Metadata and description of: *Data from: “Evolution of life history and dispersal traits during the range expansion of a biological control agent”*

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**Datafile 1: flightTrials\_AgDataCommons.xlsx**

*Description of dataset:*

Data on *D. carinulata* individuals collected from across its range that underwent flight trials in a common garden in 2018. Full description of insect collections, experimental design, flight mill design, and analysis is in “Evolution of life history and dispersal traits during the range expansion of a biological control agent”. The four flight parameters (num\_flights, distance, duration, average\_speed, and flew) were calculated from raw data collected from sensors on the flight mill with the Python program “beetleflights\_2019-1-19”. The Python program can be found in Supporting Information to the paper.

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| **Column** | **Description** |
| beetle\_ID | unique ID number of an individual beetle. Population\_### |
| weight | live weight of individual beetles (mg), measured on the day of the flight trial for that beetle |
| shipment | 1 or 2. Shipment of 3 populations (sept)=1, 8 populations (oct)=2 |
| container | container number, nested within population |
| mill\_bay | north or south bay of flight mills |
| mill\_row | row (top, middle, bottom) of flight mill in the actual set up |
| flight\_temp | average temp of the mill\_row in mill\_bay during the flight\_run on a particular trial\_date |
| flight\_temp\_rounded | flight temp rounded to 2 decimal places because original temperature data only had two decimal places |
| population | population of origin of a beetle |
| core\_edge | whether population is from the core or edge of the species range. Lo, Hu, Pu, De=core; Lc, Lj, Wi, Bl=edge |
| trial\_date | date of flight trial (during the year 2018) |
| mate\_status | mated=beetle had mated at least once prior to flight trial; unmated=beetles had not mated before flight trial |
| density | rearing density of an individual. High=5 beetles in container, low=1 beetle/container |
| eclosion | date on which beetle was removed from sand container as an adult |
| age | age in days from eclosion to flight trial date |
| flight\_run | round of flight trials on a particular day. 1 round=flights on all 24 mills |
| mill\_ID | ID number of the mill. From 0 to 23 |
| start\_time | time of day at the start of flight trial |
| end\_time | time of day at the end of flight trial |
| num\_flights | number of flights recorded by sensors during the 1 hour trial |
| distance | meters flown during 1 hr trial |
| duration | seconds flown during 1 hr trial |
| average\_speed | distance/duration |
| flew | yes=had at least 1 flight during trial; no=0 flights during trial |

**Datafile 2: eggCount\_AgDataCommons.xlsx**

*Description of dataset:*

Reproductive data from common garden experiment on *D. carinulata* individuals collected from across its range in 2018. Full description of insect collections, experimental design, and analysis is in “Evolution of life history and dispersal traits during the range expansion of a biological control agent”.

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| **Column** | **Description** |
| beetle\_ID | unique ID number of an individual beetle. Population\_### |
| eggs | total number of eggs counted on the first day of reproduction |
| age\_first | age in days at first oviposition |
| egg\_date | date of first oviposition |
| shipment | 1 or 2. Shipment of 3 populations (sept)=1, 8 populations (oct)=2 |
| population | population of origin of each beetle |
| core\_edge | whether population is from the core or edge of the range. Lo, Hu, Pu, De=core; Lc, Lj, Wi, Bl=edge |
| weight | live weight of individual beetles (mg), measured within 24 hours of eclosion |
| weight\_date | date of weight measurement |
| sex | f=female |
| eclosion | date of eclosion |

**Datafile 3: millFriction\_AgDataCommons.xlsx**

*Description of dataset:*

Data from a test of friction on each individual flight mill used in the dispersal study. Full description of experimental design, flight mill design, and analysis is in “Evolution of life history and dispersal traits during the range expansion of a biological control agent”, Supporting Information.

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| **Column** | **Description** |
| mill\_ID | Individual identifier for each flight mill |
| date | Date of friction test. |
| rep | Replicate of friction test, nested within date and mill |
| start1 | Time stamp from the start of the first lap |
| end1 | Time stamp from the end of the first lap |
| start2 | Time stamp from the start of the second lap |
| end 2 | Time stamp from the end of the second lap |
| lap1 | Elapsed time for first lap, in seconds |
| lap2 | Elapsed time for second lap, in seconds |
| ratio | lap1/lap2. This ratio used in analyses of beetle flights, to account for mill friction |