



# The ECPGR Cucurbits Database, ECCUDB

*Workshop “Tailoring the Documentation of Plant Genetic Resources in Europe to the Needs of the User”  
Prague, Czech Republic, May 20-22 2014*





## The ECPGR Cucurbits Database

Institute for the Conservation and Breeding of Valencian Agrodiversity  
COMAV Genebank, Camino de Vera, s/n, CPI Access I-Third floor  
Universidad Politécnica de Valencia. CP 46022 Valencia, Spain  
Tel: +34 963879416 +34 96877000 + EXT: 79421

Database managers: M<sup>a</sup> José Díez Niclós and **José Miguel Blanca**



The European Central Cucurbits database is being developed at the COMAV, Spain, on the initiative of the European Cooperative Programme for Crop Genetic Resources Networks (ECPGR). The database now contains passport information on 27485 accessions of several cucurbits species. The database will be extended to include passport, characterization and evaluation data of accessions belonging to most important collections in Europe. The database is being developed following the IPGRI/FAO Multicrop Passport Descriptors List.

Last updated: January, 2014

Database access	Further information
<a href="#">Passport Data</a> <a href="#">Citrullus lanatus Characterization Data</a> <a href="#">Cucumis sativus Characterization Data</a>	<a href="#">Contributors</a>
<a href="#">Off-line - Citrullus lanatus Characterization Data download</a>	<a href="#">Database description (Multicrop Passport Descriptor List)</a>
<a href="#">Off-line - Cucumis sativus Characterization Data download</a>	<a href="#">On-line Taxonomy</a>
<i>Cucurbita pepo</i> core collection (Belonging to ESP026 collection): <a href="#">Corecollection.pdf</a>	<b>Insitu Onfarm Activities</b> Spain ▾

COMAV 2014

[Back to COMAV web page](#)

Date of creation: 2001

*Some statistics....*



## Number of accessions

- TOTAL: 29.772 accessions
  - 4198 (14.10%) *Citrullus* spp.
  - 12476 (41.91%) *Cucumis* spp.
  - 12428 (41.74%) *Cucurbita* spp.
  - 670 (2.25%) Other Genera

# 42 institutions from 25 countries



<u>Country</u>	<u>Holding institution</u>	Genus				<u>TOTAL</u>
		<u>Citrullus spp.</u>	<u>Cucumis spp.</u>	<u>Cucurbita spp.</u>	<u>Other genera</u>	
Armenia	ARM002, ARM008	2	14			16
Austria	AUT025		4	8	1	13
Azerbaijan	AZE004, AZE005, AZE014, AZE015	23	80	12	1	116
Bulgaria	BGR001	169	1308	344		<b>1821</b>
Switzerland	CHE001, CHE063		5	5		10
Czech Republic	CZE122	8	988	740	37	<b>1773</b>
Germany	DEU146	274	1148	1105	157	<b>2684</b>
Spain	ESP026, ESP027, ESP058	535	2021	1578	160	<b>4294</b>
France	FRA011		82			82
United Kingdom	GBR006	11	13	12		36
Georgia	GEO001	2	5	4		11
Hungary	HUN003	215	431	899	51	<b>1596</b>
Israel	ISR020		356			356
Italy	ITA004	74	158	162	29	423
Lithuania	LTU001		8			8
Latvia	LVA010		5			5
The Netherlands	NLD037		934			<b>934</b>
Poland	POL030	91	537	381	4	<b>1013</b>
Portugal	PRT001, PRT005, PRT025	33	201	364	11	609
Romania	ROM007, ROM019, ROM020, ROM023	67	87	289	2	445
Russian Federation	RUS001	2412	2998	5771	217	<b>11398</b>
Slovakia	SVK001, SVK013	14	14	8	0	36
Sweden	SWE002		72	5		77
Turkey	TUR001		638	633		<b>1271</b>
Ukraine	UKR008, UKR021, UKR023, UKR048, UKR093	268	369	108	0	745
	<b>TOTAL</b>	<b>4198</b>	<b>12476</b>	<b>12428</b>	<b>670</b>	<b>29772</b>

# Characterization data



- 138 acc. *Cucumis sativus* (COMAV, Spain)
- 637 acc. *Cucumis sativus* from (CGN, The Netherlands)
- 107 acc. *Citrullus* (COMAV, Spain)
- 53 acc. Core collection of *C. pepo* (COMAV, Spain)

**TOTAL: 935**

## Images

- 32 *Citrullus lanatus*
- 138 *Cucumis sativus*
- 53 Core collection of *C. pepo*



**TOTAL: 223**

# Searching for passport data



## European Central Cucurbits database

SEARCH PAGE (There are 27486 accessions in the database)

1. Institute code

ESP026 Genebank of the Polytechnical University of Valencia(UPV). (Spain).

2. Accession number

3. Collecting number

4. Collecting institute code

5. Genus Citrullus



6. Species

8. Subtaxa

10. Common crop name

11. Accession name

13. Country of origin

14. Location of collecting site

# Searchable for all passport fields except Notes



COMAV - Centro de Conservación y Mejora de la Agrobiodiversidad Valenciana-ecudb Database - Microsoft Internet Explorer

Archivo Edición Ver Favoritos Herramientas Ayuda

Búsqueda Favoritos

Dirección http://www.comav.upv.es/eccudb\_index.asp

14. Location of collecting site

15. Latitude of collecting site

16. Longitude of collecting site

17. Elevation of collecting site

18. Collecting date of sample

19. Breeding institute code

20. Biological status of accession  ?

21. Ancestral data

22. Collecting/acquisition source  ?

23. Donor institute code

27. Type of germplasm storage  ?

Search

20. **Biological status of accession** (SAMPSTAT)  
The coding scheme proposed can be used at 3 different levels of detail: either by using the general codes (in boldface) such as 100, 200, 300, 400 or by using the more specific code such as 110, 120 etc.

- 100) Wild**
  - 110) Natural
  - 120) Semi-natural/wild
- 200) Weedy**
- 300) Traditional cultivar/landrace**
- 400) Breeding/research material**
  - 410) Breeder's line
    - 411) Synthetic population
    - 412) Hybrid
    - 413) Founder stock/base population
    - 414) Inbred line (parent of hybrid cultivar)
    - 415) Segregating population
  - 420) Mutant/genetic stock
- 500) Advanced/improved cultivar**
- 999) Other** (Elaborate in REMARKS field)

Listo Internet



# European Central Cucurbits database

## RESULTS PAGE

Search results: 226 matches *Citrullus lanatus*

Institute Code	Accession Number	Genus	Species	Common Crop Name	Country of origin	
ESP026	UPV016489	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>
ESP026	UPV016490	Citrullus	lanatus	Sandía de sequero	ESP	<a href="#">Details</a>
ESP026	UPV016491	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>
ESP026	UPV001947	Citrullus	lanatus	Sandía melada	ESP	<a href="#">Details</a>
ESP026	UPV001958	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>
ESP026	UPV001955	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>
ESP026	UPV001949	Citrullus	lanatus	Sandía moscatel	ESP	<a href="#">Details</a>
ESP026	UPV001961	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>
ESP026	UPV001963	Citrullus	lanatus	Sandía	ESP	<a href="#">Details</a>





# European Central Cucurbits database

**DETAIL PAGE**

1. Institute Code	2. Accession Number	3. Collecting Number	4. Collecting Institute Code	5. Genus	6. Species
ESP026	BGV002715	CA-CI- 42	ESP026	Citrullus	lanatus
7. Species Authority	8. Subtaxa	9. Subtaxa authority	10. Common Crop Name	11. Accename	12. Acquisition Date
(Thunb.) Matsum & Nakai			Sandía		
13. Country of origin	14. Location of Collecting Site	15. Latitude of Collecting Site	16. Longitude of Collecting Site	17. Elevation of Collecting Site	18. Collecting Date of Sample
ESP	Villaverde.Fuerteventura (Las Palmas)	2837--N	01353--W		35874
19. Breeding institute code	20. Biological Status of Accession	21. Ancestral data	22. Collecting/Acquisition Source	23. Donor Institute Code	24. Donor accession number
	300?		26?		
25. Other identification numbers	26. Location of safety duplicates	27. Type of germplasm storage	28. Remarks	IMAGES	
		12?			

# Searchable for characterization data



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## *Citrullus lanatus* Characterization SEARCH FORM

SEARCH

### Passport Filters

Institute Code

->All-

Country of origin

->All<-

← Spain

### Characterization Filters

Plant growth habit

->All-

Leaf blade: degree of secondary lobing

->All-

Hermaphroditic flowers

->All-

Fruit shape

->All-

Predominant (or ground) fruit skin colour

->All-

Secondary fruit skin colour pattern

->All-

Fruit skin stripe colour

->All-

Flesh colour

->All-

Distribution of grooves

->All-

Fruit bitterness

->All-

SEARCH



## European Central Cucurbits Database

**CHARACTERIZATION DATA :** GOTO : [Dataset Passport Data](#) [Dataset ALL Data](#)

Characterization data belonging to dataset that matches your search criteria:

AID	PGH	LFB	HPF	FWG	FRS	PSC	DSS	SSC	FRC	TOL	GRO	MAA	NOT(see below)	PHO
BGV000065	2			3550	3	2C	99		2	10	0		DSS: Dark green stripes with veins	YES
BGV000066	2			2450	4	3C	99		2	10	0		DSS: Dark green stripes	
BGV000067	2			5940	2	3C	1		1	10	0			
BGV000068	2			5405	2	3C	1		2	10	0			
BGV000741	2			2400	99	3C	99		2	10	0		FRS:Deformed ; DSS:striped	YES
BGV000742	2			5000	3	1;3C	99		2	10	0		DSS:striped	YES
BGV000743	2			3000	3	3C	1		2	15	0			YES
BGV000744	2			4750	2	2C	1		2	10	0			
BGV000746	2			5000	3	3C	99		1	10	0		DSS:lightly striped	YES
BGV000747	2			4256	2	3;4C	1		1;2	10	0			
BGV000750	2			3750	3	3C	1		2	10	0			YES
BGV000751	2			2520	2	1C	2	3	2	9	0			
BGV000754	2			5200	2	2C	99	3	3	10	3		DSS:dark green stripes GRO:with light ribs	
BGV000755	2			3350	3	3C	99		2	10	0		DSS:striped	YES
BGV000756	2			2800	4	3C	1		2	9,3	0			YES
BGV000760	2			6800	4	3C	1		1	11	3		GRO:with light ribs	
BGV000761	2			3475	3	3C	1		1	10	0			YES
BGV000764	2			3050	3	3C	1		1	10	0			YES



BGV014135	2			4557,5	6	2C	3		1	14,21	0			DSS:striped
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### Citrullus Legend

AID: Accession Identification Number

PGH: Plant Growth Habit (1-Bushy, 2-Runner)

LFB: Leaf Blade (3-Shallow, 5-Medium, 7-Deep)

HPF: Hermaphroditic Flowers (0-Present, 1-Absent)

FWG: Fruit Weight (g)

FRS: Fruit Shape (1-Flatenned, 2-Round, 3-Broad Elliptic, 4-Elliptic, 5-Piryform, 6-Cylindric)

PSC: Predominant Fruit Skin Colour (1-Light Green, 2-Medium Green, 3-Dark Green, 4-White, 5-Yellow, 6-Brown, 99-Variable (specified in descriptor 12(Notes))

DSS: Design Produced by Secondary Skin Colour (1-Solid, 2-Stripped, 3-Spotted, 4-Mixed, 99-Variable (specified in descriptor 12(Notes))

SSC: Skin Stripe Colour (1-Light Green, 2-Medium Green, 3-Dark Green, 4-White, 5-Yellow, 6-Brown, 99-Variable (specified in descriptor 12(Notes))

FRC: Flesh Colour (1-Red, 2-Pink, 3-Yellow, 4-White, 5-Mixed, 6-Orange, 7-Green, 99-Variable (specified in descriptor 12(Notes))

TOL: Thickness of Outer Layer of Pericarp (Measured in mm at maturity stage)

GRO: Grooves (0-Absent, 1-At basal half, 2-At apical half, 3-On whole fruit)

NOT: Notes

PHO: Photo(s)

### ADDITIONAL NOTES:

FRS: NUMBERS SEPARATED BY SEMICOLON MEANS THE ACCESSION PRESENTS FRUITS WITH BOTH SHAPES(NOT SIMULTANEOUSLY)  
NUMBERS SEPARATED BY HYPHEN MEANS THAT THE FRUIT SHAPE IS INTERMEDIATE.

PSC: NUMBERS SEPARATED BY SEMICOLON MEANS THE ACCESSION PRESENTS FRUITS WITH BOTH COLDRS(NOT SIMULTANEOUSLY)  
NUMBERS SEPARATED BY HYPHEN MEANS THAT THE FRUIT PREDOMINANT SKIN COLOUR IS INTERMEDIATE.

SSC: NUMBERS SEPARATED BY SEMICOLON MEANS THE ACCESSION PRESENTS FRUITS WITH BOTH SKIN STRIPE COLORS(NOT SIMULTANEOUSLY)  
NUMBERS SEPARATED BY HYPHEN MEANS THAT THE FRUIT SKIN STRIPE COLOUR IS INTERMEDIATE.

FRC: NUMBERS SEPARATED BY SEMICOLON MEANS THE ACCESSION PRESENTS FRUITS WITH BOTH FLESH CLOURS(NOT SIMULTANEOUSLY)  
NUMBERS SEPARATED BY HYPHEN MEANS THAT THE FRUIT FLESH COLOUR IS INTERMEDIATE.

GRO: NUMBERS SEPARATED BY SEMICOLON MEANS THE ACCESSION PRESENTS FRUITS WITH OR WITHOUT GROOVES



## European Central Cucurbits Database

**CHARACTERIZATION DATA :** GOTO : [Dataset Passport Data](#) [Dataset ALL Data](#)

Characterization data belonging to dataset that matches your search criteria:

AID	PGH	LFB	HPF	FWG	FRS	PSC	DSS	SSC	FRC	TOL	GRO	MAA	NOT(see below)	PHO
BGV000065	2			3550	3	2C	99		2	10	0		DSS: Dark green stripes with veins	YES
BGV000066	2			2450	4	3C	99		2	10	0		DSS: Dark green stripes	
BGV000067	2			5940	2	3C	1		1	10	0			
BGV000068	2			5405	2	3C	1		2	10	0			
BGV000741	2			2400	99	3C	99		2	10	0		FRS:Deformed ; DSS:striped	YES
BGV000742	2			5000	3	1;3C	99		2	10	0		DSS:striped	YES
BGV000743	2			3000	3	3C	1		2	15	0			YES
BGV000744	2			4750	2	2C	1		2	10	0			
BGV000746	2			5000	3	3C	99		1	10	0		DSS:lightly striped	YES
BGV000747	2			4256	2	3;4C	1		1;2	10	0			
BGV000750	2			3750	3	3C	1		2	10	0			YES
BGV000751	2			2520	2	1C	2	3	2	9	0			
BGV000754	2			5200	2	2C	99	3	3	10	3		DSS:dark green stripes GRO:with light ribs	
BGV000755	2			3350	3	3C	99		2	10	0		DSS:striped	YES
BGV000756	2			2800	4	3C	1		2	9,3	0			YES
BGV000760	2			6800	4	3C	1		1	11	3		GRO:with light ribs	
BGV000761	2			3475	3	3C	1		1	10	0			YES
BGV000764	2			3050	3	3C	1		1	10	0			YES



## *Citrullus Lanatus* passport and characterization data

GOTO : [Dataset Passport Data](#) [Dataset Characterization Data](#)

### BGV000065

Passport data	INSTCODE	COLLNUMB	COLLCODE	GENUS	SPECIES	SPAUTHOR	SUBTAXA	SUBTAUTHOR	CROPNAME	ACCENAME
	ESP026	A-CI-3	ESP058	Citrullus	lanatus	(Thunb.) Matsum & Nakai			sandía	
	COLLSITE	LATITUDE	LONGITUDE	ELEVATION	COLLDATE	BREDCODE	SAMPSTAT	ANCEST	COLLSRC	DONORCODE
	Lumpiaque (Zaragoza)	4140--N	00115--W	300	30904		300		26	
	STORAGE	REMARKS	PHOTO	CHARACTERIZATION						
	12		Yes	Yes						

Characterization data	PGH	LFB	HPF	FWG	FRS	PSC	DSS	SSC	FRC	TOL
	2			3550	3	2	99		2	10

### BGV000066

Passport data	INSTCODE	COLLNUMB	COLLCODE	GENUS	SPECIES	SPAUTHOR	SUBTAXA	SUBTAUTHOR	CROPNAME	ACCENAME
	ESP026	A-CI-4	ESP058	Citrullus	lanatus	(Thunb.) Matsum & Nakai			sandía	
	COLLSITE	LATITUDE	LONGITUDE	ELEVATION	COLLDATE	BREDCODE	SAMPSTAT	ANCEST	COLLSRC	DONORCODE
	Lumpiaque (Zaragoza)	4140--N	00115--W	300	30904		300		26	
	STORAGE	REMARKS	PHOTO	CHARACTERIZATION						
	12		No	Yes						



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*Cucurbita pepo* core collection (Belonging to ESP026 collection):

[Corecollection.pdf](#)

### LIST OF *Cucurbita pepo* DESCRIPTORS USED IN COMAV'S CORE COLLECTION

ACCESSION

SUBSPECIES

ORIGIN

LOCAL NAME

USE

PLANT GROWTH HABIT

STEM COLOUR

FRUIT SHAPE

PREDOMNANT FRUIT SKIN COLOUR AT MATURITY

DESIGN PRODUCED BY SECONDARY SKIN COLOUR

RIBS/WARTS

FLESH COLOUR

FRUIT WEIGHT(g)

FRUIT LENGTH(cm)

FRUIT WIDTH(cm)

FLESH THICKNESS(mm)

RIND HARDNESS

SEED LENGTH (cm)

SEED WIDTH (cm)

SEED THICKNESS (mm)

WEIGHT OF 100 SEEDS (g)

} plant

} fruit

} seed





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<i>Cucurbita pepo</i> core collection (Belonging to ESP026 collection): <a href="#">Corecollection.pdf</a>	<b>In situ Onfarm Activities</b> <div style="display: inline-block; vertical-align: middle;"> <input type="text" value="Spain"/> <ul style="list-style-type: none"> <li style="background-color: #e0e0e0; padding: 2px;">Spain</li> <li style="padding: 2px;">The Netherlands</li> <li style="padding: 2px;">Germany</li> </ul> </div>



*The cucurbits database can be largely improved. But, what are the major constraints to do it?*

- Lack of time and staff to work on it
- Scarce participation of the WG members
- Lack of completeness of data in the source collections



*The cucurbits database can be largely improved, but in its current state it can be useful for many purposes.....*

- To have a “more or less” complete picture about the cucurbits accessions stored in EU:
  - Where are stored the main cucurbits collections in EU?
    - *Russian Federation, Germany, Spain...*
  - Which is the biggest collection?
  - What is the level of duplicates?
    - *Check the fields DONORCODE and DONORNUMBER*
  - How many accessions from countries outside the EU are in the EU collections
    - *Check the field ORIGCTY*

# *The cucurbits database can be largely improved, but in its current state it can be useful for many purposes.....*



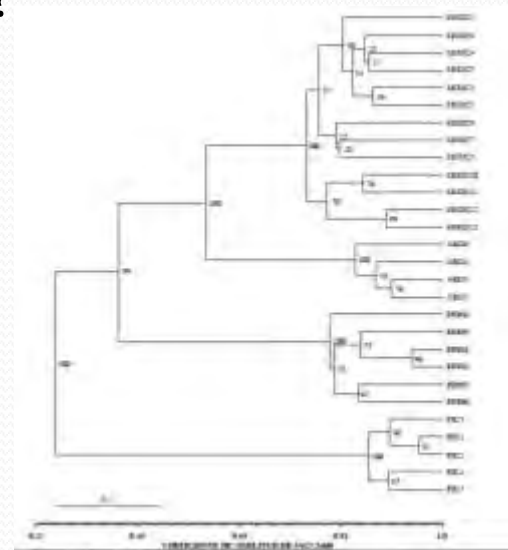
- To meet the needs of many users
  - Growers
    - Traditional varieties adapted to their local growing conditions
    - or interested in exploring foreign varieties
  - Breeders
    - Traditional varieties to improve organoleptic quality
    - Known sources of resistance
      - *PMR45, one of the most used source of resistance in melon*
    - Looking for new sources of resistance
    - Promoting the use of underutilized species (kiwano, Momordica....)  
Where are these minor species available??





*The cucurbits database can be largely improved, but in its current state it can be useful for many purposes.....*

- To meet the needs of other users
  - Taxonomists
    - Where are stored the wild relatives, the crop's ancestors?
  - Researchers interested in conducting studies on molecular variability: what are the genetic relationships among melons from Turkey, Spain and Portugal??





## *More uses.....*

- **To use as the starting point to select the European Accessions**
  - Even with lack of information on critical fields??
    - ACCENAME
    - COLLCODE
    - COLLNUMBER
    - DONORCODE
    - DONORNUMBER
    - DUPLSITE
  - Even without characterization data of most part of the accessions??

# Agreed on the CWG meeting held in Georgia in 2010



## A. Criteria for selection of unique accessions

- Split into different crops
- Assign a small group of experts for each crop
- Improve the quality of ECCUDB with EURISCO and holders' data
- Do not include hybrids. Include landraces, wild cucurbits, old varieties and breeding material
- Identify accessions received from other collections (check DONORCODE and DONORNUMB):
  - Do not include accessions that are still available in the collection of origin
  - Accept as MAAs if accessions were donated from genebanks outside of ECPGR area (e.g. USDA, Japan, etc...): select as MAA
- Study the field **ACCENAME:**
  - Accessions with unique ACCENAME: select as MAA
  - Accession with the same ACCENAME:
    - If they are from **different origins:** select as MAA
    - If they (two or more) are from the same place (country, **ORIGCTY, COLLSITE** locality, ...): potential duplicates (In case of wild material select all the accessions)
      - ◆ With characterization data:
        - Select all the accessions if they look different
        - If not, follow the sequence of "Without characterization data"
      - ◆ Without characterization data
        - Accessions collected with a difference of more than 10 years: select all the **COLLDATE** accessions
        - Accessions collected with a difference of less than 10 years:
          - Select the accession having undergone the fewest cycles of regeneration or select one at random until new information is obtained.
  - Accessions without ACCENAME:
    - Include if they have a unique origin
    - Do not include if no additional information is available



# Percentage of filled ACCENAME field per country

Country	n° accessions	ACCENAME
ARM	14	7,14
AUT	1	100
AZE	71	57,74
BRG	302	97,68
CZE	100	73
DEU	438	63,01
ESP		
FRA	82	100
GBR	1	0
GEO	2	0
HUN	210	64,76
ISR	262	0
ITA	94	28,72
NLD	2	100
POL	65	53,84
PRT	146	100
ROM	22	9,09
RUS	1135	72,07
SVK	3	100
SWE	6	0
TUR	360	0
UKR	227	92,07



# Percentage of filled ACCENAME field per country

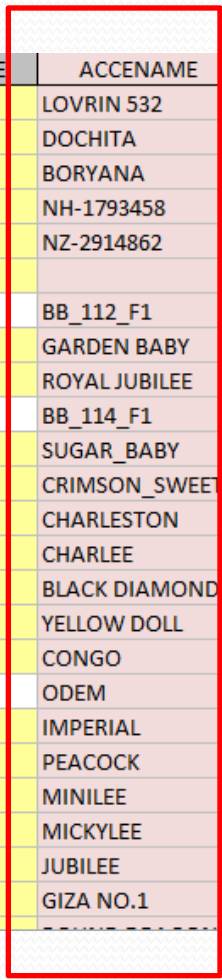


Country	n° accessions	ACCENAME
ARM	14	7,14
AUT	1	100
AZE	71	57,74
BRG	302	97,68
CZE	100	73
DEU	438	63,01
ESP		
FRA	82	100
GBR	1	0
GEO	2	0
HUN	210	64,76
ISR	262	0
ITA	94	28,72
NLD	2	100
POL	65	53,84
PRT	146	100
ROM	22	9,09
RUS	1135	72,07
SVK	3	100
SWE	6	0
TUR	360	0
UKR	227	92,07

- In general collections with more than 100 accessions have high percentages of ACCENAME field filled (63% to 100%)



1	COLLNUMB	COLLCODE	GENUS	SPECIES	SPAUTHOR	SUBTAXA	SUBTAUTHOR	CROPNAME	ACCENAME	ACQDATE	ORIGCTY	COLLSITE	LATITUDE
2			Citrullus	edulis	Pangalo			Watermelon	LOVRIN 532	1989----	ROU		
3			Citrullus	edulis	Pangalo			Watermelon	DOCHITA	1989----	ROU		
4			Citrullus	edulis	Pangalo			Watermelon	BORYANA	1988----	BGR		
5			Citrullus	edulis	Pangalo			Watermelon	NH-1793458	1988----	USA		
6			Citrullus	edulis	Pangalo			Watermelon	NZ-2914862	1988----	USA		
7	89E0427	BGR001	Citrullus	edulis	Pangalo			Watermelon		1989----	BGR	s.	
8			Citrullus	edulis	Pangalo			Watermelon	BB_112_F1	19940218	UNK		
9			Citrullus	edulis	Pangalo			Watermelon	GARDEN BABY	19910507	USA		
10			Citrullus	edulis	Pangalo			Watermelon	ROYAL JUBILEE	19910507	USA		
11			Citrullus	edulis	Pangalo			Watermelon	BB_114_F1	19940218	UNK		
12			Citrullus	edulis	Pangalo			Watermelon	SUGAR_BABY	19940218	UNK		
13			Citrullus	edulis	Pangalo			Watermelon	CRIMSON_SWEET	19940218	UNK		
14			Citrullus	edulis	Pangalo			Watermelon	CHARLESTON	19910507	USA		
15			Citrullus	edulis	Pangalo			Watermelon	CHARLEE	19910507	USA		
16			Citrullus	edulis	Pangalo			Watermelon	BLACK DIAMOND	19910507	USA		
17			Citrullus	edulis	Pangalo			Watermelon	YELLOW DOLL	19910507	USA		
18			Citrullus	edulis	Pangalo			Watermelon	CONGO	19910507	USA		
19			Citrullus	edulis	Pangalo			Watermelon	ODEM	19940603	UNK		
20			Citrullus	edulis	Pangalo			Watermelon	IMPERIAL	19910507	USA		
21			Citrullus	edulis	Pangalo			Watermelon	PEACOCK	19910507	USA		
22			Citrullus	edulis	Pangalo			Watermelon	MINILEE	19910507	USA		
23			Citrullus	edulis	Pangalo			Watermelon	MICKYLEE	19910507	USA		
24			Citrullus	edulis	Pangalo			Watermelon	JUBILEE	19910507	USA		
25			Citrullus	edulis	Pangalo			Watermelon	GIZA NO.1	19910507	USA		





## Combining the information of different fields

CROPNAME	ACCENAME	ACQDATE	ORIGCTY	COLLSITE	LATITUDE	LONGITUDE	ELEVATION	COLLDATE	BREDCODE	SAMPSTAT	ANCEST	COLLSRC
melon	Melão casca de carvalho	19900712	PRT	Viana do Castelo				19900712		300		26
melon	Melão casca de carvalho	19900713	PRT	Braga				19900713	←	300		26
melon	Melão apimentado	19900717	PRT	Braga				19900717	←	300		26
melon	Melão casca de carvalho	19900719	PRT	Braga				19900719	←	300		26
melon	Melão apimentado	19900721	PRT	Braga				19900721		300		26
melon	Melão casca de carvalho	19900721	PRT	Porto				19900721		300		26
melon	Melão regional	19910615	PRT	Braga				19910615		300		21
melon		19910729	PRT	Beja				19910729		300		21
melon	Melão amarelo	19911031	PRT	Évora				19911031		300		21

# Combining the information of different fields



K	L	M	N	O	P	Q	
HOR	CROPNAME	ACCENAME	ACQDATE	ORIGCTY	COLLSITE	LATITUDE	LONGITUDE
	melon	Melón piel de sapo		ESP	Quicena, a 2 Km dirección N;Huesca	4210--N	00028--V
	melon	Melón piel de sapo		ESP	Casas de Benítez;Cuenca		-----
	melon	Melón piel de sapo		ESP			-----
	melon	Melón piel de sapo		ESP	Cullera;Valencia	3910--N	00015--V
	melon	Melón piel de sapo		ESP	Massamagrell;Valencia	3934--N	00020--V
	melon	Melón piel de sapo		ESP	Illescas;Toledo	4008--N	00350--V
	melon	Melón piel de sapo		ESP	Benissa, a 2 Km dirección S;Alicante	3842--N	00003--E
	melon	Melón piel de sapo		ESP	Sumacàrcer;Valencia	3905--N	00037--V
	melon	Melón piel de sapo		ESP	Yátova;Valencia	3922--N	00048--V
	melon	Melón piel de sapo		ESP	Cuevas de Reylo.Fuente Álamo, a 2 Km dirección SE;Murcia	3744--N	00115--V
	melon	Melón piel de sapo		ESP	El Algar.Cartagena, a 2,5 Km dirección E;Murcia	3739--N	00054--V
	melon	Melón piel de sapo		ESP	Morata.Mazarrón;Murcia	3737--N	00130--V
	melon	Melón piel de sapo		ESP	Campillo.Lorca;Murcia	3739--N	00128--V
	melon	Melón piel de sapo		ESP	La Hoya.Lorca;Murcia	3743--N	00135--V
	melon	Melón piel de sapo		ESP	Torre Pacheco, a 6 Km dirección S;Murcia	3745--N	00059--V
	melon	Melón piel de sapo		ESP	Alcudia.Mallorca;Balears	3951--N	00306--E
	melon	Melón piel de sapo		ESP	Corvera.Murcia, a 3 Km dirección SE;Murcia	3750--N	00111--V
	melon	Melón piel de sapo		ESP	Ribagorda.Sotorribas;Cuenca	4020--N	00214--V
	melon	Melón piel de sapo		ESP	Las Herencias;Toledo	3952--N	00455--V
	melon	Melón piel de Sapo		ESP	Belvís de la Jara, a 2 Km;Toledo	3944--N	00457--V
	melon	Melón piel de sapo	20050612	ESP	Cheste;Valencia	3929--N	00041--V
	melon	Melón piel de sapo		ESP	Alboraya;Valencia	3929--N	00020--V
	melon	Melón piel de sapo		ESP	Buñol;Valencia	3925--N	00046--V
	melon	Melón piel de sapo		ESP	Novelda, a 1,4 Km dirección S;Alicante	3822--N	00046--V



# Final remarks

- The Cucurbits Database can be strongly improved. The major constraints are the lack of time and staff, the low involvement of the WG members and the low quality of holding databases
- However, the CD can be used for many purposes by users by studying deeply its content and complementing the lack of information of relevant fields with the information available in other fields.
- Many of the needs of breeders, growers and researchers can be addressed by the database