

Supplemental Material for: Comparison of drone ecology and behavior between *Apis mellifera mellifera* and the hybrid Buckfast in southwestern Sweden.

SND-ID: 2023-211. **Version:** 1. **DOI:** <https://doi.org/10.5878/pyvm-re24>

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Video Records/20220623/OAG/RIMG1713.mp4 (505.49 MB)

Video Records/20220623/videos_220623.xlsx (9.72 KB)

Video Records/20220624/OAG/RIMG0792.mp4 (1.11 GB)

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Weather Data/ApiWeather-RF6/NA_04_scale-export year-2022 id-3J1A1762.xlsx (6.61 MB)
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Weather Data/Light Intensity/uddevalla.txt (54.82 KB)
Weather Data/Wireless Vantage Pro2/NordensArc_3-1-22_00-00_1_Year_1676464013_v2.csv (3.53 MB)

Associated documentation

Readme.pdf (109.41 KB)

Download all files

2023-211-1.zip (~2.01 GB)

Citation

Schaumann, F. (2024) Supplemental Material for: Comparison of drone ecology and behavior between *Apis mellifera mellifera* and the hybrid Buckfast in southwestern Sweden (Version 1) [Data set]. University of Skövde. Available at: <https://doi.org/10.5878/pyvm-re24>

Creator/Principal investigator(s)

[Finja Schaumann](#) - University of Skövde

Research principal

[University of Skövde](#) - School of Bioscience

Principal's reference number

FP 2018/21

Description

Most research on the biology of the western honey bee (*Apis mellifera*) focuses on the worker bees, but knowledge about drones is lacking despite their important role in mating with a virgin queen. Available information about their ecology and behavior are mainly based on direct observations in need of intensive experience and knowledge about honey bees. Only two recent studies conducted in France and Argentina have monitored drones continuously, but on the scale of a single observation hive or during a short time period only. Therefore, studies that have continuously monitored drone flight activity during the whole mating season are still lacking. Further, we are not aware of any studies that have compared the ecology and behavior of drones between different subspecies of *Apis mellifera*. Besides the aim of analysing the ecology and behavior of drones in spring and summer in Sweden, where the climate poses challenging conditions for honey bees, the objective of this project was to compare the native, but threatened, subspecies *Apis mellifera mellifera* (Mel) with the hybrid 'Buckfast' (*Apis mellifera* x, Buck). In Sweden, the latter is most commonly used in beekeeping today. Activity data at the entrance of the hives was collected with the use of Radio Frequency Identification (RFID) technology at two different apiaries with 8 colonies each. RFID technology enables the continuous monitoring of bees tagged with a microchip on their thorax. Hereby, only newborn drones with a maximum age of 3 days were tagged. Further, drones' activity and behavior at the entrance of the hive was studied from video recordings. Weather parameters were measured by weather stations installed within the apiaries, enabling a direct analysis of the activity in relation to weather conditions (temperature, wind speed, rain, humidity).

Data contains personal data

No

Language

[English](#)

Time period(s) investigated

2022-05-01 – 2022-08-31

Data format / data structure

[Numeric](#)

[Text](#)

[Video](#)

Species and taxons

[Apis mellifera x](#)

[Apis mellifera mellifera](#)

[Apis mellifera x buckfast](#)

Data collection 1

- Mode of collection: Experiment
- Description of the mode of collection: Radio Frequency Identification Technology, video capture
- Time period(s) for data collection: 2022-05-18 – 2022-08-31
- Data collector: University of Skövde
- Instrument: Video camera - Ricoh WG-60 Model R02090
- Instrument: HF-RFID miniature transponder - Microsensys iID® Transponder mic3®-TAG

- Source of the data: Events/Interactions

Data collection 2

- Mode of collection: Physical measurements and tests
- Description of the mode of collection: Weather data: Temperature, humidity, rain and wind speed
- Time period(s) for data collection: 2022-05-18 – 2022-08-31
- Data collector: University of Skövde
- Instrument: Weather station - Wolf-Waage ApiWeather-RF6
- Instrument: Weather station - Davis Instruments Wireless Vantage Pro2
- Source of the data: Geographic area

Geographic spread

Geographic location: [Västra Götaland County](#)

Geographic description: One apiary was located at Nordens Ark (58.295922°N, 11.992339°E, 76 m.a.s.l.) and in Uddevalla (58.442481°N, 11.437202°E, 25 m.a.s.l.).

Responsible department/unit

School of Bioscience

Other research principals

[Friedrich Schiller University Jena](#)

Contributor(s)

Sonja Leidenberger - University of Skövde, School of Bioscience

Research area

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

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

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

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

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

[Biota](#) (INSPIRE topic categories)

Keywords

[Survival](#), [Species distribution](#), [Video recording](#), [Species-typical behavior](#), [Rfid](#), [Honeybees](#), [Buckfast bee](#), [Flight activity](#), [Drones](#)

Publications

Schaumann, F. (2023). Comparison of drone ecology and behavior between *Apis mellifera mellifera* and the hybrid Buckfast in southwestern Sweden [Master's thesis]. Högskolan i Skövde.

URN: [urn:nbn:se:his:diva-23315](#)

Point (Lon/Lat)

11.437202, 58.442481

Point (Lon/Lat)

11.992339, 58.295922

Accessibility level

Access to data through SND

Data are freely accessible

Use of data

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

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Versions

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[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

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Published: 2024-02-14

Last updated: 2024-02-14