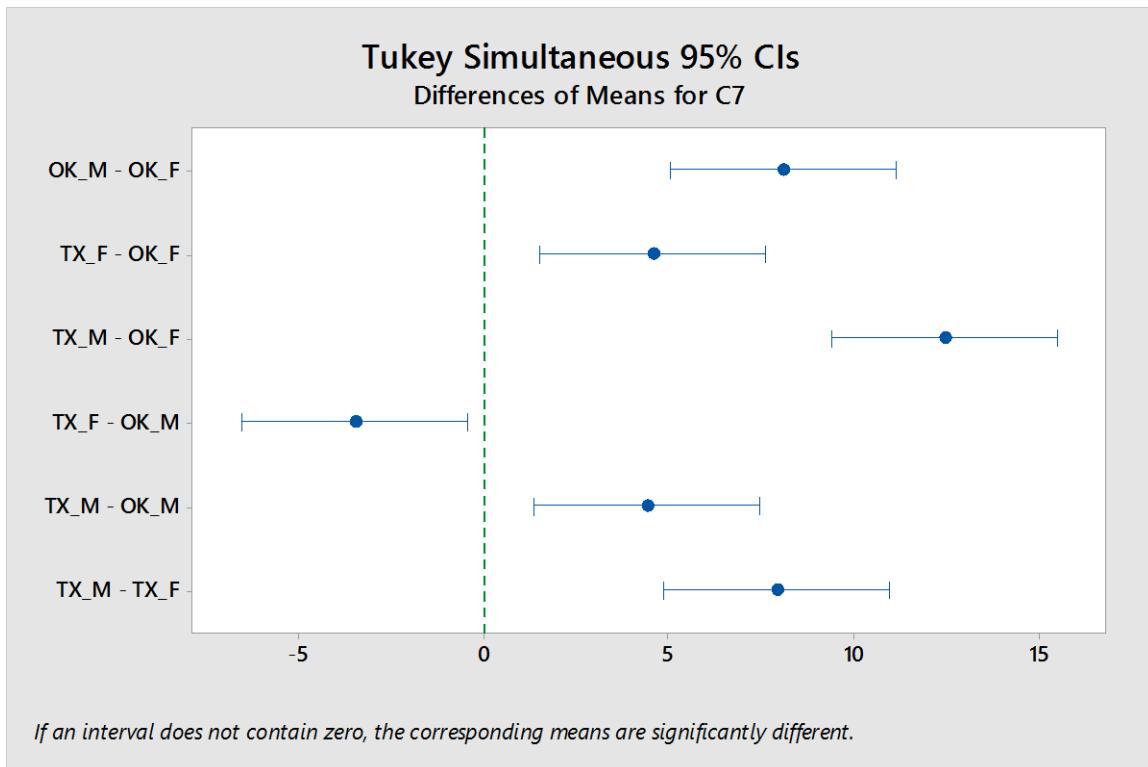
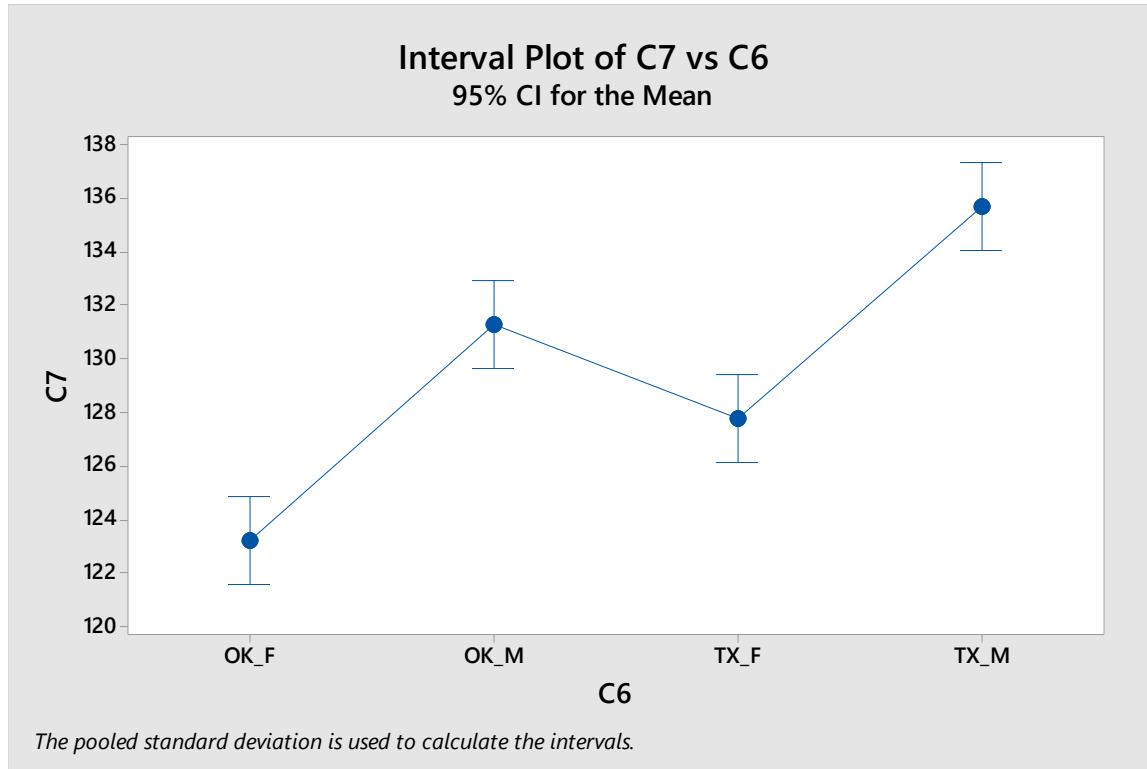
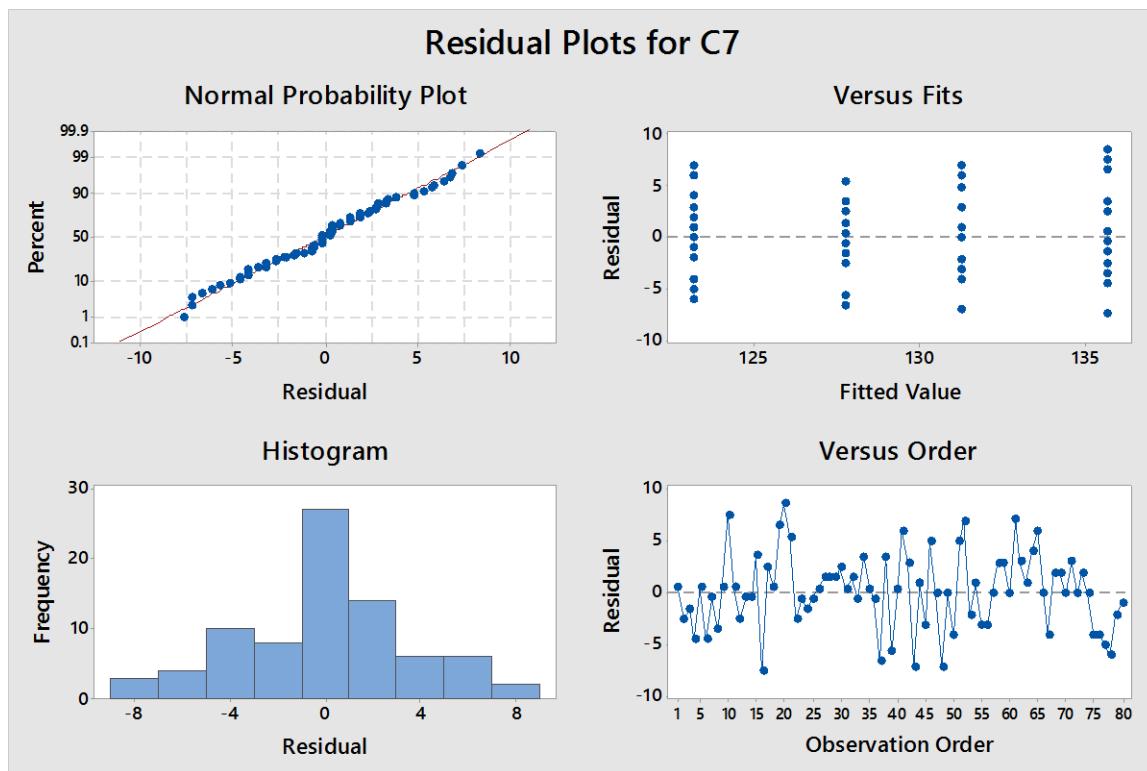


## ANOVA Lizard Data:





## Descriptive Statistics: TX\_M, TX\_F, OK\_M, OK\_F

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3
TX_M	20	0	135.65	0.910	4.07	128.00	133.00	135.50	137.50
TX_F	20	0	127.75	0.632	2.83	121.00	127.00	128.00	129.00
OK_M	20	0	131.25	0.900	4.02	124.00	128.00	131.00	134.00
OK_F	20	0	123.20	0.803	3.59	117.00	119.50	123.00	125.75

Variable	Maximum
TX_M	144.00
TX_F	133.00
OK_M	138.00
OK_F	130.00

## One-way ANOVA: C7 versus C6

Method

Null hypothesis All means are equal  
Alternative hypothesis At least one mean is different  
Significance level  $\alpha = 0.05$

Equal variances were assumed for the analysis.

Factor Information

Factor Levels Values  
C6 4 OK\_F, OK\_M, TX\_F, TX\_M

Analysis of Variance -ANOVA table

Source	DF	Adj SS	Adj MS	F-Value	P-Value
C6	3	1673	557.55	41.57	0.000
Error	76	1019	13.41		
Total	79	2692			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
3.66213	62.14%	60.64%	58.05%

Means

C6	N	Mean	StDev	95% CI
OK_F	20	123.200	3.592	(121.569, 124.831)
OK_M	20	131.250	4.025	(129.619, 132.881)
TX_F	20	127.750	2.826	(126.119, 129.381)
TX_M	20	135.650	4.069	(134.019, 137.281)

Pooled StDev = 3.66213

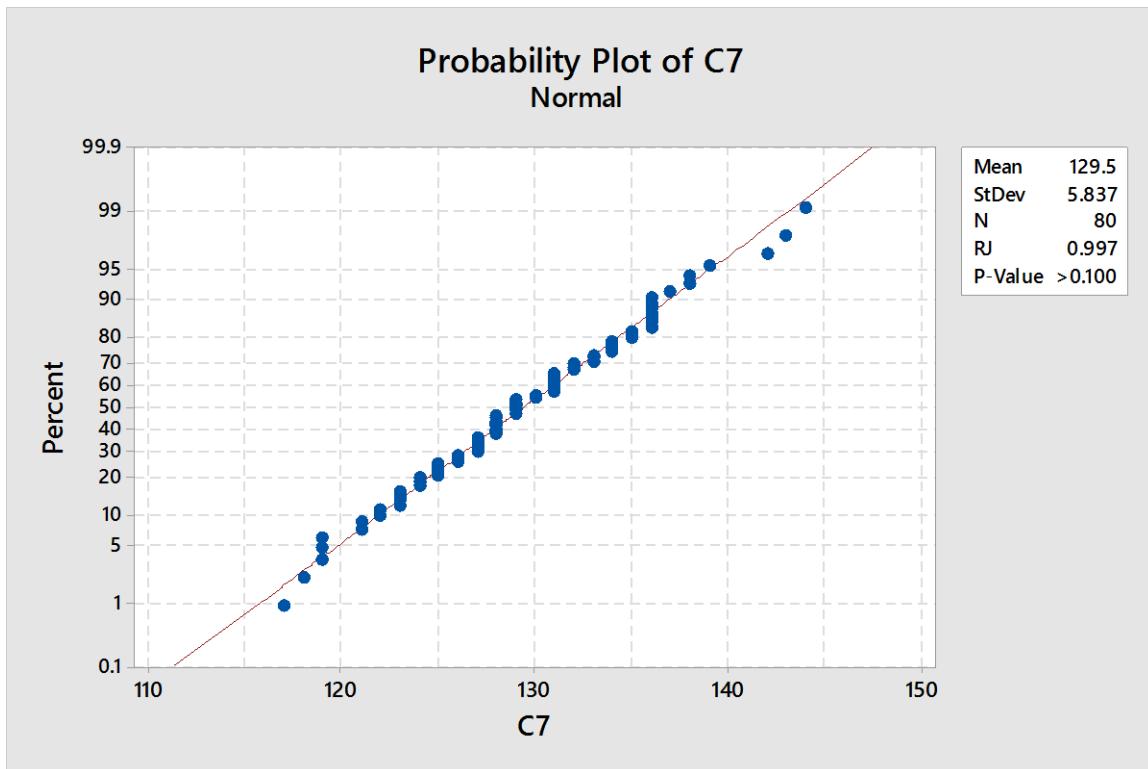
## Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

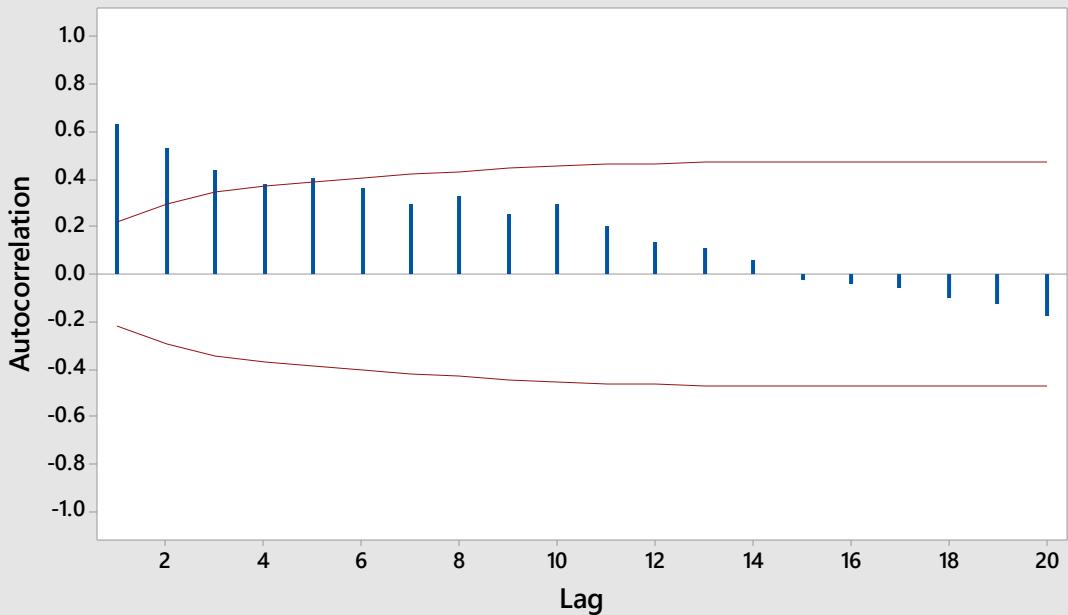
C6	N	Mean	Grouping
TX_M	20	135.650	A

OK_M	20	131.250	B
TX_F	20	127.750	C
OK_F	20	123.200	D

Means that do not share a letter are significantly different.

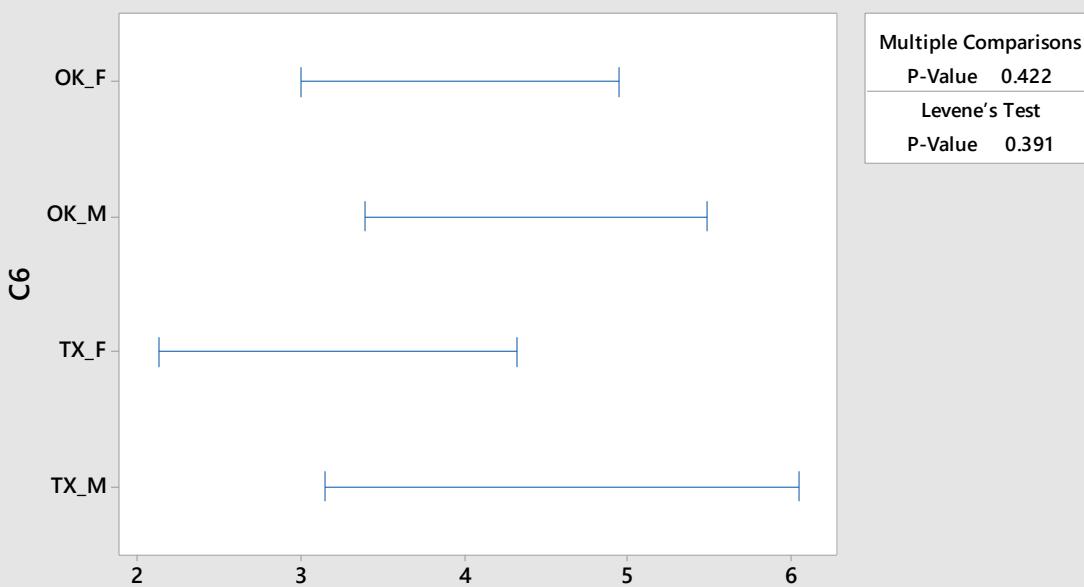


### Autocorrelation Function for C7 (with 5% significance limits for the autocorrelations)



### Test for Equal Variances: C7 vs C6

Multiple comparison intervals for the standard deviation,  $\alpha = 0.05$



## Autocorrelation Function: C7

Lag	ACF	T	LBQ
1	0.635864	5.69	33.57
2	0.532567	3.54	57.43
3	0.439156	2.55	73.86
4	0.376978	2.03	86.12
5	0.405359	2.08	100.50
6	0.365270	1.78	112.32
7	0.299809	1.41	120.40
8	0.330020	1.51	130.33
9	0.254700	1.13	136.32
10	0.293660	1.29	144.40
11	0.203109	0.87	148.32
12	0.137277	0.58	150.14
13	0.109308	0.46	151.31
14	0.058390	0.25	151.65
15	-0.026815	-0.11	151.72
16	-0.041926	-0.18	151.90
17	-0.057148	-0.24	152.24
18	-0.099976	-0.42	153.30
19	-0.125085	-0.53	154.98
20	-0.174052	-0.73	158.29

## Autocorrelation for C7

### Test for Equal Variances: C7 versus C6

Method

Null hypothesis All variances are equal  
Alternative hypothesis At least one variance is different  
Significance level  $\alpha = 0.05$

95% Bonferroni Confidence Intervals for Standard Deviations

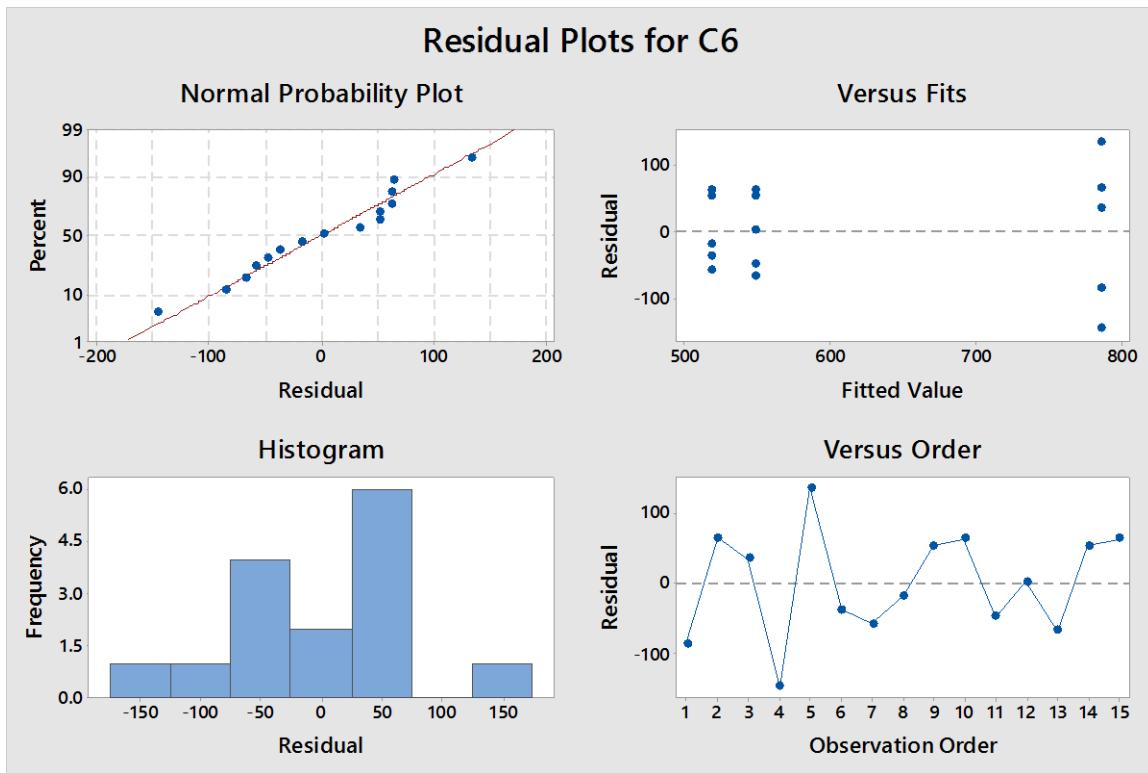
C6	N	StDev	CI
OK_F	20	3.59239	(2.60123, 5.66923)
OK_M	20	4.02460	(2.91835, 6.34224)
TX_F	20	2.82610	(1.68975, 5.40116)
TX_M	20	4.06882	(2.68305, 7.05087)

Individual confidence level = 98.75%

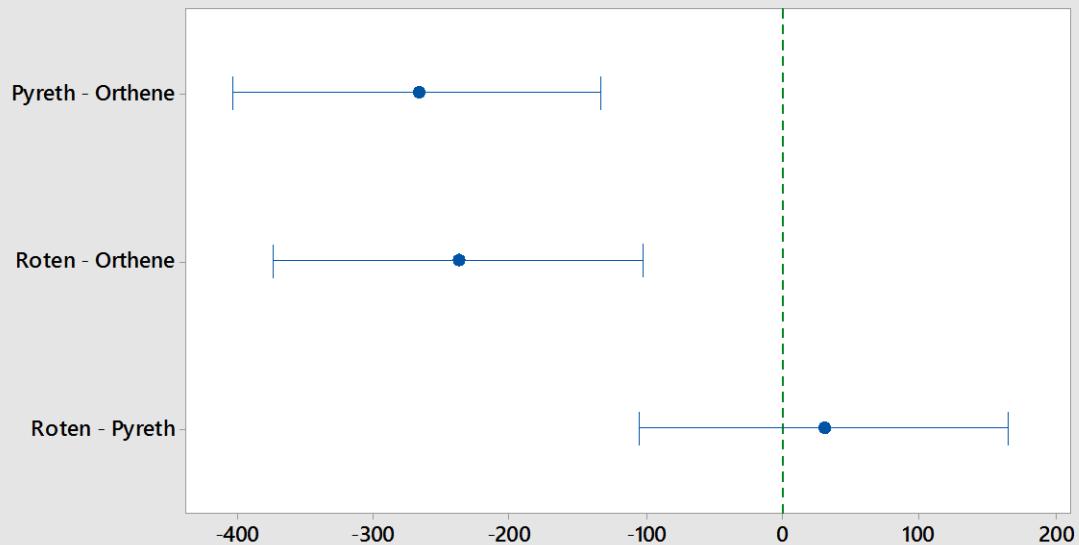
Tests

Method	Test	
	Statistic	P-Value
Multiple comparisons	-	0.422
Levene	1.02	0.391

## Problem 2: Pesticide

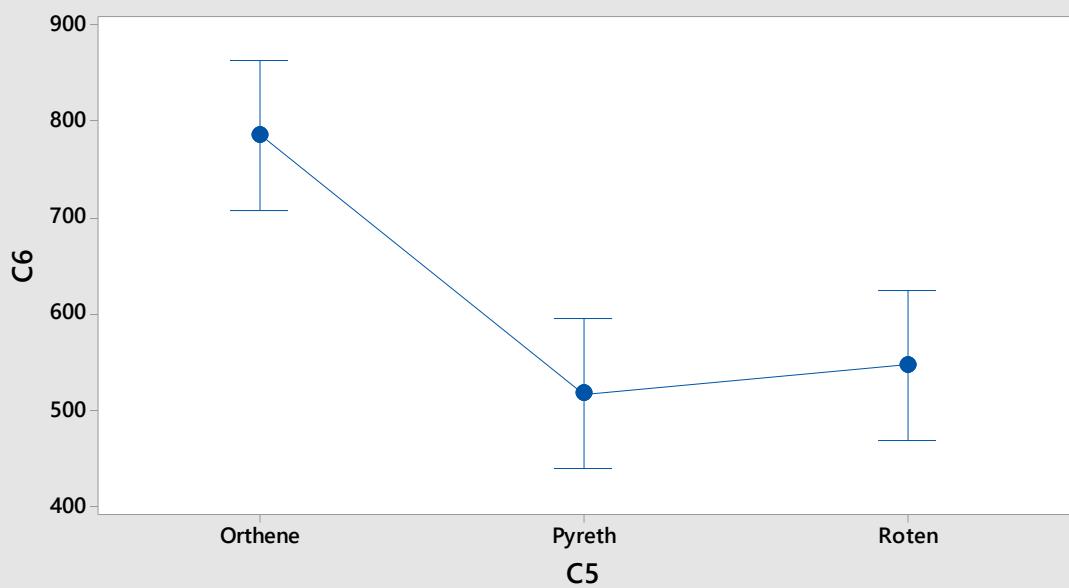


### Tukey Simultaneous 95% CIs Differences of Means for C6



If an interval does not contain zero, the corresponding means are significantly different.

### Interval Plot of C6 vs C5 95% CI for the Mean



The pooled standard deviation is used to calculate the intervals.

## One-way ANOVA: C6 versus C5

Method

Null hypothesis All means are equal  
Alternative hypothesis At least one mean is different  
Significance level  $\alpha = 0.05$

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
C5	3	Orthene, Pyreth, Roten

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
C5	2	215613	107807	16.78	0.000
Error	12	77080	6423		
Total	14	292693			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
80.1457	73.67%	69.28%	58.85%

Means

C5	N	Mean	StDev	95% CI
Orthene	5	786.0	113.9	(707.9, 864.1)
Pyreth	5	518.0	54.0	(439.9, 596.1)
Roten	5	548.0	58.1	(469.9, 626.1)

Pooled StDev = 80.1457

## Tukey Pairwise Comparisons

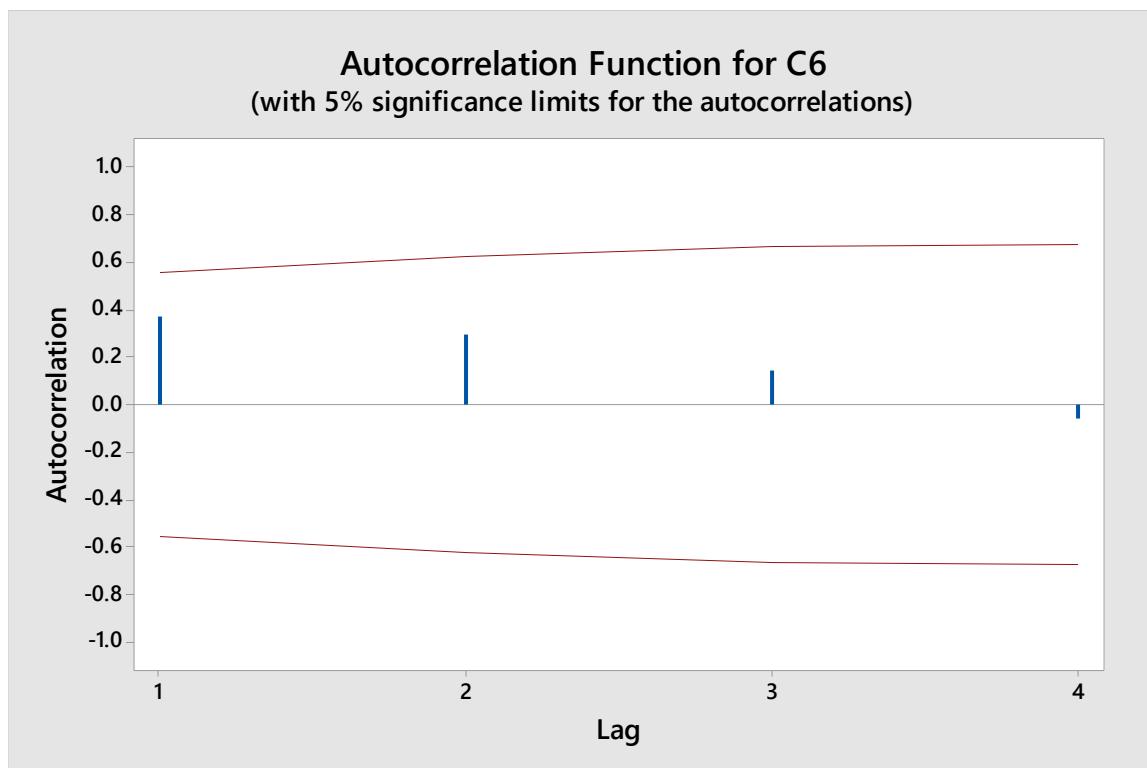
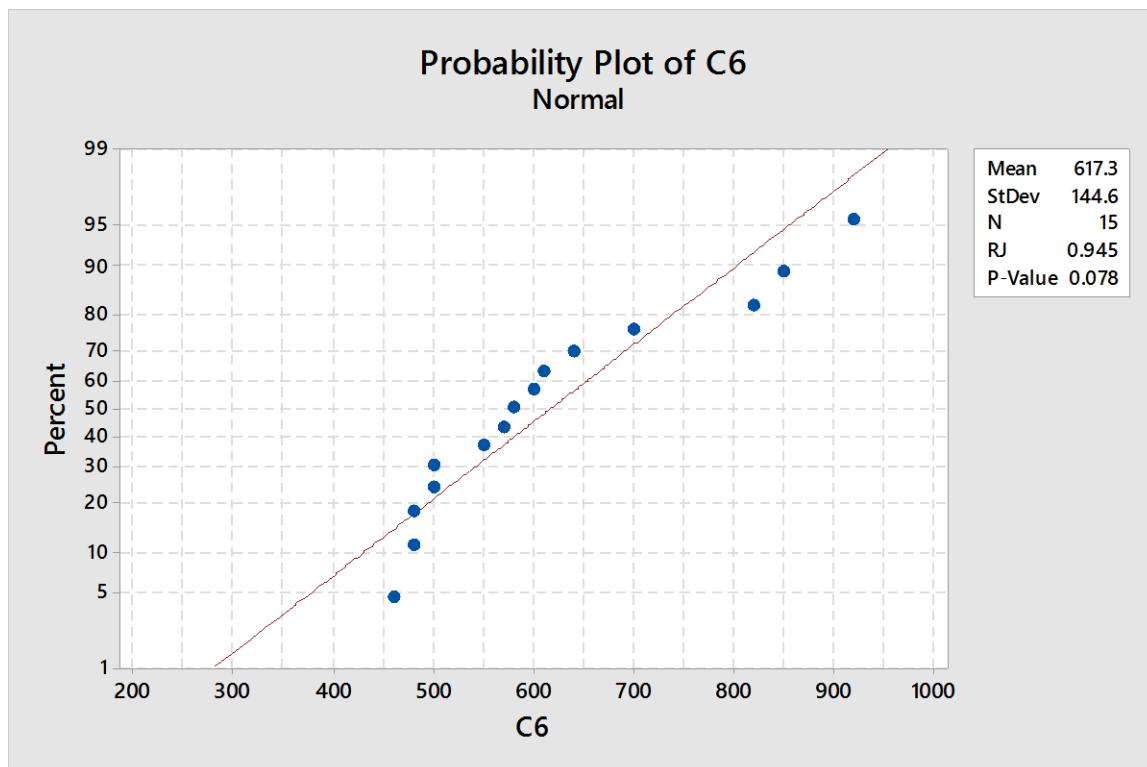
Grouping Information Using the Tukey Method and 95% Confidence

C5	N	Mean	Grouping
Orthene	5	786.0	A
Roten	5	548.0	B
Pyreth	5	518.0	B

Means that do not share a letter are significantly different.

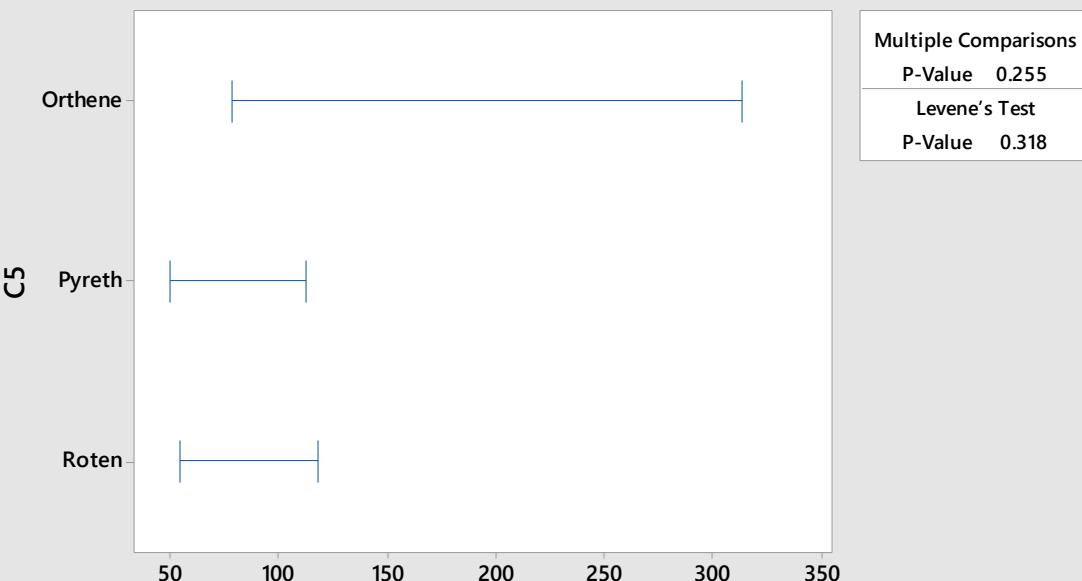
## Descriptive Statistics: Orthene, Pyreth, Roten

Variable	N	N*	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Orthene	5	0	786.0	51.0	113.9	640.0	670.0	820.0	885.0	920.0
Pyreth	5	0	518.0	24.2	54.0	460.0	470.0	500.0	575.0	580.0
Roten	5	0	548.0	26.0	58.1	480.0	490.0	550.0	605.0	610.0



## Test for Equal Variances: C6 vs C5

Multiple comparison intervals for the standard deviation,  $\alpha = 0.05$



If intervals do not overlap, the corresponding std devs are significantly different.

## Autocorrelation Function: C6

Lag	ACF	T	LBQ
1	0.367960	1.43	2.47
2	0.297009	1.02	4.20
3	0.144743	0.47	4.64
4	-0.055719	-0.18	4.71

## Autocorrelation for C6

### Test for Equal Variances: C6 versus C5

#### Method

Null hypothesis All variances are equal  
 Alternative hypothesis At least one variance is different  
 Significance level  $\alpha = 0.05$

95% Bonferroni Confidence Intervals for Standard Deviations

	C5	N	StDev	CI
Orthene	5	113.930	(45.4319, 548.158)	
Pyreth	5	54.037	(25.1120, 223.097)	
Roten	5	58.052	(26.3782, 245.119)	

Individual confidence level = 98.3333%

Tests

Method	Statistic	Test P-Value
Multiple comparisons	-	0.255
Levene	1.26	0.318