

Attachment 1

**Table 1**  
**Result from Preliminary Studies**

Time Hour	Number of Fire Ants which is found in the Sugar Food Source		
	Cucumber extract	Cucumber extract	Cucumber extract
	50%	60%	70%
1	0	0	0
2	1	0	0
3	2	0	0
4	2	0	0
5	2	1	1
6	2	2	2

**Data Analysis of the Experiment by using 60% 65% and 70% concentration  
of Cucumber Extract**

**Table 2  
Between-Subjects Factors**

		Value Label	N
concentrations	1	negative control	24
	2	65%	24
	3	70%	24
	4	75%	24
	5	positive control	24
hours	1		20
	2		20
	3		20
	4		20
	5		20
	6		20

**Descriptive Statistics**

**Table 3  
Dependent Variable: Repellency**

concentrations	hours	Mean	Std. Deviation	N
negative control	1	13.3300	.00000	4
	2	.0000	.00000	4
	3	.0000	.00000	4
	4	.0000	.00000	4
	5	.0000	.00000	4
	6	.0000	.00000	4
	Total	2.2217	5.07464	24
65%	1	1.0000E2	.00000	4

	2	1.0000E2	.00000	4
	3	1.0000E2	.00000	4
	4	93.3300	.00000	4
	5	90.0000	3.84515	4
	6	88.3325	6.38082	4
	Total	95.2771	5.72423	24
70%	1	1.0000E2	.00000	4
	2	1.0000E2	.00000	4
	3	1.0000E2	.00000	4
	4	94.9975	3.33500	4
	5	93.3300	.00000	4
	6	90.0000	3.84515	4
	Total	96.3879	4.38697	24
75%	1	1.0000E2	.00000	4
	2	1.0000E2	.00000	4
	3	1.0000E2	.00000	4
	4	1.0000E2	.00000	4
	5	93.3300	.00000	4
	6	86.6675	5.44195	4
	Total	96.6662	5.56030	24
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
	Total	1.0000E2	.00000	24
Total	1	82.6660	35.56862	20
	2	80.0000	41.03913	20
	3	80.0000	41.03913	20
	4	77.6655	39.95710	20
	5	75.3320	38.81811	20
	6	73.0000	37.92714	20
	Total	78.1106	38.41084	120

Appendix 2

Table 1

**HOMOGENEITY TEST**

**Levene's Test of Equality of Error Variances<sup>a</sup>**

Dependent Variable:repellency

F	df1	df2	Sig.
8.994	29	90	.070

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

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

hours

Table 2

**KOLMOGOROV SMIRNOV NORMALITY TEST**

**One-Sample Kolmogorov-Smirnov Test**

		repellency
N		120
Normal Parameters <sup>a</sup>	Mean	78.1106
	Std. Deviation	38.41084
Most Extreme Differences	Absolute	.379
	Positive	.284
	Negative	-.379
Kolmogorov-Smirnov Z		4.152
Asymp. Sig. (2-tailed)		.060
a. Test distribution is Normal.		



**Attachment 3**

**ONE WAY ANOVA TEST**

**Table 1**

**ANOVA 1<sup>st</sup> hour**

<b>ANOVA 1<sup>ST</sup> HOUR</b>					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29400.267	4	7350.067	551.255	.000
Within Groups	200.000	15	13.333		
Total	29600.267	19			

**Table 2**

**ANOVA 2<sup>nd</sup> hour**

<b>ANOVA 2<sup>ND</sup> HOUR</b>					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	28408.671	4	7102.168	399.397	.000
Within Groups	266.733	15	17.782		
Total	28675.404	19			

**Table 3**

**ANOVA 3<sup>rd</sup> hour**

<b>ANOVA 3<sup>RD</sup> HOUR</b>					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29968.278	4	7492.069	561.811	.000
Within Groups	200.033	15	13.336		
Total	30168.311	19			



**Table 4**  
**ANOVA 4<sup>th</sup> hour**

ANOVA 4 <sup>TH</sup> HOUR					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29400.267	4	7350.067	551.255	.000
Within Groups	200.000	15	13.333		
Total	29600.267	19			

**Table 5**  
**ANOVA 5<sup>th</sup> hour**

ANOVA 5 <sup>TH</sup> HOUR					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	27253.933	4	6813.483	146.045	.000
Within Groups	699.800	15	46.653		
Total	27953.733	19			

**Table 6**  
**ANOVA 6<sup>th</sup> hour**

ANOVA 6 <sup>TH</sup> HOUR					
repellency					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	28835.438	4	7208.859	249.614	.000
Within Groups	433.200	15	28.880		
Total	29268.638	19			

Attachment 4

**Table 1**  
**Post Hoc Tukey Test**  
**concentrations**

**Multiple Comparisons**

repellency

Tukey HSD

(I) concentrations	(J) concentrations	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
negative control	65%	-93.0554*	.55533	.000	-94.6014	-91.5094
	70%	-94.1662*	.55533	.000	-95.7122	-92.6203
	75%	-94.4446*	.55533	.000	-95.9906	-92.8986
	positive control	-97.7783*	.55533	.000	-99.3243	-96.2324
65%	negative control	93.0554*	.55533	.000	91.5094	94.6014
	70%	-1.1108	.55533	.274	-2.6568	.4351
	75%	-1.3892	.55533	.099	-2.9351	.1568
	positive control	-4.7229*	.55533	.000	-6.2689	-3.1769
70%	negative control	94.1662*	.55533	.000	92.6203	95.7122
	65%	1.1108	.55533	.274	-.4351	2.6568
	75%	-.2783	.55533	.987	-1.8243	1.2676
	positive control	-3.6121*	.55533	.000	-5.1581	-2.0661
75%	negative control	94.4446*	.55533	.000	92.8986	95.9906
	65%	1.3892	.55533	.099	-.1568	2.9351



	70%	.2783	.55533	.987	-1.2676	1.8243
	positive control	-3.3338*	.55533	.000	-4.8797	-1.7878
positive control	negative control	97.7783*	.55533	.000	96.2324	99.3243
	65%	4.7229*	.55533	.000	3.1769	6.2689
	70%	3.6121*	.55533	.000	2.0661	5.1581
	75%	3.3338*	.55533	.000	1.7878	4.8797

Based on observed means.

The error term is Mean Square(Error) = 3.701.

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

**Table 2**

**Homogeneous Subsets**

**repellency**

Tukey HSD

concentrations	N	Subset		
		1	2	3
negative control	24	2.2217		
65%	24		95.2771	
70%	24		96.3879	
75%	24		96.6662	
positive control	24			1.0000E2
Sig.		1.000	.099	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.701.





**Table 3**

hours

**Multiple Comparisons**

repellency

Tukey HSD

(I) hours	(J) hours	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	2.6660*	.60834	.000	.8945	4.4375
	3	2.6660*	.60834	.000	.8945	4.4375
	4	5.0005*	.60834	.000	3.2290	6.7720
	5	7.3340*	.60834	.000	5.5625	9.1055
	6	9.6660*	.60834	.000	7.8945	11.4375
2	1	-2.6660*	.60834	.000	-4.4375	-.8945
	3	.0000	.60834	1.000	-1.7715	1.7715
	4	2.3345*	.60834	.003	.5630	4.1060
	5	4.6680*	.60834	.000	2.8965	6.4395
	6	7.0000*	.60834	.000	5.2285	8.7715
3	1	-2.6660*	.60834	.000	-4.4375	-.8945
	2	.0000	.60834	1.000	-1.7715	1.7715
	4	2.3345*	.60834	.003	.5630	4.1060
	5	4.6680*	.60834	.000	2.8965	6.4395
	6	7.0000*	.60834	.000	5.2285	8.7715
4	1	-5.0005*	.60834	.000	-6.7720	-3.2290
	2	-2.3345*	.60834	.003	-4.1060	-.5630
	3	-2.3345*	.60834	.003	-4.1060	-.5630
	5	2.3335*	.60834	.003	.5620	4.1050
	6	4.6655*	.60834	.000	2.8940	6.4370
5	1	-7.3340*	.60834	.000	-9.1055	-5.5625
	2	-4.6680*	.60834	.000	-6.4395	-2.8965
	3	-4.6680*	.60834	.000	-6.4395	-2.8965



	4	-2.3335*	.60834	.003	-4.1050	-.5620
	6	2.3320*	.60834	.003	.5605	4.1035
6	1	-9.6660*	.60834	.000	-11.4375	-7.8945
	2	-7.0000*	.60834	.000	-8.7715	-5.2285
	3	-7.0000*	.60834	.000	-8.7715	-5.2285
	4	-4.6655*	.60834	.000	-6.4370	-2.8940
	5	-2.3320*	.60834	.003	-4.1035	-.5605

Based on observed means.

The error term is Mean Square(Error) = 3.701.

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

**Table 4**

**Homogeneous Subsets**

**repellency**

Tukey HSD

hours	N	Subset				
		1	2	3	4	5
6	20	73.0000				
5	20		75.3320			
4	20			77.6655		
2	20				80.0000	
3	20				80.0000	
1	20					82.6660
Sig.		1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 3.701.




Attachment 5

Table 1

PEARSONS CORRELATION TEST

Correlations

		repellency
concentrations	Pearson Correlation	.992**
	Sig. (2-tailed)	.000
	N	120
hours	Pearson Correlation	-.082
	Sig. (2-tailed)	.370
	N	120

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



Attachment 6

**Table 1**  
**LINIER REGRESSION TEST**

Variables Entered/Removed <sup>b</sup>			
Model	Variables Entered	Variables Removed	Method
1	Concentration, hours <sup>a</sup>		Enter

- a. All requested variables entered.
- b. Dependent Variable: repellency

**Table 2**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992 <sup>a</sup>	.983	.983	5.40843

- a. Predictors: (Constant), Concentration, hours

**Table 3**  
**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158476.994	2	79238.497	2.709E3	.000 <sup>a</sup>
	Residual	2720.355	93	29.251		
	Total	161197.349	95			

- a. Predictors: (Constant), Concentration, hours



**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158476.994	2	79238.497	2.709E3	.000 <sup>a</sup>
	Residual	2720.355	93	29.251		
	Total	161197.349	95			

b. Dependent Variable: repellency

**Table 4**  
**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.153	1.577		7.073	.000
	hours	-2.310	.323	-.096	-7.146	.000
	Concentration	1.325	.018	.987	73.258	.000

a. Dependent Variable: repellency

Attachment 7



Figure 1 Preparing of different concentrations of cucumber extract



Figure 2 The apparatus used in this experiment