

What can a C&E module in EURISCO give us?

Forage and Barley ECPGR workshop, 14-16 March 2017, Malmö, Sweden

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BACKGROUND

C&E data I

- Previously not available in EURISCO
- Of high importance to users of PGR data
 - Determines value of germplasm for breeding and research
- Difficult to handle due to lots of “standards”
 - Different descriptor names/synonyms
 - Different rating scales
 - Nominal, ordinal, metric scale
 - Different amounts of meta information
 - When, where, how, by whom?
 - Experiment set-up, treatment etc.

C&E data II

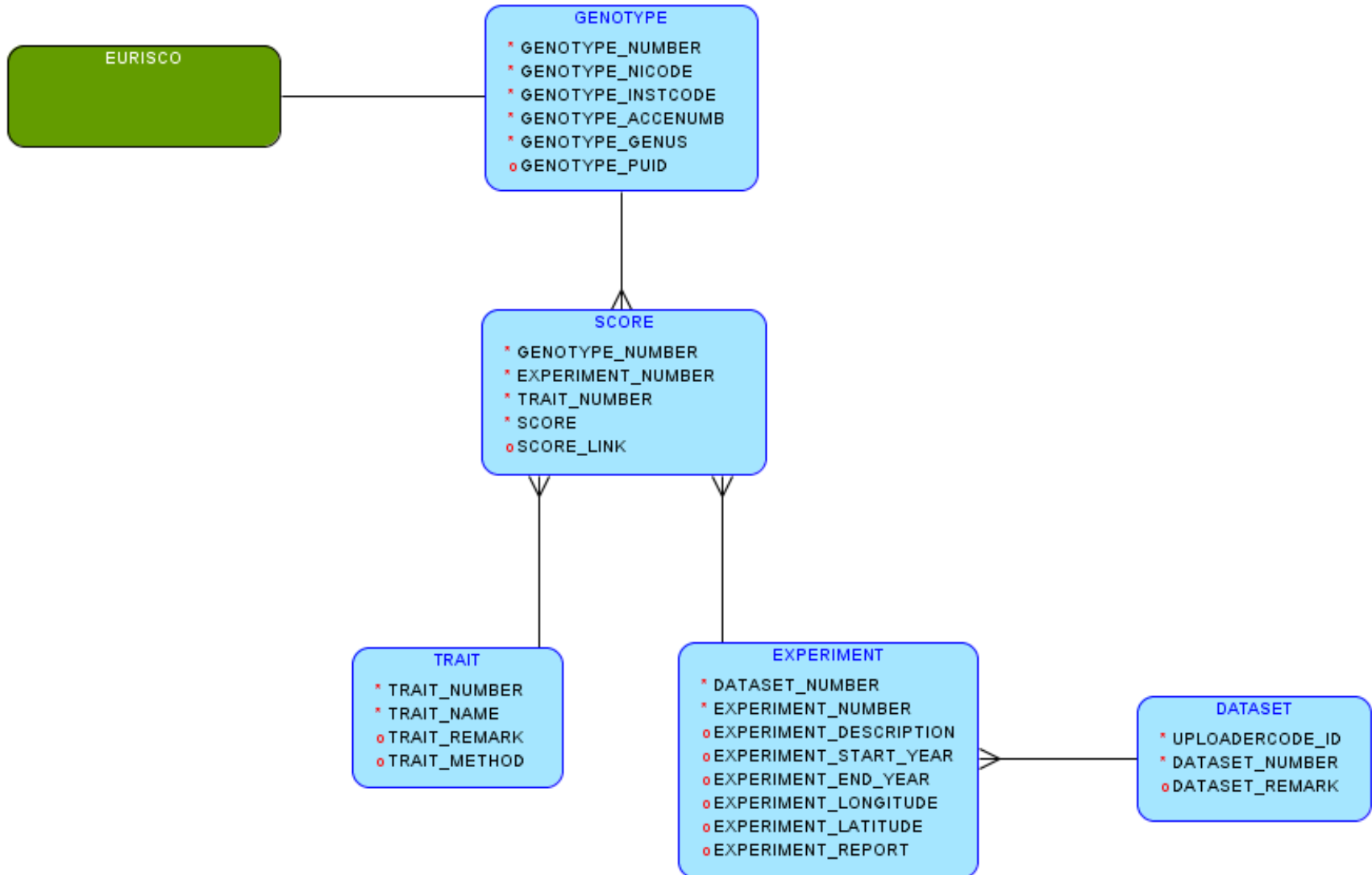
- Discussed in detail in previous years
- Suitable proposal compiled by the ECPGR Doc&Info Network in 2009
 - As simple as possible
 - As few fields as possible
 - “minimum consensus”
- D&I meeting 2014
 - Pragmatic approach:
 - No standardisation of trait, scale or experimental design
 - Only standardisation of exchange format (as simple as possible)
 - Import of existing data as-is → reach critical mass
 - Use proposal of 2009 (+ small adjustments)

DATA MODEL

Data model for C&E data I

- Five components
 - **GENOTYPE**
 - Identified by EURISCO descriptors
 - **DATASET**
 - May comprise different experiments
 - **EXPERIMENT**
 - Multiple genotypes are scored for different traits
 - **TRAIT**
 - Characteristic feature to be scored
 - **SCORE**
 - Value of a trait for a genotype

Data model for C&E data II



TEMPLATES

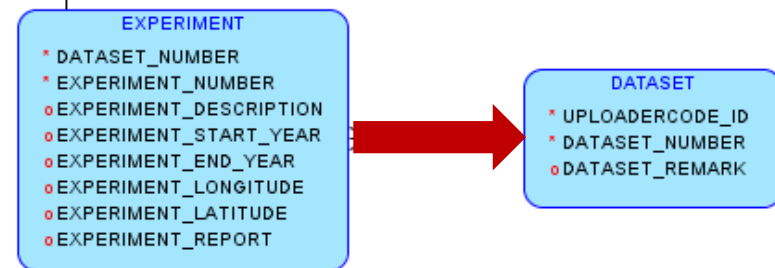
DATASET

- Enables to upload multiple experiments at once
- Fields:
 - **UPLOADERCODE***:
 - ID of registered authorised data provider
 - Provided by EURISCO
 - **DATASET_NUMBER***:
 - To link experiments with datasets
 - Unique and persistent for the data provider
 - **DATASET_REMARK**:
 - General remark for all scores in the dataset

UPLOADERCODE	DATASET_NUMBER	DATASET_REMARK
DEU	1	This dataset contains forage grass accessions of IPK.
...
...

EXPERIMENT I

- Meta data helping to interpret C&E data
 - Experiment set-up
 - Weather conditions
 - Soil conditions
 - Experiment location
 - ...
- Fields:
 - **DATASET_NUMBER***:
 - Reference of the dataset
 - **EXPERIMENT_NUMBER***:
 - To link scores with experiments
 - Unique and persistent for the data provider



EXPERIMENT II

- Fields (cont.):
 - EXPERIMENT_DESCRIPTION:
 - Brief English description
 - Information necessary for interpreting the scores, e.g. set-up
 - EXPERIMENT_START_YEAR:
 - Year in which the experiment was performed (or started)
 - EXPERIMENT_END_YEAR:
 - Year in which the experiment ended
 - EXPERIMENT_LONGITUDE:
 - Longitude of experimental site
 - EXPERIMENT_LATITUDE:
 - Latitude of experimental site
 - EXPERIMENT_REPORT:
 - Reference to a report (either report file or report URL)

EXPERIMENT III

DATASET_NUMBER	EXPERIMENT_NUMBER	EXPERIMENT_DESCRIPTION	EXPERIMENT_START_YEAR	EXPERIMENT_END_YEAR	EXPERIMENT_LONGITUDE	EXPERIMENT_LATITUDE	EXPERIMENT_REPORT
1	1	Characterisation data of Lolium perenne	1999	2000	11.278414	51.826059	http://...
1	2	Characterisation data of Lolium perenne	2000	2001	11.278414	51.826059	http://...
1	3	Characterisation data of Lolium perenne	2001	2002	11.278414	51.826059	http://...
1	4	Evaluation data of Lolium perenne (4 replications per accession)	2002	2005	11.278414	51.826059	http://...
...

TRAIT I

- Describes phenotypic traits and the methods used for scoring
- Fields:
 - **TRAIT_NUMBER***:
 - Unique, temporary number of the trait in the dataset
 - **TRAIT_NAME***:
 - English name of the trait
 - **TRAIT_REMARK**:
 - General remark helping to interpret the trait
 - **TRAIT_METHOD**:
 - English description of the used method + scale

TRAIT II

TRAIT_NUMBER	TRAIT_NAME	TRAIT_REMARK	TRAIT_METHOD
1	Sowing date	...	Date
2	Emerging date	Date, when first shoot is visible	Date
3	Growing before winter	Quality of plant growing before winter	Rating value from 1 (min) – 9 (max)
4	Stem height min	In flowering time, the shortest plant	Measurement [cm]
...

GENOTYPE I

- All accessions for which C&E data will be uploaded

- Fields:

- **GENOTYPE_NUMBER***:

- Unique, temporary number of the genotype in the dataset

- **GENOTYPE_NICODE***:

- National Inventory code from EURISCO

- **GENOTYPE_INSTCODE***:

- Holding institute code from EURISCO

- **GENOTYPE_ACCENUMB***:

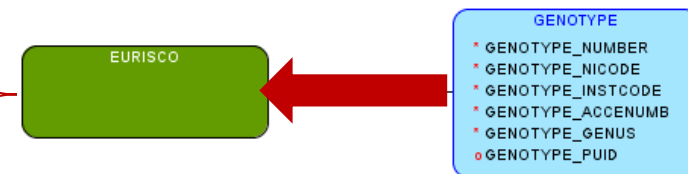
- Accession number from EURISCO

- **GENOTYPE_GENUS***:

- Genus from EURISCO

- **GENOTYPE_PUID**:

- Placeholder for a permanent unique identifier (DOI → ITPGRFA)



GENOTYPE II

GENOTYPE_NUMBER	GENOTYPE_NICODE	GENOTYPE_INSTCODE	GENOTYPE_ACCENUMB	GENOTYPE_GENUS	GENOTYPE_PUID
1	DEU	DEU271	GR 142	Lolium	
2	DEU	DEU271	GR 476	Lolium	
3	DEU	DEU271	GR 550	Lolium	
4	DEU	DEU271	GR 2670	Lolium	

SCORE I

- Observed phenotypic values of the accessions

- Fields:

- **GENOTYPE_NUMBER***:

- Reference to a genotype

- **EXPERIMENT_NUMBER***:

- Reference to an experiment

- **TRAIT_NUMBER***:

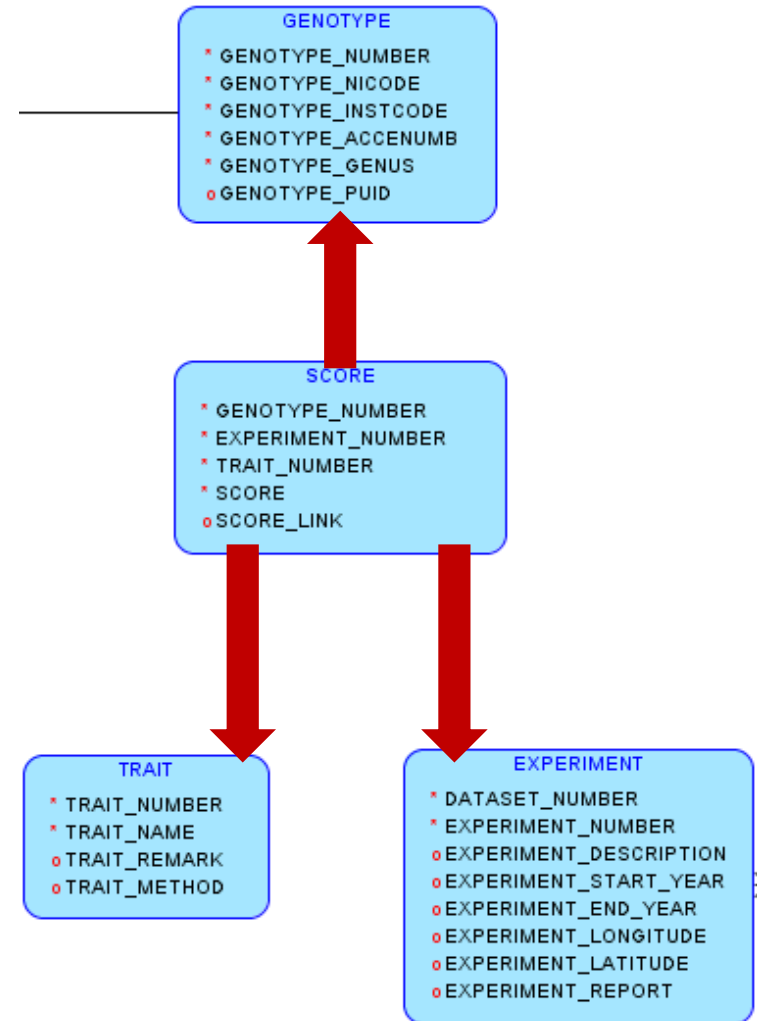
- Reference to a trait

- **SCORE***:

- Observed score

- **SCORE_LINK**:

- Link to a publication on accession level



SCORE II

GENOTYPE_NUMBER	EXPERIMENT_NUMBER	TRAIT_NUMBER	SCORE	SCORE_LINK
1	1	1	19990313	http://...
1	1	3	7	http://...
4	4	1	20020401	...
4	4	4	21	http://...
...
...

Putting all this together

GENOTYPE_NUMBER	GENOTYPE_NICODE	GENOTYPE_INSTCODE	GENOTYPE_ACCNUMB	GENOTYPE_GENUS	GENOTYPE_PUID
1	DEU	DEU271	GR 142	Lolium	
2	DEU	DEU271	GR 476	Lolium	
3	DEU	DEU271	GR 550	Lolium	
4	DEU	DEU271	GR 2670	Lolium	

GENOTYPE

TRAIT

TRAIT_NUMBER	TRAIT_NAME	TRAIT_REMARK	TRAIT_METHOD
1	Sowing date	...	Date
2	Emerging date	...	Date
3	Growing before winter	...	Rating value from 1 (min) – 9 (max)
4	Stem height min	In flowering time, the shortest plant	Measurement [cm]
...

GENOTYPE_NUMBER	EXPERIMENT_NUMBER	TRAIT_NUMBER	SCORE	SCORE_LINK
1	1	1	19990313	http://...
1	1	3	7	http://...
4	4	1	20020401	...
4	4	4	21	http://...
...
...

SCORE

DATASET_NUMBER	EXPERIMENT_NUMBER	EXPERIMENT_DESCRIPTION	EXPERIMENT_START_YEAR	EXPERIMENT_END_YEAR	EXPERIMENT_LONGITUDE	EXPERIMENT_LATITUDE	EXPERIMENT_REPORT
1	1	Characterisation data of Lolium perenne	1999		11.278414	51.826059	http://...
1	2	Characterisation data of Lolium perenne	2000		11.278414	51.826059	http://...
1	3	Characterisation data of Lolium perenne	2001		11.278414	51.826059	http://...
1	4	Evaluation data of Lolium perenne (4 replications per accession)	2002	2005	11.278414	51.826059	http://...
...

EXPERIMENT

UPLOADERCODE	DATASET_NUMBER	DATASET_REMARK
deu_uploader01	1	This dataset contains forage grass accessions.
...
...

DATASET

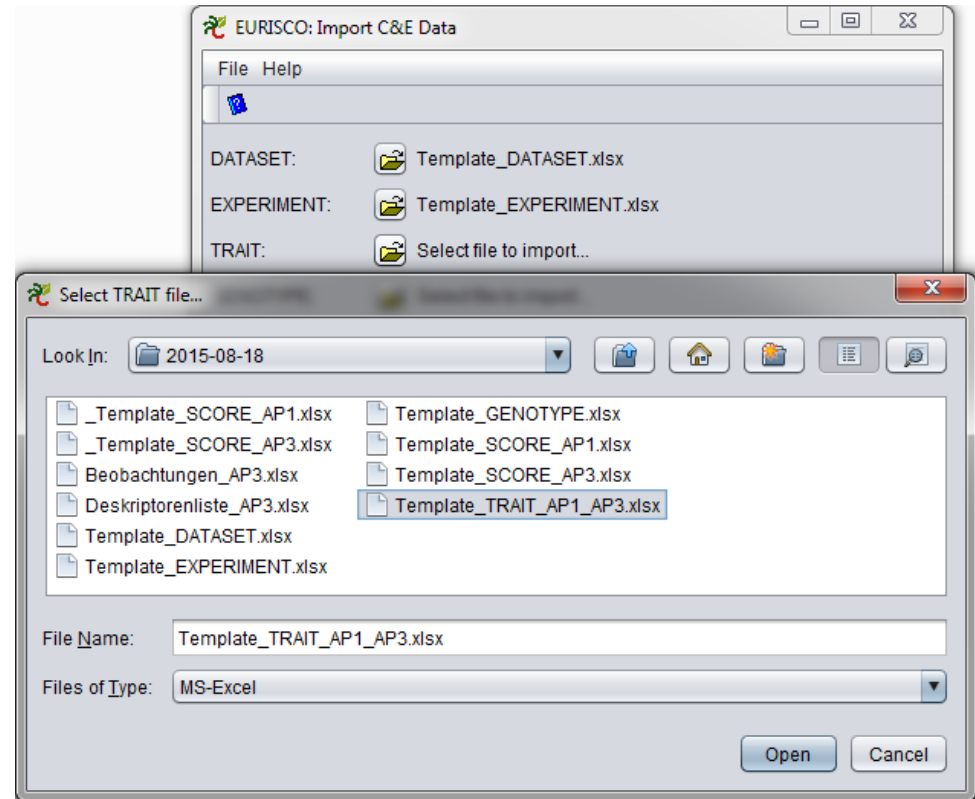
PROCEEDING

Proceeding for data upload I

- Prerequisite:
 - Only non-confidential C&E data
 - Only data of accessions listed in EURISCO
- Impact
 - NFPs responsible for data upload (Data Sharing Agreements)
 - May nominate users for (sub) accounts for data uploads
 - NFPs must approve data before publication
- Data formatting
 - According to the templates in MS Excel (.xlsx) files
 - One file for each template
- Upload via EURISCO intranet

Proceeding for data upload II

- Three steps
 1. File parsing and upload via Java tool (*data owner / NFP*)
 2. Data integrity checks (*EURISCO management*)
 3. Approval / withdrawal of data for publishing on the EURISCO website (*NFP*)



Upload of C&E data files I

EURISCO uploader

Welcome: WEISE Logout

Home

Passport data import

C&E data import

Upload C&E files

C&E integrity check results

Decision about C&E update

Home > Upload C&E files

First step: Upload C&E files

Next step

The first step of importing new C&E data into EURISCO is to upload the filled template files to the EURISCO server. The files must be formatted in accordance with the EURISCO C&E data exchange format. The data must be contained in five separate MS-Excel (.xlsx) files.

Please use the Java WebStart application for uploading: [Start the EURISCO C&E data importer.](#)

The Java application will enable you to select the five template files. These files will then be parsed and the content will be uploaded into the EURISCO staging area. At the staging area, all necessary integrity checks will be performed. Afterwards, the results of the checks will be displayed in the EURISCO intranet again.

Requirements:

- The upload tool requires a Java runtime environment version 8 including Java Webstart.
- For the database access, the Oracle standard port 1521 needs to be enabled.

File parsing and upload

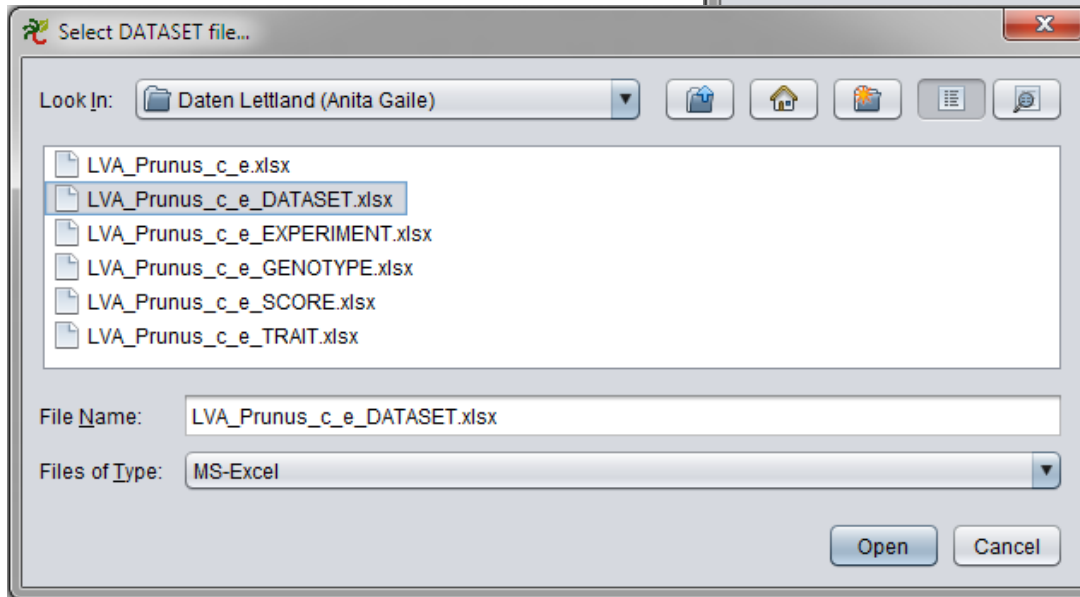
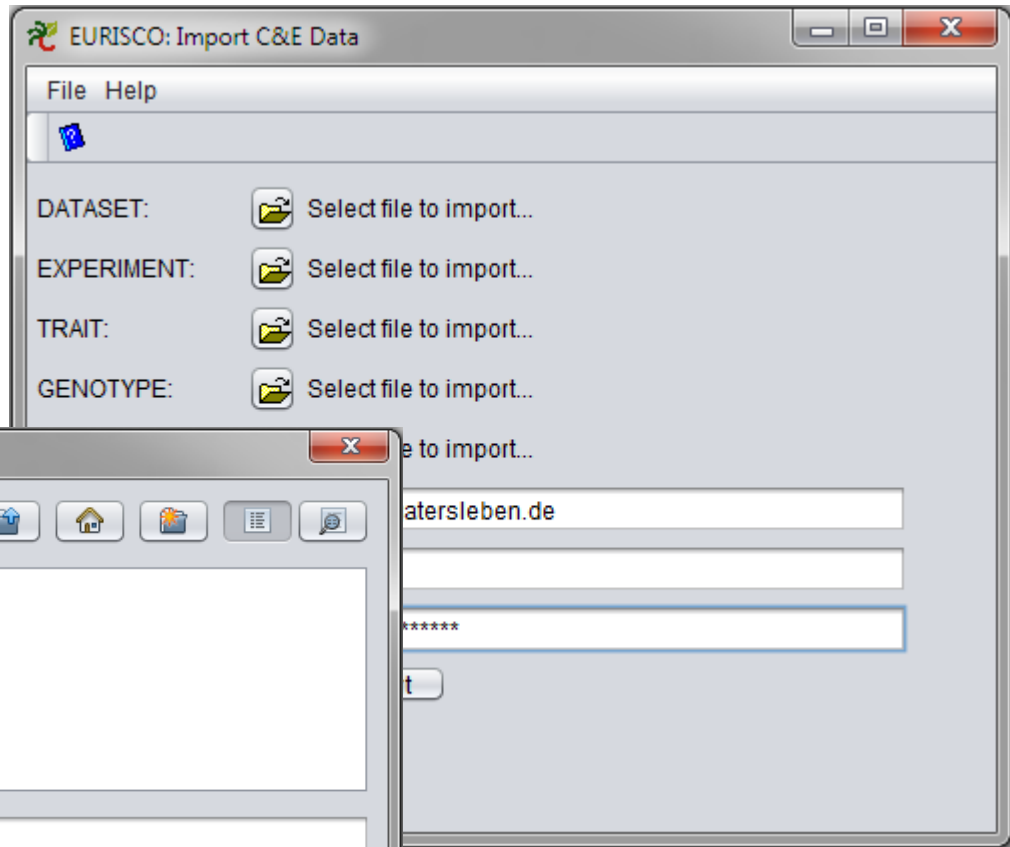
Integrity checks

Final decision

release 1.2.0

Upload of C&E data files II

- JRE 1.8
- Java WS
- Oracle standard port 1521 enabled



Integrity checks I

EURISCO uploader

Welcome: WEISE Logout

Home Passport data import **C&E data import**

Upload C&E files **C&E integrity check results** Decision about C&E update

Home > Upload

EURISCO uploader

Welcome: WEISE Logout

Home Passport data import **C&E data import**

Second step:

Upload C&E files **C&E integrity check results** Decision about C&E update

The second step finished, import running

Home > Upload

EURISCO uploader

Welcome: WEISE Logout

Home Passport data import **C&E data import**

Second step:

Upload C&E files **C&E integrity check results** Decision about C&E update

The second step finished, import finished

Home > Upload C&E files > C&E check results overview

Second step: Data integrity checks

The second step of importing C&E data into EURISCO is to perform data integrity checks. In the report below, you can see the current import status of your data (setup finished, import running, import finished). On the sub-pages, all errors will be listed (grouped by descriptor).

Search: [Q v] Go Actions v

1 - 1 of 1

National inventory	Uploader	Uploaded	Notification email	Last action	Import status
DEU	weise	2016-09-07 09:42:35	weise@ipk-gatersleben.de	2016-09-07 09:46:57	Import finished

1 - 1 of 1

release 1.2.0

File parsing and upload

↓

Integrity checks

↓

Final decision

Integrity checks II

EURISCO uploader

Welcome: WEISE Logout

Upload C&E files C&E integrity check results

Home > Upload C&E files > C&E check results overview

EURISCO uploader

Welcome: WEISE Logout

Home Passport data import C&E data import

Home > Upload C&E files > C&E check results overview > C&E errors per descriptor > C&E error details

C&E errors per descriptor

1 - 1 of 1

Template	Descriptor	Number Of f
SCORE	TRAIT_NUMBER	

1 - 1 of 1

release 1.2.0

C&E error details

1 - 15 of 148

Template	Descriptor	Line Number	Error Type	Error Description
SCORE	TRAIT_NUMBER	85	Error	Line 85: Trait number 47 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	84	Error	Line 84: Trait number 46 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	388	Error	Line 388: Trait number 88 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	387	Error	Line 387: Trait number 87 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	386	Error	Line 386: Trait number 86 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	385	Error	Line 385: Trait number 85 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	384	Error	Line 384: Trait number 84 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	383	Error	Line 383: Trait number 83 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	382	Error	Line 382: Trait number 82 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	381	Error	Line 381: Trait number 81 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	380	Error	Line 380: Trait number 80 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	379	Error	Line 379: Trait number 79 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	378	Error	Line 378: Trait number 78 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	377	Error	Line 377: Trait number 77 invalid. Not listed in TRAIT template.
SCORE	TRAIT_NUMBER	376	Error	Line 376: Trait number 75 invalid. Not listed in TRAIT template.

1 - 15 of 148

release 1.2.0

File parsing and upload

Integrity checks

Final decision

- Undefined trait number

Final decision

EURISCO uploader Welcome: WEISE [Logout](#)

[Home](#) [Passport data import](#) [C&E data import](#)

[Upload C&E files](#) [C&E integrity check results](#) [Decision about C&E update](#)

Home > Upload C&E files > C&E check results overview > Decision about C&E update

Third step: Publish or discard new data

After you have reviewed the errors which occurred during the C&E data integrity checks, the third step of importing C&E data into EURISCO is now to decide either to publish the new data to the EURISCO web frontend or to discard the imported data. In the latter case, the whole C&E data import procedure should be repeated with a reworked data set.

EURISCO uploader Welcome: WEISE [Logout](#)

[Home](#) [Passport data import](#) [C&E data import](#)

[Upload C&E files](#) [C&E integrity check results](#) [Decision about C&E update](#)

Home > Upload C&E files > C&E check results overview > Decision about C&E update > Final decision about C&E data update

Final decision about C&E data update

Your uploaded C&E data has been checked for integrity and can now be used for publishing in EURISCO. Only valid data will be used; data which contains errors will be skipped.

The final update will run as a batch job in the background.

[Update C&E data](#) [Discard C&E data](#)

Flowchart:

```
graph TD; A[File parsing and upload] --> B[Integrity checks]; B --> C[Final decision];
```

release 1.2.0

Next steps (in background)

- New dataset will be applied to EURISCO stage schema
 - Existing C&E data will not be overwritten
 - Existing C&E data may be removed on request
- EURISCO stage will be synchronised to the EURISCO web schema (Time lag!)
 - Not in main business hours
 - Rebuild of materialised views
 - News message on EURISCO webpage

DATA VISUALISATION

EURISCO web interface

- Wizard-based searches for C&E data
 - By genus
 - By species and traits
 - By experiment
 - By trait

C&E data: Genus

Filter C&E data by genus

Genera *

- Brassica
- Capsicum
- Chondrilla
- Cicerbita
- Cucumis
- Eruca
- Allium
- Hordeum
- Lactuca

Lactuca 105,02

Solanum 77,663

Capsicum 50,736

Triticum 37,301

Hordeum 32,852

Show All Scores for selected genera Experiments with selected genera

▼ Scores for selected genera

The report below comprises all scores of the selected genera (from different experiments). Detailed passport information about the respective accessions are given by the provided link. Please use the search bar below to define filters.

Q Go Actions

1 - 5 of 148367

Experiment Description	Trait Name	Trait Method	NICODE	INSTCODE	Species	ACCENUMB	Score	Score Link	Origin Country	Biological Status	Details
Evaluation (average of tw[...])	Pyrenophora graminea (Stripe)	Determined at natural	NLD	NL D037	Hordeum	CGN13027	0	-	United	Advanced or	Accession

1 - 5 of 148367

Experiment Description	Trait Name	Trait Method
Evaluation (average of tw[...])	Yield	per plot m2
Evaluation (average of tw[...])	Spike density	(3=lax, 7=dens)
Evaluation (average of tw[...])	Growth height	Measur including [...]
Evaluation (average of tw[...])	Row number	(1=2-rows, 9=4-rows) [...]

1 - 5 of 148367

2.52 s

▼ Experiments with selected genera

The report below comprises all experiments, which contain at least one (not necessarily all) of the selected genera. When clicking on the link to the traits contained in these experiments, only those traits will be shown, which were used for scoring the selected genera. Please use the search bar below to define filters.

Q Go Rows 5 Actions

1 - 5 of 127

Experiment Description	Dataset Remark	Experiment Start Year	Experiment End Year	Details
Location: Born Wageningen, sandy soil. Sowing date: 12/3/85, harvested 9/8/85.	Phenotypic data CGN	1985	-	contained traits
Location: Born Wageningen, sandy soil. Sowing date: 2/10/85, harvested from 28/7-1/8/1986.	Phenotypic data CGN	1986	-	contained traits
Location: Born Wageningen, sandy soil. Sowing date: 8/4/86, harvested 4/8-15/8/1986.	Phenotypic data CGN	1986	-	contained traits
Location: Emmeloord.	Phenotypic data CGN	1986	-	contained traits
Location: Ulrum.	Phenotypic data CGN	1986	-	contained traits

1 - 5 of 127

2.59 s

C&E data: Species and trait

Filter C&E data by species and traits

Genus *

Species *

Genus *

Species *

- Lactuca aculeata Boiss.
- Lactuca altaica Fish. & Mey.
- Lactuca biennis (Moench) Fern.
- Lactuca homblei De Wild.
- Lactuca raddeana Maxim
- Lactuca saligna L.
- Lactuca sativa L.
- Lactuca sativa x serriola
- Lactuca serriola L.
- Lactuca tatarica (L.) C. A. Mey.

- Lactuca canadensis L.
- Lactuca dregeana DC.
- Lactuca georgica L.
- Lactuca perennis L.
- Lactuca indica L.
- Lactuca quercina L.**

Traits *

- Leaf blistering (At harvest maturity[...])
- Leaf color intensity ((3=light, 5=medium, 7=dar[...])
- Leaf margin undulation (At harvest maturity[...])
- Leaf shape ((1=narrow elliptic,2=el.,[...])
- Leaf shape ((1=round, 2=ovate, 3=obov[...])**
- Leaf vein prickles ((1=not present, 9=present[...])
- Leaf vein prickles (-[...])
- Leaf venation (At harvest maturity (1= n[...])
- Nasonovia ribisnigri (Resistance to Nasonovia r[...])
- Nitrate content (Mean nitrate content of t[...])
- Pemphigus hursarius ((1=very resistant, 2=resi[...])

- Bolting time (Days from planting to 50%[...])
- Leaf color ((1=yellow, 2=green, 3=gra[...])
- Leaf division (At harvest maturity (1=0,[...])
- Leaf tip shape ((3=rounded, 5=medium roun[...])**

Apply Reset

C&E data: Experiment

Filter C&E data by experiment

The report below lists all experiments, which contain characterisation & evaluation (C&E) data.

Q Go Rows 10

Experiment Start Year between 1967 and 2012

1 - 10 of 782

Experiment Description
Sowing date = February 2, Planting date = April 17, IVT glasshouse XII, heated, soil culture, 2 stems, 4 plants per field, collection no. 567-659, experimentist H. Roelofsens and G. Pet, standard = Bruinsma Wonder
Sowing date February 18, Planting date April 8, IVT glasshouse XII, heated, soil culture, 2 stems, 5 plants per field, collection no 444-543, experimentist L. de Groot and G. Pet, standard is Bruinsma Wonder
Sowing date = March 15, Planting date = April 26, IVT glasshouse XII, heated, soil culture, 2 stems, 5 plants per field, collection no. 660-762, experimentist L. de Groot and G. Pet, standard is Bruinsma Wonder
Sowing date = February 28, Planting date = April 13, IVT glasshouse XII-IX, heated, soil culture, 2 stems, 5 plants per field, collection no. 763-869, experimentists L. de Groot and G. Pet, standard = Bruinsma Wonder
Sowing date = February 24, Planting date = April 18, IVT glasshouse no. XII, heated, soil culture, 2 stems, 5 plants per field, collection no.871-934, experimentists L. de Groot and G. Pet, standard = Bruinsma Wonder
Sowing date = March 11, Planting date = April 26, IVT glasshouse XII, heated, soil culture, 2 stems, 5 plants per field, collection no. 935-981, experimentist L. de Groot and G. Pet, standard = Bruinsma Wonder
Sowing date = March 13, Planting date = May 1, IVT glasshouse II-I, heated, soil culture, 2 stems, 5 plants per field, collection no. 982-1021, experimentist G. Pet, standard = Bruinsma Wonder
Sowing date = March 20, Planting date = April 28, IVT glasshouse no. II-II, soil culture, 1 stem, 5 plants per field, collection no. 1476-1574, experimentist G. Pet, standard = Sonatine
Sowing date = January 31, Planting date = March 31, IVT Glasshouse no. 12, heated, soil culture, 2 stems, 5 plants per field, collection no. 33-68, experimentist G. Pet, Standard = Claessee
Sowing date = January 29, Planting date = March 28, IVT glasshouse no. 12, heated, soil culture, 2 stems, 5 plants per field, collection no. 1-111, experimentist G. Pet, standard = Claessee

1 - 10 of 782

0.03 s

Filter C&E data by experiment

The report below lists all experiments, which contain characterisation & evaluation (C&E) data. Please use the search bar below to define filters.

< Report View Exclude Null Values < Row 5 of 782 >

Uploader Code	weise
Dataset Remark	Test data CGN
Uploaded At	2015-10-20
Experiment Description	Sowing date = February 24, Planting date = April 18, IVT glasshouse no. XII, heated, soil culture, 2 stems, 5 plants per field, collection no.871-934, experimentists L. de Groot and G. Pet, standard = Bruinsma Wonder
Experiment Start Year	1984
Details	contained traits
Rpt File	Download report file

0.02 s

Traits in selected experiment

Q Go Rows 10 Actions

1 - 10 of 26

Trait Name	Trait Remark	Trait Method	Details
Fruit corrugation	-	(0=smooth, 3=slightly corrugated, 5=medium, 7=corrugated, 9=very corrugated)	scores
Fruit attitude	-	Bruinsma Wonder=7 (1=very drooping, 3=drooping, 5=horizontal, 7=semi-erect, 9=erect)	scores
Flower attitude	-	Bruinsma Wonder=7 (1=very drooping, 3=drooping, 5=horizontal, 7=semi-erect, 9=erect)	scores
Mature fruit color	-	(A=dark red,B=light r,C=orange,D=salmon,E=canary,F=sulphur,G=green,I=brown,J=light orange,K=white,a-b=both in one fruit)	scores
Tobacco mosaic virus	-	determined at natural infection (0=no symptoms, +=symptoms present)	scores
Stem anthocyanin content	-	Bruinsma Wonder=3 (0=absent, 1=very little, 3=little, 5=medium, 7=much, 9=very much)	scores
Fruit ribbing	-	(0=absent, 1=very little, ..., 9=very high)	scores
Flower color	-	(A=white, B=filthy-white, C=light green, D=light purple, E=dark purple, F=yellow, G=white/anthocyanin)	scores
Fruit outerwall thickness	-	Measurement, 9=9mm or more.	scores
Fruit cracking tendency	-	(1=none, 3=slight, 5=medium, 7=medium to severe, 9=severe)	scores

1 - 10 of 26

0.12 s

C&E data: Trait

Filter C&E data by trait

The report below lists the definitions of all phenotypic traits, which are currently available in EURISCO. Please use the search bar below to define filters.

Rows

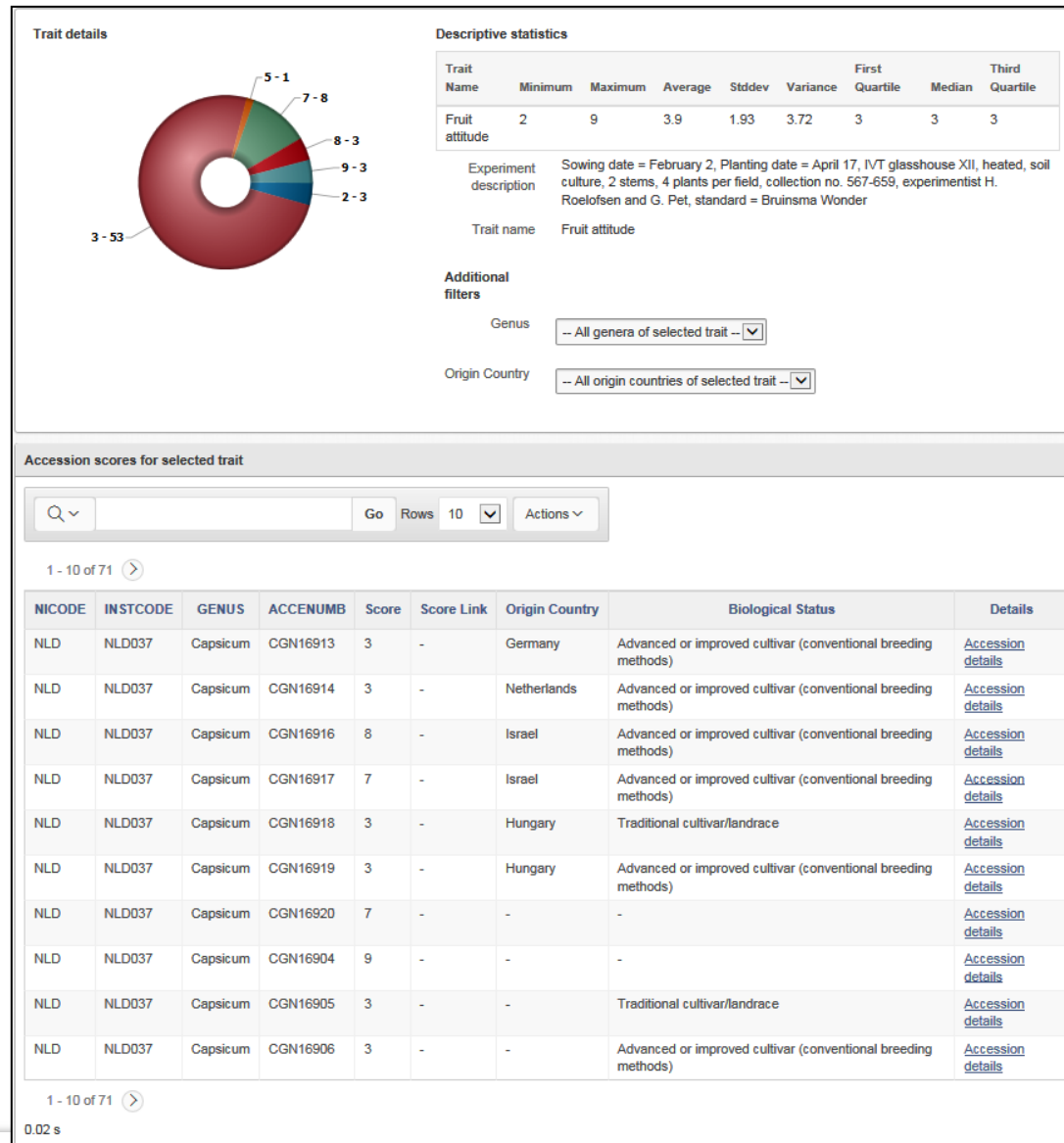
1 - 10 of 1214 >

Trait Name	Trait Remark	Trait Method	Trait Group	Details
Petiole and/or midvein enlargement	-	3=narrow, 5=intermediate,7=enlarged (See IPGRI descriptors Brassica and Raphanus 1990 4.2.27)	C&E data (not further specified)	used by experiment(s)
Siliqua angle	-	1=0°; 2=0-22.5°; 3=22.5°; 4=22.5-45°; 5=45°; 6:45-67.5°; 7=67.5°	C&E data (not further specified)	used by experiment(s)
Leaf anthocyanin content	-	1 = very weak, 3 = weak, 5 = medium, 7 = strong, 9 = very strong	C&E data (not further specified)	used by experiment(s)
Time period until marketable maturity	-	(1=very early, ..., 9=very late)	C&E data (not further specified)	used by experiment(s)
Bremia lactucae	-	Resistance to B. lactucae race BI 5, scale:1 = susceptible, 9 = resistant	C&E data (not further specified)	used by experiment(s)
Bremia lactucae	-	Resistance to B. lactucae race BI 11, scale:1 = susceptible, 9 = resistant	C&E data (not further specified)	used by experiment(s)
Bremia lactucae	-	Resistance to B. lactucae race BI 12, scale:1 = susceptible, 9 = resistant	C&E data (not further specified)	used by experiment(s)
Bremia lactucae	-	Resistance to B. lactucae race BI 14, scale:1 = susceptible, 9 = resistant	C&E data (not further specified)	used by experiment(s)
Leaf anthocyanin distribution	-	1 = localised, 2 = entire	C&E data (not further specified)	used by experiment(s)
Bremia lactucae	-	Resistance to B. lactucae race BI 25, scale:1 = susceptible, 9 = resistant	C&E data (not further specified)	used by experiment(s)

1 - 10 of 1214 >

0.03 s

C&E data: C&E scores



EURISCO web interface

- Still interested in getting additional use-cases for
 - Presentation of C&E data
 - Searching/filtering C&E data
 - Analysis of C&E data

Examples I

- Wizard-based (step-by-step) selection of C&E data?
 - By taxonomy
 - By trait
 - By experiment
 - ...
- Download of selected data (incl. metadata)?
- Descriptive statistics (on experiment level only)?
 - Min, max, avg, stddev, ...
 - Box plots, histograms, scatterplots, ...
- Comparisons?
 - Different countries of origin
 - ...

Examples II

Q Go Actions ▾

1 - 15 >

Trait Name	Unit	Minimum	Maximum	Average	Stddev	Variance	First Quartile	Median	Third Quartile
Length_primary_root_day_2	cm	.0769	5.0049	1.6267	1.0375	1.0765	.8328	1.3749	2.22075
Length_primary_root_day_3	cm	.145	8.2812	2.9827	1.7086	2.9193	1.63035	2.7457	4.010925
Length_primary_root_day_6	cm	.5243	19.8785	9.9115	3.4562	11.9454	7.6231	9.9545	12.1373
Length_primary_root_day_8	cm	.5973	23.1517	14.9772	4.6948	22.0415	11.8333	15.5338	18.4976
Length_primary_root_day_10	cm	2.7703	24.9071	18.5805	4.4733	20.0107	15.7547	20.2375	21.9946
Length_lateral_roots_day_2	cm	0	.542	.0036	.0379	.0014	0	0	0
Length_lateral_roots_day_3	cm	0	.6299	.0057	.0444	.002	0	0	0
Length_lateral_roots_day_6	cm	0	42.247	4.1527	5.8309	33.999	0	1.8464	6.096825
Length_lateral_roots_day_8	cm	0	130.4067	28.495	24.3938	595.056	10.6366	22.1419	37.7196
Length_lateral_roots_day_10	cm	2.4513	235.7843	66.2073	51.863	2689.7719	27.4616	50.745	88.5509
Total_root_length_day_2	cm	.0769	5.0049	1.6307	1.0403	1.0822	.8328	1.3749	2.22995
Total_root_length_day_3	cm	.145	8.2812	2.9884	1.7113	2.9286	1.636425	2.7457	4.027575
Total_root_length_day_6	cm	.5243	59.3962	14.0647	8.3458	69.652	8.49165	11.8062	17.34515
Total_root_length_day_8	cm	5.0457	151.2535	43.4908	27.7073	767.693	22.3352	37.1098	55.4076
Total_root_length_day_10	cm	10.5623	268.6712	85.2913	55.3723	3066.0905	43.067	69.7821	110.9772

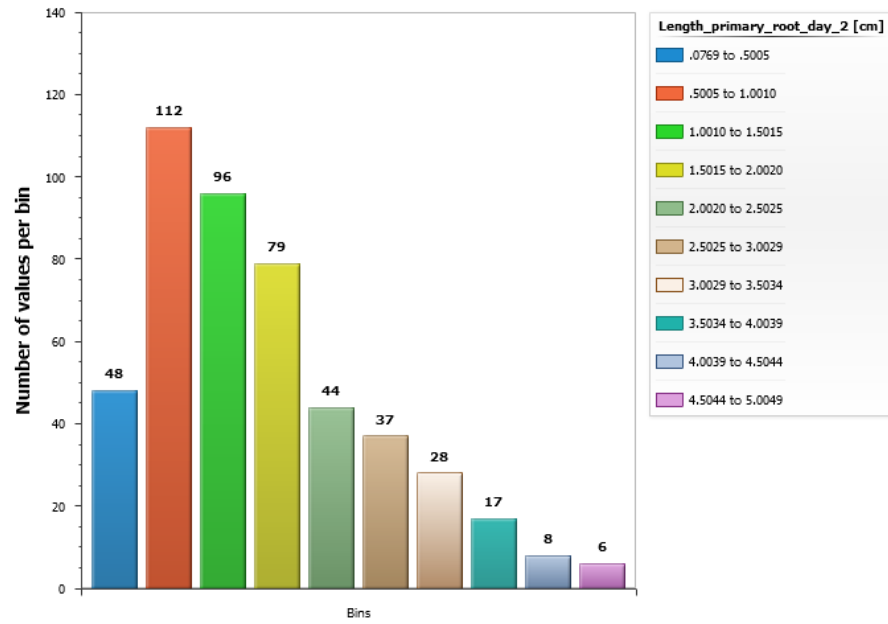
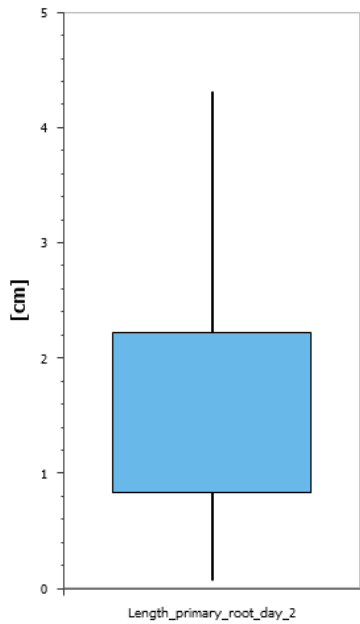
1 - 15 >

0.30 s

Examples III

Select trait: Length_primary_root_day_2

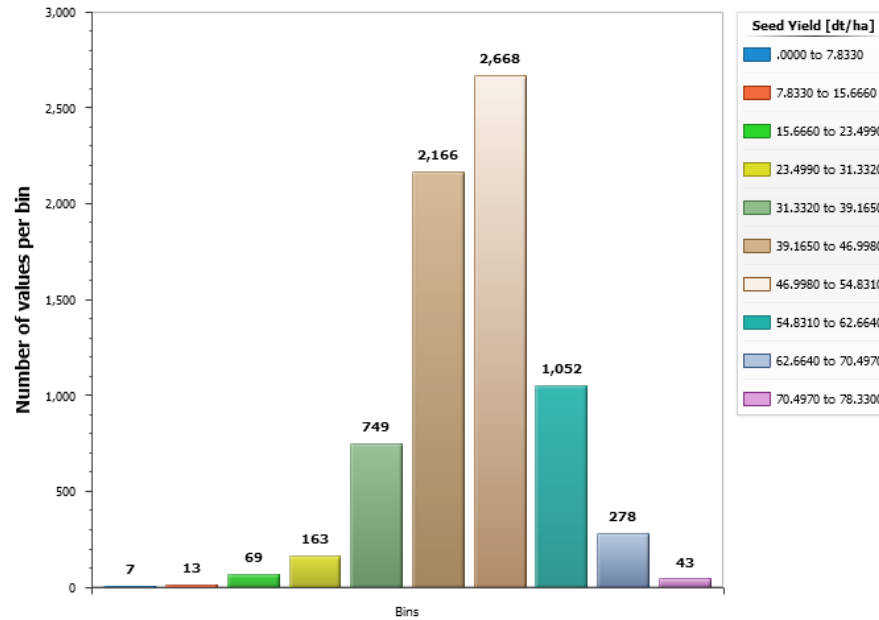
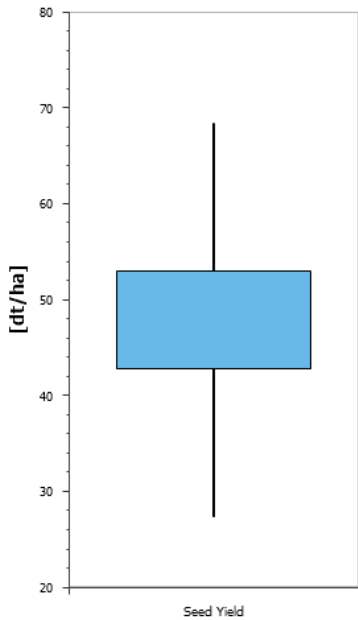
Trait	Unit	Minimum	Maximum	Average	Stddev	Variance	First Quartile	Median	Third Quartile
Length_primary_root_day_2	cm	.0769	5.0049	1.6267	1.0375	1.0765	.8328	1.3749	2.22075



Examples IV

Select trait:

Trait	Unit	Minimum	Maximum	Average	Stddev	Variance	First Quartile	Median	Third Quartile
Seed Yield	dt/ha	0	78.33	47.8293	8.854	78.3934	42.76725	48.177	52.983975



Examples V

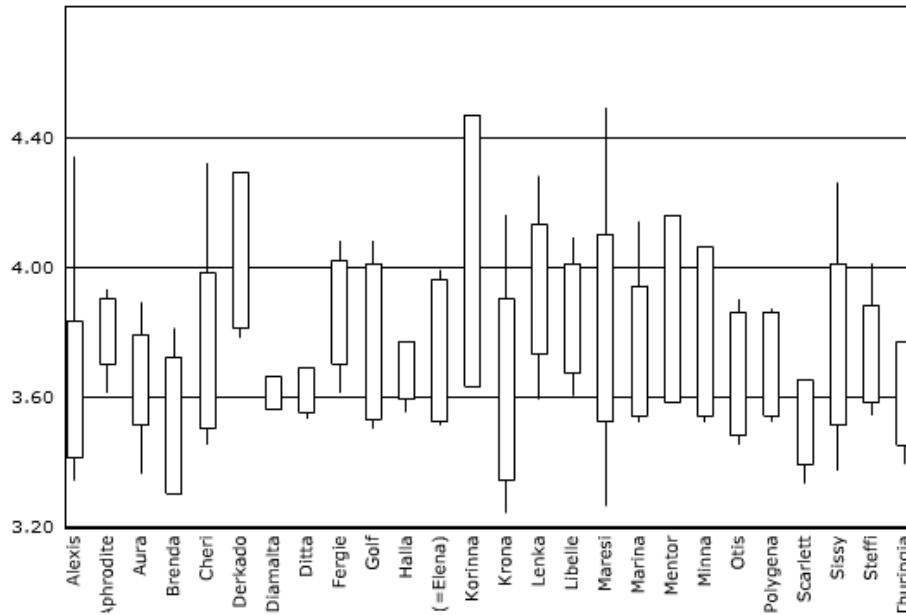
Averages per trait

real extract [%]

2-rowed

spring barley

Plot



Examples VI

Scatterplot

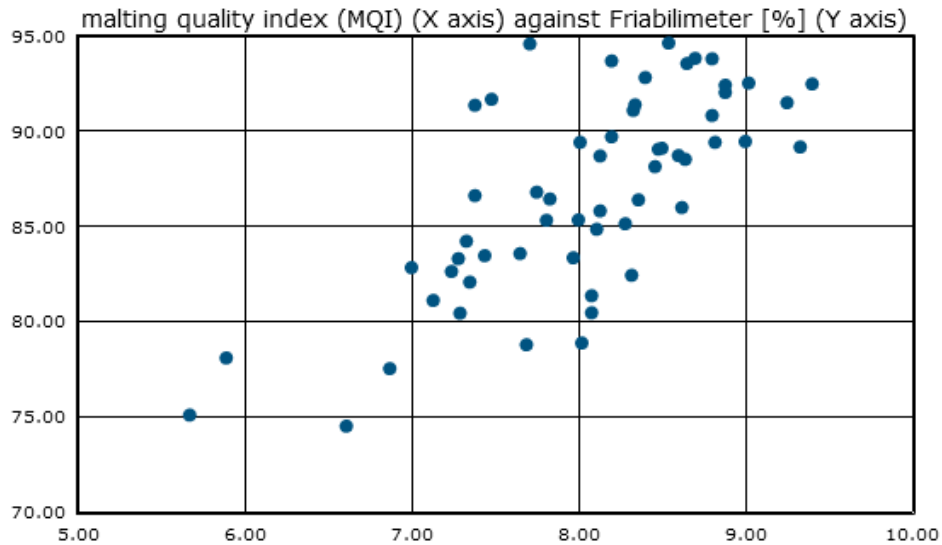
malting quality index (MQI) ▾

Friabilimeter [%] ▾

2-rowed ▾

spring barley ▾

Plot



What are your requirements?

