

On-Farm Grant RD309-129/S000671, OS14-087:

FIGURES AND TABLES:

Sustainable Harvesters Farm (HD):

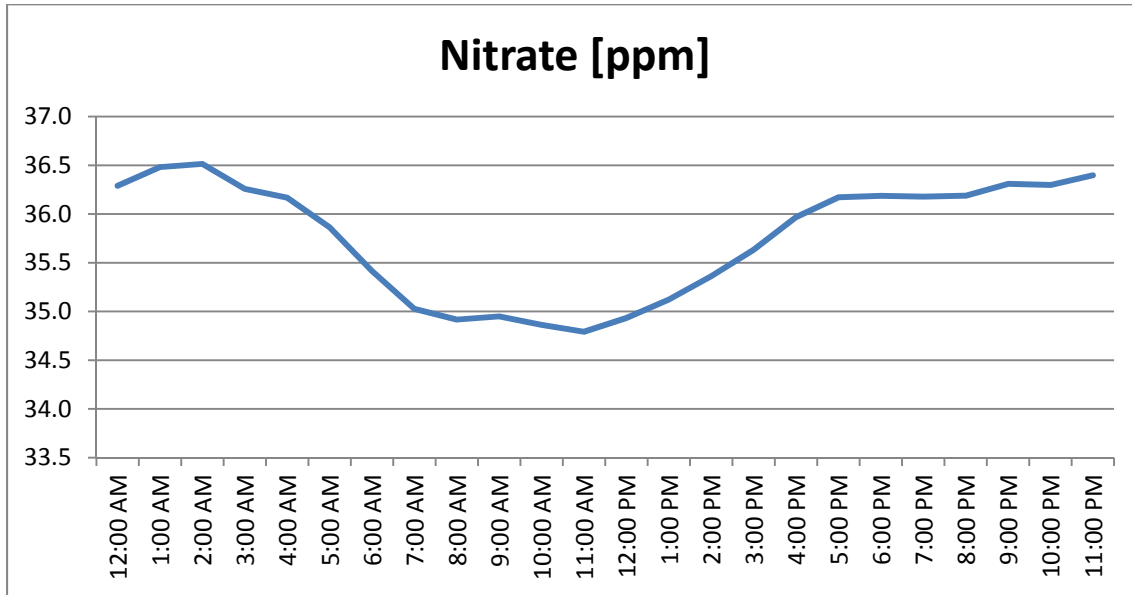


Figure 1: Daily fluctuations in nitrate level at Sustainable Harvesters. Each measurement is the average of 199 days.

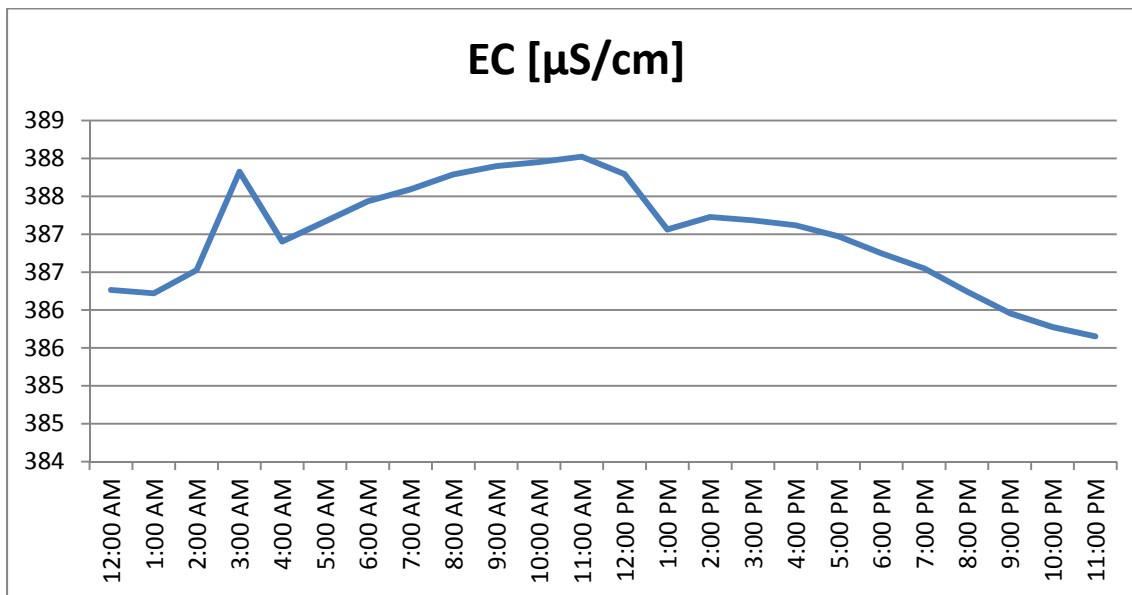


Figure 2: Daily fluctuations in EC at Sustainable Harvesters. Each measurement is the average of 199 days.

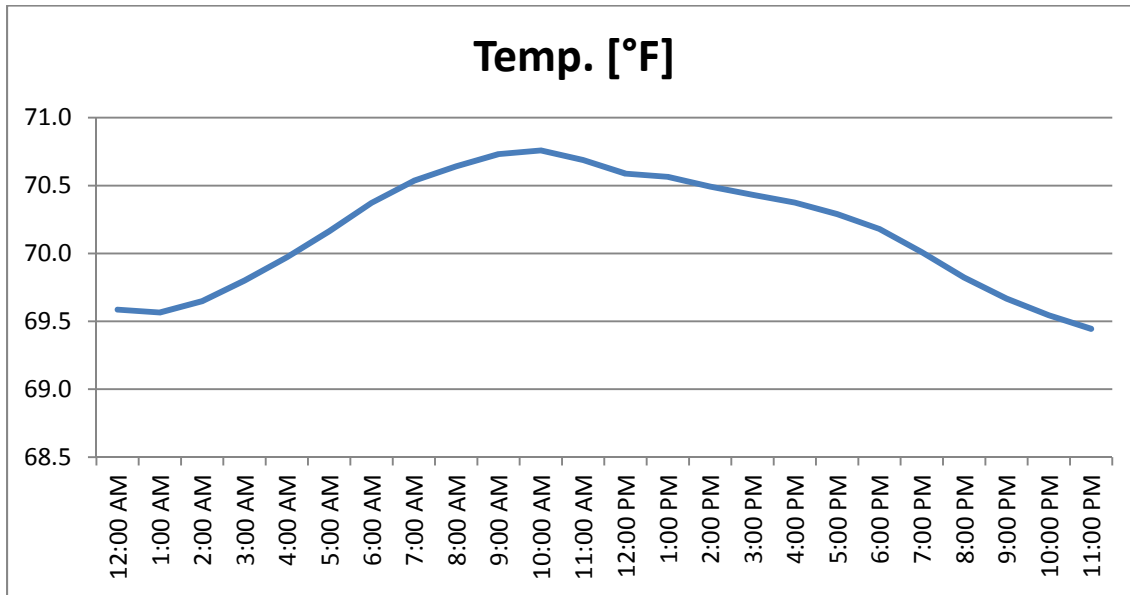


Figure 3: Daily fluctuations in temperature (F) at Sustainable Harvesters. Each measurement is the average of 199 days.

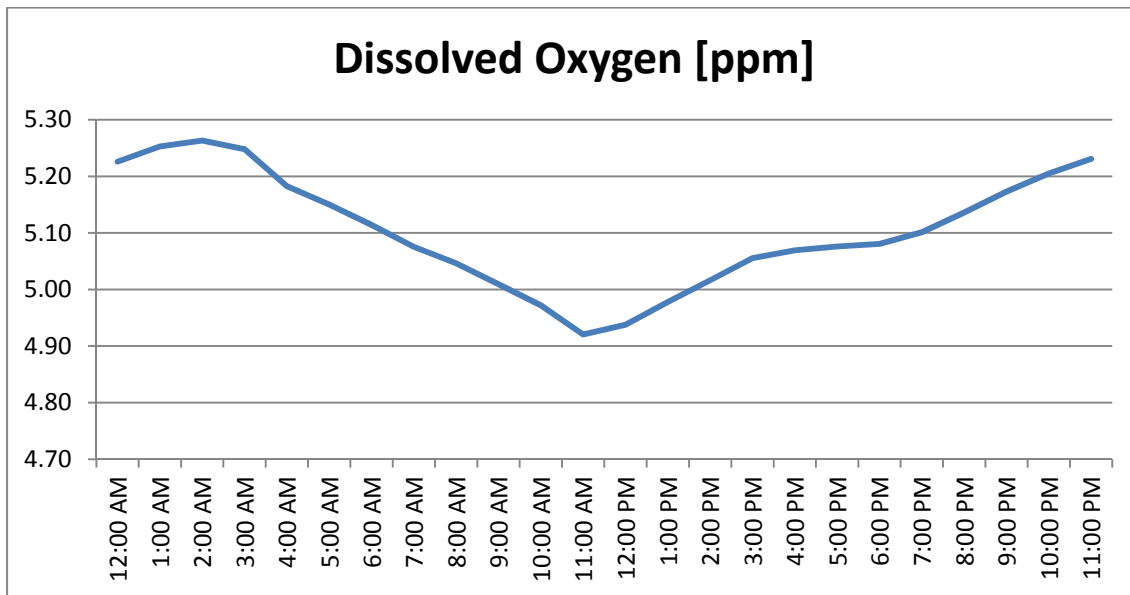


Figure 4: Daily fluctuations in dissolved oxygen (DO) at Sustainable Harvesters. Each measurement is the average of 199 days.

Table 1. Hourly averages of data collected over 199 days at Sustainable Harvesters. This table shows additional information not presented in Figures 1-4.

Time	Temp.[°F]	EC[μS/cm]	RES[Ohm-cm]	TDS [ppm]	Sal.[PSU]	D.O.[ppm]	ppm[Ni]	Battery[V]
12:00 AM	69.59	386.26	2592.42	193.40	0.19	5.23	36.29	5.39
1:00 AM	69.56	386.22	2592.75	193.37	0.19	5.25	36.48	5.39
2:00 AM	69.65	386.53	2591.00	193.53	0.19	5.26	36.52	5.39
3:00 AM	69.80	387.83	2583.77	194.15	0.19	5.25	36.26	5.39
4:00 AM	69.97	386.90	2588.35	193.71	0.19	5.18	36.17	5.39
5:00 AM	70.16	387.17	2586.65	193.86	0.19	5.15	35.86	5.39
6:00 AM	70.37	387.43	2584.95	193.96	0.19	5.11	35.42	5.39
7:00 AM	70.53	387.59	2583.91	194.06	0.19	5.08	35.03	5.39
8:00 AM	70.64	387.79	2582.60	194.14	0.19	5.05	34.92	5.38
9:00 AM	70.73	387.90	2581.89	194.17	0.19	5.01	34.95	5.38
10:00 AM	70.76	387.95	2581.43	194.22	0.19	4.97	34.86	5.38
11:00 AM	70.69	388.02	2580.79	194.27	0.19	4.92	34.79	5.38
12:00 PM	70.59	387.79	2582.23	194.15	0.19	4.94	34.93	5.38
1:00 PM	70.56	387.06	2589.12	193.78	0.19	4.98	35.12	5.39
2:00 PM	70.49	387.23	2586.10	193.87	0.19	5.02	35.36	5.39
3:00 PM	70.43	387.18	2586.11	193.85	0.19	5.06	35.63	5.39
4:00 PM	70.37	387.12	2586.46	193.82	0.19	5.07	35.97	5.39
5:00 PM	70.29	386.97	2587.43	193.73	0.19	5.08	36.17	5.39
6:00 PM	70.18	386.75	2588.95	193.61	0.19	5.08	36.19	5.39
7:00 PM	70.01	386.55	2590.28	193.52	0.19	5.10	36.18	5.38
8:00 PM	69.82	386.24	2592.38	193.38	0.19	5.14	36.19	5.38
9:00 PM	69.67	385.96	2594.40	193.23	0.19	5.17	36.31	5.38
10:00 PM	69.54	385.77	2595.67	193.15	0.18	5.21	36.30	5.38
11:00 PM	69.44	385.65	2596.51	193.09	0.18	5.23	36.40	5.38

Table 2. Lettuce Harvest Fresh Weight (g) of a sample of 15 plants harvested 37 days after seeding

Plant and Root	Plant
135.9 g	108.1 g
4.8 oz	3.8 oz

Table 3. Leaf %N and Nitrate (NO3) content of a sample of 15 plants harvested 37 days after seeding

% N	NO3 ppm
5.87	5253

Sand Creek Farm (LD):

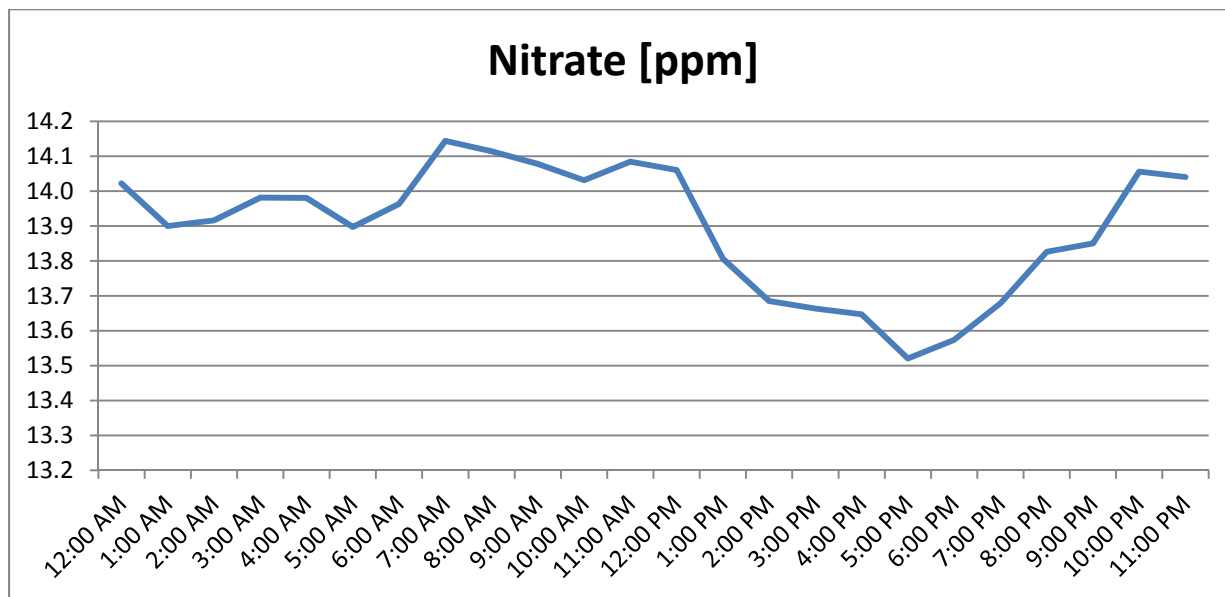


Figure 5: Daily fluctuations in nitrate level at Sand Creek Farm. Each measurement is the average of 177 days.

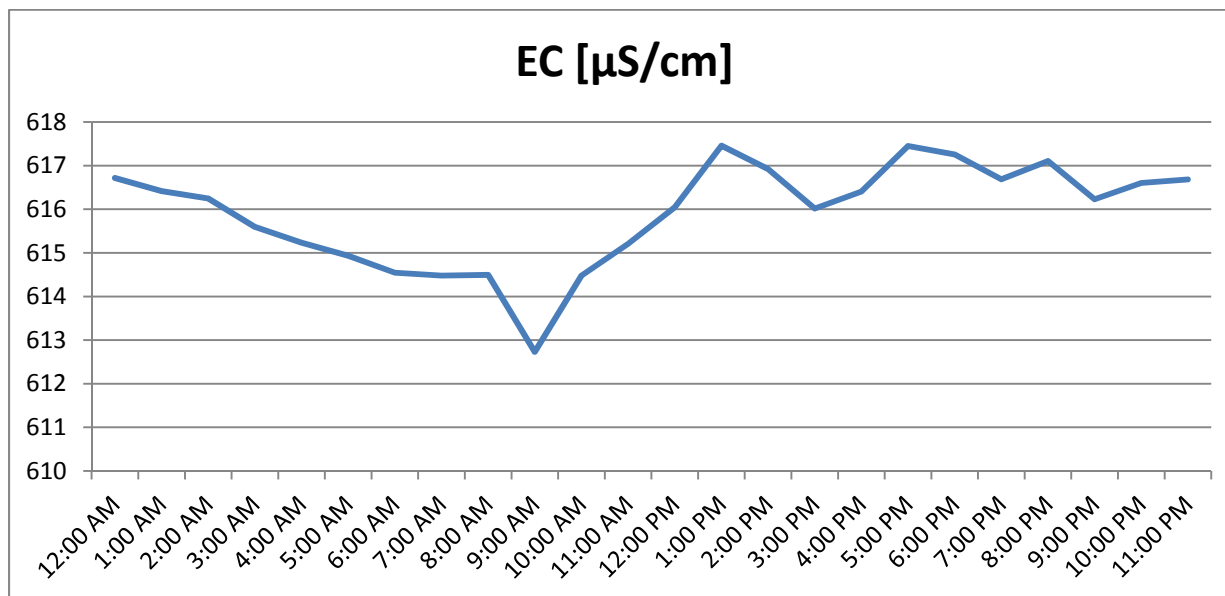


Figure 6: Daily fluctuations in EC at Sand Creek Farm. Each measurement is the average of 177 days.

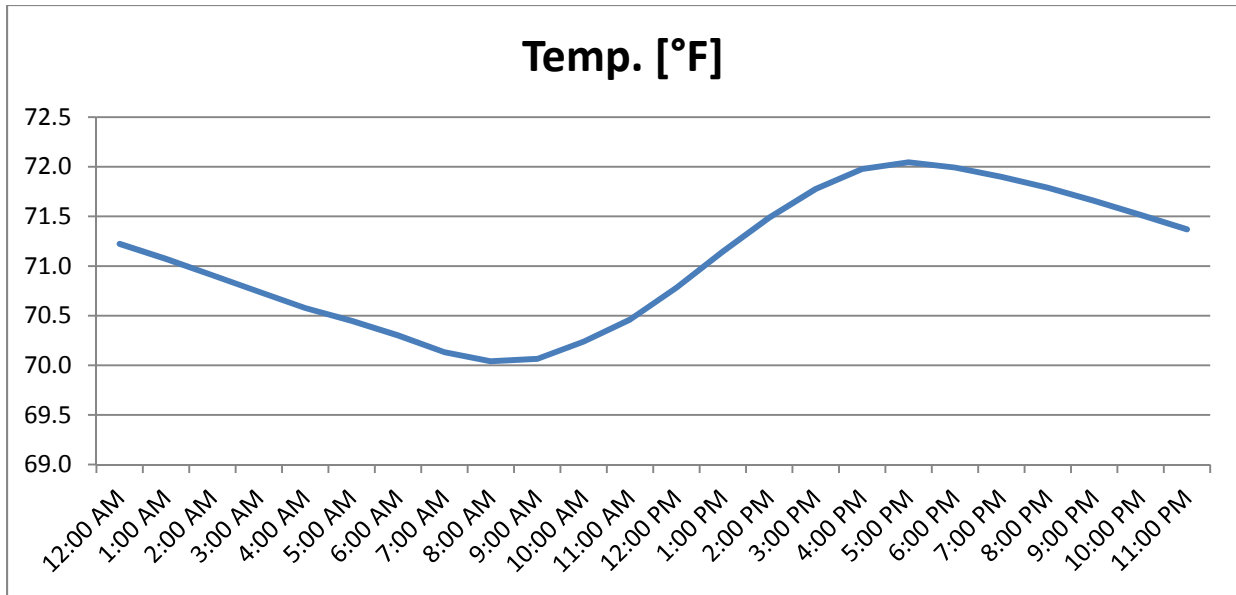


Figure 7: Daily fluctuations in water temperature at Sand Creek Farm. Each measurement is the average of 177 days.

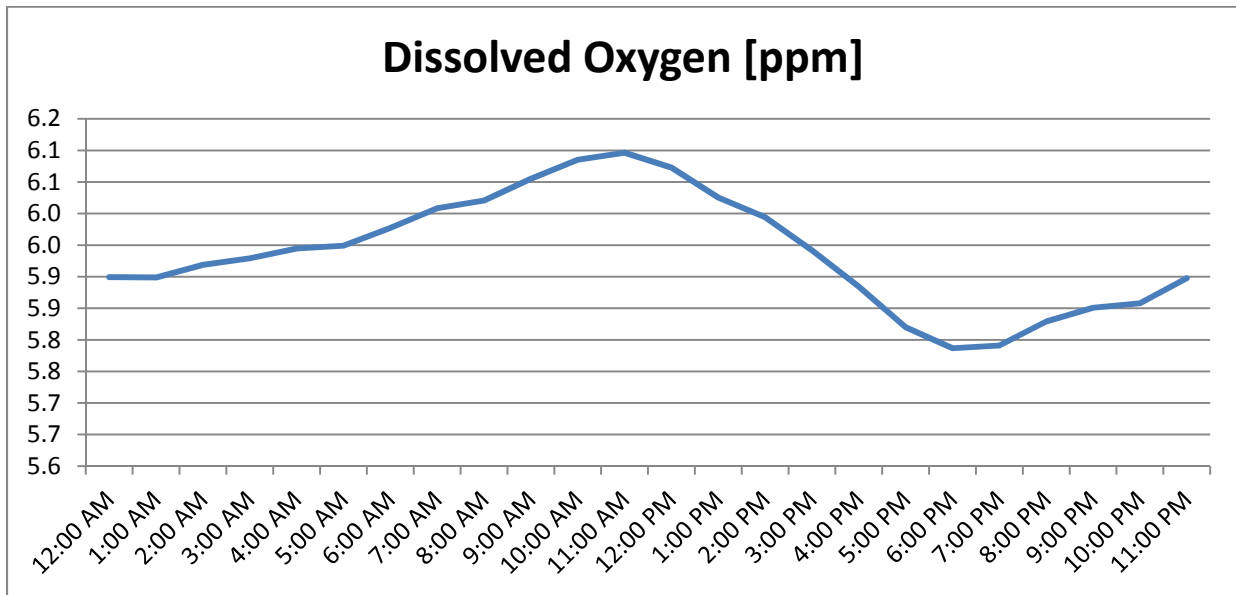


Figure 8: Daily fluctuations in dissolved oxygen (DO) at Sand Creek Farm. Each measurement is the average of 177 days.

Table 4. Hourly averages of data collected over 177 days at Sand Creek Farm. This table shows additional information not presented in Figures 5-8.

Time	Temp.[°F]	EC[μS/cm]	RES[Ohm-cm]	TDS [ppm]	Sal.[PSU]	D.O.[ppm]	ppm[Ni]
12:00 AM	71.22	616.72	1813.23	308.62	0.30	5.90	14.02
1:00 AM	71.07	616.42	1814.28	308.47	0.30	5.90	13.90
2:00 AM	70.91	616.25	1814.92	308.39	0.30	5.92	13.92
3:00 AM	70.74	615.60	1816.61	308.06	0.30	5.93	13.98
4:00 AM	70.58	615.23	1818.10	307.88	0.30	5.94	13.98
5:00 AM	70.45	614.93	1819.72	307.71	0.30	5.95	13.90
6:00 AM	70.30	614.55	1821.43	307.53	0.30	5.98	13.96
7:00 AM	70.13	614.48	1823.20	307.49	0.30	6.01	14.14
8:00 AM	70.04	614.49	1823.01	307.50	0.30	6.02	14.11
9:00 AM	70.06	612.73	1826.46	306.62	0.30	6.06	14.08
10:00 AM	70.24	614.48	1822.11	307.50	0.30	6.09	14.03
11:00 AM	70.46	615.21	1819.69	307.86	0.30	6.10	14.08
12:00 PM	70.78	616.04	1816.98	308.27	0.30	6.07	14.06
1:00 PM	71.15	617.46	1812.12	308.96	0.30	6.03	13.81
2:00 PM	71.49	616.92	1812.34	308.72	0.30	5.99	13.69
3:00 PM	71.78	616.02	1815.10	308.26	0.30	5.94	13.66
4:00 PM	71.98	616.41	1813.77	308.46	0.30	5.88	13.65
5:00 PM	72.05	617.45	1809.06	308.98	0.30	5.82	13.52
6:00 PM	71.99	617.26	1809.31	308.89	0.30	5.79	13.57
7:00 PM	71.90	616.69	1811.31	308.59	0.30	5.79	13.68
8:00 PM	71.79	617.11	1809.91	308.80	0.30	5.83	13.83
9:00 PM	71.66	616.23	1812.79	308.37	0.30	5.85	13.85
10:00 PM	71.52	616.60	1812.68	308.55	0.30	5.86	14.06
11:00 PM	71.37	616.69	1813.21	308.60	0.30	5.90	14.04

Table 5. Lettuce Harvest Fresh Weight (g) of a sample of 10 plants harvested 80 days after harvest

Plant and Root	Plant
321 g	226 g
11.3 oz	7.9 oz

Table 6. Leaf %N and Nitrate (NO3) content of a sample of 10 plants harvested 37 days after harvest

% N	NO3 ppm
8.18	7,321

Table 7. Comparison between HD (Sustainable Harvester) and LD (Sand Creek Farm)

	High Density (HD)	Low Density (LD)
Nitrate (ppm)		
Average	35.76 ± 18.21	13.9 ± 6.78
Min.	2.70	0.15
Max.	74.10	76.55
EC (µS/cm)		
Average	387 ± 14	616 ± 207
Min.	175	341
Max.	485	1103
Temperature (F)		
Average	70.2 ± 7.3	71 ± 6.8
Min.	58.4	59.5
Max.	84.7	86.4
Dissolved Oxygen (DO)		
Average	5.11 ± 1.5	5.94 ± 2.0
Min.	1.6	2.9
Max.	7.9	11.5
No. of Measurements	58,020	50,595
Lettuce Harvest Weight (oz)	3.8 (37 days old)	7.9 (80 days old)
Leaf Nitrate Content (ppm)	5,253	7,321
Feeding Rate	4.7 lb/day	1.6 lb/day