

Data Import for Breeding Values Estimation

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General

Template/Example

See attached template Datenimport.csv to be filled in with a spreadsheet application.

In DatenimportBeispiel.xls this template was filled with example data and saved in Excel, which can be a starting point. Be aware, data import does not support Excel files directly.

Preparation of the import file

In a spreadsheet or database application, please save as filetype CSV with the following options:

- Separator ; (semicolon)
- Text separator: "
- Character set Unicode (UTF-8)

Export from Pexa

In the export function, a .ldi file is written which can be imported.

Pexa before version 5 was based on the previous data model. With some restrictions (country code must be guessed), files can also be read. However, queens and its parents, mating stations, inseminators must be from D.I.B.-Carnica-, ACA, Switzerland, Netherlands, Sweden, South Tyrol, French Carnica.

Rules of the import file

Fields are identified by the header line. Spelling must be accurate! Order is not important, columns can be removed if not needed.

Obligatory are the fields which identify the queen (L1A, LV1A, Z1A, NR1A, J1A of 1A), the type of mating (ANPAARTYP or PAARTYP) and apiary number NST in case of a performance test.

Any other field can be left blank but not in any combination, e.g. the fields of the 2A code must be filled jointly.

If the header does not comply, the file will not be read and an error is issued. The file will be read line-by-line. Lines with not the same number of columns will be refused. For each line there will either be a success message and/or warnings and error messages. As usual, errors prompt refusal of the dataset while warnings do not.

Field contents will be tested on type and value range, detailed error message will be directly displayed.

Still, wrong field contents may be accepted and lead to negative consequences, finally for the breeding values. Especially in bulk upload of data, extreme care is necessary!

Imported data can later be displayed in data overview and can be modified later. However, wrong information in queen identification will make this difficult.

If no queen with a certain identification is registered yet it is inserted. Otherwise, the existing dataset is modified but not if it was registered by a different breeder. As a general rule: only fields contained in the header line are overwritten. If the field entry is blank, the respective entry in BeeBreed is deleted. In principle, you can edit breeding data in spreadsheet and import over and over again.

The numbered BIM- and BOMI-fields limited access to the hive records. Note that the data is indexed with the date! Contents will be overwritten only if the date matches exactly. Changing the date will lead to duplicate entries.

Special rule for the administrator

The administrator is entitled to enter data for any breeder of his/her administration. For that, an additional column ZST must be added. It is not present in the example data, it must be added manually.

If, under an administrator's account, the column is missing, the data is stored for the administrator as performance tester.

Details to the data model

Please note, that in the new data model introduced in May 2018, the nomenclature of queens, breeders, associations, mating stations and inseminators now includes a country code which is represented in fields L1A, L2A, L4A, LBST and so on. There is a separate registry for mating stations (LBST, LVBST, NBST, DBST) and inseminators (LBES, LVBES, NBES).

Several fields describe details of artificial insemination: number of drones (DROHNEN), number of drone colonies (DVOELKER), sub-type of mating (PAARSUBTYP) which is "b" if the drones are taken directly from the registered colony (identified in the fields L4A, LV4A, Z4A, NR4A, J4A which in this case is 1b), and "a" if the drones are from drone colonies stem from this registered colony - the default.

In addition to the clearance rate we would like to know the waiting time: AUSRAUMH.

VITTEST is 1 if the rules of the vitality test of the AGT are followed, e.g. Varroa treatment is forgone.

Multiple readouts of Varroa infestation and mite fall can be entered. Giving the date is essential here, which can be the full date (DD.MM.YYYY), date without a year (DD.MM. which refers to the test year), or calendar week in fields BOMID1 ... BOMID7 resp. BIMID1 ... BIMID7.

Mite fall refers to a number of days (BOMITG1 ... BOMITG7), mite infestation to grams of the bee sample (BIMIGR1 ... BIMIGR7).

There is a special meaning of the first mite fall measurement of the year, typically at flowering of willow (*Salix caprea*) entered columns (BOMI, BOMITG, BOMID). This identifies the initial Varroa burden as a starting point for the Varroa development.

Multiple mite fall data BOMI1 ... BOMI7 are for those testers not able/willing to perform infestation measurements. The preferred procedure (by AGT, D.I.B., ACA etc.) is the initial mite fall and multiple infestation measurements (until the Varroa treatment in autumn).

The test year JST is by default the year after the year of birth of the queen. For exceptions from this rule, this can be marked here.

In field LP it can be marked if the performance test was complete (1) or was aborted (2), or if no performance test was made (3). If the dataset is incompletely filled, enter 0. By default, it is 1.

Field FG marks that the administrator released the dataset. In data import, it can only be set to 1 by the administrator which is also the default.

Second performance check

A second performance test is realised via a specific, restricted data set. This data record does not contain any information of the pedigree, breed identification, licensing or passing/loss. Instead, the data record contains a reference to the main data record, which contains this information. The following rules apply when importing a second performance test:

- When entering a second performance test, the column ZWEITLP must be present in the import file and be assigned 'y' for a data record that contains a second test.
- The master data record must be available before entering any additional performance test. This data record is found via the queen code.
- The various additional performance tests of a queen are differentiated with the test year JST. All additional performance tests must also have a different test year than the main data set.
- The performance test of the main data set cannot be downgraded to a second performance test

- A second performance check cannot be upgraded to a main data record.

These rules are automatically implemented in the data record entry in the BeeBreed interface. The user must pay attention to this in the import function. Otherwise, in most cases the data record will be rejected with an error message, but in some cases the data record may be saved in an undesired form. It is therefore important to check the success of saving in the data view. While the BeeBreed interface only allows the second performance year to be entered for the highest expertise level, the import function does not differentiate between expertise levels.

Data fields

| Name | Meaning | Format, values |
|------------|--|---|
| L1A | Country of 1a-queen | 2 uppercase letters ¹ |
| LV1A | Association of 1a-queen | 1-99 |
| Z1A | Breeder code of 1a-queen | 1-999 |
| NR1A | Studbook number of 1a-queen | 1-99999 |
| J1A | Birth year of 1a-queen | 1900-2100 |
| ZST | Breeder code of test apiary (only when administrator used import function) | 1..999 |
| NST | Apiary number | 1..99 |
| JST | Performance test year (optional, default J1A plus 1) | 1900..2050 |
| LINIE | Breeding line | Text |
| GF | Generation | integer |
| L2A | Country of 2a-queen | 2 uppercase letters ¹ |
| LV2A | Association of 2a-queen | 1-99 |
| Z2A | Breeder code of 2a-queen | 1-999 |
| NR2A | Studbook number of 2a-queen | 1-99999 |
| J2A | Birth year of 2a-queen | 1900-2100 |
| ANPAARTYP | Type of mating | 1: artificial insemination, 2: mating station, 5: apiary mating |
| PAARTYP | Type of mating (obsolete) | 1 artificial insemination, 2 island mating station, 3 line mating station, 4 race mating station, 5 apiary mating, 6 AGT-mating station with more than one 4a |
| PAARSUBTYP | a for 4a-mating, b for 1b-mating | only for artificial insemination |
| LBST | Country of mating station | 2 uppercase letters ¹ |
| LVBST | Association of mating station | 1..99 |
| NBST | Number of mating station | 1..99 |
| DBST | Run of mating station | integer or blank if a single run |
| LBES | Country of inseminator | 2 uppercase letters ¹ |
| LVBES | Verband inseminator | 1..99 |
| NBES | Nummer inseminator | 1..99 |
| L4A | Country of 4a-queen resp. 1b-queen (depending on SUBPAARTYP) | 2 uppercase letters ¹ |
| LV4A | Association of 4a-queen | 1-99 |
| Z4A | Breeder code of 4a-queen | 1-999 |
| NR4A | Studbook number of 4a-queen | 1-99999 |
| J4A | Birth year of 4a-queen | 1900-2100 |
| DROHNEN | Number of drones (optional, only for artificial insemination) | 1..100 |
| DVOELKER | Number of drone colonies (optional, only for artificial insemination and PAARSUBTYP a) | 1..100 |
| SCHLUPF | Date of hatch | dd.mm. |
| ZEICHEN | Mark of queen | text |
| BESAMT | Date of mating | dd.mm. |
| EIABLAG | Start of laying eggs | dd.mm. |
| VOLKSNR | Colony number | Text |
| BEMERK | Remark | Text |

¹ISO 3166-2 Code

| Name | Meaning | Format, values |
|-------------------|--|----------------------------|
| GESAMT | Total yield honey incl. stockpile | decimal |
| TEIL1 | Yield until 15.6. | decimal |
| TEIL2 | Yield from 16.6 to 15.8. | decimal |
| TEIL3 | Yield from 16.8. | decimal |
| VORRAT | Stockpile | decimal |
| SANFT | Aggressiveness | 1..4 |
| WABEN | Calmness | 1..4 |
| SCHWARM | Swarming tendency | 1..4 |
| ENTWICK | Spring development | 1..4 |
| VOLKSS | Colony strength | 1..4 |
| WINTER | Overwintering strength | 1..4 |
| VITTEST | Vitality test | 1 or blank |
| VITTEST_WINTER | Overwintering in vitality test | 0..4 |
| VITTEST_FRUEHJAHR | Spring development after vitality test | 1..4 |
| AUSRAUM | Pintest clearance rate in percent | 0..100 |
| AUSRAUMH | Pintest waiting hours | 6..24 |
| BOMI | Mite fall at sallow bloom | 0..100 |
| BOMITG | Days of this measurement | |
| BOMID | Date of this measurement | dd.mm.yyyy or dd.mm. or ww |
| KALKBRUT | Chalkbrood | 1..4 or j |
| NOSEMA | Nosema | 1..4 or j |
| SACKBRUT | Sacbrood | 1..4 or j |
| EFAULBRUT | european foulbrood | 1..4 or j |
| AFAULBRUT | american foulbrood | 1..4 or j |
| DWVD | deformed wing-virus pathology | 1..4 or j |
| CBP | chronic bee paralysis pathology | 1..4 or j |
| ABP | acute bee paralysis pathology | 1..4 or j |
| BQCD | black queen cell virus disease | 1..4 or j |
| KALKBRUT_NW | Chalkbrood pathogen detection | j or n |
| NOSEMA_NW | Nosema pathogen detection | j or n |
| SACKBRUT_NW | Sacbrood pathogen detection | j or n |
| EFAULBRUT_NW | european foulbrood pathogen detection | j or n |
| AFAULBRUT_NW | american foulbrood pathogen detection | j or n |
| DWVD_NW | deformed wing-virus pathology pathogen detection | j or n |
| CBP_NW | chronic bee paralysis pathology pathogen detection | j or n |
| ABP_NW | acute bee paralysis pathology pathogen detection | j or n |
| BQCD_NW | black queen cell virus disease pathogen detection | j or n |

| Name | Meaning | Format, values |
|-------------|---|---|
| RASSEA | Workers race typical | j or n |
| UNRA | Investigation number for race analysis workers | Text |
| RASSED | Drones race typical | j or n |
| UNRD | Investigation number for race analysis / drones | Text |
| LP | Dataset status | 0 - in process, 1 - performance test complete, 2 - performance test aborted, 3 - without performance test |
| FG | Release by administrator | 0 or 1 |
| KOER | License class | A, Av, B, Bv, C, P or J |
| KOERBEST | License confirmation by administrator: 0 - undecided, 1 - confirmed | 0, 1 |
| KSDATUM | License date | dd.mm.yy |
| ADATUM | Passing/loss, date | mm.yy |
| AGRUND | Passing/loss, 1 - sold/passed, 2 - swarmed, 3 - dead/requeened, 4 - handling error/damage, 5 - colony dis- solved, 6 - colony loss, 7- unknown, 8 - not race typical, 9 - drone broody, 10 - theft / vandalism | |
| SMR | Brood investigation: mite non- reproduction, percentage of cells with non-reproductive mites to all single infested cells | 0..100 |
| RECAP | Brood investigation: recapping, per- centage of recapped cells to all cells | 0..100 |
| RECINF | Brood investigation: recapping in- fested, percentage of recapped in- fested cells to all infested cells | 0..100 |

| Name | Meaning | Format, values |
|-------------|--|-----------------------|
| BOMI1 | 1. measurement mite fall | 0..100 |
| BOMITG1 | Days of this measurement | 7..28 |
| BOMID1 | Date of this measurement | dd.mm. or ww |
| BOMI2 | 2. measurement mite fall | 0..100 |
| BOMITG2 | Days of this measurement | 7..28 |
| BOMID2 | Date of this measurement | dd.mm. or ww |
| BOMI3 | 3. measurement mite fall | 0..100 |
| BOMITG3 | Days of this measurement | 7..28 |
| BOMID3 | Date of this measurement | dd.mm. or ww |
| BOMI4 | 4. measurement mite fall | 0..100 |
| BOMITG4 | Days of this measurement | 7..28 |
| BOMID4 | Date of this measurement | dd.mm. or ww |
| BOMI5 | 5. measurement mite fall | 0..100 |
| BOMITG5 | Days of this measurement | 7..28 |
| BOMID5 | Date of this measurement | dd.mm. or ww |
| BOMI6 | 6. measurement mite fall | 0..100 |
| BOMITG6 | Days of this measurement | 7..28 |
| BOMID6 | Date of this measurement | dd.mm. or ww |
| BOMI7 | 7. measurement mite fall | 0..100 |
| BOMITG7 | Days of this measurement | 7..28 |
| BOMID7 | Date of this measurement | dd.mm. or ww |
| BIMI1 | 1. measurement mite infestation on bee sample | 0..200 |
| BIMIGR1 | Weight (g) of this bee sample | 0..150 |
| BIMID1 | Date of this measurement | dd.mm. or ww |
| BIMI2 | 2. measurement mite infestation | 0..200 |
| BIMIGR2 | Weight (g) of this bee sample | 0..150 |
| BIMID2 | Date of this measurement | dd.mm. or ww |
| BIMI3 | 3. measurement mite infestation | 0..200 |
| BIMIGR3 | Weight (g) of this bee sample | 0..150 |
| BIMID3 | Date of this measurement | dd.mm. or ww |
| BIMI4 | 4. measurement mite infestation | 0..200 |
| BIMIGR4 | Weight (g) of this bee sample | 0..150 |
| BIMID4 | Date of this measurement | dd.mm. or ww |
| BIMI5 | 5. measurement mite infestation | 0..200 |
| BIMIGR5 | Weight (g) of this bee sample | 0..150 |
| BIMID5 | Date of this measurement | dd.mm. or ww |
| BIMI6 | 6. measurement mite infestation | 0..200 |
| BIMIGR6 | Weight (g) of this bee sample | 0..150 |
| BIMID6 | Date of this measurement | dd.mm. or ww |
| BIMI7 | 7. measurement mite infestation | 0..200 |
| BIMIGR7 | Weight (g) of this bee sample | 0..150 |
| BIMID7 | Date of this measurement | dd.mm. or ww |
| SMR | Brood investigation: Suppressed mite reproduction, ratio of cells with non- reproductive mites | 0..100 |
| RECAP | Brood investigation: ratio of recapped cells (no matter whether cell contained mites) | 0..100 |
| RECINF | Brood investigation: ratio of recapped cells (only cells with mites) | 0..100 |