

Data on how honeybee host brood traits influence Varroa destructor reproduction

SND-ID: 2023-79-1. **Version:** 1. **DOI:** <https://doi.org/10.5878/znc2-9b12>

Download data

Scaramella_et_al_2023_Bar_Graph_Data.tsv (371 bytes)

Scaramella_et_al_2023_Data.tsv (3.07 KB)

Scaramella_et_al_2023_Stacked_Bar_Graph_Data.tsv (3.6 KB)

Associated documentation

Rplots.pdf (6.78 KB)

Scaramella_et_al_2023_Analysis_Code_log.txt (7.52 KB)

Scaramella_et_al_2023_Analysis_Code.R (8.2 KB)

Scaramella_et_al_2023_Bar_Graph_Data_Read_Me.txt (3.64 KB)

Scaramella_et_al_2023_Data_Read_Me.txt (4.86 KB)

Scaramella_et_al_2023_Stacked_Bar_Graph_Data_Read_Me.txt (3.85 KB)

sessionInfo.txt (2.82 KB)

Download all files

2023-79-1-1.zip (~44.69 KB)

Citation

Scaramella, N., Burke, A., Oddie, M., & Locke, B. (2023) Data on how honeybee host brood traits influence Varroa destructor reproduction (Version 1) [Data set]. Swedish University of Agricultural Sciences. Available at: <https://doi.org/10.5878/znc2-9b12>

Creator/Principal investigator(s)

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Principal's reference number

SLU.ekol.2023.4.4.IÄ-11

Description

The data set was collected in Uppsala Sweden between 2019 and 2021. Hives were established using varroa resistant queens from Oslo, Norway (n = 3), Gotland Sweden, (n = 5), and Avignon, France (n = 4), with a varroa susceptible population from Uppsala, Sweden (n = 5) as control. All hives were located at the SLU Lövsta research station (GPS Coordinates: 59° 50' 2.544"N, 17° 48' 47.447"E).

Varroa destructor mite reproductive success was measured on frames with adult honeybee workers exposed to, and excluded from access to honeybee larvae. Excluders were added directly after brood capping, and frames were dissected nine days later. Cell caps were removed using a scalpel with the pupae and mite families carefully removed from the cell using forceps and a fine paint brush. Mite reproductive success calculated by counting successful reproduction attempts, which was defined as a mite that successfully produced one male, and at least one female offspring. If a mite did not meet this requirement, it was considered a failed reproduction attempt and the reason for failure was documented. All data was analyzed in R version 4.0.1 using R Studio 1.3.959. A linear mixed-effect model was used with mite reproductive success as the response variable, population origin and excluder treatment as independent variables, with colony and year as random effect variables to compare treatments within each population as well as fecundity. Least-square means of the model were used to compare treatments between individual populations.

Scaramella_et_al_2023_Data.tsv - Data set consists of 34 rows and 21 columns. Colony demographics, and designated treatment are listed. All data collected are count data and are explained in more detail in read me file.

R script used in analysis is attached. It is split into two sections, with the first being used for statistical analysis, and the second used for plot creations used in the paper. Sections defined by title SECTION 1 - ANALYSIS and SECTION 2 - PLOTS

The output Scaramella_et_al_2023_Analysis_Code_log.txt and plot file Rplots.pdf can, provided that the script is in the same directory as the data files and needed R packages are installed (see sessionInfo.txt), be reproduced by running:

```
Rscript Scaramella_et_al_2023_Analysis_Code.R > \  
Scaramella_et_al_2023_Analysis_Code_log.txt
```

Scaramella_et_al_2023_Bar_Graph_Data.tsv - Data set consisting of 8 rows & 5 columns. Colony demographics, and designated treatment are listed. All data generated from the count data in Scaramella_et_al_2023_Data.tsv and are explained in more detail in read me file.

Scaramella_et_al_2023_Stacked_Bar_Graph_Data.tsv - Data set consisting of 102 rows & 8 columns. Colony demographics, and designated treatment are listed. All data is Scaramella_et_al_2023_Data.tsv restructured to include reason failed as a column. The data is explained in more detail in read me file.

Data contains personal data

No

Language

[English](#)

Time period(s) investigated

2019-06 - 2021-09

Data format / data structure

[Numeric](#)

[Text](#)

Species and taxons

[Apis mellifera](#)

[Varroa destructor](#)

[Varroa destructor anderson & truelove, 2000](#)

[Apis mellifera linnaeus, 1758](#)

Data collection 1

- Mode of collection: Field/Intervention experiment
- Time period(s) for data collection: 2019-06 - 2021-10
- Data collector: Swedish University of Agricultural Sciences

Responsible department/unit

Department of Ecology

Contributor(s)

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Funding 1

- Funding agency: Formas
- Funding agency's reference number: 2016-00481
- Project name on the application: Future Research Leaders

Funding 2

- Funding agency: European Research Council
- Funding agency's reference number: 949223
- Project name on the application: ERC Starting Grant

Research area

[Zoology](#) (Standard för svensk indelning av forskningsämnen 2011)

[Ecology](#) (Standard för svensk indelning av forskningsämnen 2011)

[Evolutionary biology](#) (Standard för svensk indelning av forskningsämnen 2011)

Keywords

[Natural selection](#), [Honeybees](#), [Suppressed mite reproduction](#), [Varroa resistance](#)

Publications

Nicholas Scaramella et al. Host brood traits, independent of adult behaviours, reduce Varroa destructor mite reproduction in resistant honeybee populations. International Journal for Parasitology. Accepted

DOI: <https://doi.org/10.1016/j.ijpara.2023.04.001>

If you have published anything based on these data, [please notify us](#) with a reference to your publication(s). If you are responsible for the catalogue entry, you can update the metadata/data description in DORIS.

Accessibility level

Access to data through SND
Data are freely accessible

Use of data

[Things to consider when using data shared through SND](#)

Versions

Version 1. 2023-06-01

Contact for questions about the data

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Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

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