



C&E data in ECCDBs

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16/62 ECCDBs with C&E data

(63% of ECCDB accessions)

- **7 Vegetable**
 - Brassica, Chicory, Eggplant, Lactuca, Minor leafy, Spinach, Tomato
- **4 Cereals**
 - Avena, Barley, Maize, Wheat
- **3 Starch, Sugar**
 - Beta, Potato cult., Potato wild
- **2 Fruit**
 - Prunus, Vitis

ECP/GR	N. traits	Char.	Eval.	N. accessions	N. observ.	Ratio obs/acc	Ratio obs/acc – n. traits
Potato cult.	85	33	52	11,792	160,914	13.6	0.16
Beta	83	48	35	10,485	36,513	3.5	0.042
Vitis	71	59	12	15,936	49,780	3.1	0.044
Avena	66	39	27	32,694	169,799	5	0.079
Potato wild	55	0	55	10,341	33,256	3.22	0.058
Eggplant	44	31	13	5,022	854 acc.		
Brassica	31	24	7	23,630	1,268 acc.		
Maize	27	19	8	11,865	54,968	4.63	0.17



ECP/GR

	N. traits	Char.	Eval.	N. accessions	N. observ.	Ratio obs/acc	Ratio obs/acc – n. traits
Prunus	22	8	14	4,134	1,769 acc.		
Minor leafy	21	6	15	183	1,127	6.1	0.29
Wheat	21	8	13	164,352	19,222 only char.	0.1	0.005
Spinach	12	9	3	2,017	1,878	0.93	0.078
Tomato	10	10	0	21,327	8,900	0.41	0.042
Lactuca	9	9	0	11,554	12,016 - 260 (wild)	1.17 – 0.2 (wild)	0.049 - 0.022 (wild)
Barley	3	3	0	155,000	102,171	0.66	0.22
Chicory	1	0	1	1,634	22	0.013	0.013

Type of evaluation data

Trait category	Number of databases
Biotic stress	11
Quality	9
Phenology	5
Yield	5
Abiotic stress	5

On-line searchable vs. flat tables

Searchable (10)

- Avena
- Barley
- Beta
- Eggplant
- Maize
- Potato cult.
- Prunus
- Tomato
- Vitis
- Wheat

Flat tables (6)

- Brassica
- Chicory
- Lactuca
- Minor leafy vegetables
- Potato (wild)
- Spinach

How data are handled

Flat tables:

- Explanation tables (read me; codes used for countries, institutes, species, collectors, etc.)
- Description of traits and scoring method for characterization (IPGRI, UPOV or other)
- Experiment description for evaluation data (site, date, people, methods, measure units)
- Standardized traits, but different notations accepted
- Excel tables with scores by each partner in different years

How data are handled

Searchable DBs:

- **Avena and Beta**: values presented in different forms, both original data and also universal scores harmonized through algorithms to compare heterogeneous data; allows for different methodologies to be described
- **Barley - Eggplant - Maize – Prunus – Tomato – Vitis – Wheat** : Descriptors standardized. Searchable masks with drop down menus or free text – multiple fields connected by AND/OR – clear result - unclear methodology behind (descriptor values not easy to interpret – drop down menu ideal, and possibility to make more than one choice within descriptor – different scoring methods accepted (Vitis); different years of evaluation (Vitis); alternative scoring (wheat)

How data are handled

Searchable DBs:

- **Potato cult.:** contributors can enter data on-line – data per variety (not per accession) each variety can be scored by multiple holders - multiple searches – all codes easily available – data transformed (taxa and cultivar names)

Conchita

[pedigree] [parents] [similar varieties][tabulated data]

HIGHER TAXON: *Solanaceae*
GENUS: *Solanum* L.
Solanum tuberosum L. cv. Conchita
Pedigree:
Breeder:
Breeder's rights:
Synonyms:
National list:



ADMINISTRATION

Country of origin

PERU [18]

Data source

DEU001 [8] NEIKER [18] VRI RUSSIA [23]

Plant health directive EC77/93, requirements

Part tested [8]

Plant material maintained as

Tuber [23] In-vitro [8]

Sample status

Advanced cultivar [8, 18, 23]

Test conditions

Non organic [8]

UTILISATION CHARACTERISTICS

Dry matter content

Medium [23]

ENVIRONMENTAL STRESS FACTORS

Frost resistance

Medium [23]

Source:

- | | | |
|------|---|------|
| [8] | Federal Research Centre of Agriculture, GERMANY | 2005 |
| [18] | NEIKER-Instituto Vasco de Investigación y Des, SPAIN | 2005 |
| [23] | N.I. Vavilov All-Russian Scientific Research, RUSSIAN FEDERATION | 2005 |

Other features of ECCDBs

- On-line data entry
- Link to pedigree
- Comparison with parents
- List of breeders
- Synonyms
- Pictures
- Visitor statistics
- Duplicate search
- Support of multiple taxonomy systems
- Taxonomy keys
- Literature DB
- Bibliography per accession
- Links to related databases
- Link to genes catalogue
- List of taxa
- Microsatellites lists
- Seeds available

Other features of CCDBS

Potato cultiv.: on-line data entry; pedigree; comparison with parents; breeders; core collections; synonyms; pictures; visitors statistics

Avena and Beta: duplicate search; Taxonomy system

Eggplant: literature DB; bibliography per accession; pictures; related databases; seeds available

Wheat: List of genes. List of taxa; link to pedigree catalogue; link to genes catalogue

Tomato: Probable duplicates search; taxonomy key and links; literature; template for data submission

Pyrus: synonyms; pictures

Vitis: microsatellites list, pictures

Conclusion

- Few available data – why?
 - a) Missing data
 - b) Lack of organization
 - c) Resistance to share data
- Dependent on EU project funds (public domain)
 - Clarify incentives to generate/share data
- Standardization issue
 - Harmonize / transform data vs. leave data as they are received
- Many different ways to display data
 - Could be useful to set up a list of principles of a friendly database, i.e.:
 - a) Always provide off-line downloadable
 - b) Drop down menus
 - c) Codes always explained
 - d) Multiple choices possible
 - e) Etc.