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PP-230 [Beekeeping Technology and Quality]

ERBEL BEE TEST APP:
New Data Collection Software For Performance Testing In Honey Bee Queen Selection And Breeding

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HONEY BEE SELECTION PROGRAMS

The genetic improvement of honey bee populations is a promising way to achieve more efficient and sustainable beekeeping, because:

1) Allows for increased colony productivity

2) Improves livestock manageability

3) Helps bee populations adapt to changing environmental conditions

4) Enhances disease resistance

5) And plays a key role in conserving different Apis mellifera populations

The web platform for genetic value estimation BeeBreed (Länderinstitut für Bienenkunde) is the largest public database containing data on more than 200,000 queens of different subspecies. Taking into account pedigree and performance data of the queens and using the BLUP system, they calculate the genetic values of each queen in order to carry out a genetic selection.

PERFORMANCE TESTING

The basis of all selection programmes is the data collected through performance testing. This is a phase that involves many people, breeders and testers above all, but also mating station managers, inseminators, selection programme coordinators, etc.
Most breeders participating in breeding and genetic improvement programs still use paper forms for recording performance data. This procedure leads to a certain percentage of data corruption through misread handwriting, loss of cards, transmission errors and loss of time when entering data into BeeBreed.
It is crucial that all the data collected by the queen testers in the selection programme is made available to BeeBreed managers in the easiest, quickest and most efficient way, without generating errors or too much extra work.

ERBEL BEE TEST

To avoid these issues and improve certain aspects of breeding programs, we developed an app called **ERBEL Bee Test** for recording queen testing data during selection. This app enables users to:

a) Collect data in an organized and clear manner,

b) Instantly upload data to the BeeBreed platform, avoiding errors,

c) Store historical data and download it when needed,

d) Validate the accuracy of recorded data and alert testers if any testing is being conducted incorrectly, as it allows real-time tracking of who is conducting the tests and how,

e) Perform a pre-selection of queens halfway through the testing process.

By using this app, the collection of performance data is immediately improved, as testers' work can be monitored and they can be notified if an operation is not done correctly so that they can correct it. In this way, the breeding program itself also benefits immediately, with increased quantity and quality of the collected data.

HOW TO USE ERBEL BEETEST?

More info https://erbel.eus/erbel-bee-test-app/

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The genetic improvement of honey bee populations is a promising way to achieve more efficient and sustainable beekeeping because it allows for increased colony productivity, but also improves livestock manageability, helps bee populations adapt to changing environmental conditions, enhances disease resistance, and plays a key role in conserving different Apis mellifera populations. At the 1972 Apimondia Congress, new standards for colony performance testing were presented (Ruttner, 1972) and although adapted in many ways (Büchler, 2024), the protocol is still valid today. In 1989, the BLUP system used in livestock selection was adapted for honey bees (Bienefeld, 1990) and resulted in substantial progress by breeders organized through the web platform for genetic value estimation (https://beebreed.eu) provided by the Länderinstitut für Bienenkunde in Germany (Hoppe, 2020).
Despite the technological advances in big data processing of breeding data, most beekeepers participating in breeding and genetic improvement programs still use paper forms for recording performance data. This procedure leads to a certain percentage of data corruption through misread handwriting, loss of cards and transmission errors.
To avoid these issues and improve certain aspects of breeding programs, we developed an app called ERBEL Bee Test for recording queen testing data during selection. This app enables users to:
1) Collect data in an organized and clear manner,
2) Instantly upload data to the BeeBreed platform, avoiding errors,
3) Store historical data and download it when needed,
4) Validate the accuracy of recorded data and alert testers if any testing is being conducted incorrectly, as it allows real-time tracking of who is conducting the tests and how, and
5) Perform a pre-selection of queens halfway through the testing process.
By using this app, the collection of performance data is immediately improved, as testers' work can be monitored and they can be notified if an operation is not done correctly so that they can correct it. In this way, the breeding program itself also benefits immediately, with increased quantity and quality of the collected data.