

# GEMMA

## A technical web site to share DUS data

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### Introduction

The GEMMA database (web site) was created in a CPVO project (CPV8648) between 4 partners, in order to provide a database compiling DUS information which optimize the management of variety reference

collection in peach tree. The partners use a structure which allow to integrate different types of data, to support multi languages, to define access rights and manage different species.



Three types of information are available (morphological and measured data, biomolecular data and digital data) for a variety, managed according to a relational model.

**Morphological and measured data**

INRA TABLE OF CHARACTERISTICS TO BE USED IN DUS-TEST AND PREPARATION OF DESCRIPTIONS

Peach, 2003-03-27

- 35. Fruit : shape in ventral view
  - Broad oblate 1 Plate de Chine
  - Oblate 2 Robin
  - Round 3 Redwing
  - Ovate 4 Cavalier
  - Elliptic 5 Elberta
- 15. Petal : number
  - Five 1 Redhaven
  - More than five 2 Red Flower Peach
- 16. Stamens : position compared to petals
  - Below 1 Loring
  - Same level 2 Robin, Springtime
  - Above 3 Redhaven
- 17. Stigma : position compared to anthers
  - Below 1 Vivian
  - Same level 2 Crimson Gold
  - Above 3 Fazalode

**Digital data**

INRA TABLE OF CHARACTERISTICS TO BE USED IN DUS-TEST AND PREPARATION OF DESCRIPTIONS

Peach, 2003-03-27

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**Biomolecular data**

Marker	Major Allele	Frequency	Genotype	Type	AlleleNo	Availability	PIC
UDP96005	0.70	19	9	1.00	0.44		
CPV00045	0.68	12	8	0.99	0.44		
CPV00176	0.47	16	6	0.96	0.59		
UDP98409	0.71	19	8	0.99	0.42		
UDP98022	0.59	21	9	0.98	0.56		
BPPCT007	0.50	18	8	0.98	0.55		
BPPCT015	0.61	36	17	0.98	0.65		
UDP98412	0.43	26	12	0.99	0.65		
CPVCT044	0.48	31	12	0.99	0.65		
CPVCT001	0.46	31	11	0.98	0.68		
UDP98008	0.64	18	10	0.99	0.50		
CPVCT038	0.63	21	10	0.99	0.50		
BPPCT017	0.60	27	15	0.98	0.47		
BPPCT025	0.66	35	11	0.96	0.53		
CPVCT022	0.27	40	18	0.99	0.78		
CPVCT006	0.56	9	4	0.97	0.53		
<b>Mean</b>	<b>0.55</b>	<b>23.19</b>	<b>10.38</b>	<b>0.98</b>	<b>0.55</b>		

The variety data are attached to a general table of the variety, and all the data (phenotypic, measured and molecular) are imported into the database via Excel and can be exported to Excel. Descriptions may be integrated in application of different UPOV guidelines or CPVO protocols. A tool for converting a guideline to another is also available.

To use the morphological data available in the database, a sorting system on different criteria (character and level of expression) is also available on the site to realize thereafter an export of essential data on Excel.

**Export screen**

Gemma

Home Varieties Management Help

Criteria query (You can use the %)

Species: Pécher Country: FR N'variety: Guideline: CPVO-TP 053/1

Denomination: Breeder: Reference: Type of data: Phenotypical data Type of description: Official description

List of data [253]

Country	N'variety	Denomination	Breeder	Breeder reference	Species code	Remark	1	2	3	4	5
FR	90	Mailharprincesse	Arsène Maillard	01167301NB	PRUNU_PER		5	5	3	5	3
FR	91	Mailharquenne	Laurence Maillard	01140301NB	PRUNU_PER		5	5	5	3	3
FR	92	Mailharson	Arsène Maillard	10301809NPJ	PRUNU_PER		5	5	3	5	3
FR	93	Mailharuby	Euro Pepinières SC	EP9411N	PRUNU_PER		5	3	3	3	3
FR	94	Maud	Pépinières Valla Ge	509/94	PRUNU_PER		7	5	3	3	3
FR	95	Mazarine	Joseph Burin,EARL	MAZARINE	PRUNU_PER		9	7	3	3	3
FR	96	Mesembrace	Institut National di	S6606	PRUNU_PER		7	7	3	5	5
FR	97	Metmay	Thomas O. CHAMB	METMAY	PRUNU_PER		5	5	3	5	5
FR	98	Meymag	GAE MEYNAUD Fré	MEY1499	PRUNU_PER		5	5	3	5	5
FR	99	Meyna	GAE MEYNAUD Fré	M1385	PRUNU_PER		9	7	3	7	1
FR	101	Monaca	René Monteux-Cail	MONACA	PRUNU_PER		9	7	3	5	5
FR	102	Monafi	René Monteux-Cail	MONAFI	PRUNU_PER		7	7	3	5	3
FR	103	Monnan	René Monteux-Cail	3R	PRUNU_PFR		7	7	1	3	3

Export Refresh List of characteristics

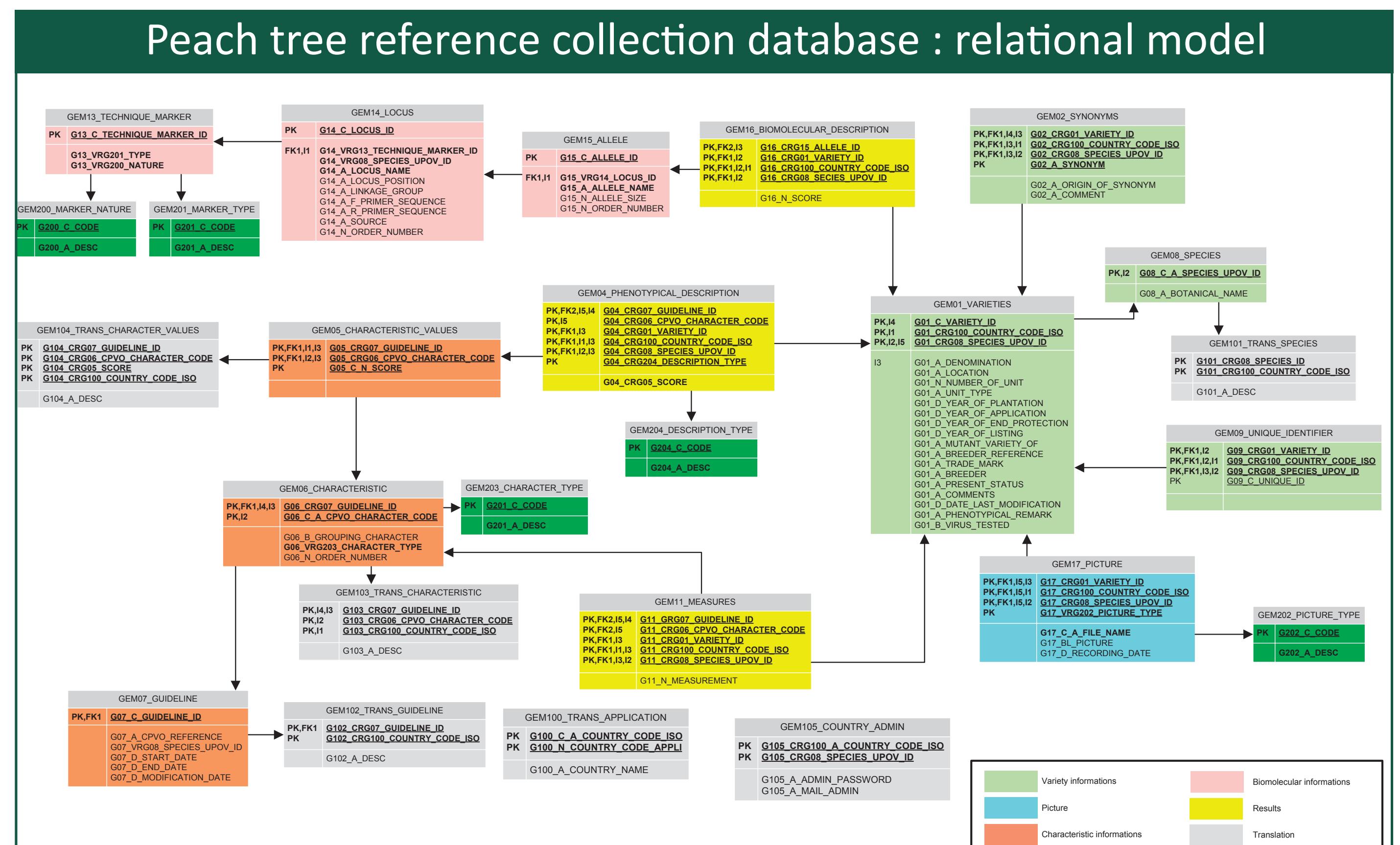
This web site approach is the easiest way to share data, to quickly correct problems, to use sort and Excel export, with different access rights that permit all the partners to feed the database themselves.

Three different access levels:

**Administrator:** one data administrator per country and species with a specific Account/Password ; management of his own data ; display data from other countries/species only with authorization →only administrators accounts will see data on country/species.

**User:** restricted access that require a specific Account/Password; each user account is created by the administrator→only users and administrators accounts will see the variety.

**Public:** access that doesn't require any specific Account/Password →everyone can see the data on country/species.



**Consultation screen**

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Accueil Variétés Administration Aide

Critères d'interrogation (Vous pouvez utiliser le %)

Spécie: Pêcher Pays: FR N'variété: Inscr:

Dénomination: Obteneur: Référence: Maque déposée:

Liste des variétés

Pays	Id. unique	N'variété	Dénomination	Inscript.	Obteneur	Référence obteneur
FR	14	12	Suncrest	1970	United State Department of Agriculture - G	SUNCREST
FR	13	11	Springtime	1967	ARMSTRONG NURSERIES Inc.	SPRINGTIME
FR	12	10	Springcrest	1973	United State Department of Agriculture - G	SPRINGCREST
FR	11	9	Snow Queen	1979	ARMSTRONG NURSERIES Inc.	SNOWQUEEN
FR	10	8	Redhaven	1961	Stat Exp South Haven	REDHAVEN

Données Détail

Type de données: Données phénotypiques Guideline: CPVO-TP 053/1

Liste des caractères [69]

Code	Nom	Regroup.	Type description	FR	ES	HU	IT
1	Tree : size		Official description	5	6	5	5
2	Tree : vigour		Official description	7	6	5	7
3	Tree : habit		Official description	3	3	4	3
4	Flowering shoot : thickness (excluding brindilles)		Official description	5	7	7	5
5	Flowering shoot : length of internodes (excluding brindilles)		Official description	5	5	5	5
6	Flowering shoot : anthocyanin coloration (excluding brindilles, side away from		Official description	9	9	9	9
7	Flowering shoot : intensity of anthocyanin coloration (excluding brindilles, side		Official description	3	5	3	4
8	Flowering shoot : density of flower buds (excluding brindilles)		Official description	7	3	5	5
9	Flowering shoot : general distribution of flower buds (excluding brindilles)		Official description	2	1	2	2
10	Flower : type		Official description	1	1	1	1

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**Sorting and export screen**

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Home Varieties Management Help

Critères d'interrogation (Vous pouvez utiliser le %)

Species: Pécher Country: FR N'variety: Guideline: CPVO-TP 053/1

Denomination: Breeder: Reference: Type of data: Phenotypical data Type of description: Official description

List of data [253]

Charact. (1)	Low Score	1-non showy	High Score	1-non showy
Charact. (2)	Low Score	1-brood oblate	High Score	2-oblate
Charact. (3)	Low Score	1-greenish white	High Score	2-white
Charact. (4)	Low Score	2-white	High Score	3-cream white
Charact. (5)	Low Score	3-cream white	High Score	4-light yellow
Charact. (6)	Low Score	4-light yellow	High Score	5-yellow
Charact. (7)	Low Score	5-yellow	High Score	6-orange
Charact. (8)	Low Score	6-orange	High Score	7-orange
Charact. (9)	Low Score	7-orange	High Score	8-red
Charact. (10)	Low Score	8-red	High Score	9-red

Reset Close

Sort Save Sort Restore Sort Refresh Export List of characteristics

This database, currently used for fruit species (peach, apricot and apple in progress) can be declined on other types of species.