

APPENDIX

Appendix 1

Descriptive Statistics

Insecticidal potency of red pepper on fire ants

concentrations	hours	Mean	Std. Deviation	N
negative control	1	.0000	.00000	4
	2	.0000	.00000	4
	3	.0000	.00000	4
	4	.0000	.00000	4
	5	.0000	.00000	4
	6	.0000	.00000	4
	24	3.3350	3.85093	4
	Total		.4764	1.74931
10%	1	16.6675	11.54797	4
	2	30.0025	11.54797	4
	3	40.0025	16.32857	4
	4	53.3350	16.33265	4
	5	68.3350	13.74611	4
	6	75.0025	9.99944	4
	24	1.0000E2	.00000	4
	Total		54.7636	29.16431



15%	1	23.3350	11.54508	4
	2	36.6650	16.77785	4
	3	53.3325	14.39959	4
	4	61.6675	16.66700	4
	5	65.0025	16.66700	4
	6	74.9975	19.14999	4
	24	98.3325	3.33500	4
	Total	59.0475	26.71032	28
20%	1	45.0000	14.78037	4
	2	66.6675	23.72934	4
	3	75.0000	23.95953	4
	4	83.3350	11.54508	4
	5	85.0000	12.61686	4
	6	89.9975	11.54797	4
	24	1.0000E2	.00000	4
	Total	77.8571	22.00255	28
positive control	1	1.0000E2	.00000	4
	2	1.0000E2	.00000	4
	3	1.0000E2	.00000	4
	4	1.0000E2	.00000	4
	5	1.0000E2	.00000	4
	6	1.0000E2	.00000	4
	24	1.0000E2	.00000	4
	Total	1.0000E2	.00000	28

Total	1	37.0005	36.60880	20
	2	46.6670	37.08719	20
	3	53.6670	36.86346	20
	4	59.6675	36.41731	20
	5	63.6675	36.48126	20
	6	67.9995	37.50071	20
	24	80.3335	39.55678	20
	Total	58.4289	38.75428	140

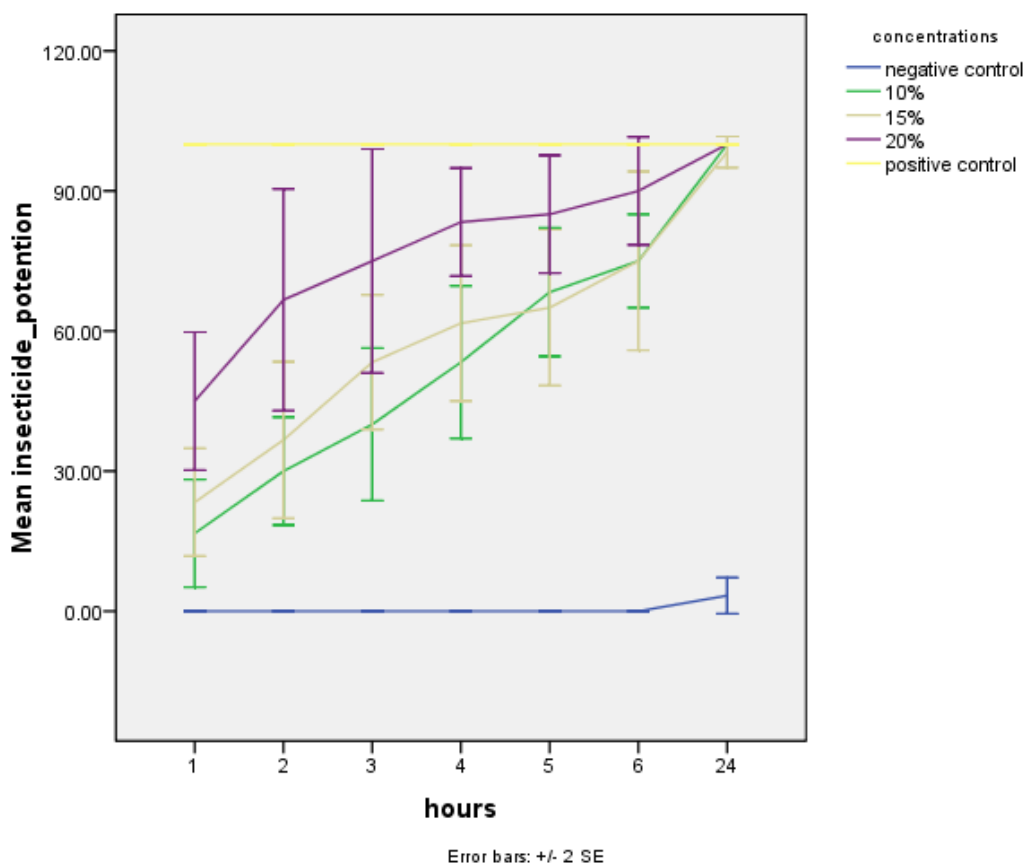


Figure 5.1. Line Chart of Insecticide Potency in Every Treatments per Hour

Appendix 2

KOLGOROV SMIRNOV NORMALITY TEST

One-Sample Kolmogorov-Smirnov Test

		insecticide_potention
N		140
Normal Parameters ^a	Mean	58.4289
	Std. Deviation	38.75428
Most Extreme Differences	Absolute	.167
	Positive	.142
	Negative	-.167
Kolmogorov-Smirnov Z		1.975
Asymp. Sig. (2-tailed)		.091
a. Test distribution is Normal.		

HOMOGENEITY TEST IV VARIANCE

Levene's Test of Equality of Error Variances^a

Dependent Variable:insecticide_potention

F	df1	df2	Sig.
3.598	34	105	.073

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + concentrations + hours + concentrations * hours



Appendix 3

ONE WAY ANOVA TEST

ANOVA 1ST HOUR

insecticide_potention

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23199.933	4	5799.983	29.654	.000
Within Groups	2933.800	15	195.587		
Total	26133.733	19			

ANOVA 2ND HOUR

insecticide_potention

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	22675.284	4	5668.821	27.045	.000
Within Groups	3144.089	15	209.606		
Total	25819.373	19			

ANOVA 3RD HOUR

insecticide_potention

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23164.689	4	5791.172	42.718	.000
Within Groups	2033.500	15	135.567		
Total	25198.189	19			

ANOVA 4TH HOUR

insecticide_potention

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	23408.978	4	5852.244	46.748	.000
Within Groups	1877.789	15	125.186		
Total	25286.767	19			

ANOVA 5TH HOUR

insecticide_potention

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	24919.560	4	6229.890	51.910	.000
Within Groups	1800.200	15	120.013		
Total	26719.760	19			

ANOVA 6TH HOUR

insecticide_potention

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	29652.187	4	7413.047	1.428E3	.000
Within Groups	77.856	15	5.190		
Total	29730.042	19			

ANOVA 24TH HOUR

insecticide_potention

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24008.571	4	6002.143	61.865	.000
Within Groups	1455.311	15	97.021		
Total	25463.882	19			



Appendix 4

MULTI COMPARISON POST HOC TUKEY TEST

concentrations

Multiple Comparisons

insecticide_potention

Tukey HSD

(I)concentration(J)concentration		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
negative control	10%	-54.2871*	3.01047	.000	-62.6435	-45.9308
	15%	-58.5711*	3.01047	.000	-66.9274	-50.2147
	20%	-77.3807*	3.01047	.000	-85.7370	-69.0244
	positive control	-99.5236*	3.01047	.000	-107.8799	-91.1672
10%	negative control	54.2871*	3.01047	.000	45.9308	62.6435
	15%	-4.2839	3.01047	.614	-12.6403	4.0724
	20%	-23.0936*	3.01047	.000	-31.4499	-14.7372
	positive control	-45.2364*	3.01047	.000	-53.5928	-36.8801
15%	negative control	58.5711*	3.01047	.000	50.2147	66.9274
	10%	4.2839	3.01047	.614	-4.0724	12.6403
	20%	-18.8096*	3.01047	.000	-27.1660	-10.4533
	positive control	-40.9525*	3.01047	.000	-49.3088	-32.5962



20%	negative control	77.3807*	3.01047	.000	69.0244	85.7370
	10%	23.0936*	3.01047	.000	14.7372	31.4499
	15%	18.8096*	3.01047	.000	10.4533	27.1660
	positive control	-22.1429*	3.01047	.000	-30.4992	-13.7865
positive control	negative control	99.5236*	3.01047	.000	91.1672	107.8799
	10%	45.2364*	3.01047	.000	36.8801	53.5928
	15%	40.9525*	3.01047	.000	32.5962	49.3088
	20%	22.1429*	3.01047	.000	13.7865	30.4992

Based on observed means.

The error term is Mean Square(Error) = 126.881.

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

insecticide_potention

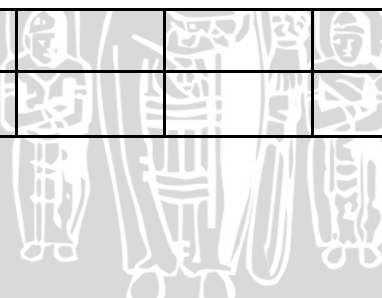
Tukey HSD

concentrations	N	Subset			
		1	2	3	4
negative control	28	.4764			
10%	28		54.7636		
15%	28		59.0475		
20%	28			77.8571	
positive control	28				1.0000E2
Sig.		1.000	.614	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 126.881.



Hours

Multiple Comparisons

insecticide_potention

Tukey HSD

(I) hours	(J) hours	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-9.6665	3.56204	.105	-20.3750	1.0420
	3	-16.6665*	3.56204	.000	-27.3750	-5.9580
	4	-22.6670*	3.56204	.000	-33.3755	-11.9585
	5	-26.6670*	3.56204	.000	-37.3755	-15.9585
	6	-30.9990*	3.56204	.000	-41.7075	-20.2905
	24	-43.3330*	3.56204	.000	-54.0415	-32.6245
2	1	9.6665	3.56204	.105	-1.0420	20.3750
	3	-7.0000	3.56204	.443	-17.7085	3.7085
	4	-13.0005*	3.56204	.007	-23.7090	-2.2920
	5	-17.0005*	3.56204	.000	-27.7090	-6.2920
	6	-21.3325*	3.56204	.000	-32.0410	-10.6240
	24	-33.6665*	3.56204	.000	-44.3750	-22.9580
3	1	16.6665*	3.56204	.000	5.9580	27.3750
	2	7.0000	3.56204	.443	-3.7085	17.7085
	4	-6.0005	3.56204	.628	-16.7090	4.7080
	5	-10.0005	3.56204	.084	-20.7090	.7080
	6	-14.3325*	3.56204	.002	-25.0410	-3.6240
	24	-26.6665*	3.56204	.000	-37.3750	-15.9580



4	1	22.6670*	3.56204	.000	11.9585	33.3755
	2	13.0005*	3.56204	.007	2.2920	23.7090
	3	6.0005	3.56204	.628	-4.7080	16.7090
	5	-4.0000	3.56204	.920	-14.7085	6.7085
	6	-8.3320	3.56204	.236	-19.0405	2.3765
	24	-20.6660*	3.56204	.000	-31.3745	-9.9575
5	1	26.6670*	3.56204	.000	15.9585	37.3755
	2	17.0005*	3.56204	.000	6.2920	27.7090
	3	10.0005	3.56204	.084	-.7080	20.7090
	4	4.0000	3.56204	.920	-6.7085	14.7085
	6	-4.3320	3.56204	.886	-15.0405	6.3765
	24	-16.6660*	3.56204	.000	-27.3745	-5.9575
6	1	30.9990*	3.56204	.000	20.2905	41.7075
	2	21.3325*	3.56204	.000	10.6240	32.0410
	3	14.3325*	3.56204	.002	3.6240	25.0410
	4	8.3320	3.56204	.236	-2.3765	19.0405
	5	4.3320	3.56204	.886	-6.3765	15.0405
	24	-12.3340*	3.56204	.013	-23.0425	-1.6255
24	1	43.3330*	3.56204	.000	32.6245	54.0415
	2	33.6665*	3.56204	.000	22.9580	44.3750
	3	26.6665*	3.56204	.000	15.9580	37.3750
	4	20.6660*	3.56204	.000	9.9575	31.3745
	5	16.6660*	3.56204	.000	5.9575	27.3745
	6	12.3340*	3.56204	.013	1.6255	23.0425

Based on observed means.

The error term is Mean Square(Error) = 126.881.

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

insecticide_potention

Tukey HSD

hours	N	Subset				
		1	2	3	4	5
1	20	37.0005				
2	20	46.6670	46.6670			
3	20		53.6670	53.6670		
4	20			59.6675	59.6675	
5	20			63.6675	63.6675	
6	20				67.9995	
24	20					80.3335
Sig.		.105	.443	.084	.236	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 126.881.



Appendix 5

PEARSON CORRELATION TEST

Correlations

		insecticide_pot ention
concentration	Pearson Correlation	.783**
	Sig. (2-tailed)	.000
	N	112
hours	Pearson Correlation	.371**
	Sig. (2-tailed)	.000
	N	112

** . Correlation is significant at the 0.01 level (2-tailed).



Appendix 6

LINER REGRESSION TEST

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	hours, concentration ^a		. Enter

a. All requested variables entered.

b. Dependent Variable: insecticide_potention

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.867 ^a	.751	.747	18.39074

a. Predictors: (Constant), hours, concentration

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111412.046	2	55706.023	164.704	.000 ^a
	Residual	36865.897	109	338.219		
	Total	148277.943	111			

a. Predictors: (Constant), hours, concentration

b. Dependent Variable: insecticide_potention



Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9.486	3.619		-2.621	.010
	concentration	3.048	.186	.783	16.405	.000
	hours	1.837	.237	.371	7.765	.000

a. Dependent Variable: insecticide_potention



Appendix 7 Documentation



Extraction of Red Pepper (*Capsicum annuum*)



Extraction of Red Pepper (*Capsicum annuum*)



Extraction of Red Pepper (*Capsicum annuum*)



Red Pepper Extract



Exploration of extract concentrations to be used in the experiment



The three concentrations of extract used in the experiment prepared in the spraying bottle



Holes were made on the lid of the container to give enough oxygen supply to fire ants



Extract with different concentrations were sprayed into respective containers where 15 fire ants were placed in each



Positive control (Malathion 0.28%) and Negative control (Water)



Dead fire ants after treatment

