.8663	0.7954	0.5489	4.2022	6	0.700	0.158	0.050	0.293	
250157	ECX115019A	0.3121	0.3947	0.5786	0.5384	0.6224	0.7628	3.2090	6	0.535	0.162	-0.116	0.293	
250158	ECX116019A	0.6716	0.6293	0.6917	0.8102	0.5667	0.5624	3.9319	6	0.655	0.092	0.005	0.293	
250159	ECX117019A	0.8890	0.4329	0.7159	0.6738	0.8971	0.8801	4.4888	6	0.748	0.182	0.098	0.293	
250160	ECX118019A	0.5262	0.6665	0.6835	0.6142	0.7384	0.5517	3.7805	6	0.630	0.081	-0.020	0.293	
250161	ECX119019A	0.6214	0.4969	0.7870	0.7328	0.5668	0.4220	3.6269	6	0.604	0.139	-0.046	0.293	
250162	ECX120019A	0.5872	0.7314	0.6065	0.6687	0.4655	0.4822	3.5415	6	0.590	0.104	-0.060	0.293	
250231	ECT111019A	0.6850	0.7678	0.8266	0.7342	0.7339	0.9998	4.7473	6	0.791	0.112	0.141	0.293	
250232	ECT111029A	0.5238	0.3838	0.5284	0.6372	0.9052	0.6447	3.6231	6	0.604	0.176	-0.047	0.293	
250233	ECT112019A	1.0152	0.3652	0.9361	0.6543	0.3971	0.7928	4.1607	6	0.693	0.272	0.043	0.293	
250234	ECT113019A	0.6164	0.8758	0.7991	0.9770	0.7666	0.9228	4.9577	6	0.826	0.129	0.176	0.293	
250235	ECT114019A	0.2890	0.3225	0.2120	0.1776	0.4949	0.4685	1.9645	6	0.327	0.131	-0.323	0.293	YES
250236	ECT115019A							0.0000	0	0.000	0.000	-0.650	NA	YES
250237	ECT116019A		0.4772	0.3910	0.3415	0.3137		1.5234	4	0.381	0.072	-0.270	0.345	
250238	ECT117019A	0.5929	0.8000		0.6476	0.9621	0.4187	3.4213	5	0.684	0.333	0.034	0.315	
250239	ECT118019A		0.5580			0.3839		0.9419	2	0.471	0.123	-0.180	0.468	
250240	ECT119019A							0.0000	0	0.000	0.000	-0.650	NA	YES
250241	ECT120019A	0.3454		0.7316				1.0770	2	0.539	0.273	-0.112	0.468	
251336	ECT126019A	0.3976	0.5616	0.3154	0.6042	0.3232	0.6284	2.8304	6	0.472	0.143	-0.179	0.293	
251336D	ECT126019AD	0.6962	0.3826	0.4983	0.6600	0.4989	0.2367	2.9727	6	0.495	0.172	-0.155	0.293	
Control-1R		0.5691	0.5569	0.6764	0.5048	0.4803	0.5289	3.3164	6	0.553	0.069	-0.098	0.293	
Control-2R		0.6097	0.6720	0.7600	0.4239	0.9309	0.7456	4.1421	6	0.690	0.169	0.040	0.293	
Control-3R		0.9721	0.5680	0.6165	0.8846	0.4553	0.7538	4.2503	6	0.708	0.197	0.058	0.293	
Combined								11.7088	18	0.650	0.163	0.000	0.204	
Pooled STD	0.362													

TABLE 8b. ONION Total Root Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.0259	0.0208	0.0130	0.0235	0.0277	0.0509	0.1618	6	0.027	0.013	0.015	0.009	YES
250022D	ECR111019AD	0.0248	0.0238	0.0232	0.0108	0.0349	0.0407	0.1582	6	0.026	0.010	0.014	0.009	YES
250023	ECR111029A	0.0070		0.0160	0.0133	0.0167	0.0296	0.0826	5	0.017	0.008	0.004	0.009	
250024	ECR112019A	0.0277	0.0362	0.0517	0.0308	0.0201	0.0359	0.2024	6	0.034	0.011	0.021	0.009	YES
250025	ECR113019A	0.0135	0.0123	0.0174	0.0159	0.0229	0.0188	0.1008	6	0.017	0.004	0.004	0.009	
250026	ECR114019A	0.0165	0.0192	0.0351	0.0223	0.0239	0.0269	0.1439	6	0.024	0.007	0.012	0.009	YES
250027	ECR115019A	0.0233	0.0386	0.0289	0.0291	0.0293	0.0345	0.1837	6	0.031	0.005	0.018	0.009	YES
250028	ECR116019A	0.0048	0.0125	0.0040	0.0389	0.0325	0.0051	0.0978	6	0.016	0.015	0.004	0.009	
250029	ECR117019A	0.0101		0.0066	0.0015	0.0084	0.0016	0.0282	5	0.006	0.004	-0.007	0.009	
250030	ECR118019A	0.0177	0.0168	0.0167	0.0249	0.0102	0.0390	0.1253	6	0.021	0.010	0.009	0.009	YES
250031	ECR119019A	0.0047	0.0160		0.0165	0.0197		0.0569	4	0.014	0.007	0.002	0.010	
250032	ECR120019A	0.0234	0.0037	0.0232	0.0101	0.0675		0.1279	5	0.026	0.025	0.013	0.009	YES
250152	ECX111019A	0.0049	0.0100			0.0186		0.0335	3	0.011	0.007	-0.001	0.011	
250152D	ECX111019AD	0.0032	0.0355	0.0119	0.0467	0.0209	0.0058	0.1240	6	0.021	0.017	0.008	0.009	
250153	ECX111029A		0.0028	0.0123		0.0051	0.0075	0.0277	4	0.007	0.004	-0.005	0.010	
250154	ECX112019A	0.0157	0.0040	0.0086	0.0016	0.0074	0.0165	0.0538	6	0.009	0.006	-0.003	0.009	
250155	ECX113019A	0.0038	0.0292		0.0008	0.0240	0.0224	0.0802	5	0.016	0.013	0.004	0.009	
250156	ECX114019A	0.0409	0.0253	0.0390	0.0230	0.0338	0.0332	0.1952	6	0.033	0.007	0.020	0.009	YES
250157	ECX115019A		0.0084					0.0084	1	0.008	0.000	-0.004	0.019	
250158	ECX116019A	0.0082	0.0249	0.0095	0.0105	0.0287	0.0322	0.1140	6	0.019	0.011	0.007	0.009	
250159	ECX117019A	0.0174	0.0199	0.0182	0.0562	0.0243	0.0102	0.1462	6	0.024	0.016	0.012	0.009	YES
250160	ECX118019A	0.0114	0.0244	0.0264	0.0241	0.0226	0.0207	0.1296	6	0.022	0.005	0.009	0.009	YES
250161	ECX119019A	0.0083	0.0050	0.0092	0.0022	0.0005	0.0114	0.0366	6	0.006	0.004	-0.006	0.009	
250162	ECX120019A	0.0115	0.0296	0.0401	0.0276	0.0199	0.0380	0.1667	6	0.028	0.011	0.015	0.009	YES
250231	ECT111019A		0.0026	0.0000	0.0052	0.0217	0.0179	0.0474	5	0.009	0.010	-0.003	0.009	
250232	ECT111029A	0.0085		0.0119	0.0080	0.0080		0.0364	4	0.009	0.002	-0.003	0.010	
250233	ECT112019A	0.0099	0.0170	0.0169	0.0115	0.0070	0.0108	0.0731	6	0.012	0.004	0.000	0.009	
250234	ECT113019A	0.0176	0.0375	0.0104	0.0099	0.0155	0.0141	0.1050	6	0.018	0.010	0.005	0.009	
250235	ECT114019A		0.0134	0.0045	0.0035			0.0214	3	0.007	0.005	-0.005	0.011	
250236	ECT115019A		0.0165		0.0015	0.0011		0.0191	3	0.006	0.009	-0.006	0.011	
250237	ECT116019A							0.0000	0	0.000	0.000	-0.012	NA	YES
250238	ECT117019A	0.0068			0.0309	0.0270	0.0150	0.0797	4	0.020	0.011	0.008	0.010	
250239	ECT118019A					0.0175		0.0175	1	0.018	0.000	0.005	0.019	
250240	ECT119019A			0.0019				0.0019	1	0.002	0.000	-0.010	0.019	
250241	ECT120019A				0.0021	0.0176		0.0197	2	0.010	0.011	-0.002	0.013	
251336	ECT126019A			0.0033				0.0033	1	0.003	0.000	-0.009	0.019	
251336D	ECT126019AD	0.0030		0.0011			0.0036	0.0077	3	0.003	0.001	-0.010	0.011	
Control-1R		0.0128	0.0108	0.0070	0.0080	0.0093	0.0154	0.0633	6	0.011	0.003	-0.002	0.009	
Control-2R		0.0082	0.0129	0.0396		0.0129		0.0736	4	0.018	0.014	0.006	0.010	
Control-3R		0.0071	0.0059	0.0198	0.0037		0.0112	0.0477	5	0.010	0.006	-0.003	0.009	
Combined								0.1846	15	0.012	0.009	0.000	0.006	
Pooled STD	0.0102													

TABLE 8c. CARROT Total Root Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.0711	0.0476	0.0747	0.1280	0.0834	0.0488	0.4536	6	0.076	0.029	0.065	0.013	YES
250022D	ECR111019AD	0.0570	0.0663	0.0457	0.0639	0.0632	0.0509	0.3470	6	0.058	0.008	0.047	0.013	YES
250023	ECR111029A	0.0233	0.0351	0.0312	0.0249	0.0103	0.0454	0.1702	6	0.028	0.012	0.018	0.013	YES
250024	ECR112019A	0.0291	0.0178	0.0709	0.0386	0.0391	0.0473	0.2428	6	0.040	0.018	0.030	0.013	YES
250025	ECR113019A	0.0453	0.0410	0.0384	0.0654	0.0525	0.0532	0.2958	6	0.049	0.010	0.039	0.013	YES
250026	ECR114019A	0.0467	0.0652	0.0474	0.0689	0.0395	0.0637	0.3314	6	0.055	0.012	0.045	0.013	YES
250027	ECR115019A	0.0300	0.0581	0.0476	0.0871	0.0519	0.0596	0.3343	6	0.056	0.019	0.045	0.013	YES
250028	ECR116019A	0.0399	0.0464	0.0417	0.0195	0.0321	0.0352	0.2148	6	0.036	0.009	0.025	0.013	YES
250029	ECR117019A	0.0066	0.0022	0.0631	0.0183	0.0182	0.0139	0.1223	6	0.020	0.022	0.010	0.013	
250030	ECR118019A	0.0441	0.0468	0.0439	0.0545	0.0532	0.0564	0.2989	6	0.050	0.006	0.039	0.013	YES
250031	ECR119019A	0.0302	0.0623	0.0476	0.0289	0.0724	0.0747	0.3161	6	0.053	0.020	0.042	0.013	YES
250032	ECR120019A							0.0000	0	0.000	0.000	-0.010	NA	YES
250152	ECX111019A		0.0243	0.0010	0.0117	0.0263	0.0020	0.0653	5	0.013	0.012	0.003	0.014	
250152D	ECX111019AD	0.0333	0.0440	0.0158	0.0115	0.0107	0.0630	0.1783	6	0.030	0.021	0.019	0.013	YES
250153	ECX111029A	0.0227	0.0273	0.0773	0.0600	0.0067	0.0627	0.2567	6	0.043	0.028	0.032	0.013	YES
250154	ECX112019A		0.0009	0.0071		0.0011	0.0299	0.0390	4	0.010	0.014	-0.001	0.015	
250155	ECX113019A	0.0251	0.0427	0.0484	0.0530	0.0302	0.0389	0.2383	6	0.040	0.011	0.029	0.013	YES
250156	ECX114019A	0.0320	0.0357	0.0479	0.0312	0.0591	0.0285	0.2344	6	0.039	0.012	0.029	0.013	YES
250157	ECX115019A		0.0010	0.0026		0.0092	0.0016	0.0144	4	0.004	0.004	-0.007	0.015	
250158	ECX116019A	0.0435	0.0402	0.0621	0.0240	0.0228	0.0807	0.2733	6	0.046	0.022	0.035	0.013	YES
250159	ECX117019A	0.0122	0.0530	0.0332	0.0125	0.0395	0.0460	0.1964	6	0.033	0.017	0.022	0.013	YES
250160	ECX118019A	0.0366	0.0139	0.0347	0.0395	0.0435	0.0171	0.1853	6	0.031	0.012	0.020	0.013	YES
250161	ECX119019A	0.0081	0.0031	0.0079	0.0168	0.0093	0.0080	0.0532	6	0.009	0.004	-0.002	0.013	
250162	ECX120019A	0.0484	0.0637	0.0316	0.0600	0.0277	0.0294	0.2608	6	0.043	0.016	0.033	0.013	YES
250231	ECT111019A	0.0279	0.0431	0.0589		0.0452	0.0714	0.2465	5	0.049	0.017	0.039	0.014	YES
250232	ECT111029A		0.0374	0.0415	0.0289	0.0152	0.0077	0.1307	5	0.026	0.014	0.016	0.014	YES
250233	ECT112019A	0.0372	0.0288	0.0207	0.0165	0.0160	0.0086	0.1278	6	0.021	0.010	0.011	0.013	
250234	ECT113019A	0.0313	0.0269	0.0516	0.0235	0.0247	0.0220	0.1800	6	0.030	0.011	0.020	0.013	YES
250235	ECT114019A		0.0023			0.0250		0.0273	2	0.014	0.016	0.003	0.021	
250236	ECT115019A	0.0064						0.0064	1	0.006	0.000	-0.004	0.028	
250237	ECT116019A							0.0000	0	0.000	0.000	-0.010	NA	YES
250238	ECT117019A						0.0004	0.0004	1	0.000	0.000	-0.010	0.028	
250239	ECT118019A							0.0000	0	0.000	0.000	-0.010	NA	YES
250240	ECT119019A							0.0000	0	0.000	0.000	-0.010	NA	YES
250241	ECT120019A						0.0025	0.0025	1	0.003	0.000	-0.008	0.028	
251336	ECT126019A				0.0339			0.0339	1	0.034	0.000	0.023	0.028	
251336D	ECT126019AD			0.0005	0.0131			0.0136	2	0.007	0.009	-0.004	0.021	
Control-1R		0.0300	0.0060	0.0073	0.0039	0.0039		0.0511	5	0.010	0.011	0.000	0.014	
Control-2R		0.0167	0.0213	0.0169	0.0087	0.0127	0.0085	0.0848	6	0.014	0.005	0.004	0.013	
Control-3R		0.0077		0.0007			0.0018	0.0102	3	0.003	0.004	-0.007	0.017	
Combined								0.1461	14	0.010	0.008	0.000	0.010	
Pooled STD	0.015													

TABLE 8d. RADISH Total Root Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.0876	0.2513	0.2795	0.2275	0.3184	0.2890	1.4533	6	0.242	0.082	0.152	0.054	YES
250022D	ECR111019AD	0.3130	0.2519	0.2464	0.1632	0.1036	0.1898	1.2679	6	0.211	0.074	0.121	0.054	YES
250023	ECR111029A	0.1130	0.1126	0.1596	0.1302	0.1074	0.1355	0.7583	6	0.126	0.020	0.036	0.054	
250024	ECR112019A	0.0999	0.1237	0.1314	0.1019	0.1230	0.0841	0.6640	6	0.111	0.018	0.020	0.054	
250025	ECR113019A	0.0870	0.0925	0.1019	0.0801	0.0608	0.1293	0.5516	6	0.092	0.023	0.001	0.054	
250026	ECR114019A	0.0757	0.0907	0.0532	0.0812	0.0538	0.0798	0.4344	6	0.072	0.015	-0.018	0.054	
250027	ECR115019A	0.1193	0.9880	0.1415	0.1257	0.1029	0.1050	1.5824	6	0.264	0.355	0.173	0.054	YES
250028	ECR116019A	0.0629	0.0959	0.1068	0.0837	0.0750	0.0935	0.5178	6	0.086	0.016	-0.004	0.054	
250029	ECR117019A	0.0854	0.0819	0.1300	0.0738	0.0500	0.0827	0.5038	6	0.084	0.026	-0.007	0.054	
250030	ECR118019A	0.1035	0.1017	0.0499	0.0504	0.0776	0.0637	0.4468	6	0.074	0.024	-0.016	0.054	
250031	ECR119019A	0.1545	0.1395	0.1625	0.1460	0.1241	0.1312	0.8578	6	0.143	0.014	0.052	0.054	
250032	ECR120019A	0.0918	0.1292	0.1014	0.0580	0.1495	0.0558	0.5857	6	0.098	0.038	0.007	0.054	
250152	ECX111019A	0.0510	0.1110		0.0692	0.1204	0.1269	0.4785	5	0.096	0.034	0.005	0.058	
250152D	ECX111019AD	0.0526	0.1219	0.0670	0.0833	0.0702	0.0668	0.4618	6	0.077	0.024	-0.014	0.054	
250153	ECX111029A	0.1273	0.0807	0.0829	0.0626	0.0741	0.0808	0.5084	6	0.085	0.022	-0.006	0.054	
250154	ECX112019A	0.0628				0.0000	0.0150	0.0778	3	0.026	0.033	-0.065	0.071	
250155	ECX113019A	0.0609	0.0633	0.0964	0.1126	0.0952	0.1272	0.5556	6	0.093	0.026	0.002	0.054	
250156	ECX114019A	0.0567	0.0699	0.0442	0.0665	0.0949	0.0755	0.4077	6	0.068	0.017	-0.023	0.054	
250157	ECX115019A		0.0647					0.0647	1	0.065	0.000	-0.026	0.118	
250158	ECX116019A	0.0470	0.0836	0.0389	0.0587	0.0404	0.0444	0.3130	6	0.052	0.017	-0.038	0.054	
250159	ECX117019A	0.0724	0.0918	0.1132	0.0995	0.1045	0.1109	0.5923	6	0.099	0.015	0.008	0.054	
250160	ECX118019A	0.0793	0.0608	0.1708	0.1500	0.1333	0.1256	0.7198	6	0.120	0.042	0.029	0.054	
250161	ECX119019A	0.0363	0.0338	0.0309	0.0311	0.0593	0.0338	0.2252	6	0.038	0.011	-0.053	0.054	
250162	ECX120019A	0.0340	0.0441	0.0513	0.0311	0.0299	0.0331	0.2235	6	0.037	0.009	-0.053	0.054	
250231	ECT111019A	0.1006	0.0932	0.1308	0.0684	0.0700	0.0796	0.5426	6	0.090	0.023	0.000	0.054	
250232	ECT111029A	0.1062	0.1176	0.0987	0.0516	0.2158	0.2544	0.8443	6	0.141	0.077	0.050	0.054	
250233	ECT112019A	0.0606	0.0491	0.0504	0.0501	0.0766	0.0610	0.3478	6	0.058	0.011	-0.033	0.054	
250234	ECT113019A	0.0504	0.0544	0.1095	0.0778	0.1175	0.1028	0.5124	6	0.085	0.029	-0.005	0.054	
250235	ECT114019A	0.1223	0.1206	0.0802	0.0755	0.0892	0.1212	0.6090	6	0.102	0.022	0.011	0.054	
250236	ECT115019A	0.0622	0.0424	0.0453	0.0306	0.0304	0.0437	0.2546	6	0.042	0.012	-0.048	0.054	
250237	ECT116019A	0.0614	0.0736	0.0771	0.0218	0.0477	0.0196	0.3012	6	0.050	0.025	-0.040	0.054	
250238	ECT117019A	0.1311	0.1245	0.1454	0.0655	0.0933	0.1005	0.6603	6	0.110	0.029	0.019	0.054	
250239	ECT118019A	0.0802	0.0662		0.0395	0.0577		0.2436	4	0.061	0.017	-0.030	0.063	
250240	ECT119019A	0.0148		0.0462	0.0395	0.0376	0.0258	0.1639	5	0.033	0.012	-0.058	0.058	YES
250241	ECT120019A	0.0608	0.0769	0.0386	0.0872	0.0666	0.0248	0.3549	6	0.059	0.024	-0.031	0.054	
251336	ECT126019A	0.1211	0.1380	0.1048	0.1211	0.1631	0.0472	0.6953	6	0.116	0.039	0.025	0.054	
251336D	ECT126019AD	0.0698	0.1046	0.0817	0.0776	0.0736	0.0684	0.4757	6	0.079	0.013	-0.011	0.054	
Control-1R		0.0927	0.0664	0.0894	0.0964	0.1265	0.1078	0.5792	6	0.097	0.020	0.006	0.054	
Control-2R		0.0745	0.1966	0.1049	0.0681	0.0711	0.1120	0.6272	6	0.105	0.049	0.014	0.054	
Control-3R		0.1199	0.0548	0.0612	0.0783	0.0509	0.0589	0.4240	6	0.071	0.026	-0.020	0.054	
Combined								1.6304	18	0.091	0.035	0.000	0.037	
Pooled STD	0.0661													

TABLE 8e. SOYBEAN Total Root Weights (g)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	0.5312	0.9130	0.9486	1.1729	1.2535	1.2150	6.0342	6	1.006	0.272	0.127	0.114	YES
250022D	ECR111019AD	0.3033	0.3944	0.4340	0.3378	0.4142	0.5921	2.4758	6	0.413	0.101	-0.466	0.114	YES
250023	ECR111029A	0.3660	0.5148	0.5165	0.4595	0.7467		2.6035	5	0.521	0.140	-0.358	0.123	YES
250024	ECR112019A	0.1719	0.2186	0.1932	0.3248	0.3942	0.2225	1.5252	6	0.254	0.086	-0.624	0.114	YES
250025	ECR113019A	0.3760		0.6315	0.3566	0.3189	0.5294	2.2124	5	0.442	0.133	-0.436	0.123	YES
250026	ECR114019A	0.4310	0.3420	0.4251	0.6732	0.5514	0.6180	3.0407	6	0.507	0.128	-0.372	0.114	YES
250027	ECR115019A	0.2036	0.4451	0.3656	0.3843	0.6731	0.8170	2.8887	6	0.481	0.224	-0.397	0.114	YES
250028	ECR116019A	0.5607	0.5293	0.3760	0.4761	0.4259	0.3469	2.7149	6	0.452	0.085	-0.426	0.114	YES
250029	ECR117019A	0.2593	0.3443	0.3225	0.3417	0.4241	0.4336	2.1255	6	0.354	0.066	-0.524	0.114	YES
250030	ECR118019A	0.4435	0.3739	0.7295	0.4121	0.5100	0.4269	2.8959	6	0.483	0.129	-0.396	0.114	YES
250031	ECR119019A	0.6109	0.4068	0.5296	0.5358	0.3384	0.3147	2.7362	6	0.456	0.120	-0.422	0.114	YES
250032	ECR120019A	0.4399	0.3487	0.4397	0.4644	0.3212	0.5156	2.5295	6	0.422	0.073	-0.457	0.114	YES
250152	ECX111019A	0.4531	0.4223	0.4662	0.4988	0.4218	0.3688	2.6310	6	0.439	0.045	-0.440	0.114	YES
250152D	ECX111019AD	0.3501	0.2939	0.3356	0.4143	0.3362	0.2883	2.0184	6	0.336	0.046	-0.542	0.114	YES
250153	ECX111029A	0.3110	0.3619	0.3089	0.3449	0.4364	0.4094	2.1725	6	0.362	0.052	-0.516	0.114	YES
250154	ECX112019A	0.2562	0.3052	0.2284	0.2329	0.3050	0.3158	1.6435	6	0.274	0.039	-0.605	0.114	YES
250155	ECX113019A	0.2472	0.3147	0.2908	0.3216	0.3485	0.3916	1.9144	6	0.319	0.049	-0.559	0.114	YES
250156	ECX114019A	0.4633	0.4697	0.3930	0.3664	0.4477	0.4035	2.5436	6	0.424	0.042	-0.455	0.114	YES
250157	ECX115019A	0.2322	0.3003	0.3330	0.0824	0.3608	0.5630	1.8717	6	0.312	0.158	-0.567	0.114	YES
250158	ECX116019A	0.2303	0.4392	0.3616	0.3014	0.4064	0.4522	2.1911	6	0.365	0.086	-0.513	0.114	YES
250159	ECX117019A	0.2245	0.3534	0.4765	0.3422	0.4713	0.6612	2.5291	6	0.422	0.150	-0.457	0.114	YES
250160	ECX118019A	0.4922	0.4418	0.4077	0.4041	0.4041	0.5168	2.6667	6	0.444	0.049	-0.434	0.114	YES
250161	ECX119019A	0.1779	0.2943	0.2529	0.2449	0.5153	0.1308	1.6161	6	0.269	0.134	-0.609	0.114	YES
250162	ECX120019A	0.4082	0.3380	0.3694	0.2937	0.4372	0.5599	2.4064	6	0.401	0.093	-0.477	0.114	YES
250231	ECT111019A	0.4221	0.4305	0.4733	0.4201	0.3609	0.3816	2.4885	6	0.415	0.039	-0.464	0.114	YES
250232	ECT111029A	0.3017	0.4804	0.2949	0.1985	0.2807	0.3748	1.9310	6	0.322	0.096	-0.557	0.114	YES
250233	ECT112019A	0.3317	0.4325	0.3613	0.5143	0.5313	0.5283	2.6994	6	0.450	0.088	-0.429	0.114	YES
250234	ECT113019A	0.3620	0.3729	0.4967	0.3817	0.4883	0.6082	2.7098	6	0.452	0.097	-0.427	0.114	YES
250235	ECT114019A	0.0984	0.0910	0.1304	0.0913		0.1859	0.5970	5	0.119	0.041	-0.759	0.123	YES
250236	ECT115019A	0.1980	0.4790	0.3680	0.4082	0.3987		1.8519	5	0.370	0.105	-0.508	0.123	YES
250237	ECT116019A	0.3352		0.3744	0.3268		0.3084	1.3448	4	0.336	0.028	-0.542	0.134	YES
250238	ECT117019A	0.2351	0.3655	0.2729	0.4149	0.2694	0.3644	1.9222	6	0.320	0.071	-0.558	0.114	YES
250239	ECT118019A		0.4652					0.4652	1	0.465	0.000	-0.413	0.251	YES
250240	ECT119019A							0.0000	0	0.000	0.000	-0.879	NA	YES
250241	ECT120019A	0.2525	0.2309	0.2777	0.4388			1.1999	4	0.300	0.095	-0.579	0.134	YES
251336	ECT126019A	0.3953	0.2898	0.3840	0.3336	0.3628	0.2793	2.0448	6	0.341	0.048	-0.538	0.114	YES
251336D	ECT126019AD	0.2260	0.2037	0.4312	0.2327	0.1415	0.2758	1.5109	6	0.252	0.098	-0.627	0.114	YES
Control-1R		0.6043	1.0614	0.7138	0.2405	1.3908	0.3458	4.3566	6	0.726	0.436	-0.152	0.114	
Control-2R		0.8311	0.6571	1.5250	0.8149	0.8620	1.1399	5.8300	6	0.972	0.313	0.093	0.114	
Control-3R		0.9012	0.8865		0.9081	1.1737		3.8695	4	0.967	0.138	0.089	0.134	
Combined								14.0561	16	0.879	0.339	0.000	0.083	
Pooled STD	0.139													

TABLE 9a. CORN Average Plant Heights (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	37.5	41.8	43.2	46.0	42.3	52.5	263.3	6	43.9	5.0	-0.9	4.9	
250022D	ECR111019AD	47.8	53.8	49.3	35.1	47.3	44.2	277.5	6	46.3	6.3	1.5	4.9	
250023	ECR111029A	42.5	38.5	45.5	48.0	41.8	50.8	267.1	6	44.5	4.5	-0.3	4.9	
250024	ECR112019A	43.3	43.3	44.7	41.3	38.3	42.7	253.7	6	42.3	2.2	-2.5	4.9	
250025	ECR113019A	35.5	48.2	48.8	46.5	45.7	47.0	271.6	6	45.3	4.9	0.5	4.9	
250026	ECR114019A	44.5	52.0	47.8	51.0	45.7	49.8	290.8	6	48.5	3.0	3.7	4.9	
250027	ECR115019A	43.0	44.3	52.5	43.8	47.7	48.7	280.0	6	46.7	3.6	1.9	4.9	
250028	ECR116019A	42.5	44.8	47.0	37.8	46.3	43.0	261.5	6	43.6	3.3	-1.2	4.9	
250029	ECR117019A	33.0	35.7	41.0	41.3	48.0	50.0	249.0	6	41.5	6.6	-3.3	4.9	
250030	ECR118019A	41.2	44.8	49.7	51.0	47.8	54.0	288.5	6	48.1	4.6	3.3	4.9	
250031	ECR119019A	33.0	28.0	47.3	49.0	47.8	51.5	256.7	6	42.8	9.7	-2.0	4.9	
250032	ECR120019A	34.8	29.7	46.8	40.3	41.0	47.5	240.1	6	40.0	6.9	-4.8	4.9	
250152	ECX111019A	23.8	38.8	41.0	38.5	38.2	34.5	214.8	6	35.8	6.2	-9.0	4.9	YES
250152D	ECX111019AD	43.7	42.3	28.8	41.7	49.2	42.0	247.7	6	41.3	6.7	-3.5	4.9	
250153	ECX111029A	28.3	43.2	44.3	46.3	26.5	46.7	235.3	6	39.2	9.3	-5.6	4.9	YES
250154	ECX112019A	39.2	45.3	45.0	36.5	41.5	41.3	248.8	6	41.5	3.8	-3.3	4.9	
250155	ECX113019A	44.5	29.2	47.5	51.5	40.3	51.0	264.0	6	44.0	8.4	-0.8	4.9	
250156	ECX114019A	34.8	41.2	50.3	46.2	47.5	52.5	272.4	6	45.4	6.5	0.6	4.9	
250157	ECX115019A	44.3	46.8	46.7	48.3	55.3	43.8	285.0	6	47.5	4.1	2.7	4.9	
250158	ECX116019A	33.7	43.7	34.5	46.7	47.8	46.8	253.0	6	42.2	6.4	-2.6	4.9	
250159	ECX117019A	51.8	54.7	47.7	47.5	48.3	43.3	293.3	6	48.9	3.9	4.1	4.9	
250160	ECX118019A	46.7	54.0	50.3	51.3	50.3	47.3	300.0	6	50.0	2.7	5.2	4.9	YES
250161	ECX119019A	42.5	38.8	50.2	51.2	46.8	54.3	283.7	6	47.3	5.8	2.5	4.9	
250162	ECX120019A	47.0	49.7	49.7	64.5	49.0	54.5	314.3	6	52.4	6.4	7.6	4.9	YES
250231	ECT111019A	42.7	42.3	49.7	43.7	30.0	41.3	249.7	6	41.6	6.4	-3.2	4.9	
250232	ECT111029A	38.5	44.3	42.3	38.3	44.0	35.8	243.3	6	40.5	3.5	-4.3	4.9	
250233	ECT112019A	43.3	51.5	62.0	56.8	53.0	59.2	325.8	6	54.3	6.6	9.5	4.9	YES
250234	ECT113019A	60.8	52.7	52.8	57.8	52.3	54.5	330.9	6	55.2	3.4	10.3	4.9	YES
250235	ECT114019A	53.5	50.0	47.0	39.0	35.7	33.3	258.5	6	43.1	8.2	-1.7	4.9	
250236	ECT115019A							0.0	0	0.0	0.0	-44.8	NA	YES
250237	ECT116019A		35.8	43.4	28.9	39.0		147.1	4	36.8	6.1	-8.0	5.7	YES
250238	ECT117019A	39.7	48.7		54.0	53.0	44.0	239.3	5	47.9	6.1	3.1	5.2	
250239	ECT118019A		52.0			49.0		101.0	2	50.5	2.1	5.7	7.8	
250240	ECT119019A							0.0	0	0.0	0.0	-44.8	NA	YES
250241	ECT120019A	40.0		45.0				85.0	2	42.5	3.5	-2.3	7.8	
251336	ECT126019A	41.9	53.5	52.7	46.9	52.2	46.0	293.0	6	48.8	4.6	4.0	4.9	
251336D	ECT126019AD	42.6	62.0	50.6	43.2	40.4	46.0	284.7	6	47.5	7.9	2.6	4.9	
Control-1R		40.5	45.8	45.0	40.3	33.5	39.3	244.3	6	40.7	4.4	-4.1	4.9	
Control-2R		63.0	51.3	49.7	42.0	48.3	45.0	299.3	6	49.9	7.2	5.1	4.9	
Control-3R		47.0	50.0	46.3	46.0	23.5	50.0	262.8	6	43.8	10.1	-1.0	4.9	
Combined								806.5	18	44.8	8.16	0.0	3.4	
Pooled STD	6.01													

TABLE 9b. ONION Average Plant Heights (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	11.6	12.0	12.0	12.5	10.3	13.2	71.6	6	11.9	1.0	3.1	3.0	YES
250022D	ECR111019AD	11.8	12.0	13.0	15.0	14.1	16.1	82.0	6	13.7	1.7	4.9	3.0	YES
250023	ECR111029A	7.8		15.0	11.3	14.3	12.5	60.8	5	12.2	2.9	3.4	3.2	YES
250024	ECR112019A	15.5	13.0	14.0	16.0	17.0	16.3	91.8	6	15.3	1.5	6.5	3.0	YES
250025	ECR113019A	12.5	10.5	10.5	13.6	15.3	11.0	73.5	6	12.2	2.0	3.4	3.0	YES
250026	ECR114019A	11.2	14.3	13.4	14.6	15.7	14.3	83.3	6	13.9	1.5	5.1	3.0	YES
250027	ECR115019A	13.5	12.9	12.2	15.4	17.3	12.8	84.0	6	14.0	1.9	5.2	3.0	YES
250028	ECR116019A	6.5	20.5	12.0	17.1	16.3	7.5	80.0	6	13.3	5.6	4.5	3.0	YES
250029	ECR117019A	14.5		9.7	16.5	11.0	7.8	59.4	5	11.9	3.6	3.1	3.2	
250030	ECR118019A	10.4	13.8	10.7	18.0	11.0	13.9	77.8	6	13.0	2.9	4.2	3.0	YES
250031	ECR119019A	18.0	19.3	0.0	20.0	20.5	0.0	77.8	6	13.0	10.1	4.2	3.0	YES
250032	ECR120019A	16.8	12.0	16.0	15.3	16.1		76.1	5	15.2	1.9	6.4	3.2	YES
250152	ECX111019A	16.8	16.5	6.0	1.0	16.5	0.0	56.8	6	9.5	8.1	0.7	3.0	
250152D	ECX111019AD	14.5	15.9	13.5	16.9	16.8	15.0	92.6	6	15.4	1.3	6.6	3.0	YES
250153	ECX111029A	0.0	7.3	9.5		9.3	9.2	35.2	5	7.0	4.0	-1.8	3.2	
250154	ECX112019A	8.5	7.5		11.5	6.5	12.8	46.8	5	9.4	2.7	0.5	3.2	
250155	ECX113019A	12.0	15.7	0.0	11.0	17.0	17.5	73.2	6	12.2	6.5	3.4	3.0	YES
250156	ECX114019A	14.5	12.9	13.5	14.0	15.0	14.8	84.8	6	14.1	0.8	5.3	3.0	YES
250157	ECX115019A		9.3					9.3	1	9.3	0.0	0.4	6.5	
250158	ECX116019A	11.8	13.3	13.0	15.8	15.8	16.4	86.0	6	14.3	1.9	5.5	3.0	YES
250159	ECX117019A	18.3	13.2	15.5	17.5	15.1	14.3	93.8	6	15.6	1.9	6.8	3.0	YES
250160	ECX118019A	13.5	16.0	13.0	17.6	16.0	15.1	91.2	6	15.2	1.7	6.4	3.0	YES
250161	ECX119019A	11.3	11.7	13.6	10.1	14.5	14.9	76.1	6	12.7	1.9	3.9	3.0	YES
250162	ECX120019A	14.9	16.3	14.6	16.9	14.3	16.6	93.7	6	15.6	1.1	6.8	3.0	YES
250231	ECT111019A		6.0		17.0	16.0	18.3	57.3	4	14.3	5.6	5.5	3.5	YES
250232	ECT111029A	17.0		15.3	12.5	16.5		61.3	4	15.3	2.0	6.5	3.5	YES
250233	ECT112019A	16.8	13.0	14.9	18.5	15.5	14.6	93.2	6	15.5	1.9	6.7	3.0	YES
250234	ECT113019A	12.6	13.8	8.5	16.3	18.0	15.8	85.0	6	14.2	3.4	5.4	3.0	YES
250235	ECT114019A		13.3	14.0	9.5			36.8	3	12.3	2.4	3.4	4.0	
250236	ECT115019A	15.4			15.6	3.5		34.5	3	11.5	6.9	2.7	4.0	
250237	ECT116019A							0.0	0	0.0	0.0	-8.8	NA	YES
250238	ECT117019A	18.3			19.2	17.0	19.5	73.9	4	18.5	1.1	9.7	3.5	YES
250239	ECT118019A					10.5		10.5	1	10.5	0.0	1.7	6.5	
250240	ECT119019A			8.7				8.7	1	8.7	0.0	-0.1	6.5	
250241	ECT120019A				9.5	13.0		22.5	2	11.3	2.5	2.4	4.7	
251336	ECT126019A			11.7				11.7	1	11.7	0.0	2.9	6.5	
251336D	ECT126019AD	11.0		12.5			14.0	37.5	3	12.5	1.5	3.7	4.0	
Control-1R		9.0	8.0	7.3	6.8	7.3	10.2	48.4	6	8.1	1.3	-0.7	3.0	
Control-2R		6.0	7.8	9.6		13.0		36.4	4	9.1	3.0	0.3	3.5	
Control-3R		12.0	10.0	9.0	7.0		9.3	47.3	5	9.5	1.8	0.6	3.2	
Combined								132.0	15	8.80	1.96	0.0	2.2	
Pooled STD	3.60													

TABLE 9c. CARROT Average Plant Heights (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	6.8	7.5	7.8	9.4	9.4	8.5	49.4	6	8.2	1.1	4.3	2.0	YES
250022D	ECR111019AD	8.6	7.1	6.8	9.6	8.9	8.6	49.7	6	8.3	1.1	4.3	2.0	YES
250023	ECR111029A	8.5	4.6	7.6	8.4	5.9	6.9	41.9	6	7.0	1.5	3.0	2.0	YES
250024	ECR112019A	7.4	8.6	9.0	9.5	8.0	10.3	52.8	6	8.8	1.0	4.8	2.0	YES
250025	ECR113019A	9.1	7.9	7.0	7.8	9.0	8.4	49.2	6	8.2	0.8	4.2	2.0	YES
250026	ECR114019A	7.6	7.6	7.2	8.1	7.5	6.8	44.8	6	7.5	0.5	3.5	2.0	YES
250027	ECR115019A	8.3	10.1	8.3	10.3	9.1	7.6	53.8	6	9.0	1.1	5.0	2.0	YES
250028	ECR116019A	12.5	12.2	11.0	9.1	10.6	9.6	65.0	6	10.8	1.4	6.9	2.0	YES
250029	ECR117019A	7.5	7.8	13.8	11.3	8.6	9.8	58.8	6	9.8	2.4	5.8	2.0	YES
250030	ECR118019A	9.4	10.3	10.8	11.5	9.8	9.9	61.7	6	10.3	0.8	6.3	2.0	YES
250031	ECR119019A	18.0	11.8	12.0	12.0	9.9	12.8	76.5	6	12.8	2.7	8.8	2.0	YES
250032	ECR120019A							0.0	0	0.0	0.0	-4.0	NA	YES
250152	ECX111019A	0.0	9.4	6.7	13.0	9.3	7.5	45.8	6	7.6	4.3	3.7	2.0	YES
250152D	ECX111019AD	9.5	8.8	10.3	8.1	7.3	8.5	52.6	6	8.8	1.1	4.8	2.0	YES
250153	ECX111029A	10.0	8.6	9.9	30.8	7.0	8.8	75.1	6	12.5	9.0	8.6	2.0	YES
250154	ECX112019A	8.8			8.5		5.5	22.8	3	7.6	1.8	3.6	2.6	YES
250155	ECX113019A	14.5	11.8	12.4	13.0	11.1	14.3	77.1	6	12.8	1.3	8.9	2.0	YES
250156	ECX114019A	7.7	9.1	8.8	7.8	9.3	7.6	50.3	6	8.4	0.8	4.4	2.0	YES
250157	ECX115019A		4.0	5.5		8.0	4.0	21.5	4	5.4	1.9	1.4	2.3	
250158	ECX116019A	10.4	8.9	11.8	12.5	9.8	10.4	63.8	6	10.6	1.3	6.7	2.0	YES
250159	ECX117019A	7.5	10.3	10.3	8.2	12.2	9.3	57.7	6	9.6	1.7	5.7	2.0	YES
250160	ECX118019A	9.1	10.5	10.4	8.3	10.7	9.8	58.7	6	9.8	1.0	5.8	2.0	YES
250161	ECX119019A	7.6	8.8	6.9	8.8	9.0	6.9	48.0	6	8.0	1.0	4.0	2.0	YES
250162	ECX120019A	9.4	8.3	10.8	11.1	10.3	9.3	59.1	6	9.9	1.0	5.9	2.0	YES
250231	ECT111019A	9.5	13.3	11.1		9.7	11.1	54.7	5	10.9	1.5	7.0	2.1	YES
250232	ECT111029A		8.8	8.8	11.3	10.0	11.0	49.8	5	10.0	1.2	6.0	2.1	YES
250233	ECT112019A	8.9	7.9	7.3	7.8	9.3	8.3	49.4	6	8.2	0.7	4.3	2.0	YES
250234	ECT113019A	9.1	8.8	10.5	8.8	9.3	9.9	56.3	6	9.4	0.7	5.4	2.0	YES
250235	ECT114019A		6.5			12.5		19.0	2	9.5	4.2	5.5	3.1	YES
250236	ECT115019A	7.5						7.5	1	7.5	0.0	3.5	4.3	
250237	ECT116019A							0.0	0	0.0	0.0	-4.0	NA	YES
250238	ECT117019A						5.0	5.0	1	5.0	2.0	1.0	4.3	
250239	ECT118019A					1.0		1.0	1	1.0	0.0	-3.0	4.3	
250240	ECT119019A							0.0	0	0.0	0.0	-4.0	NA	YES
250241	ECT120019A						6.5	6.5	1	6.5	0.0	2.5	4.3	
251336	ECT126019A				18.1			18.1	1	18.1	0.0	14.1	4.3	YES
251336D	ECT126019AD			5.0	15.0			20.0	2	10.0	7.1	6.0	3.1	YES
Control-1R		4.4	3.2	3.8	5.5	3.0		19.9	5	4.0	1.0	0.0	2.1	
Control-2R		3.7	4.2	3.5	4.8	4.5	5.3	26.0	6	4.3	0.7	0.4	2.0	
Control-3R		4.0		2.0			3.5	9.5	3	3.2	1.0	-0.8	2.6	
Combined								55.3	14	3.95	0.93	0.0	1.5	
Pooled STD	2.36													

TABLE 9d. RADISH Average Plant Heights (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	4.5	4.6	4.3	4.4	4.5	4.8	27.1	6	4.5	0.2	0.3	0.6	
250022D	ECR111019AD	5.5	3.9	5.0	5.1	4.3	4.8	28.6	6	4.8	0.6	0.5	0.6	
250023	ECR111029A	5.0	5.0	4.9	5.0	4.6	5.0	29.5	6	4.9	0.2	0.7	0.6	YES
250024	ECR112019A	4.9	4.5	4.3	5.2	4.8	4.5	28.2	6	4.7	0.3	0.5	0.6	
250025	ECR113019A	4.8	5.0	4.8	4.6	4.8	5.0	29.0	6	4.8	0.2	0.6	0.6	
250026	ECR114019A	4.5	4.5	5.1	5.0	4.9	4.6	28.6	6	4.8	0.3	0.5	0.6	
250027	ECR115019A	4.4	3.9	3.6	4.9	4.2	3.9	24.9	6	4.2	0.5	-0.1	0.6	
250028	ECR116019A	5.3	5.0	5.8	5.5	5.0	4.9	31.4	6	5.2	0.3	1.0	0.6	YES
250029	ECR117019A	5.7	7.0	6.5	6.8	7.0	4.6	37.6	6	6.3	1.0	2.0	0.6	YES
250030	ECR118019A	5.4	5.2	5.3	5.7	5.0	5.4	32.0	6	5.3	0.2	1.1	0.6	YES
250031	ECR119019A	8.2	5.5	6.1	6.6	5.9	5.4	37.7	6	6.3	1.0	2.0	0.6	YES
250032	ECR120019A	6.3	6.0	6.2	5.8	6.0	6.0	36.3	6	6.0	0.2	1.8	0.6	YES
250152	ECX111019A	12.5	6.5		7.5	6.6	6.8	39.9	5	8.0	2.6	3.7	0.7	YES
250152D	ECX111019AD	5.6	5.6	5.3	5.9	5.4	5.9	33.7	6	5.6	0.2	1.4	0.6	YES
250153	ECX111029A	6.3	5.9	7.1	6.1	5.4	5.5	36.3	6	6.1	0.6	1.8	0.6	YES
250154	ECX112019A	8.5	6.3				7.5	22.3	3	7.4	1.1	3.2	0.8	YES
250155	ECX113019A	8.3	8.2	9.5	8.8	7.8	6.9	49.4	6	8.2	0.9	4.0	0.6	YES
250156	ECX114019A	4.9	4.8	4.6	5.1	4.6	4.1	28.1	6	4.7	0.3	0.4	0.6	
250157	ECX115019A		5.5					5.5	1	5.5	0.0	1.3	1.4	
250158	ECX116019A	6.7	5.3	5.6	4.9	4.8	4.9	32.2	6	5.4	0.7	1.1	0.6	YES
250159	ECX117019A	6.5	5.8	6.5	5.3	4.4	5.0	33.5	6	5.6	0.8	1.3	0.6	YES
250160	ECX118019A	8.1	7.5	7.5	10.6	7.6	8.0	49.3	6	8.2	1.2	4.0	0.6	YES
250161	ECX119019A	4.2	6.1	5.6	4.9	6.1	5.0	31.9	6	5.3	0.8	1.1	0.6	YES
250162	ECX120019A	5.9	5.1	6.5	7.0	5.0	6.1	35.6	6	5.9	0.8	1.7	0.6	YES
250231	ECT111019A	7.0	5.9	7.0	6.6	6.9	5.6	39.0	6	6.5	0.6	2.3	0.6	YES
250232	ECT111029A	7.1	5.9	6.3	6.0	6.0	6.7	38.0	6	6.3	0.5	2.1	0.6	YES
250233	ECT112019A	8.1	6.6	7.7	7.1	6.6	6.4	42.5	6	7.1	0.7	2.8	0.6	YES
250234	ECT113019A	6.4	6.2	6.5	6.3	6.1	7.1	38.6	6	6.4	0.4	2.2	0.6	YES
250235	ECT114019A	5.8	4.7	4.4	4.6	5.5	5.3	30.3	6	5.1	0.6	0.8	0.6	YES
250236	ECT115019A	5.4	5.4	4.9	5.2	4.7	5.2	30.7	6	5.1	0.3	0.9	0.6	YES
250237	ECT116019A	6.0	5.1	5.7	6.5	5.4	6.5	35.1	6	5.9	0.6	1.6	0.6	YES
250238	ECT117019A	6.1	6.5	7.6	8.8	7.9	5.7	42.6	6	7.1	1.2	2.9	0.6	YES
250239	ECT118019A	4.8	4.6		5.3	4.8	6.0	25.5	5	5.1	0.6	0.8	0.7	YES
250240	ECT119019A	6.0		6.6	7.5	7.7	6.2	34.0	5	6.8	0.8	2.6	0.7	YES
250241	ECT120019A	9.0	5.5	4.3	5.0	4.3	6.5	34.7	6	5.8	1.8	1.5	0.6	YES
251336	ECT126019A	6.1	6.2	6.0	7.5	7.0	6.6	39.5	6	6.6	0.6	2.3	0.6	YES
251336D	ECT126019AD	5.2	5.5	5.7	6.0	5.5	5.4	33.3	6	5.5	0.3	1.3	0.6	YES
Control-1R		4.3	3.9	3.9	4.4	4.3	3.9	24.7	6	4.1	0.2	-0.1	0.6	
Control-2R		4.8	4.4	4.2	3.8	4.1	4.7	26.0	6	4.3	0.4	0.1	0.6	
Control-3R		4.3	3.7	4.0	6.0	3.8	4.0	25.8	6	4.3	0.9	0.0	0.6	
Combined								76.4	18	4.25	0.54	0.0	0.4	
Pooled STD	0.77													

TABLE 9e. SOYBEAN Average Plant Heights (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	15.3	16.0	25.2	20.5	20.0	20.5	117.5	6	19.6	3.6	-16.0	3.3	YES
250022D	ECR111019AD	13.8	15.5	15.0	15.3	17.8	16.8	94.3	6	15.7	1.4	-19.8	3.3	YES
250023	ECR111029A	11.3	18.3	24.0	24.7	23.0		101.3	5	20.3	5.6	-15.3	3.6	YES
250024	ECR112019A	11.7	10.7	10.7	16.7	19.3	10.3	79.3	6	13.2	3.8	-22.3	3.3	YES
250025	ECR113019A	17.7		34.2	23.5	23.8	17.0	116.1	5	23.2	6.9	-12.3	3.6	YES
250026	ECR114019A	16.5	20.7	20.3	18.5	20.8	19.8	116.7	6	19.4	1.7	-16.1	3.3	YES
250027	ECR115019A	11.0	16.3	15.8	13.8	19.3	19.5	95.8	6	16.0	3.2	-19.6	3.3	YES
250028	ECR116019A	16.8	19.0	17.0	18.2	16.7	13.2	100.8	6	16.8	2.0	-18.8	3.3	YES
250029	ECR117019A	12.7	14.5	15.7	15.7	15.2	18.3	92.0	6	15.3	1.8	-20.2	3.3	YES
250030	ECR118019A	14.7	18.7	16.7	18.5	16.7	16.8	102.0	6	17.0	1.5	-18.5	3.3	YES
250031	ECR119019A	16.5	17.5	17.5	19.2	18.5	13.5	102.7	6	17.1	2.0	-18.4	3.3	YES
250032	ECR120019A	13.3	16.5	16.3	16.7	17.2	19.0	99.0	6	16.5	1.8	-19.0	3.3	YES
250152	ECX111019A	16.5	17.0	19.3	17.2	14.2	17.0	101.1	6	16.8	1.6	-18.7	3.3	YES
250152D	ECX111019AD	14.2	15.5	18.0	16.3	16.5	17.0	97.5	6	16.3	1.3	-19.3	3.3	YES
250153	ECX111029A	18.0	21.8	18.7	14.7	18.8	15.7	107.7	6	17.9	2.5	-17.6	3.3	YES
250154	ECX112019A	14.2	15.3	15.0	8.0	10.7	7.0	70.2	6	11.7	3.7	-23.8	3.3	YES
250155	ECX113019A	20.0	18.7	17.3	20.5	17.7	13.2	107.3	6	17.9	2.6	-17.7	3.3	YES
250156	ECX114019A	17.3	18.2	18.2	18.3	17.0	15.2	104.1	6	17.3	1.2	-18.2	3.3	YES
250157	ECX115019A	23.8	21.0	24.0	14.5	20.8	21.8	125.8	6	21.0	3.5	-14.6	3.3	YES
250158	ECX116019A	14.3	17.7	16.5	16.8	17.8	14.5	97.7	6	16.3	1.5	-19.3	3.3	YES
250159	ECX117019A	13.5	26.5	20.2	22.5	19.7	16.5	118.8	6	19.8	4.5	-15.7	3.3	YES
250160	ECX118019A	30.5	26.7	33.0	32.7	27.2	24.3	174.3	6	29.1	3.5	-6.5	3.3	YES
250161	ECX119019A	18.5	22.3	21.7	19.8	24.5	15.0	121.8	6	20.3	3.3	-15.2	3.3	YES
250162	ECX120019A	18.2	17.8	19.0	20.3	18.8	19.5	113.7	6	18.9	0.9	-16.6	3.3	YES
250231	ECT111019A	16.8	21.0	18.3	17.7	15.3	18.8	108.0	6	18.0	1.9	-17.5	3.3	YES
250232	ECT111029A	18.7	19.8	17.7	16.3	13.8	14.3	100.7	6	16.8	2.4	-18.8	3.3	YES
250233	ECT112019A	17.8	21.3	27.5	22.3	23.0	17.5	129.5	6	21.6	3.7	-14.0	3.3	YES
250234	ECT113019A	23.2	25.5	23.8	20.2	18.3	19.0	130.0	6	21.7	2.9	-13.9	3.3	YES
250235	ECT114019A	15.0	9.0	10.0	12.8		8.3	55.2	5	11.0	2.8	-24.5	3.6	YES
250236	ECT115019A	23.0	24.8	24.4	22.2	48.0		142.3	5	28.5	11.0	-7.1	3.6	YES
250237	ECT116019A	17.9		18.5	21.0		17.9	75.3	4	18.8	1.5	-16.7	3.9	YES
250238	ECT117019A	18.3	16.5	11.8	15.8	19.0	15.8	97.3	6	16.2	2.5	-19.3	3.3	YES
250239	ECT118019A		23.0					23.0	1	23.0	0.0	-12.5	7.2	YES
250240	ECT119019A							0.0	0	0.0	0.0	-35.5	NA	YES
250241	ECT120019A	14.5	20.5	21.5	17.8			74.3	4	18.6	3.1	-17.0	3.9	YES
251336	ECT126019A	19.8	23.0	20.5	23.2	21.5	18.4	126.3	6	21.1	1.9	-14.5	3.3	YES
251336D	ECT126019AD	23.6	20.5	17.8	21.6	19.6	20.0	123.1	6	20.5	1.9	-15.0	3.3	YES
Control-1R		29.3	31.0	23.3	19.5	43.3	17.5	164.0	6	27.3	9.5	-8.2	3.3	
Control-2R		33.0	36.3	52.7	42.0	33.3	33.2	230.5	6	38.4	7.8	2.9	3.3	
Control-3R		48.3	55.0		33.3	37.5		174.2	4	43.5	9.9	8.0	3.9	
Combined								568.7	16	35.54	10.82	0.0	2.4	
Pooled STD	4.01													

TABLE 10a. CORN Average Root Lengths (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	18.8	19.3	20.2	27.8	19.5	23.3	128.9	6	21.5	3.5	-3.4	4.0	
250022D	ECR111019AD	26.7	15.8	21.3	16.0	27.8	16.2	123.8	6	20.6	5.5	-4.3	4.0	YES
250023	ECR111029A	30.0	46.0	23.0	26.3	35.8	22.3	183.4	6	30.6	9.1	5.7	4.0	YES
250024	ECR112019A	13.3	11.7	10.7	18.3	22.0	24.7	100.7	6	16.8	5.8	-8.1	4.0	YES
250025	ECR113019A	16.3	16.3	18.8	15.5	34.8	24.7	126.3	6	21.1	7.5	-3.9	4.0	
250026	ECR114019A	15.5	19.5	29.2	17.8	27.8	24.7	134.4	6	22.4	5.6	-2.5	4.0	
250027	ECR115019A	17.2	13.3	17.8	26.3	23.3	24.2	122.2	6	20.4	5.0	-4.6	4.0	YES
250028	ECR116019A	10.8	23.5	23.0	19.8	19.7	15.8	112.5	6	18.8	4.8	-6.2	4.0	YES
250029	ECR117019A	15.7	17.0	15.0	16.0	11.0	20.0	94.7	6	15.8	2.9	-9.1	4.0	YES
250030	ECR118019A	20.7	21.3	20.0	16.3	23.3	21.5	123.2	6	20.5	2.3	-4.4	4.0	YES
250031	ECR119019A	15.2	13.7	16.3	21.0	19.0	20.3	105.4	6	17.6	3.0	-7.3	4.0	YES
250032	ECR120019A	15.7	18.3	17.0	32.0	24.3	17.8	125.1	6	20.8	6.2	-4.1	4.0	YES
250152	ECX111019A	21.8	21.0	23.8	19.3	20.0	27.7	133.6	6	22.3	3.1	-2.7	4.0	
250152D	ECX111019AD	21.0	18.0	20.3	20.8	16.7	28.0	124.8	6	20.8	3.9	-4.1	4.0	YES
250153	ECX111029A	21.0	13.2	18.0	17.5	19.7	29.2	118.5	6	19.8	5.3	-5.2	4.0	YES
250154	ECX112019A	18.8	13.3	21.5	19.2	23.2	15.7	111.6	6	18.6	3.7	-6.3	4.0	YES
250155	ECX113019A	15.3	13.0	28.0	33.5	25.3	17.2	132.3	6	22.1	8.1	-2.9	4.0	
250156	ECX114019A	23.0	13.2	19.3	19.7	20.5	26.3	121.9	6	20.3	4.4	-4.6	4.0	YES
250157	ECX115019A	16.5	16.0	22.2	14.8	15.8	25.2	110.4	6	18.4	4.2	-6.5	4.0	YES
250158	ECX116019A	13.7	22.5	20.5	15.5	21.5	12.8	106.4	6	17.7	4.3	-7.2	4.0	YES
250159	ECX117019A	15.3	20.2	18.0	22.7	18.5	14.0	108.7	6	18.1	3.2	-6.8	4.0	YES
250160	ECX118019A	15.3	11.3	15.3	17.2	20.0	12.8	91.9	6	15.3	3.1	-9.6	4.0	YES
250161	ECX119019A	22.2	11.2	16.5	20.0	19.3	12.5	101.7	6	16.9	4.4	-8.0	4.0	YES
250162	ECX120019A	13.0	19.3	21.0	8.0	31.5	17.0	109.8	6	18.3	8.0	-6.6	4.0	YES
250231	ECT111019A	15.7	22.7	21.8	19.0	14.8	17.7	111.7	6	18.6	3.2	-6.3	4.0	YES
250232	ECT111029A	16.0	16.5	21.3	20.3	23.5	22.0	119.7	6	19.9	3.0	-5.0	4.0	YES
250233	ECT112019A	17.0	20.3	9.0	17.0	22.0	19.0	104.3	6	17.4	4.5	-7.5	4.0	YES
250234	ECT113019A	20.8	26.7	18.3	25.3	27.8	17.0	135.9	6	22.7	4.6	-2.3	4.0	
250235	ECT114019A	13.0	9.0	18.0	15.0	15.3	14.8	85.2	6	14.2	3.0	-10.7	4.0	YES
250236	ECT115019A							0.0	0	0.0	0.0	-24.9	NA	YES
250237	ECT116019A		14.6	18.4	10.3	9.3		52.6	4	13.1	4.2	-11.8	4.7	YES
250238	ECT117019A	15.0	15.2		8.0	18.5	15.0	71.7	5	14.3	3.8	-10.6	4.3	YES
250239	ECT118019A		10.0			34.0		44.0	2	22.0	17.0	-2.9	6.3	
250240	ECT119019A							0.0	0	0.0	0.0	-24.9	NA	YES
250241	ECT120019A	9.0		15.3				24.3	2	12.2	4.5	-12.8	6.3	YES
251336	ECT126019A	24.8	15.2	20.9	26.0	18.6	20.6	126.0	6	21.0	4.0	-3.9	4.0	
251336D	ECT126019AD	22.8	13.8	23.2	20.2	21.8	24.0	125.7	6	21.0	3.7	-4.0	4.0	
Control-1R		29.0	28.5	31.5	28.5	32.5	27.0	177.0	6	29.5	2.1	4.6	4.0	
Control-2R		24.0	29.7	28.3	19.0	28.7	28.5	158.2	6	26.4	4.1	1.4	4.0	
Control-3R		20.5	23.0	19.3	19.0	13.5	18.0	113.3	6	18.9	3.1	-6.0	4.0	
Combined								448.5	18	24.9	5.5	0.0	2.8	
Pooled STD	4.91													

TABLE 10b. ONION Average Root Lengths (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	16.8	13.9	22.8	15.5	15.0	16.6	100.5	6	16.7	3.1	4.4	3.5	YES
250022D	ECR111019AD	14.0	15.0	16.3	19.0	11.9	17.4	93.6	6	15.6	2.5	3.2	3.5	
250023	ECR111029A	11.0		21.5	21.0	19.3	13.5	86.3	5	17.3	4.7	4.9	3.8	YES
250024	ECR112019A	6.5	9.7	10.6	11.0	10.0	11.0	58.8	6	9.8	1.7	-2.6	3.5	
250025	ECR113019A	14.5	19.8	14.5	13.5	18.5	14.2	94.9	6	15.8	2.6	3.5	3.5	
250026	ECR114019A	9.8	19.0	19.1	17.4	15.2	12.6	93.1	6	15.5	3.7	3.2	3.5	
250027	ECR115019A	13.3	13.0	17.6	12.9	14.8	13.4	84.9	6	14.1	1.8	1.8	3.5	
250028	ECR116019A	6.7	18.5	9.0	9.4	16.7	2.8	63.0	6	10.5	6.0	-1.9	3.5	
250029	ECR117019A	2.3		2.8	3.5	4.2	3.5	16.3	5	3.3	0.7	-9.1	3.8	YES
250030	ECR118019A	6.5	9.7	6.8	13.6	7.7	15.3	59.5	6	9.9	3.7	-2.4	3.5	
250031	ECR119019A	6.5	19.8	0.0	12.0	21.8		60.0	5	12.0	9.1	-0.4	3.8	
250032	ECR120019A	10.5	7.0	13.3	8.0	24.1		62.9	5	12.6	6.9	0.2	3.8	
250152	ECX111019A	7.3	5.7	1.0		8.7		22.6	4	5.6	3.3	-6.7	4.1	YES
250152D	ECX111019AD	8.0	17.5	6.7	17.0	20.8	15.0	85.0	6	14.2	5.6	1.8	3.5	
250153	ECX111029A		2.3	7.5		3.3	7.8	20.8	4	5.2	2.9	-7.1	4.1	YES
250154	ECX112019A	11.0	6.8		6.2	5.0	7.0	35.9	5	7.2	2.8	-5.2	3.8	YES
250155	ECX113019A	8.5	13.6	0.0	4.5	11.5	18.3	56.4	6	9.4	6.5	-3.0	3.5	
250156	ECX114019A	10.3	9.2	14.6	9.3	20.0	15.8	79.2	6	13.2	4.4	0.8	3.5	
250157	ECX115019A		7.0					7.0	1	7.0	0.0	-5.4	7.7	
250158	ECX116019A	6.0	11.1	8.3	12.5	10.8	16.8	65.4	6	10.9	3.7	-1.5	3.5	
250159	ECX117019A	13.8	18.5	16.0	14.0	16.5	8.5	87.3	6	14.5	3.4	2.2	3.5	
250160	ECX118019A	11.2	18.0	10.8	13.9	13.8	15.1	82.7	6	13.8	2.7	1.4	3.5	
250161	ECX119019A	4.0	5.8	6.3	4.0	4.0	5.9	30.0	6	5.0	1.1	-7.4	3.5	YES
250162	ECX120019A	6.9	10.8	10.9	14.8	12.8	15.5	71.7	6	12.0	3.1	-0.4	3.5	
250231	ECT111019A		7.0		10.0	22.5	14.8	54.3	4	13.6	6.8	1.2	4.1	
250232	ECT111029A	18.5		20.3	13.0	15.5		67.3	4	16.8	3.2	4.5	4.1	YES
250233	ECT112019A	14.3	12.0	12.5	14.0	9.8	15.8	78.3	6	13.1	2.1	0.7	3.5	
250234	ECT113019A	9.5	10.0	4.8	9.3	13.5	10.0	57.1	6	9.5	2.8	-2.8	3.5	
250235	ECT114019A		16.0	10.5	17.0			43.5	3	14.5	3.5	2.1	4.6	
250236	ECT115019A	9.3			4.5	2.7		16.5	3	5.5	3.4	-6.8	4.6	YES
250237	ECT116019A							0.0	0	0.0	0.0	-12.4	NA	YES
250238	ECT117019A	7.3			17.2	15.3	13.5	53.2	4	13.3	4.3	0.9	4.1	
250239	ECT118019A					14.5		14.5	1	14.5	0.0	2.1	7.7	
250240	ECT119019A			10.0				10.0	1	10.0	0.0	-2.4	7.7	
250241	ECT120019A				9.5	32.0		41.5	2	20.8	15.9	8.4	5.6	YES
251336	ECT126019A			8.2				8.2	1	8.2	0.0	-4.2	7.7	
251336D	ECT126019AD	7.5		3.0			5.5	16.0	3	5.3	2.3	-7.0	4.6	YES
Control-1R		13.5	14.5	10.0	14.5	13.5	14.7	80.7	6	13.4	1.8	1.1	3.5	
Control-2R		5.7	10.0	16.0		10.5		42.2	4	10.5	4.2	-1.8	4.1	
Control-3R		7.0	17.0	20.0	8.0		10.5	62.5	5	12.5	5.7	0.1	3.8	
Combined								185.3	15	12.4	6.5	0.0	2.6	
Pooled STD	4.21													

TABLE 10c. CARROT Average Root Lengths (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	14.0	16.4	15.0	10.3	16.3	22.2	94.1	6	15.7	3.9	4.3	3.7	YES
250022D	ECR111019AD	18.8	12.6	16.4	20.1	19.0	14.0	100.9	6	16.8	3.0	5.4	3.7	YES
250023	ECR111029A	15.6	12.2	18.4	11.0	7.4	21.0	85.6	6	14.3	5.0	2.8	3.7	
250024	ECR112019A	7.8	4.0	13.8	9.9	8.2	16.5	60.1	6	10.0	4.5	-1.4	3.7	
250025	ECR113019A	6.4	19.6	13.5	23.9	22.1	16.9	102.4	6	17.1	6.4	5.6	3.7	YES
250026	ECR114019A	8.0	19.6	16.2	12.3	17.0	23.3	96.3	6	16.1	5.4	4.6	3.7	YES
250027	ECR115019A	15.0	15.3	13.9	18.2	17.0	19.3	98.6	6	16.4	2.1	5.0	3.7	YES
250028	ECR116019A	10.5	11.8	10.5	8.2	8.8	11.2	61.0	6	10.2	1.4	-1.3	3.7	
250029	ECR117019A	5.2	4.8	13.2	9.3	10.3	8.3	50.9	6	8.5	3.2	-2.9	3.7	
250030	ECR118019A	15.4	14.3	17.3	11.0	11.4	11.7	81.1	6	13.5	2.6	2.1	3.7	
250031	ECR119019A	15.0	16.3	18.7	10.3	10.1	12.8	83.2	6	13.9	3.4	2.4	3.7	
250032	ECR120019A							0.0	0	0.0	0.0	-11.4	NA	YES
250152	ECX111019A		12.5	2.8	15.3	9.6	11.0	51.2	5	10.2	4.6	-1.2	3.9	
250152D	ECX111019AD	15.5	14.4	10.0	4.9	8.3	9.9	63.0	6	10.5	3.9	-0.9	3.7	
250153	ECX111029A	9.0	12.1	11.8	16.7	5.6	12.4	67.6	6	11.3	3.7	-0.2	3.7	
250154	ECX112019A	13.0			7.3		2.8	23.0	3	7.7	5.1	-3.8	4.8	
250155	ECX113019A	20.8	10.3	11.6	22.5	10.7	11.3	87.2	6	14.5	5.5	3.1	3.7	
250156	ECX114019A	7.3	12.9	9.2	13.6	15.5	10.4	68.9	6	11.5	3.0	0.1	3.7	
250157	ECX115019A		5.5	13.5		15.5	7.0	41.5	4	10.4	4.9	-1.0	4.3	
250158	ECX116019A	14.0	18.9	16.8	23.8	16.5	19.2	109.2	6	18.2	3.3	6.8	3.7	YES
250159	ECX117019A	8.8	13.7	17.6	14.7	12.8	8.3	75.9	6	12.7	3.6	1.2	3.7	
250160	ECX118019A	6.7	11.0	13.5	7.3	12.8	7.4	58.6	6	9.8	3.0	-1.7	3.7	
250161	ECX119019A	6.3	6.8	6.3	9.6	5.5	5.8	40.2	6	6.7	1.5	-4.7	3.7	YES
250162	ECX120019A	11.0	13.4	20.0	13.8	10.6	7.5	76.3	6	12.7	4.2	1.3	3.7	
250231	ECT111019A	13.4	16.3	17.8		13.6	17.0	78.0	5	15.6	2.0	4.2	3.9	YES
250232	ECT111029A		10.8	16.1	31.3	16.5	11.5	86.2	5	17.2	8.2	5.8	3.9	YES
250233	ECT112019A	10.5	11.7	14.3	13.5	12.4	17.0	79.4	6	13.2	2.3	1.8	3.7	
250234	ECT113019A	10.0	11.9	14.2	16.9	13.8	11.8	78.5	6	13.1	2.4	1.7	3.7	
250235	ECT114019A		7.0			31.0		38.0	2	19.0	17.0	7.6	5.7	YES
250236	ECT115019A	10.7						10.7	1	10.7	4.4	-0.7	7.9	
250237	ECT116019A							0.0	0	0.0	0.0	-11.4	NA	YES
250238	ECT117019A						3.0	3.0	1	3.0	0.0	-8.4	7.9	YES
250239	ECT118019A							0.0	0	0.0	0.0	-11.4	NA	YES
250240	ECT119019A							0.0	0	0.0	0.0	-11.4	NA	YES
250241	ECT120019A						9.0	9.0	1	9.0	0.0	-2.4	7.9	
251336	ECT126019A				13.0			13.0	1	13.0	0.0	1.6	7.9	
251336D	ECT126019AD			0.5	15.5			16.0	2	8.0	10.6	-3.4	5.7	
Control-1R		14.1	8.5	10.2	20.0	7.3		60.0	5	12.0	5.2	0.6	3.9	
Control-2R		12.8	18.0	10.3	11.0	16.0	11.8	79.9	6	13.3	3.0	1.9	3.7	
Control-3R		10.0		4.0			6.0	20.0	3	6.7	3.1	-4.8	4.8	
Combined								159.9	14	11.4	4.5	0.0	2.8	
Pooled STD	4.32													

TABLE 10d. RADISH Average Root Lengths (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	9.9	9.6	11.3	11.5	12.4	6.3	61.0	6	10.2	2.2	-1.7	1.5	YES
250022D	ECR111019AD	12.6	11.9	11.5	11.5	11.3	11.9	70.7	6	11.8	0.5	-0.1	1.5	
250023	ECR111029A	10.9	11.3	11.7	13.7	10.0	10.4	68.0	6	11.3	1.3	-0.6	1.5	
250024	ECR112019A	9.6	8.5	8.3	8.3	8.3	9.3	52.2	6	8.7	0.6	-3.2	1.5	YES
250025	ECR113019A	11.4	14.8	13.7	12.0	11.6	14.2	77.7	6	13.0	1.5	1.0	1.5	
250026	ECR114019A	11.8	9.1	11.1	11.6	11.9	11.0	66.6	6	11.1	1.0	-0.8	1.5	
250027	ECR115019A	11.0	11.7	11.1	11.5	15.4	11.6	72.3	6	12.1	1.7	0.1	1.5	
250028	ECR116019A	11.5	12.9	11.4	14.9	9.4	8.0	68.1	6	11.3	2.4	-0.6	1.5	
250029	ECR117019A	6.3	6.0	7.8	6.6	5.0	5.8	37.5	6	6.2	0.9	-5.7	1.5	YES
250030	ECR118019A	11.8	12.2	11.8	8.8	6.5	5.9	57.0	6	9.5	2.8	-2.4	1.5	YES
250031	ECR119019A	9.6	7.6	9.6	9.8	7.6	10.3	54.5	6	9.1	1.2	-2.8	1.5	YES
250032	ECR120019A	7.3	11.3	17.3	10.0	11.8	11.0	68.8	6	11.5	3.3	-0.4	1.5	
250152	ECX111019A	14.0	14.8		10.3	12.4	9.8	61.2	5	12.2	2.2	0.3	1.6	
250152D	ECX111019AD	12.0	12.9	10.5	10.9	11.6	10.8	68.7	6	11.5	0.9	-0.5	1.5	
250153	ECX111029A	8.4	9.3	9.0	12.3	10.1	10.9	60.0	6	10.0	1.4	-1.9	1.5	YES
250154	ECX112019A	15.5	16.0				12.0	43.5	3	14.5	2.2	2.6	2.0	YES
250155	ECX113019A	8.5	11.7	7.2	8.1	9.2	8.4	53.1	6	8.8	1.5	-3.1	1.5	YES
250156	ECX114019A	10.9	13.0	10.4	10.6	11.3	10.3	66.5	6	11.1	1.0	-0.8	1.5	
250157	ECX115019A		9.3					9.3	1	9.3	0.0	-2.7	3.4	
250158	ECX116019A	10.0	10.0	5.7	11.0	8.9	10.7	56.3	6	9.4	1.9	-2.5	1.5	YES
250159	ECX117019A	11.4	10.4	8.3	9.3	8.4	9.5	57.2	6	9.5	1.2	-2.4	1.5	YES
250160	ECX118019A	5.7	10.0	10.6	10.8	8.8	7.8	53.7	6	9.0	2.0	-3.0	1.5	YES
250161	ECX119019A	7.7	10.3	9.9	7.5	11.1	4.8	51.2	6	8.5	2.3	-3.4	1.5	YES
250162	ECX120019A	9.4	9.8	11.6	8.8	7.5	11.8	58.8	6	9.8	1.6	-2.1	1.5	YES
250231	ECT111019A	9.5	12.5	12.5	10.6	11.5	12.6	69.3	6	11.5	1.3	-0.4	1.5	
250232	ECT111029A	10.1	9.6	13.5	12.1	10.8	10.5	66.6	6	11.1	1.4	-0.8	1.5	
250233	ECT112019A	10.2	9.2	10.0	11.2	8.4	12.1	61.1	6	10.2	1.3	-1.7	1.5	YES
250234	ECT113019A	8.0	10.0	10.6	9.9	10.1	10.7	59.3	6	9.9	1.0	-2.0	1.5	YES
250235	ECT114019A	10.0	9.5	10.1	8.9	10.1	10.7	59.3	6	9.9	0.6	-2.0	1.5	YES
250236	ECT115019A	9.9	14.2	12.7	9.9	8.8	10.0	65.4	6	10.9	2.0	-1.0	1.5	
250237	ECT116019A	12.6	10.9	10.2	11.0	9.1	12.5	66.2	6	11.0	1.4	-0.9	1.5	
250238	ECT117019A	10.6	10.5	9.8	10.5	8.4	10.2	60.0	6	10.0	0.8	-1.9	1.5	YES
250239	ECT118019A	9.6	9.3		11.8	9.5	16.0	56.1	5	11.2	2.9	-0.7	1.6	
250240	ECT119019A	11.7		15.3	11.5	23.8	13.5	75.8	5	15.2	5.1	3.3	1.6	YES
250241	ECT120019A	18.0	13.5	9.8	10.1	11.0	8.0	70.5	6	11.7	3.6	-0.2	1.5	
251336	ECT126019A	10.2	11.2	8.5	13.5	9.8	12.0	65.1	6	10.8	1.8	-1.1	1.5	
251336D	ECT126019AD	8.7	8.5	11.4	9.4	9.1	10.1	57.2	6	9.5	1.1	-2.4	1.5	YES
Control-1R		11.6	10.3	10.9	10.5	10.1	10.1	63.5	6	10.6	0.6	-1.3	1.5	
Control-2R		14.3	16.4	16.2	14.5	11.2	12.2	84.8	6	14.1	2.1	2.2	1.5	
Control-3R		13.6	11.2	10.1	11.8	9.3	10.2	66.1	6	11.0	1.5	-0.9	1.5	
Combined								214.4	18	11.9	2.2	0.0	1.1	
Pooled STD	1.88													

TABLE 10e. SOYBEAN Average Root Lengths (cm)

Sample ID	Client ID	Container 1	Container 2	Container 3	Container 4	Container 5	Container 6	Total	Number of Measurements	Mean	Standard Deviation	Difference from Control	Least Significant Difference @ 95%	Statistical Difference
250022	ECR111019A	11.7	18.0	15.0	27.7	25.3	17.2	114.8	6	19.1	6.2	-4.6	3.1	YES
250022D	ECR111019AD	15.0	14.7	16.7	16.0	18.8	30.7	111.8	6	18.6	6.1	-5.1	3.1	YES
250023	ECR111029A	17.0	17.0	16.2	26.7	30.3	30.3	137.5	6	22.9	6.9	-0.9	3.1	
250024	ECR112019A	8.3	11.8	13.3	11.0	12.0	13.7	70.2	6	11.7	1.9	-12.1	3.1	YES
250025	ECR113019A	14.7		20.2	20.0	17.8	16.0	88.6	5	17.7	2.4	-6.1	3.3	YES
250026	ECR114019A	12.0	15.0	19.0	21.0	18.5	21.5	107.0	6	17.8	3.7	-5.9	3.1	YES
250027	ECR115019A	12.2	16.3	13.8	13.2	13.5	24.3	93.3	6	15.6	4.5	-8.2	3.1	YES
250028	ECR116019A	13.5	10.3	11.8	14.8	13.8	16.8	81.2	6	13.5	2.3	-10.2	3.1	YES
250029	ECR117019A	7.8	8.7	8.7	7.5	7.7	15.0	55.3	6	9.2	2.9	-14.5	3.1	YES
250030	ECR118019A	14.3	15.7	18.7	16.8	15.7	16.2	97.3	6	16.2	1.5	-7.5	3.1	YES
250031	ECR119019A	14.5	15.8	17.7	19.3	11.3	14.0	92.7	6	15.4	2.8	-8.3	3.1	YES
250032	ECR120019A	12.7	14.8	18.0	20.8	13.2	22.2	101.6	6	16.9	4.0	-6.8	3.1	YES
250152	ECX111019A	16.0	14.8	16.7	18.0	15.3	14.0	94.8	6	15.8	1.4	-8.0	3.1	YES
250152D	ECX111019AD	13.8	14.0	13.2	15.5	15.5	15.5	87.5	6	14.6	1.0	-9.2	3.1	YES
250153	ECX111029A	13.3	14.2	14.0	16.7	13.7	15.8	87.7	6	14.6	1.3	-9.2	3.1	YES
250154	ECX112019A	10.3	13.2	13.2	12.0	9.3	5.2	63.2	6	10.5	3.0	-13.2	3.1	YES
250155	ECX113019A	13.5	14.2	19.3	16.8	15.3	16.5	95.7	6	15.9	2.1	-7.8	3.1	YES
250156	ECX114019A	16.5	16.0	16.0	14.0	18.8	13.0	94.3	6	15.7	2.0	-8.0	3.1	YES
250157	ECX115019A	13.8	21.5	24.0	6.0	13.3	19.3	97.8	6	16.3	6.6	-7.5	3.1	YES
250158	ECX116019A	10.7	16.2	15.7	13.7	15.2	15.0	86.3	6	14.4	2.0	-9.4	3.1	YES
250159	ECX117019A	10.2	17.2	24.0	19.8	23.0	26.3	120.5	6	20.1	5.8	-3.7	3.1	YES
250160	ECX118019A	7.5	7.2	14.8	10.7	10.7	11.7	62.4	6	10.4	2.8	-13.4	3.1	YES
250161	ECX119019A	10.5	13.3	11.3	14.5	20.5	12.0	82.2	6	13.7	3.6	-10.1	3.1	YES
250162	ECX120019A	12.7	15.7	15.7	14.3	15.3	16.0	89.7	6	14.9	1.3	-8.8	3.1	YES
250231	ECT111019A	12.3	15.3	13.7	13.8	14.3	18.0	87.5	6	14.6	1.9	-9.2	3.1	YES
250232	ECT111029A	11.3	12.0	14.3	13.3	15.2	12.7	78.8	6	13.1	1.4	-10.6	3.1	YES
250233	ECT112019A	14.7	12.8	17.2	13.7	15.2	17.7	91.2	6	15.2	1.9	-8.6	3.1	YES
250234	ECT113019A	14.7	14.7	15.8	15.8	14.8	19.7	95.5	6	15.9	1.9	-7.9	3.1	YES
250235	ECT114019A	14.0	9.3	7.8	8.5		11.2	50.8	5	10.2	2.5	-13.6	3.3	YES
250236	ECT115019A	12.8	18.4	23.7	15.2	13.5		83.6	5	16.7	4.5	-7.0	3.3	YES
250237	ECT116019A	9.6		15.0	12.0		13.8	50.3	4	12.6	2.3	-11.2	3.6	YES
250238	ECT117019A	13.5	12.5	13.3	14.2	14.3	15.0	82.8	6	13.8	0.9	-10.0	3.1	YES
250239	ECT118019A		36.0					36.0	1	36.0	0.0	12.2	6.8	YES
250240	ECT119019A							0.0	0	0.0	0.0	-23.8	NA	YES
250241	ECT120019A	11.8	14.0	15.0	14.3			55.2	4	13.8	1.4	-10.0	3.6	YES
251336	ECT126019A	10.8	13.8	10.8	13.1	14.0	13.6	76.0	6	12.7	1.5	-11.1	3.1	YES
251336D	ECT126019AD	15.3	10.4	11.8	13.6	11.0	32.4	94.4	6	15.7	8.4	-8.0	3.1	YES
Control-1R		23.3	20.7	22.3	18.5	21.7	20.0	126.5	6	21.1	1.7	-2.7	3.1	
Control-2R		18.0	16.7	23.3	26.7	27.0	30.8	142.5	6	23.8	5.5	0.0	3.1	
Control-3R		18.3	26.7		35.3	31.0		111.3	4	27.8	7.3	4.1	3.6	
Combined								380.3	16	23.8	5.4	0.0	2.2	
Pooled STD	3.75													

Table 11. Sample Planting and Harvesting

Sample ID	Client ID	Date Planted	Date Harvested
250022	ECR111019A	09/11/04	10/11/04
250022D	ECR111019AD	09/11/04	10/11/04
250023	ECR111029A	09/11/04	10/11/04
250024	ECR112019A	09/11/04	10/11/04
250025	ECR113019A	09/11/04	10/11/04
250026	ECR114019A	09/11/04	10/11/04
250027	ECR115019A	09/11/04	10/11/04
250028	ECR116019A	09/11/04	10/11/04
250029	ECR117019A	09/11/04	10/11/04
250030	ECR118019A	09/11/04	10/11/04
250031	ECR119019A	09/11/04	10/11/04
250032	ECR120019A	09/11/04	10/11/04
250152	ECX111019A	09/14/04	10/14/04
250152D	ECX111019AD	09/14/04	10/14/04
250153	ECX111029A	09/14/04	10/14/04
250154	ECX112019A	09/14/04	10/14/04
250155	ECX113019A	09/14/04	10/14/04
250156	ECX114019A	09/14/04	10/14/04
250157	ECX115019A	09/14/04	10/14/04
250158	ECX116019A	09/14/04	10/14/04
250159	ECX117019A	09/14/04	10/14/04
250160	ECX118019A	09/14/04	10/14/04
250161	ECX119019A	09/14/04	10/14/04
250162	ECX120019A	09/14/04	10/14/04
250231	ECT111019A	09/11/04	10/11/04
250232	ECT111029A	09/11/04	10/11/04
250233	ECT112019A	09/14/04	10/14/04
250234	ECT113019A	09/14/04	10/14/04
250235	ECT114019A	09/21/04	10/21/04
250236	ECT115019A	09/21/04	10/21/04
250237	ECT116019A	09/21/04	10/21/04
250238	ECT117019A	09/21/04	10/21/04
250239	ECT118019A	09/21/04	10/21/04
250240	ECT119019A	09/21/04	10/21/04
250241	ECT120019A	09/21/04	10/21/04
251336	ECT126019A	09/21/04	10/21/04
251336D	ECT126019AD	09/21/04	10/21/04
Control-1R		10/06/04	11/05/04
Control-2R		10/06/04	11/05/04
Control-3R		10/06/04	11/05/04

010042

Appendix A

Images 1 - 6

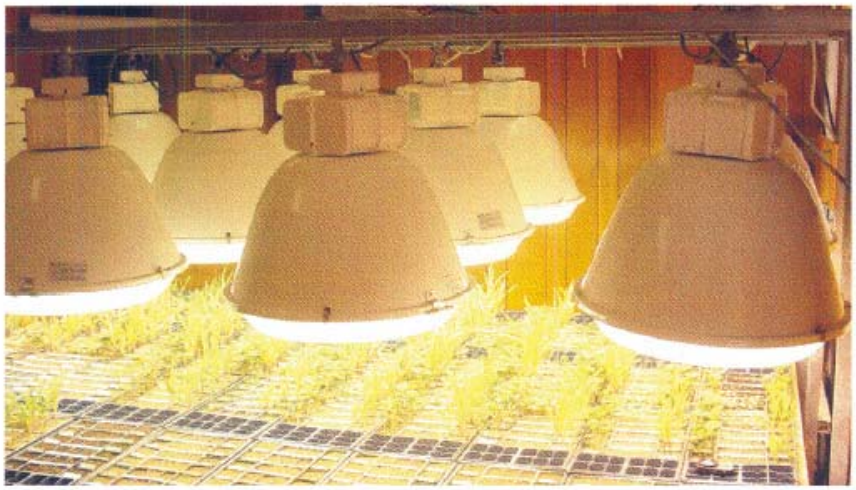
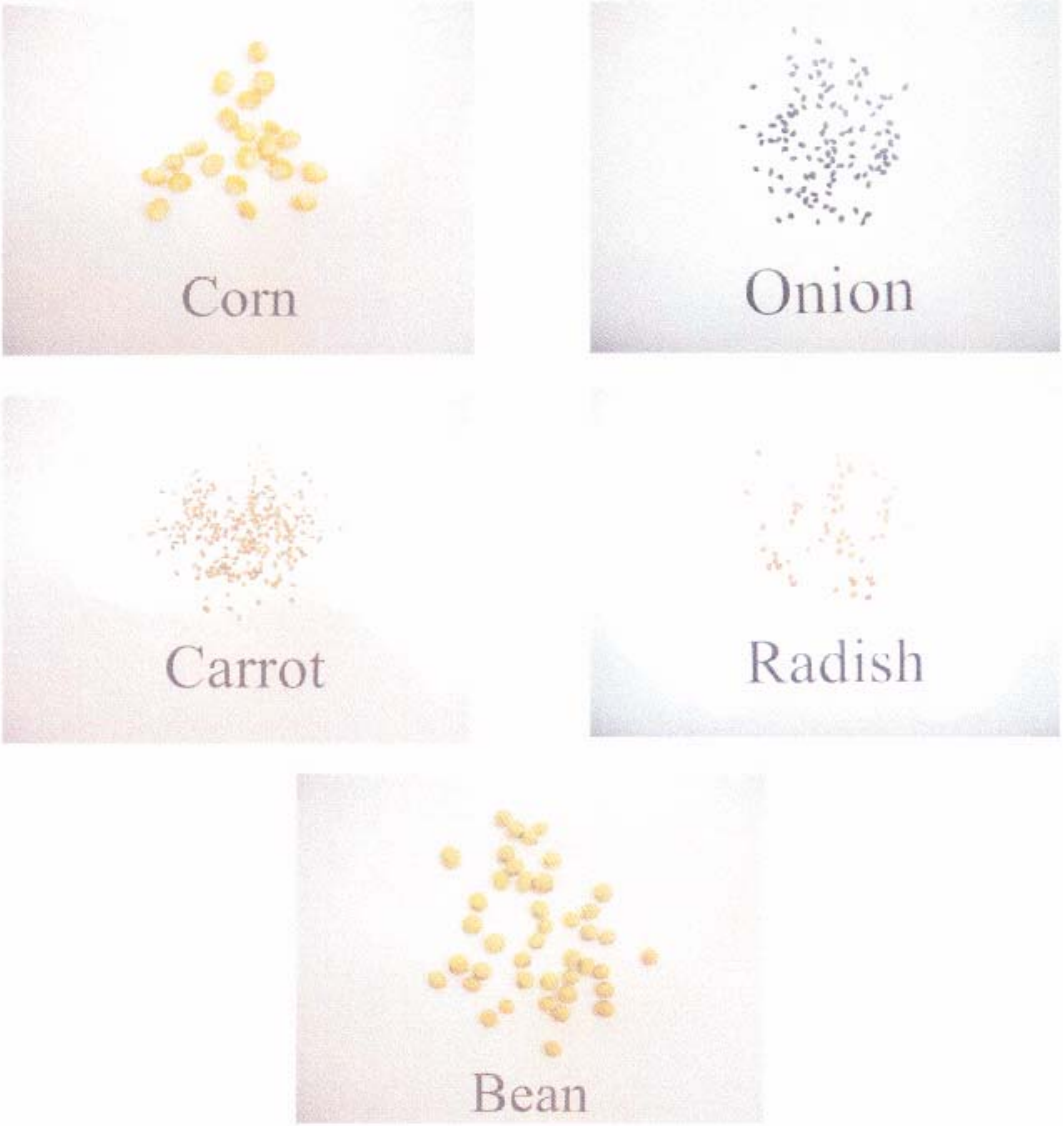


Image 1. 12 Large metal Halide HID Lamps were required for lighting (09-21-04)

Image 2. Tray Configuration



Images 3a-e. Seeds of the five test species.

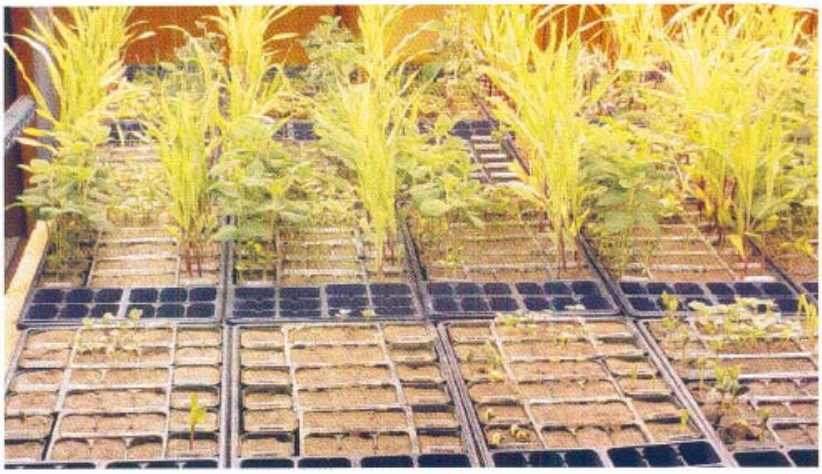


Image 4a-b: Plants near midpoint (day 13) of the 30-day test (09/13/04)

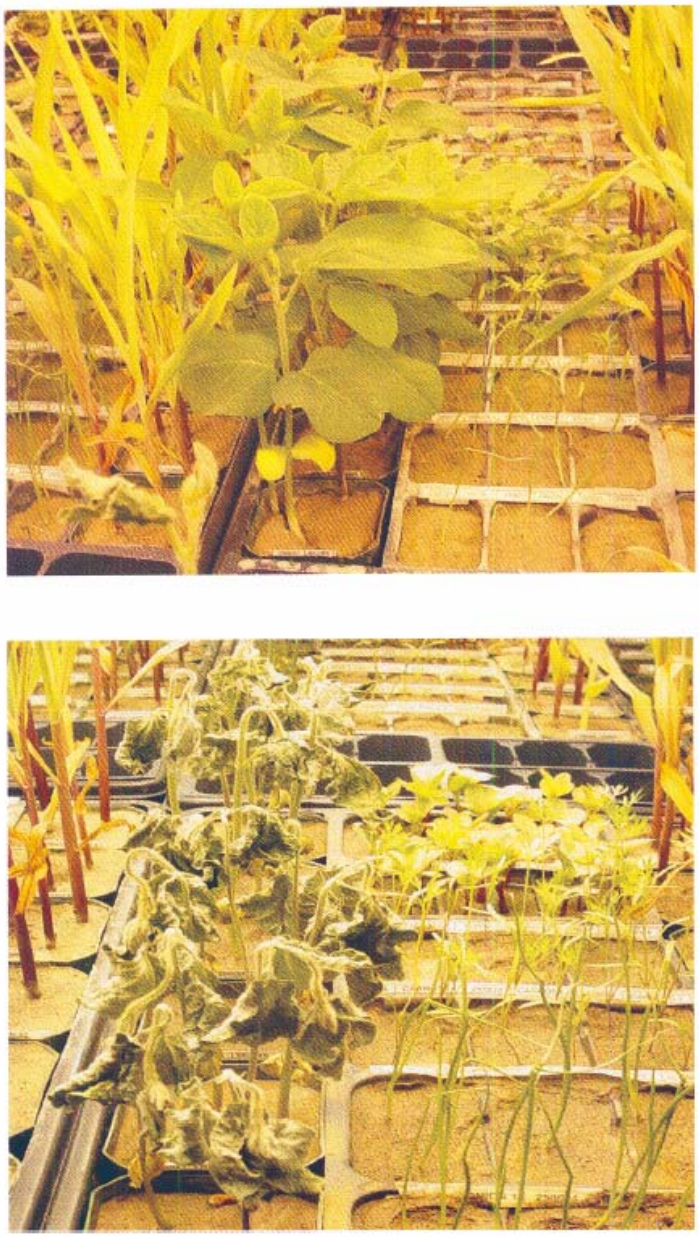


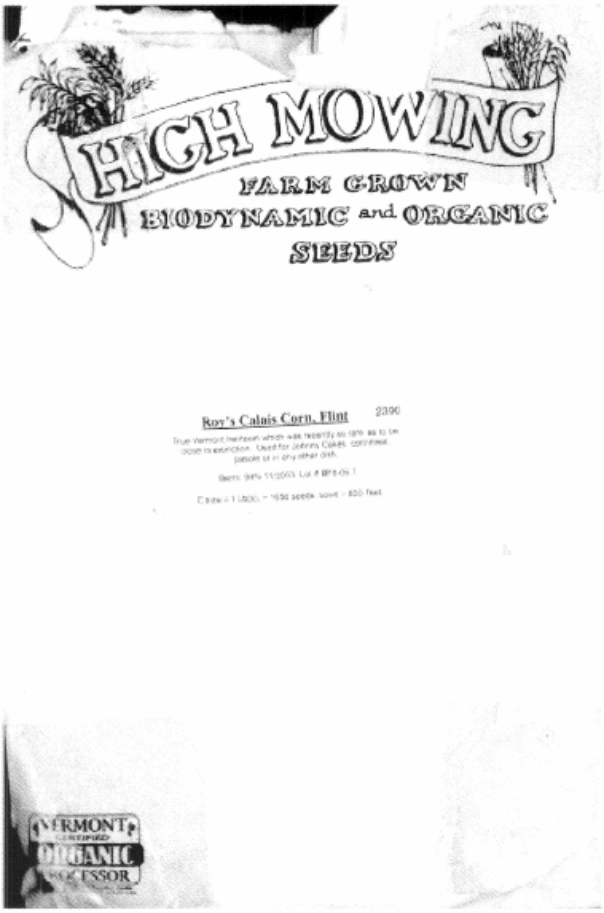
Image 5a-b: Close up of plants day 13, a) healthy, b) wilting

Image 6a-b: Controls on day 29, a) view of sample tray, b) surface of soil with green fungus

010048

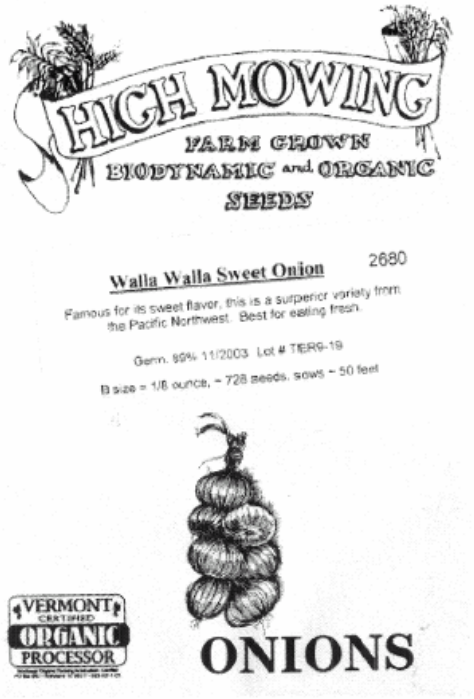
Appendix B

Seed Packets

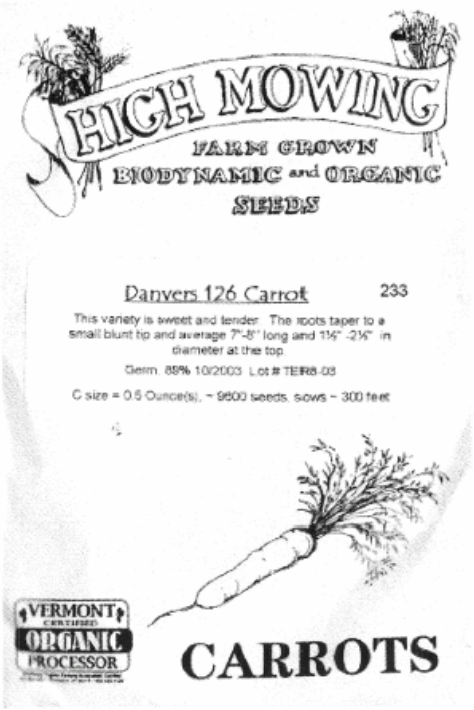


Seed Packet – Corn

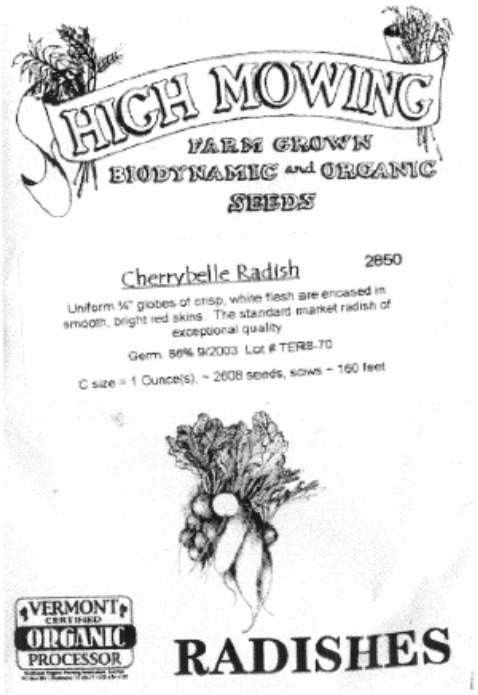
B-1



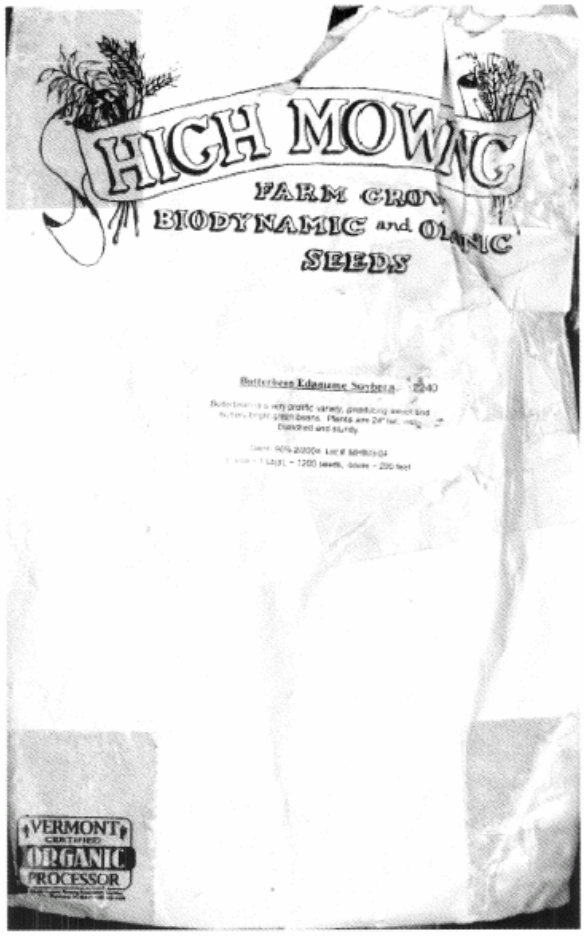
Seed Packet – Onions



Seed Packet – Carrots



Seed Packet - Radishes



Seed Packet - Soybean

010054

Appendix C

Chain of Custody

435.20
9/11/2002
Rev. 02

INEEL CHAIN OF CUSTODY FORM

21910

Page 1 of 1

See Instructions On Back

1 Sampler (Printed): Tom Haney
2 Sampler (Signature): Tom [signature]
3 Project Name: Long-term Ecological Monitoring
4 Laboratory Shipped To: SWRI
5 Sampling & Analysis Plan Number: ICP EXT04-00165
6 TOS/SOW/PSR Number: 473

Reference Area

7 Sample ID#	8 Sample Date	9 Sample Time	10 Sample Location	11 Depth inch	12 Sample Matrix	13 Analysis Type No(s)	14 Preservative	15 Remarks
ECR111019A	19AUG04	1355	Plot 1	0-12	Soil	See Comments		INTACT
ECR111029A	23AUG04	1055	1					INTACT
ECR112019A	23AUG04	1010	2					INTACT
ECR113019A	19AUG04	1325	3					INTACT
ECR114019A	19AUG04	1415	4					INTACT
ECR115019A	23AUG04	0920	5					INTACT
ECR116019A	23AUG04	1400	6					INTACT
ECR117019A	23AUG04	1330	7					INTACT
ECR118019A	23AUG04	1430	8					INTACT
ECR119019A	23AUG04	1455	9					INTACT
ECR120019A	23AUG04	1520	10					INTACT

Client: Bechtel BWXT Idaho, LLC
SRR: 26410
Project #: 08386.38.00X
Case #: ER-SOW-473
TTSR: 08/26/2004 Time: 08:30AM
All samples received @ SwRI intact.

16 Comments: 9A = Earthworm Toxicity rest - Rye Grass Growth test

THERMOMETER 027
TEMPERATURE 22.0°C

Cooler Number(s):

17 Relinquished By (Printed)	18 Relinquished By (Signature)	19 Date	20 Time	21 Received By (Printed)	22 Received By (Signature)	23 Date	24 Time
Tom Haney	Tom [signature]	24AUG04	0900				
				Cynthia A. Salicedo	[signature]	08/25/04	0830

Distribution: Original & Yellow: Accompany Shipment To Laboratory Pink: Forward To Sample Management Green: Retained By Project

010055

435 20
9/11/2002
Rev. 02

INEEL CHAIN OF CUSTODY FORM

21911

Page 1 of 1

See Instructions On Back

[1] Sampler (Printed): Tom Haney
[2] Sampler (Signature):
[3] Project Name: Long-Term Ecological Monitoring
[4] Laboratory Shipped To:
[5] Sampling & Analysis Plan Number: ICP EXT04-00165
[6] TOS/SOW/PSR Number: 473

[7] Sample ID#	[8] Sample Date	[9] Sample Time	[10] Sample Location	[11] Depth (inch)	[12] Sample Matrix	[13] Analysis Type No(s)	[14] Preservative	[15] Remarks
ECX111019A	24AUG04	0950	Plot 1	0-12	Soil	9A	NA	INTACT
ECX111029A	24AUG04	0950	1			9A0		INTACT
ECX112019A	24AUG04	1045	2			Composite		INTACT
ECX113019A	24AUG04	1410	3					INTACT
ECX114019A	24AUG04	1325	4					INTACT
ECX115019A	24AUG04	1435	5					INTACT
ECX116019A	24AUG04	1455	6					INTACT
ECX117019A	24AUG04	1530	7					INTACT
ECX118019A	24AUG04	1310	8					INTACT
ECX119019A	24AUG04	1210	9					INTACT
ECX120019A	24AUG04	1135	10					INTACT

[16] Comments: 9A = Earthworm Toxicity Test + Rye Grass Growth Test

Cooler Number(s):

[17] Relinquished By (Printed)	[18] Relinquished By (Signature)	[19] Date	[20] Time	[21] Received By (Print
Tom Haney		25AUG04	0900	

Client: Bechtel BWXT Idaho LLC
SRR: 26431
Project #: 06355.38.00X
Case #: ER-SOW-473
VTSR: 08/26/2004 Time: 08:30PM

Distribution: Original & Yellow: Accompany Shipment To Laboratory Pink: Forward To Sample Management Green: Retained By Project

Temperature 027
Temperature 22.0°C

010056

435.20
9/11/2002
Rev. 02

INEEL CHAIN OF CUSTODY FORM

21387

See Instructions On Back

Page 1 of 1

1 Sampler (Printed): Tom Haney	2 Sampler (Signature): [signature]	3 Project Name: Long-Term Ecological Monitoring	
4 Laboratory Shipped To: SWRI	INTEC	5 Sampling & Analysis Plan Number: ICP-EXT-04-00165	6 TOS/SOW/PSR Number: 473

7 Sample ID#	8 Sample Date	9 Sample Time	10 Sample Location	11 Depth inch	12 Sample Matrix	13 Analysis Type No(s)	14 Preservative	15 Remarks
ECT111019A			Plot 1	0-12	Soil	9A	None	INTACT
ECT111029A			1			Earthworm		INTACT
ECT112019A	25AUG04	10:20	2			Toxicity		INTACT
ECT113019A	25AUG04	1045	3			Test		INTACT
ECT114019A	25AUG04	1115	4					INTACT
ECT115019A	26AUG04	0843	5			RyeGrass		INTACT
ECT116019A	26AUG04	0915	6			Growth		INTACT
~~ECT118019A~~	~~25AUG04~~							
ECT117019A	26AUG04	0935	7			Test		INTACT
ECT118019A	26AUG04	0958	8					INTACT
ECT119019A	26AUG04	1025	9					INTACT
ECT120019A	26AUG04	1055	10					INTACT

16 Comments:
Client: Bechtel BWXT Idaho, LLC
SRR: 26438
Project #: 06386.38.00X
Case #: ER-SOW-473
VTSR: 08/27/2004 Time: 08:15AM
All sample received @ SwRI intact.

THERMOMETER 027
TEMPERATURE 22.0°C

Cooler Number(s):

17 Relinquished By (Printed)	18 Relinquished By (Signature)	19 Date	20 Time	21 Received By (Printed)	22 Received By (Signature)	23 Date	24 Time
Tom Haney	[signature]	26AUG04	1200				
				Cynthia A. Salcedo	[signature]	08/27/04	08 15AM

Distribution: Original & Yellow: Accompany Shipment To Laboratory Pink: Forward To Sample Management Green: Retained By Project

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435.20
9/11/2002
Rev. 02

INEEL CHAIN OF CUSTODY FORM

25909

Page 1 of 1

See Instructions On Back

[1] Sampler (Printed): Tom Haney
[2] Sampler (Signature):
[3] Project Name: Long-Term Ecological Monitoring
[4] Sampling & Analysis Plan Number: ICP EXT 04-00165
[5] TOS/SOW/PSR Number: 473
[6] Laboratory Shipped To: SwRI

[7] Sample ID#	[8] Sample Date	[9] Sample Time	[10] Sample Location	[11] Depth inch	[12] Sample Matrix	[13] Analysis Type No(s)	[14] Preservative	[15] Remarks
ECT126019A	~~8SEP04~~	1440	TSF-07	0-12	Soil	earthworm tox Ryegrass growth	NA - analyze ASAP	INTACT

Client: Bechtel BWXT Idaho, LLC
SRR: 29620
Project #: 06366.38.00X
Case #: ER-SOW-473
VTSR: 09/10/2004 Time: 08:20AM
All samples received at SwRI intact.

THERMOMETER 027
TEMPERATURE 22.0°C

[16] Comments:

Cooler Number(s):

[17] Relinquished By (Printed)	[18] Relinquished By (Signature)	[19] Date	[20] Time	[21] Received By (Printed)	[22] Received By (Signature)	[23] Date	[24] Time
Tom Haney		9SEP04	0900				
				CYNTHIA A. SALCEDO		[illegible]	0820 AM

Distribution: Original & Yellow: Accompany Shipment To Laboratory Pink: Forward To Sample Management Green: Retained By Project

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