

# C&E data in the European Barley Database

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EPGRIS3 Workshop  
on C&E Data

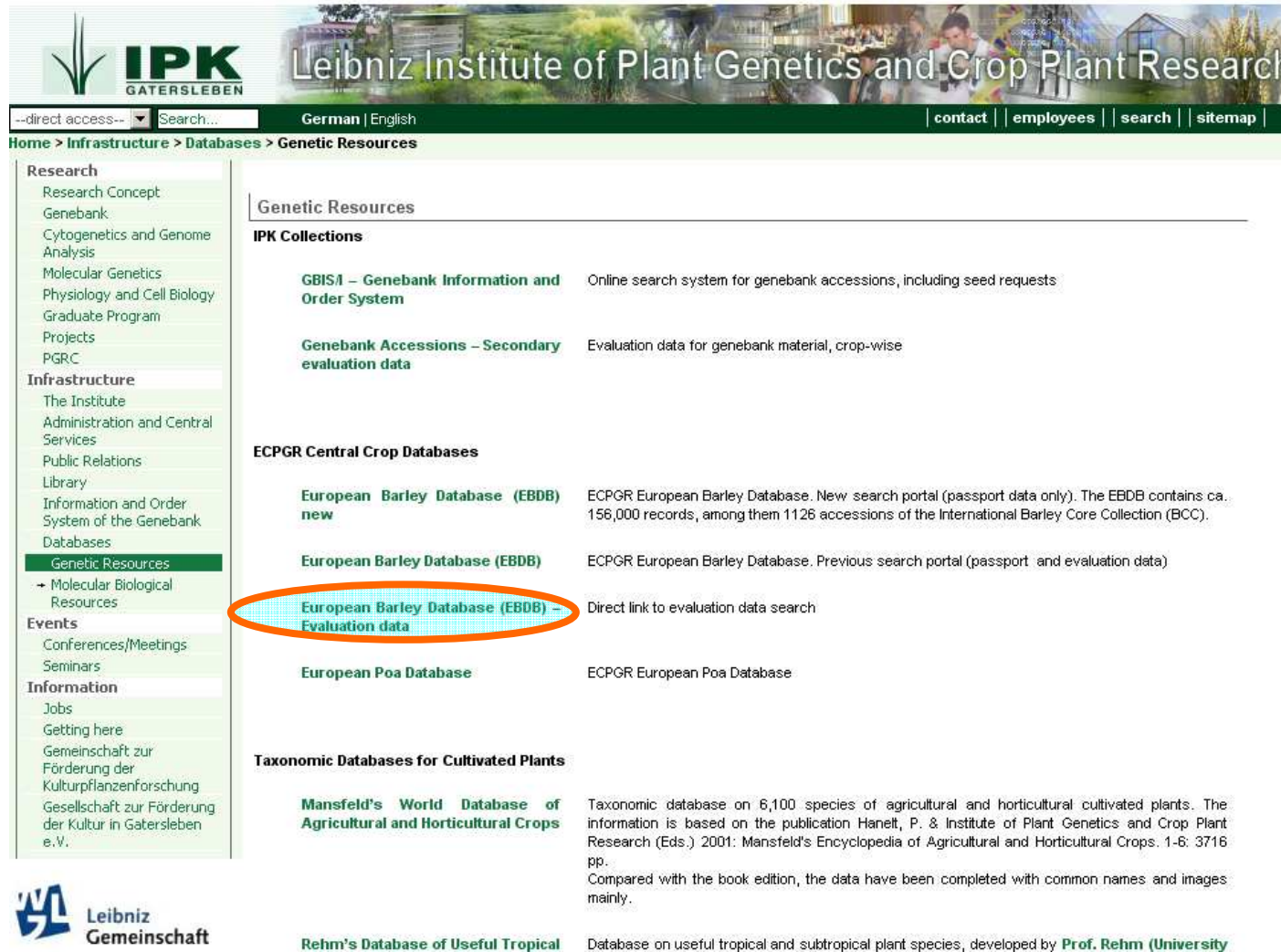
Bonn  
7 May 2009

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# Present State EBDB

- previous version developed in 1999-2002
  - Postgres, PHP, web interface
  - project GENRES Barley, Dirk Enneking
  - included C&E data from project
  - C&E data handling based on NGB's "Dynamic Data Analyser"
- after 2002: PDW project (Bioinformatics)
  - transfer to Oracle, re-engineering
  - new web interface – only for Passport data
  - "old" and "new" portal still active



The screenshot shows the website header with the IPK Gatersleben logo and the title 'Leibniz Institute of Plant Genetics and Crop Plant Research'. Below the header is a navigation bar with a search box, language options (German | English), and links for contact, employees, search, and sitemap. The main content area is titled 'Genetic Resources' and is divided into several sections: 'IPK Collections', 'ECPGR Central Crop Databases', and 'Taxonomic Databases for Cultivated Plants'. The 'European Barley Database (EBDB) - Evaluation data' link is highlighted with an orange circle. The left sidebar contains a navigation menu with categories like Research, Infrastructure, Events, and Information.

**Genetic Resources**

**IPK Collections**

- GBISA – Genebank Information and Order System** Online search system for genebank accessions, including seed requests
- Genebank Accessions – Secondary evaluation data** Evaluation data for genebank material, crop-wise

**ECPGR Central Crop Databases**

- European Barley Database (EBDB) new** ECPGR European Barley Database. New search portal (passport data only). The EBDB contains ca. 156,000 records, among them 1126 accessions of the International Barley Core Collection (BCC).
- European Barley Database (EBDB)** ECPGR European Barley Database. Previous search portal (passport and evaluation data)
- European Barley Database (EBDB) - Evaluation data** Direct link to evaluation data search
- European Poa Database** ECPGR European Poa Database

**Taxonomic Databases for Cultivated Plants**

- Mansfeld's World Database of Agricultural and Horticultural Crops** Taxonomic database on 6,100 species of agricultural and horticultural cultivated plants. The information is based on the publication Hanelt, P. & Institute of Plant Genetics and Crop Plant Research (Eds.) 2001: Mansfeld's Encyclopedia of Agricultural and Horticultural Crops. 1-6: 3716 pp. Compared with the book edition, the data have been completed with common names and images mainly.
- Rehm's Database of Useful Tropical** Database on useful tropical and subtropical plant species, developed by **Prof. Rehm (University**

**Leibniz Gemeinschaft**

# Explanation to the Dynamic Evaluation Data Analyser

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- Some examples
- `prorecnum=1` (Spring barley)
- `prorecnum=2` (Winter barley)

This explanation page is reached either because you loaded the evaluation data analyser page without specifying a project number, or you intentionally followed a link to this page. If you wanted to view some evaluation data, please specify a project number on the URL line, like [this](#).

The graphs and statistical analyses presented on the result pages are always extracted and calculated at run-time from data in the NGB database. In other words, the information is always up-to-date and synchronised with the latest observations entered into the information system.

## Grouping of descriptors

For projects or queries that involve a large number of descriptors, the main page can show the descriptors in arbitrary groups like 'botanic', 'agricultural', 'resistance', or 'chemical' properties. This will make the page easier to read, but needs a data dictionary table to work consistently.

## Grouping of observations

For each project, the main (first) result page will show one line for each descriptor evaluated in the project. If only one descriptor was evaluated, you will get only one line on the first page. By following the link in the first column of the table (the descriptor name) you will get more detailed statistics for the descriptor in question, with lines showing how the variation in the observed material is spread over subgroups. Currently the variation in the following subgroups is calculated:

- variation by observation site
- variation by observation year
- variation in observed taxa
- variation in observed culta ('type of germplasm')
- variation by country of origin
- variation in observed accessions

If any of these groupings, except for the accession group, has only one instance, e.g. all observations were made in the same year, then the corresponding statistics line will not be shown. In such cases the variation is the same as total variation for the observed descriptor, which is shown as the top line on all pages anyway. One of the difficulties with providing automated analyses on the observed values in a characterisation or evaluation trials come from unclear definitions, and mixed scales of

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# Evaluation data spring barley

## Genres Spring Barley Evaluation











Total variation	x	SD	CV	n	Min	Max	Distribution
<b>leafspots</b>	3.84	2.08	0.54	116	1	9	
<b>R. maidis</b>	1.03	0.18	0.17	2225	1	4.20621	
<b>R. padi</b>	1.80	1.33	0.74	2225	1	8.45043	
<b>Ramularia cygni-galli</b>	3.99	1.70	0.43	135	1	8	
<b>S. avenae</b>	1.12	0.45	0.40	2225	1	5.47913	
<b>ML dirrhodium</b>	1.69	1.38	0.82	2225	1	7.85323	
<b>Lodging</b>	3.07	2.48	0.81	272	1	10	
<b>Puccinia striiformis f. sp. Hordei (Yellow rust)</b>	1.35	1.05	0.78	1114	1	8	
<b>Puccinia hordei (Brown rust, Dwarf leaf rust)</b>	4.53	2.29	0.51	11564	1	9	
<b>Blumeria graminis f. sp. Hordei (Powdery mildew)</b>	4.43	2.12	0.48	13856	1	9	
<b>Rhynchosporium secalis (Scald)</b>	3.91	2.10	0.54	11087	1	9	
<b>Pyrenophora graminea (Barley stripe)</b>	1.31	0.97	0.74	1310	1	7.68197	
<b>Pyrenophora teres (Net blotch)</b>	3.14	1.54	0.49	8716	1	12.85646	

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# Spring barley - detail

## Descriptor data

**obsdscnum3**  
**descode** 9-12  
**descriptor** leafspots  
**code\_strin** % infection logarithmic scale: 1=0 - 0,75 %, 2=0.75 - 2 %  
 7=21-36 %, 8=36-60 %, 9=60-100 %  
**decodeby** CODDISLOG  
**remarks** Physiological stress symptom, not in IPGRI desc. List

Total variation	x	SD	CV	n	Min	Max	Distribution
<b>leafspots</b>	3.84	2.08	0.54	116	1	9	
Variation by sit	x	SD	CV	n	Min	Max	Distribution
<b>Landskrona 2002 Spring</b>	5.15	1.49	0.29	52	3	9	
<b>Reichersberg 2001 Spring</b>	2.77	1.88	0.68	64	1	8	
Variation by yea	x	SD	CV	n	Min	Max	Distribution
<b>2001</b>	2.77	1.88	0.68	64	1	8	
<b>2002</b>	5.15	1.49	0.29	52	3	9	
Variation by tax	x	SD	CV	n	Min	Max	Distribution
<b>Hordeum agriocrithon Aberg var. agriocrithon</b>	7.00	0.00	0.00	1	7	7	
<b>Hordeum spontaneum Koch</b>	1.00	0.00	0.00	4	1	1	
<b>Hordeum vulgare L.</b>	3.00	1.83	0.61	4	1	5	
<b>Hordeum vulgare L. convar. deficiens (Steud.) Mansf. var. abyssinicum (Sér.) Körn.</b>	3.00	0.00	0.00	1	3	3	
<b>Hordeum vulgare L. convar. deficiens (Steud.) Mansf. var. deficiens (Steud.) Körn.</b>	4.50	2.12	0.47	2	3	6	
<b>Hordeum vulgare L.</b>							

# Spring barley – more detail

convar. vulgare var. subviolaceum Körn.	3.00	0.00	0.00	1	3	3	
Hordeum vulgare L. convar. vulgare var. trifurcatum (Schlecht.) Wender.	2.00	0.00	0.00	1	2	2	
Hordeum vulgare L. convar. vulgare var. violaceum Körn.	1.00	0.00	0.00	1	1	1	
Hordeum vulgare L. var. gallaesidamicum Giess. et al.	6.00	0.00	0.00	1	6	6	
Not classified	3.33	2.08	0.62	3	1	5	
<b>Variation by cul</b>	<b>x</b>	<b>SD</b>	<b>CV</b>	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Distribution</b>
Wild	1.00	0.00	0.00	4	1	1	
Landrace	5.19	1.47	0.28	21	3	8	
Breeders line	4.00	0.00	0.00	1	4	4	
Advanced cultivar	2.83	2.23	0.79	18	1	8	
Not classified	3.85	1.99	0.52	72	1	9	
<b>Variation by ori</b>	<b>x</b>	<b>SD</b>	<b>CV</b>	<b>n</b>	<b>Min</b>	<b>Max</b>	<b>Distribution</b>
Afghanistan	4.33	1.53	0.35	3	3	6	
Albania	3.00	0.00	0.00	1	3	3	
Argentina	4.00	0.00	0.00	1	4	4	
Australia	5.00	1.76	0.35	10	2	8	
Azerbaijan	1.00	0.00	0.00	1	1	1	
Bulgaria	4.00	0.00	0.00	2	4	4	
Belarus	4.00	0.00	0.00	1	4	4	
Bolivia	6.00	0.00	0.00	1	6	6	
Canada	1.00	0.00	0.00	1	1	1	
China	1.50	0.71	0.47	2	1	2	
Colombia	5.00	0.00	0.00	1	5	5	
Czech Republic	2.00	0.00	0.00	1	2	2	
Germany	2.14	1.68	0.79	7	1	5	
Denmark	1.00	0.00	0.00	1	1	1	
Algeria	4.80	0.84	0.18	5	4	6	
Ecuador	2.00	0.00	0.00	1	2	2	
Spain	3.50	0.71	0.20	2	3	4	
Ethiopia	5.45	1.47	0.27	20	3	8	
Finland	4.00	0.00	0.00	1	4	4	
United Kingdom	1.00	0.00	0.00	1	1	1	

# Evaluation data winter barley

Genres Winter Barley Evaluation

Total variation	x	SD	CV	n	Min	Max	Distribution
Barley mild mosaic virus + Barley yellow mosaic virus (BaYMV-1)	5.64	3.77	0.67	3634	1	9	
Barley mild mosaic virus + Barley yellow mosaic virus (BaYMV-1 + 2)	6.14	3.83	0.62	2304	1	9	
R. maidis	1.03	0.18	0.17	2225	1	4.20621	
R. padi	1.80	1.33	0.74	2225	1	8.45043	
Ramularia cygni-galli	3.99	1.70	0.43	135	1	8	
S. avenae	1.12	0.45	0.40	2225	1	5.47913	
M. dirrhodium	1.69	1.38	0.82	2225	1	7.85323	
Lodging	3.07	2.48	0.81	272	1	10	
Puccinia striiformis f. sp. Hordei (Yellow rust)	1.35	1.05	0.78	1114	1	8	
Puccinia hordei (Brown rust, Dwarf leaf rust)	4.53	2.29	0.51	11564	1	9	
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Rhynchosporium secalis (Scald)	3.91	2.10	0.54	11087	1	9	
Pyrenophora graminea (Barley stripe)	1.31	0.97	0.74	1310	1	7.68197	
Pyrenophora teres (Net blotch)	3.14	1.54	0.49	8716	1	12.85646	
Barley yellow dwarf virus (BYDV)	5.68	1.52	0.27	1714	1	9	
Barley mild mosaic virus (BaMMV)	3.35	3.65	1.09	184	1	9	
Beginning of heading (spike emergence)	1.00	0.00	0.00	127	1	1	
Cold tolerance	2.26	1.89	0.84	107	1	9	

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# EBDB characterisation data

## **Growth habit**

spring	58385
winter	15289
intermediate	2195

## **Kernel cover**

C=covered	3521
N=Naked	2829

## **Spike kernel row number**

2-row	8483
6-row	11469

Total EBDB:  
>155,000 accessions

# Present situation

- no personnel capacity for EBDB development (eg C&E data inclusion in new portal)
- update of passport planned 2009-2010
  - request passport from each holder in EURISCO format & replace previous set from that holder
  - maintain cross-refs between accessions (eg designation of duplicates)
  - add passport from EURISCO alternatively
- C&E data? → provide to EURISCO?

thx for attn