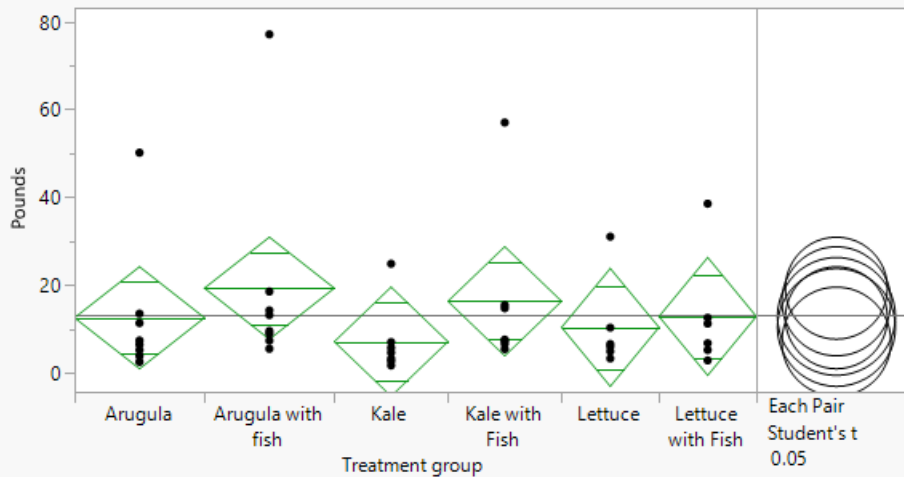


Figure 1. Production of 3 varieties of leafy greens (in Lbs) under identical growing conditions using water with and without fish.

Summary – Leafy green production was consistently higher for each variety (Arugula, Kale, and lettuce) when watered from tanks containing fish. The increase in production is not statistically significant (at a 95%) level but the pattern of higher production is evident. This experiment needs to be repeated with higher replication to definitively say that production is higher, but these data are suggestive of an effect and this effect is consistent with what we would expect (higher production utilizing water with higher nutrient content).

Oneway Analysis of Pounds By Treatment group



Oneway Anova

Summary of Fit

Rsquare	0.066616
Adj Rsquare	-0.06302
Root Mean Square Error	16.21386
Mean of Response	13.26405
Observations (or Sum Wgts)	42

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Treatment group	5	675.451	135.090	0.5139	0.7639
Error	36	9464.010	262.889		
C. Total	41	10139.461			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Arugula	8	12.5313	5.7325	0.905	24.157
Arugula with fish	8	19.2675	5.7325	7.642	30.893
Kale	7	7.0957	6.1283	-5.333	19.524
Kale with Fish	7	16.2857	6.1283	3.857	28.714
Lettuce	6	10.3350	6.6193	-3.090	23.760
Lettuce with Fish	6	12.8367	6.6193	-0.588	26.261

Std Error uses a pooled estimate of error variance

Means Comparisons

Comparisons for each pair using Student's t

Confidence Quantile

t	Alpha
2.02809	0.05

LSD Threshold Matrix

Abs(Dif)-LSD

	Arugula with fish	Kale with Fish	Lettuce with Fish	Arugula	Lettuce	Kale
Arugula with fish	-16.442	-14.037	-11.328	-9.705	-8.826	-4.847
Kale with Fish	-14.037	-17.577	-14.845	-13.264	-12.344	-8.387
Lettuce with Fish	-11.328	-14.845	-18.985	-17.454	-16.483	-12.554
Arugula	-9.705	-13.264	-17.454	-16.442	-15.563	-11.583
Lettuce	-8.826	-12.344	-16.483	-15.563	-18.985	-15.055
Kale	-4.847	-8.387	-12.554	-11.583	-15.055	-17.577

Positive values show pairs of means that are significantly different.

Connecting Letters Report

Level	Mean
Arugula with fish	A 19.267500
Kale with Fish	A 16.285714
Lettuce with Fish	A 12.836667
Arugula	A 12.531250
Lettuce	A 10.335000
Kale	A 7.095714

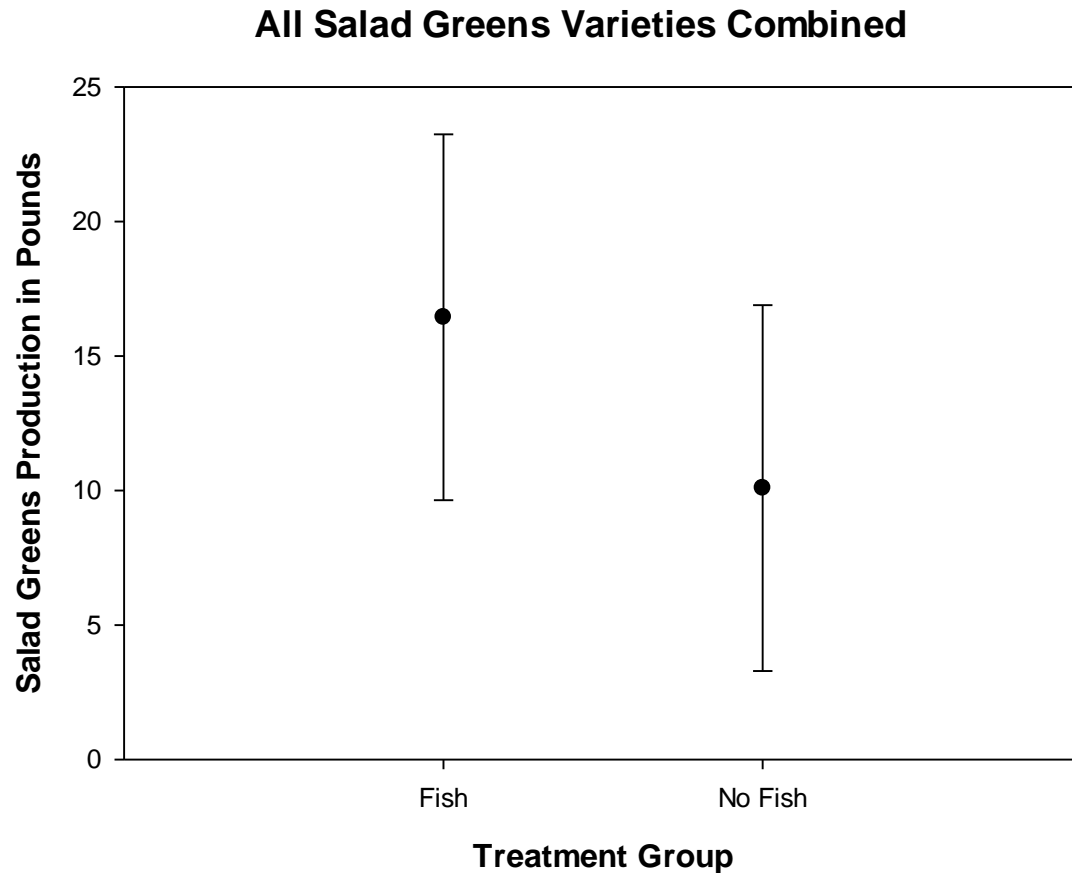
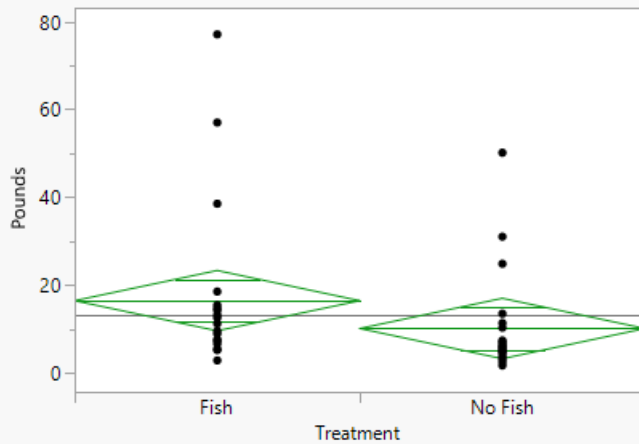


Figure 2. Combined (Arugula, Kale, and Lettuce) leafy green production in identical growing environments using water with and without fish.

Summary – Even when leafy greens varieties are combined the results are still not statistically significant (at a 95% level), but the pattern of higher production with water containing fish is evident. Large variability in the pounds of salad greens produced in both treatments created a situation where getting a result that is statistically significant would require additional replication. The pattern of higher production in the treatment group utilizing water with fish is evident but not statistically significant with the current level of replication. These data are suggestive that farmers may be able to increase yield of salad greens by utilizing water from ponds or tanks containing fish.

Oneway Analysis of Pounds By Treatment



Oneway Anova

Summary of Fit

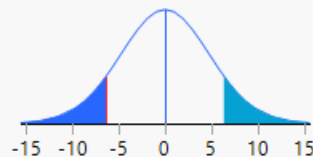
Rsquare	0.041681
Adj Rsquare	0.017723
Root Mean Square Error	15.58592
Mean of Response	13.26405
Observations (or Sum Wgts)	42

Pooled t Test

No Fish-Fish

Assuming equal variances

Difference	-6.344	t Ratio	-1.319
Std Err Dif	4.810	DF	40
Upper CL Dif	3.377	Prob > t	0.1947
Lower CL Dif	-16.065	Prob > t	0.9027
Confidence	0.95	Prob < t	0.0973



Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Treatment	1	422.625	422.625	1.7398	0.1947
Error	40	9716.837	242.921		
C. Total	41	10139.461			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Fish	21	16.4362	3.4011	9.5623	23.310
No Fish	21	10.0919	3.4011	3.2180	16.966

Std Error uses a pooled estimate of error variance

Missing Rows 6