***C. lacinia* Mating Experiments Metadata**

**Maggie Vincent,** [**mvinc33@lsu.edu**](mailto:mvinc33@lsu.edu)

**8 February 2024**

This is a metadata file written by Maggie Vincent and concerns the *Chlosyne lacinia* mating experiments that took place between April and September 2023 while at Louisiana State University.

*Experimental design*

The experiments were designed by Maggie Vincent, Ana Salgado, and Luis Santiago-Rosario, with input from Kyle Harms. Maggie Vincent and Ana Salgado performed the experiment.

*Specimen collection*

Luis and Maggie collected Colony 1 caterpillars (Table 1) in southern Texas between 16 and 18 April 2023.

Ana and Maggie collected Colony 2 caterpillars (Table 2) in southern Texas between 16 and 17 June 2023.

**Table 1.** The coordinates of where each *C. lacinia* population (1-8) was collected in southwestern Texas. We obtained coordinates from iNaturalist. The populations made up “Colony 1” and were used in the *choice* mating trials.

|  |  |  |
| --- | --- | --- |
| **Population Number** | **Latitude (° North)** | **Longitude (° West)** |
| 1 | 28.66565 | 99.19156 |
| 2 | 28.493 | 99.817 |
| 3 | 28.493 | 99.817 |
| 4 | 28.124 | 99.589 |
| 5 | 27.877 | 99.472 |
| 6 | 27.876 | 99.472 |
| 7 | 27.877 | 99.472 |
| 8 | 26.316 | 98.663 |

**Table 2.** The coordinates of where each *C. lacinia* population (1-12) was collected in southwestern Texas. We obtained coordinates from iNaturalist. The populations comprised “Colony 2” and were used in the *no choice* mating trials.

|  |  |  |
| --- | --- | --- |
| **Population Number** | **Latitude (° North)** | **Longitude (° West)** |
| 1 | 29.5 | 98.191 |
| 2 | 29.5 | 98.191 |
| 3 | 29.328 | 98.257 |
| 4 | 29.328 | 98.257 |
| 5 | 29.265 | 98.699 |
| 6 | 29.265 | 98.699 |
| 7 | 28.902 | 99.115 |
| 8 | 28.902 | 99.115 |
| 9 | 28.707 | 99.158 |
| 10 | 28.786 | 98.965 |
| 11 | 28.786 | 98.965 |
| 12 | 28.887 | 98.656 |

*Choice* experiments took place between 8 am and 12 pm between the dates of 7 and 17 June 2023. *No choice* experiments took place between 8 am and 12 pm between the dates of 17 and 29 August 2023.

If no copulation had started at the 90-minute mark, the trial was stopped (female removed) and marked as NMO for “no mating occurred” in the datasheet.

*Data collection organization*

**Table 3.** Variable names and explanation for all variables collected in the choice trials. File is called “2023\_choice\_trials.csv”.

|  |  |
| --- | --- |
| **Variable name in datasheet** | **Variable explanation** |
| trial\_number | Trial number was sequential |
| date | Date the trial took place |
| family | The lineage ID for each individual so we avoided inbreeding. |
| female | ID of the female in the trial with either an H for high sodium or N for low sodium |
| female\_sodium | Larval sodium treatment of the female |
| mating\_male | ID of the male that copulated with the female |
| mating\_male\_treatment | Larval sodium treatment of the male that copulated with the female |
| non-mating\_male | ID of the male that did not copulate with the female |
| non-mating\_male\_treatment | Larval sodium treatment of the male that did not copulate with the female |
| start\_time | The starting time on the timer when the female was put in the trial cage |
| mating\_begins | The time on the timer a male and female began copulating |
| mating\_ends | The time on the timer a male and female stopped copulating |
| time\_before\_copulation | The length of time before copulation started. |
| copulation\_duration | The length of time a male and female copulated. |
| duration\_rounded | “copulation\_duration” rounded to the nearest half minute |
| duration\_integer | “copulation\_duration” rounded to the nearest whole number |

**Table 4.** Variable names with explanations for all variables collected in the no choice trials. The file is called “2023\_no\_choice\_trial\_data”.

|  |  |
| --- | --- |
| **Variable name in datasheet** | **Variable explanation** |
| date |  |
| female | ID of the female in the trial with either an H for high sodium or N for low sodium |
| male | ID of the male in the trial with either an H for high sodium or N for low sodium |
| female\_sodium | Low or high |
| male\_sodium | Low or high |
| cross | The lineage cross for each individual to avoid inbreeding. |
| start\_time | Time both individuals were together in minutes and seconds |
| before\_rounded | Time before copulation rounded to the nearest whole minute |
| copulation\_end\_time | Time copulation ended in minutes and seconds |
| copulation\_length | Duration of copulation in minutes and seconds |
| length\_rounded | Duration of copulation rounded to the nearest minute |
| abd\_bends\_in\_the\_first\_10\_minutes | The number of times a male bent his abdomen towards the female in the first ten minutes of the trial |
| copulation\_(y/n) | Y means copulation occurred, N means copulation did not occur. |
| oviposition\_1\_date | The date clutch 1 was laid |
| O1\_size | The length and width in mm of clutch 1 |
| O1\_hatch\_date | The date clutch 1 hatched |
| O1\_hatch\_number | The number of individuals in the first clutch |