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Mate Selection in House Crickets

Pre-Lab:

Question 1. Do you anticipate the female will have a mate preference for the resident or intruder cricket? Why? (3 pts)

Question 2. Do you anticipate the female will have a mate preference for the larger or smaller cricket? Why? (3 pts)

Data Collection:

Treatment 1: Large Owner, Small Intruder. Sum the total number of interactions. (5pts)

| | Large Owner | | Small Intruder | | Female | |
|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Dominant Behaviors | # Directed at Female | # Directed at S Male | # Directed at Female | # Directed at L Male | # Directed at L Male | # Directed at S Male |
| Antenna Tap | | | | | | |
| Body Raise | | | | | | |
| Leg Kick | | | | | | |
| Head Butt | | | | | | |
| Chase | | | | | | |
| Shudder | | | | | | |

| | | | | | | |
|-----------------|-----|-----|-----|-----|--|--|
| Sing | | | | | | |
| Crawl-over | | | | | | |
| Mount | N/A | N/A | N/A | N/A | | |
| Total #s | | | | | | |
| Summed | | | | | | |

Treatment 2: Small Owner, Large Intruder. Sum the total number of interactions. (5 pts)

| | Small Owner | | Large Intruder | | Female | |
|-----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Behavior | # Directed at Female | # Directed at L Male | # Directed at Female | # Directed at S Male | # Directed at S Male | # Directed at L Male |
| Antenna Tap | | | | | | |
| Body Raise | | | | | | |
| Leg Kick | | | | | | |
| Head Butt | | | | | | |
| Chase | | | | | | |
| Shudder | | | | | | |
| Sing | | | | | | |
| Crawl-over | | | | | | |
| Mount | N/A | N/A | N/A | N/A | | |
| Total #s | | | | | | |
| Summed | | | | | | |

Question 3. Were there any cases where small cricket demonstrated a greater # of dominant behaviors over large crickets? Was this more common when an asymmetry of value existed? (3 pts)

Treatment 3: Large Intruder, small intruder. Sum the total number of interactions. (5pts)

| | Large Intruder | | Small Intruder | | Female | |
|-----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Behavior | # Directed at Female | # Directed at S Male | # Directed at Female | # Directed at L Male | # Directed at S Male | # Directed at L Male |
| Antenna Tap | | | | | | |
| Body Raise | | | | | | |
| Leg Kick | | | | | | |
| Head Butt | | | | | | |
| Chase | | | | | | |
| Shudder | | | | | | |
| Sing | | | | | | |
| Crawl-over | | | | | | |
| Mount | N/A | N/A | N/A | N/A | | |
| Total #s | | | | | | |
| Summed | | | | | | |

Data Analysis:

In prior years, we have been able to perform each of these tests in groups, resulting in a dataset with a greater number of total interactions. Using the data below from past years, answer the following questions:

| | | # Dominant Interactions by Female |
|-----------------------------|-----------------------|--|
| Treatments 1 & 2 | Owner | 141 |
| | Intruder | 132 |
| Treatment 3 | Small Intruder | 42 |
| | Large Intruder | 156 |

Question 4. Is a female cricket's mate preference (greater # of dominant interactions) influenced by the male's prior investment in a territory? Show your work. (10pts)

Statistical test:

One or two-tailed? Why?

H₀:

H_A:

Work:

Conclusion:

Question 5. Was this the result you expected? Why or why not? (3 pts)

Question 6. In a neutral territory, does the size of the male cricket influence the mate preference (greater number of dominant interactions) of the female cricket? Show your work. (10pts)

Statistical test:

One or two-tailed? Why?

H0:

HA:

Work:

Conclusion:

Question 7. Was this the result you expected? Why or why not? (3 pts)



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