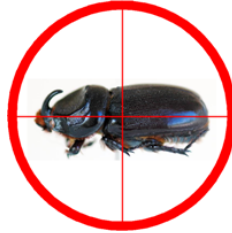


Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Octalactone (straight from bottle)

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:15:28  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120508a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 8, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Origin of beetles unknown.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through thrice (beetle 1 = beetle 6 = beetle 11).
- Dose presented was 2 microlitres.

## 2 Results

- Beetles responded (made a decision within 10 s) in 15 of 30 trials.  
(Response rate = 50 %)

- In 9 of the 15 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.6072; Two-tailed binomial test)
- In 6 of the 15 responses, the beetle went to the left.  
(Not significant; P-value = 0.6072; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 9, number of trials = 15, p-value = 0.6072 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3228698 0.8366357 sample estimates: probability of success 0.6

## 2.2 Test for Directional Bias

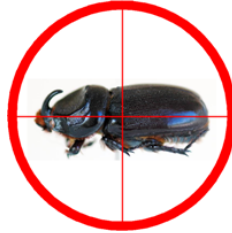
Exact binomial test

data: total.left and total.responses number of successes = 6, number of trials = 15, p-value = 0.6072 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1633643 0.6771302 sample estimates: probability of success 0.4

## 3 Raw Data

	l.response	r.response
1	-	l
2	-	r
3	-	r
4	-	l
5	-	l
6	-	r
7	-	r
8	-	r
9	-	r
10	-	l
11	-	r
12	-	r
13	-	l
14	-	r
15	-	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Oryctalure (1 percent?) in Mineral Oil

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:23:15  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120508b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 8, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Origin of beetles unknown.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through thrice (beetle 1 = beetle 6).
- Dose presented was 2 microlitres on filter paper on a pin.

## 2 Results

- Beetles responded (made a decision within 10 s) in 10 of 20 trials.  
(Response rate = 50 %)

- In 9 of the 10 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0215; Two-tailed binomial test)
- In 9 of the 10 responses, the beetle went to the left.  
(Significant; P-value = 0.0215; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 9, number of trials = 10, p-value = 0.02148 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5549839 0.9974714 sample estimates: probability of success 0.9

## 2.2 Test for Directional Bias

Exact binomial test

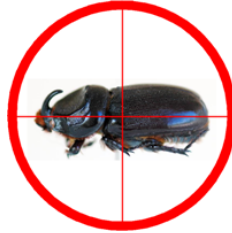
data: total.left and total.responses number of successes = 9, number of trials = 10, p-value = 0.02148 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5549839 0.9974714 sample estimates: probability of success 0.9

## 3 Raw Data

	l.response	r.response
1	l	-
2	l	-
3	l	-
4	l	-
5	l	-
6	l	-
7	l	-
8	l	-
9	l	-
10	r	-

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Compost sample uninfested by beetles.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:44:33  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120510a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Sample presented in aerated jar.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)

- In 12 of the 20 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.5034; Two-tailed binomial test)
- In 12 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.5034; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 12, number of trials = 20, p-value = 0.5034 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3605426 0.8088099 sample estimates: probability of success 0.6

## 2.2 Test for Directional Bias

Exact binomial test

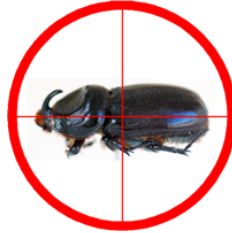
data: total.left and total.responses number of successes = 12, number of trials = 20, p-value = 0.5034 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3605426 0.8088099 sample estimates: probability of success 0.6

## 3 Raw Data

	l.response	r.response
1	l	r
2	l	l
3	r	l
4	r	l
5	l	l
6	l	r
7	l	r
8	r	r
9	l	r
10	l	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Compost sample infested by beetles.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:44:00  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120510b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Sample presented in full aerated jar.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)



- In 15 of the 20 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0414; Two-tailed binomial test)
- In 9 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.8238; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 15, number of trials = 20, p-value = 0.04139 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5089541 0.9134285 sample estimates: probability of success 0.75

## 2.2 Test for Directional Bias

Exact binomial test

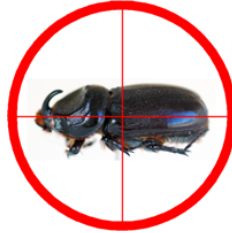
data: total.left and total.responses number of successes = 9, number of trials = 20, p-value = 0.8238 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2305779 0.6847219 sample estimates: probability of success 0.45

## 3 Raw Data

	l.response	r.response
1	l	l
2	l	r
3	r	l
4	l	r
5	l	r
6	l	r
7	l	r
8	l	r
9	r	r
10	r	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Pure larval frass.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:43:23  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120510c.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Sample presented in full aerated jar.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)
- In 11 of the 20 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.8238; Two-tailed binomial test)

- In 11 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.8238; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 11, number of trials = 20, p-value = 0.8238 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3152781 0.7694221 sample estimates: probability of success 0.55

## 2.2 Test for Directional Bias

Exact binomial test

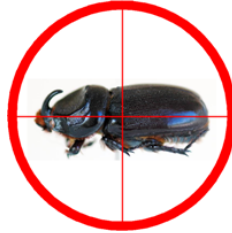
data: total.left and total.responses number of successes = 11, number of trials = 20, p-value = 0.8238 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3152781 0.7694221 sample estimates: probability of success 0.55

## 3 Raw Data

	l.response	r.response
1	l	r
2	l	r
3	l	r
4	r	r
5	r	r
6	l	l
7	l	l
8	r	l
9	l	l
10	r	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Coconut tree crown.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:42:17  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120510d.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Crown presented in aerated, sealed oven (turkey) bags.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)

- In 16 of the 20 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0118; Two-tailed binomial test)
- In 6 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.1153; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 16, number of trials = 20, p-value = 0.01182 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.563386 0.942666 sample estimates: probability of success 0.8

## 2.2 Test for Directional Bias

Exact binomial test

data: total.left and total.responses number of successes = 6, number of trials = 20, p-value = 0.1153 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1189316 0.5427892 sample estimates: probability of success 0.3

## 3 Raw Data

	l.response	r.response
1	r	r
2	r	r
3	l	r
4	l	r
5	l	r
6	l	r
7	l	r
8	r	r
9	l	r
10	r	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Coconut tree crown vs. beetle-infested compost.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 16:51:06  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120510e.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, May 10.
- Infested Compost Stimulus in right hand branch of olfactometer for first half of expt, coconut tree crown in left branch.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Crown presented in aerated, sealed oven (turkey) bags; Compost presented in full, aerated jar.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)

- In 5 of the 20 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0414; Two-tailed binomial test)
- In 11 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.8238; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 5, number of trials = 20, p-value = 0.04139 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.08657147 0.49104587 sample estimates: probability of success 0.25

## 2.2 Test for Directional Bias

Exact binomial test

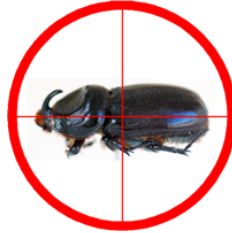
data: total.left and total.responses number of successes = 11, number of trials = 20, p-value = 0.8238 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3152781 0.7694221 sample estimates: probability of success 0.55

## 3 Raw Data

	l.response	r.response
1	r	l
2	r	l
3	l	r
4	r	l
5	l	l
6	r	r
7	r	l
8	r	l
9	l	l
10	r	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Body Butter Sample 1

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 15:56:06  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120511.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 11, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).

## 2 Results

- Beetles responded (made a decision within 10 s) in 18 of 20 trials.  
(Response rate = 90 %)
- In 5 of the 18 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.0963; Two-tailed binomial test)



- In 11 of the 18 responses, the beetle went to the left.  
(Not significant; P-value = 0.4807; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 5, number of trials = 18, p-value = 0.09625 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.09694921 0.53480197 sample estimates: probability of success 0.2777778

## 2.2 Test for Directional Bias

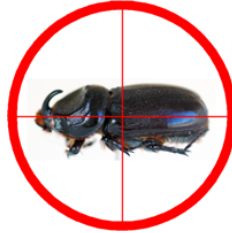
Exact binomial test

data: total.left and total.responses number of successes = 11, number of trials = 18, p-value = 0.4807 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3574512 0.8270141 sample estimates: probability of success 0.6111111

## 3 Raw Data

	l.response	r.response
1	-	r
2	l	l
3	r	l
4	r	l
5	-	l
6	l	l
7	l	r
8	r	l
9	r	l
10	r	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Coconut tree crown.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 17:03:11  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120511b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 10 and 11, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive male beetles field collected, received May 8.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Crown presented in aerated, sealed oven (turkey) bags.

## 2 Results

- Beetles responded (made a decision within 10 s) in 32 of 32 trials.  
(Response rate = 100 %)

- In 21 of the 32 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.1102; Two-tailed binomial test)
- In 15 of the 32 responses, the beetle went to the left.  
(Not significant; P-value = 0.8601; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 21, number of trials = 32, p-value = 0.1102 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.4680690 0.8142809 sample estimates: probability of success 0.65625

## 2.2 Test for Directional Bias

Exact binomial test

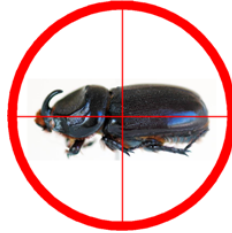
data: total.left and total.responses number of successes = 15, number of trials = 32, p-value = 0.8601 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2909398 0.6525632 sample estimates: probability of success 0.46875

## 3 Raw Data

	l.response	r.response
1	r	r
2	r	r
3	r	r
4	l	l
5	l	r
6	l	r
7	l	l
8	r	r
9	r	r
10	l	r
11	l	l
12	l	r
13	l	r
14	l	r
15	l	l
16	r	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Coconut tree crown.

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-11 17:06:17  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120511c.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 11, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, received May 10.
- Stimulus in left hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Crown presented in aerated, sealed oven (turkey) bags.

## 2 Results

- Beetles responded (made a decision within 10 s) in 20 of 20 trials.  
(Response rate = 100 %)

- In 15 of the 20 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0414; Two-tailed binomial test)
- In 9 of the 20 responses, the beetle went to the left.  
(Not significant; P-value = 0.8238; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 15, number of trials = 20, p-value = 0.04139 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5089541 0.9134285 sample estimates: probability of success 0.75

## 2.2 Test for Directional Bias

Exact binomial test

data: total.left and total.responses number of successes = 9, number of trials = 20, p-value = 0.8238 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2305779 0.6847219 sample estimates: probability of success 0.45

## 3 Raw Data

	l.response	r.response
1	l	l
2	r	r
3	l	l
4	l	r
5	r	r
6	r	r
7	l	r
8	l	r
9	l	r
10	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Old Stump

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 13:39:12  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120514a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, received May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Stump presented in aerated, sealed oven (turkey) bags.

## 2 Results

- Beetles responded (made a decision within 10 s) in 19 of 20 trials.  
(Response rate = 95 %)
- In 14 of the 19 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.0636; Two-tailed binomial test)

- In 4 of the 19 responses, the beetle went to the left.  
(Significant; P-value = 0.0192; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 14, number of trials = 19, p-value = 0.06357 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.4879707 0.9085342 sample estimates: probability of success 0.7368421

## 2.2 Test for Directional Bias

Exact binomial test

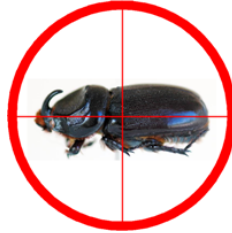
data: total.left and total.responses number of successes = 4, number of trials = 19, p-value = 0.01921 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.06052454 0.45565308 sample estimates: probability of success 0.2105263

## 3 Raw Data

	l.response	r.response
1	l	r
2	r	r
3	r	r
4	l	r
5	l	r
6	r	r
7	r	r
8	-	r
9	l	r
10	r	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.





# Olfactometer Bioassay: Body Butter Number 3

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 13:48:21  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120514b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, received May 10.
- Stimulus in left hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Small dollop of body butter presented on vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 16 of 20 trials.  
(Response rate = 80 %)

- In 7 of the 16 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.8036; Two-tailed binomial test)
- In 9 of the 16 responses, the beetle went to the left.  
(Not significant; P-value = 0.8036; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 7, number of trials = 16, p-value = 0.8036 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1975341 0.7012231 sample estimates: probability of success 0.4375

## 2.2 Test for Directional Bias

Exact binomial test

data: total.left and total.responses number of successes = 9, number of trials = 16, p-value = 0.8036 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2987769 0.8024659 sample estimates: probability of success 0.5625

## 3 Raw Data

	l.response	r.response
1	l	r
2	r	l
3	l	-
4	l	-
5	r	l
6	r	l
7	r	r
8	r	-
9	l	-
10	l	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: coconut-scented soap from bathroom of UOG

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 13:52:52  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120514c.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive female beetles from PIF, received May 10.
- Stimulus in right hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Small dollop of soap presented on vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 12 of 20 trials.  
(Response rate = 60 %)

- In 9 of the 12 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.146; Two-tailed binomial test)
- In 4 of the 12 responses, the beetle went to the left.  
(Not significant; P-value = 0.3877; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 9, number of trials = 12, p-value = 0.146 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.4281415 0.9451394 sample estimates: probability of success 0.75

## 2.2 Test for Directional Bias

Exact binomial test

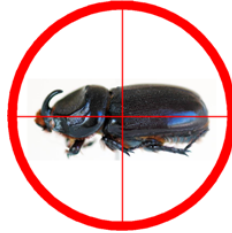
data: total.left and total.responses number of successes = 4, number of trials = 12, p-value = 0.3877 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.09924609 0.65112449 sample estimates: probability of success 0.3333333

## 3 Raw Data

	l.response	r.response
1	-	r
2	l	r
3	r	r
4	l	l
5	-	r
6	-	-
7	-	l
8	-	r
9	-	r
10	-	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Old Stump

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 13:57:06  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120514d.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus in left hand branch of olfactometer for first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Old stump presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 36 of 40 trials.  
(Response rate = 90 %)
- In 31 of the 36 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0; Two-tailed binomial test)

- In 14 of the 36 responses, the beetle went to the left.  
(Not significant; P-value = 0.243; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 31, number of trials = 36, p-value = 1.291e-05 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.7050251 0.9533223 sample estimates: probability of success 0.8611111

## 2.2 Test for Directional Bias

Exact binomial test

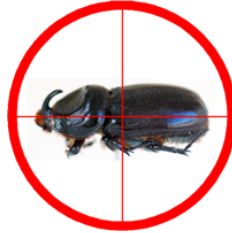
data: total.left and total.responses number of successes = 14, number of trials = 36, p-value = 0.243 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2314244 0.5653620 sample estimates: probability of success 0.3888889

## 3 Raw Data

	l.response	r.response
1	r	r
2	r	r
3	l	r
4	-	-
5	l	r
6	l	r
7	l	r
8	r	r
9	r	r
10	l	r
11	l	r
12	r	r
13	l	r
14	l	-
15	l	r
16	l	r
17	l	r
18	l	r
19	l	r
20	l	-

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Pomegranate and fig body butter (number 4)

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:01:18  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120515a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only on left hand branch of olfactometer.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- Small dollop of body butter presented on vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 4 of 20 trials.  
(Response rate = 20 %)



- In 1 of the 4 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.625; Two-tailed binomial test)
- In 1 of the 4 responses, the beetle went to the left.  
(Not significant; P-value = 0.625; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 1, number of trials = 4, p-value = 0.625 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.006309463 0.805879550 sample estimates: probability of success 0.25

## 2.2 Test for Directional Bias

Exact binomial test

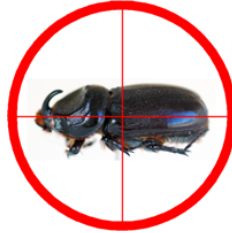
data: total.left and total.responses number of successes = 1, number of trials = 4, p-value = 0.625 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.006309463 0.805879550 sample estimates: probability of success 0.25

## 3 Raw Data

	l.response	r.response
1	-	-
2	-	-
3	r	-
4	r	-
5	r	-
6	-	-
7	-	-
8	l	-
9	-	-
10	-	-

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Heartwood of CRB Infested Coconut Tree

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:32:38  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120515b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 14, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- Heartwood presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 17 of 20 trials.  
(Response rate = 85 %)

- In 8 of the 17 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 1; Two-tailed binomial test)
- In 10 of the 17 responses, the beetle went to the left.  
(Not significant; P-value = 0.6291; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 8, number of trials = 17, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2298327 0.7218817 sample estimates: probability of success 0.4705882

## 2.2 Test for Directional Bias

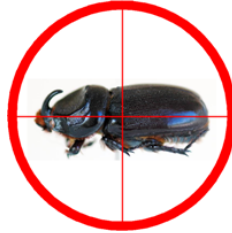
Exact binomial test

data: total.left and total.responses number of successes = 10, number of trials = 17, p-value = 0.6291 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3292472 0.8155630 sample estimates: probability of success 0.5882353

## 3 Raw Data

	l.response	r.response
1	-	r
2	l	l
3	l	r
4	r	l
5	l	-
6	r	l
7	l	l
8	r	-
9	l	r
10	r	l

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Oryctalure 1 Percent?

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:10:07  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120515c.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 15, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in left hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- 3 microliters presented on small triangle of filter paper pinned to a vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 3 of 20 trials.  
(Response rate = 15 %)

- In 3 of the 3 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.25; Two-tailed binomial test)
- In 3 of the 3 responses, the beetle went to the left.  
(Not significant; P-value = 0.25; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 3, number of trials = 3, p-value = 0.25 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2924018 1.0000000 sample estimates: probability of success 1

## 2.2 Test for Directional Bias

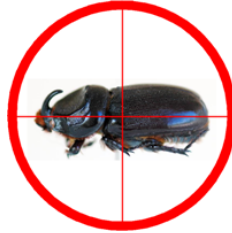
Exact binomial test

data: total.left and total.responses number of successes = 3, number of trials = 3, p-value = 0.25 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2924018 1.0000000 sample estimates: probability of success 1

## 3 Raw Data

	l.response	r.response
1	-	-
2	-	-
3	-	-
4	l	-
5	l	-
6	-	-
7	-	-
8	-	-
9	l	-
10	-	-

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Oryctalure 1 Percent?

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:12:26  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120517a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 17, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- 6 microliters presented on small triangle of filter paper pinned to a vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 19 of 20 trials.  
(Response rate = 95 %)

- In 15 of the 19 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0192; Two-tailed binomial test)
- In 12 of the 19 responses, the beetle went to the left.  
(Not significant; P-value = 0.3593; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 15, number of trials = 19, p-value = 0.01921 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5443469 0.9394755 sample estimates: probability of success 0.7894737

## 2.2 Test for Directional Bias

Exact binomial test

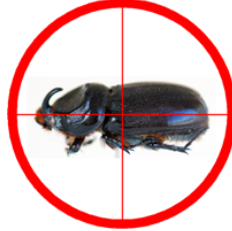
data: total.left and total.responses number of successes = 12, number of trials = 19, p-value = 0.3593 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3835779 0.8371141 sample estimates: probability of success 0.6315789

## 3 Raw Data

	l.response	r.response
1	l	l
2	l	r
3	r	l
4	l	l
5	l	-
6	l	r
7	l	r
8	l	r
9	l	r
10	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.

Guam Coconut Rhinoceros Beetle Eradication Project



# Olfactometer Bioassay: Heartwood of CRB Infested Coconut Tree

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:30:40  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120517b.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 17, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, male beetles were run through twice (beetle 1 = beetle 6).
- Heartwood presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 6 of 20 trials.  
(Response rate = 30 %)



- In 3 of the 6 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 1; Two-tailed binomial test)
- In 3 of the 6 responses, the beetle went to the left.  
(Not significant; P-value = 1; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 3, number of trials = 6, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1181172 0.8818828 sample estimates: probability of success 0.5

## 2.2 Test for Directional Bias

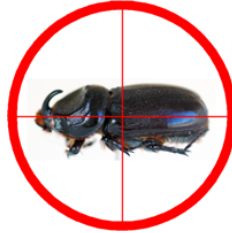
Exact binomial test

data: total.left and total.responses number of successes = 3, number of trials = 6, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1181172 0.8818828 sample estimates: probability of success 0.5

## 3 Raw Data

	l.response	r.response
1	-	-
2	-	-
3	-	r
4	-	l
5	-	-
6	-	r
7	-	-
8	-	l
9	-	l
10	-	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Illuminescence

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:19:02  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120517c.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 17, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- Illuminescence presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 35 of 40 trials.  
(Response rate = 88 %)
- In 25 of the 35 responses, the beetle went towards the stimulus.  
(Significant; P-value = 0.0167; Two-tailed binomial test)

- In 17 of the 35 responses, the beetle went to the left.  
(Not significant; P-value = 1; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 25, number of trials = 35, p-value = 0.01667 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.5369554 0.8536453 sample estimates: probability of success 0.7142857

## 2.2 Test for Directional Bias

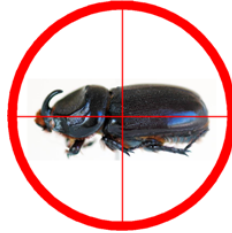
Exact binomial test

data: total.left and total.responses number of successes = 17, number of trials = 35, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3138285 0.6601086 sample estimates: probability of success 0.4857143

## 3 Raw Data

	l.response	r.response
1	r	r
2	l	r
3	l	r
4	l	r
5	l	l
6	l	l
7	l	r
8	l	l
9	r	r
10	l	l
11	-	r
12	r	l
13	l	r
14	r	-
15	r	r
16	l	r
17	-	-
18	-	r
19	l	r
20	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Beetle galleries in crown

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:23:08  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120517d.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 17, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 14.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, beetles were run through twice (beetle 1 = beetle 6).
- Galleries presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 14 of 20 trials.  
(Response rate = 70 %)

- In 9 of the 14 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.424; Two-tailed binomial test)
- In 5 of the 14 responses, the beetle went to the left.  
(Not significant; P-value = 0.424; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 9, number of trials = 14, p-value = 0.424 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3513801 0.8724016 sample estimates: probability of success 0.6428571

## 2.2 Test for Directional Bias

Exact binomial test

data: total.left and total.responses number of successes = 5, number of trials = 14, p-value = 0.424 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.1275984 0.6486199 sample estimates: probability of success 0.3571429

## 3 Raw Data

	l.response	r.response
1	l	r
2	-	r
3	r	-
4	-	l
5	r	r
6	r	r
7	-	l
8	l	-
9	-	r
10	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.



# Olfactometer Bioassay: Blooming Influorescence

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:25:33  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120518a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 18, 2012.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 18.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- Influorescence presented in aerated, sealed oven (turkey) bag.

## 2 Results

- Beetles responded (made a decision within 10 s) in 17 of 20 trials.  
(Response rate = 85 %)

- In 11 of the 17 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.3323; Two-tailed binomial test)
- In 9 of the 17 responses, the beetle went to the left.  
(Not significant; P-value = 1; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 11, number of trials = 17, p-value = 0.3323 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.3832837 0.8579025 sample estimates: probability of success 0.6470588

## 2.2 Test for Directional Bias

Exact binomial test

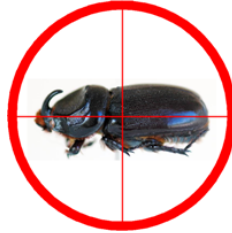
data: total.left and total.responses number of successes = 9, number of trials = 17, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2781183 0.7701673 sample estimates: probability of success 0.5294118

## 3 Raw Data

	l.response	r.response
1	-	r
2	r	r
3	l	l
4	l	r
5	l	l
6	-	l
7	r	r
8	l	l
9	-	r
10	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.





# Olfactometer Bioassay: Oryctalure 1 Percent?

Prepared by  
Aubrey Moore  
University of Guam Cooperative Extension Service

Generated 2012-05-21 14:28:16  
Path: C:/Documents and Settings/Administrator/My Documents/CRB Olfactometer  
Data file: data20120519a.txt  
R script: doit.r  
Brew file: doit.brew

## 1 Notes

- Date and Time: Performed on May 19, 2012 at 8PM.
- Lighting: Performed in shaded outdoor hallway.
- Olfactometer: Sides of glass Y masked with blue tape.
- Insects: Naive beetles from PIF, received May 18.
- Stimulus only in right hand branch of olfactometer in first half of expt.
- In each trial, female beetles were run through twice (beetle 1 = beetle 6).
- 6 microliters of Oryctalure presented on small triangle of filter paper pinned to vial cap.

## 2 Results

- Beetles responded (made a decision within 10 s) in 10 of 10 trials.  
(Response rate = 100 %)

- In 6 of the 10 responses, the beetle went towards the stimulus.  
(Not significant; P-value = 0.7539; Two-tailed binomial test)
- In 5 of the 10 responses, the beetle went to the left.  
(Not significant; P-value = 1; Two-tailed binomial test)

## 2.1 Test for Attractiveness

Exact binomial test

data: total.attracted and total.responses number of successes = 6, number of trials = 10, p-value = 0.7539 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.2623781 0.8784477 sample estimates: probability of success 0.6

## 2.2 Test for Directional Bias

Exact binomial test

data: total.left and total.responses number of successes = 5, number of trials = 10, p-value = 1 alternative hypothesis: true probability of success is not equal to 0.5 95 percent confidence interval: 0.187086 0.812914 sample estimates: probability of success 0.5

## 3 Raw Data

	l.response	r.response
1	r	r
2	l	l
3	r	r
4	l	l
5	l	r

Table 1: Raw data. l.response = response when stimulus is placed in left branch of the Y tube; r.response = response when stimulus is placed in right branch; r = beetle chose left branch; l = beetle chose right branch; - = beetle failed to make a decision within 10 s.