Advanced in The Italian National Germplasm database - PlantA-Res

M. Antonietta Palombi

CREA – OFA, Rome - Italy

http://planta-res.politicheagricole.it/pages/index.php

PlantA-Res is the Italian online portal dedicated to activities concerning the safeguard and sustainable utilization of Plant Genetic Resources for Food and Agriculture (PGRFA) in Italy, according to the International FAO Treaty for PGRFA.

Partecipants

Agrumicoltura e Colture Mediterranee, Acireale (CT)
Apicoltura e Bachicoltura, Padova
Colture alternative al Tabacco, Scafati (SA)
Cerealicoltura, Foggia
Maiscoltura, Bergamo
Cerealicoltura, Roma
Risicoltura, Vercelli
Cerealicoltura, Sant'Angelo Lodigiano (LO)
Colture Industriali, Rovigo
Colture Industriali, Bologna
Colture Foraggere e Lattiero-Casearie, Lodi
Frutticoltura, Caserta
Frutticoltura, Forlì
Frutticoltura, Roma
Floricoltura e Specie Ornamentali, Sanremo
Valorizzazione Specie Floricole Mediterranee, Bagheria (PA)
Vivaismo e Gestione Verde Ambientale e Ornamentale, Pescia (PT)
Genomica e Post-Genomica , Fiorenzuola d'Arda (PC)
Monitoraggio e Pianificazione Forestale, Villazzano (TN)
Selvicoltura, Arezzo
Produzioni Legnose Fuori Foresta, Casale Monferrato (AL)
Olivicoltura e Industria Olearia, Rende ((CS)
Orticoltura, Monsampolo del Tronto (AP)
Orticoltura , Montanaso Lombardo (LO)
Orticoltura, Pontecagnano (SA)
Patologia Vegetale, Roma
Sistemi Colturali degli Ambienti caldo-aridi, Bari
Viticoltura, Arezzo
Viticoltura , Conegliano Veneto (TV)
Uva da Tavola e Viticoltura in Ambiente Mediterraneo, Turi (BA)

The Database

It currently, includes 241 genera for a total of **49005** accessions, grouped in 10 categories.

Categories	Specie	Accessions
Cereals	69	17,338
Vegetables	101	3,240
Grapevine	20	3,777
Olive	2	884
Forage crops	187	7,594
Industrial species	87**	2,703
Aromatic/Medicinal spp.	166**	219
Ornamental species	225**	594
Forest species (*)	36	3,764
Fruits, Nuts and Citrus	171	8,892

(*) not include in EURISCO; (**) some species could be included in more than one category

Our activities are mainly focused on:

- **Establish a common platform wich include PGRFAs collected in Italy.**
- **Facilitate access to information on the material maintained in different collections.**
- **Give information concerning the evaluation of agronomical, qualitative, technological and ornamental aspects of this material.**





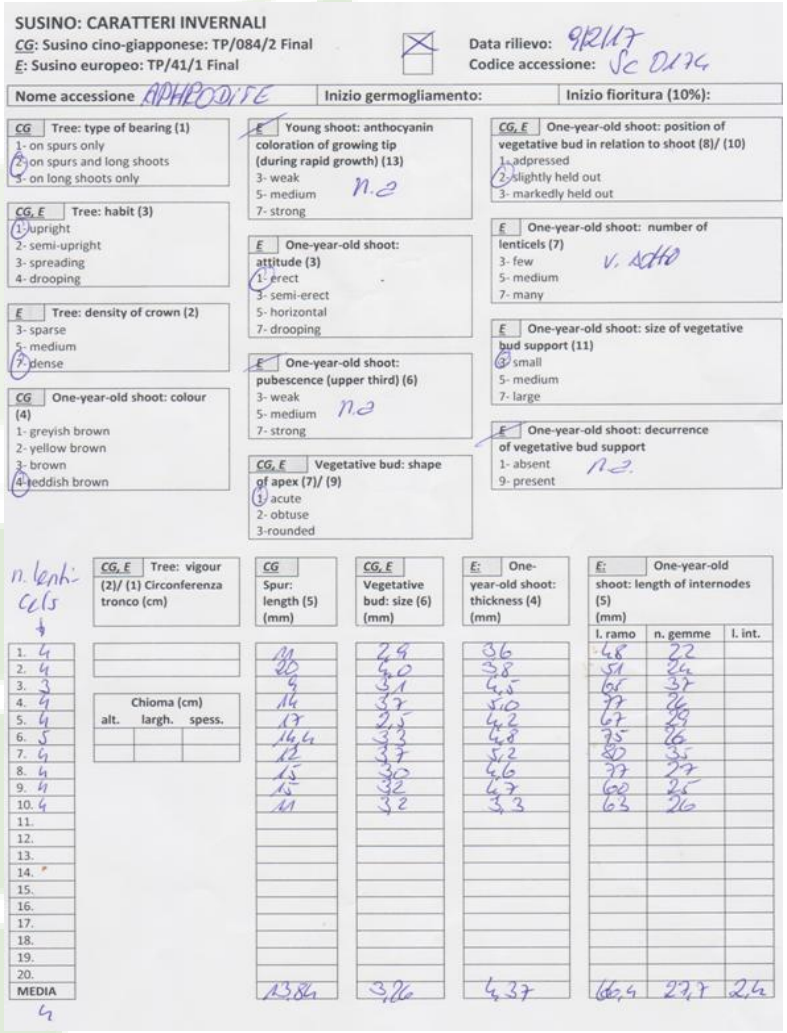



Specific Descriptors

In order to give information concerning the evaluation of agronomical, qualitative, technological and ornamental aspects of this material we collect morphological, phenological and agronomical data.
During the last 3 years we collected data for peach, plum and kiwifruit.

For some species (es. kiwifruit, apple, cherry, wheat, rice, beet …) **specific descriptors,** as adopted from CPVO and UPOV, are used.
For fruit species, in particular, we prepare specific technical reports. An example is given for plum in (next slides).

Specific Descriptors: Plum



SUSINO: CARATTERI INVERNALI

CG: Susino cino-giapponese: TP/084/2 Final
E: Susino europeo: TP/41/1 Final

Data rilievo: 9/2/17
Codice accessione: Sc 0174

Nome accessione: APHRODITE | Inizio germogliamento: | Inizio fioritura (10%):

CG — Tree: type of bearing (1)
1- on spurs only
2- on spurs and long shoots
3- on long shoots only

CG, E — Tree: habit (3)
1- upright
2- semi-upright
3- spreading
4- drooping

E — Tree: density of crown (2)
3- sparse
5- medium
7- dense

CG — One-year-old shoot: colour (4)
1- greyish brown
2- yellow brown
3- brown
4- reddish brown

E — Young shoot: anthocyanin coloration of growing tip (during rapid growth) (13)
3- weak
5- medium
7- strong
n.a

E — One-year-old shoot: attitude (3)
1- erect
3- semi-erect
5- horizontal
7- drooping

E — One-year-old shoot: pubescence (upper third) (6)
3- weak
5- medium
7- strong
n.a

CG, E — Vegetative bud: shape of apex (7)/ (9)
1- acute
2- obtuse
3-rounded

CG, E — One-year-old shoot: position of vegetative bud in relation to shoot (8)/ (10)
1- adpressed
2- slightly held out
3- markedly held out

E — One-year-old shoot: number of lenticels (7)
3- few
5- medium
7- many
v. scarso

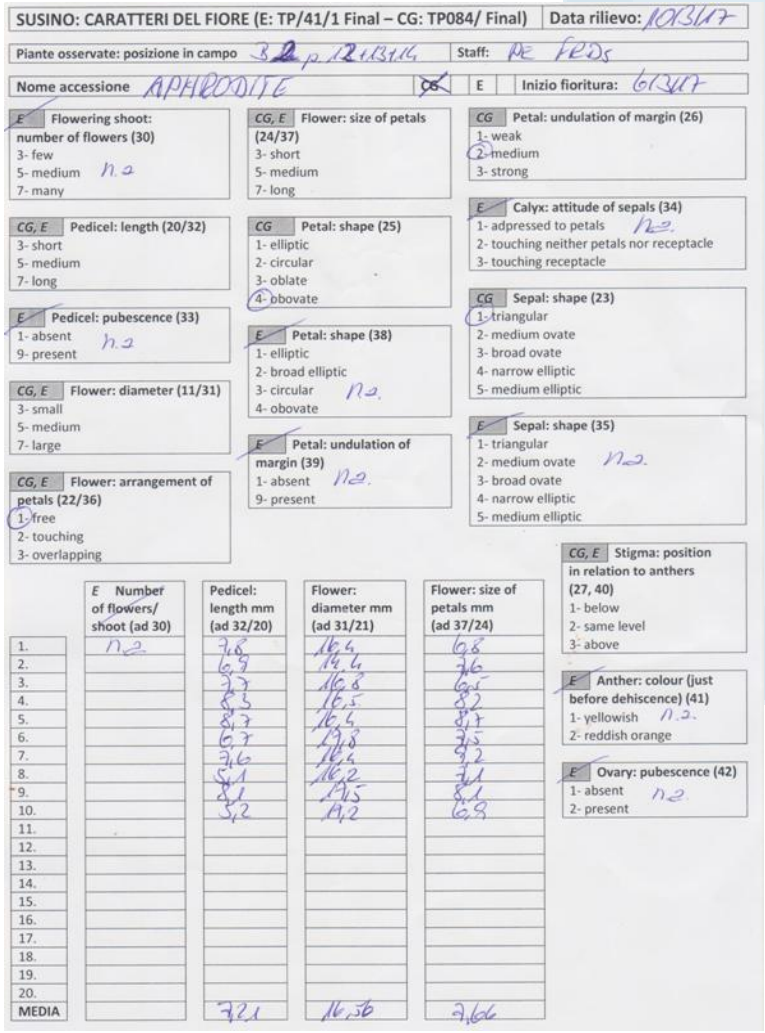
E — One-year-old shoot: size of vegetative bud support (11)
3- small
5- medium
7- large

E — One-year-old shoot: decurrence of vegetative bud support
1- absent
9- present
n.a.

n. lenticelle

	CG, E Tree: vigour (2)/ (1) Circonferenza tronco (cm)	CG Spur: length (5) (mm)	CG, E Vegetative bud: size (6) (mm)	E: One-year-old shoot: thickness (4) (mm)	E: One-year-old shoot: length of internodes (5) (mm) l. ramo	n. gemme	l. int.
1.		11	2,9	3,6	4,8	22	
2.		20	4,0	3,8	5,1	24	
3.		9	3,1	4,5	6,5	37	
4.		14	3,7	5,0	7,7	26	
5.		17	2,3	4,2	6,7	29	
6.		14,4	3,3	4,8	7,5	26	
7.		12	3,7	5,2	8,0	35	
8.		15	3,0	4,6	7,7	27	
9.		15	3,2	4,7	6,0	25	
10.		11	3,2	3,3	6,3	26	
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
MEDIA		13,84	3,26	4,37	66,4	27,7	2,4

Chioma (cm): alt. | largh. | spess.



SUSINO: CARATTERI DEL FIORE (E: TP/41/1 Final – CG: TP084/ Final) | Data rilievo: 10/3/17

Piante osservate: posizione in campo 3 p. 12.13.14 | Staff: AE FRDs

Nome accessione: APHRODITE | CG | E | Inizio fioritura: 6/3/17

E — Flowering shoot: number of flowers (30)
3- few
5- medium
7- many
n.a

CG, E — Pedicel: length (20/32)
3- short
5- medium
7- long

E — Pedicel: pubescence (33)
1- absent
9- present
n.a

CG, E — Flower: diameter (11/31)
3- small
5- medium
7- large

CG, E — Flower: arrangement of petals (22/36)
1- free
2- touching
3- overlapping

CG, E — Flower: size of petals (24/37)
3- short
5- medium
7- long

CG — Petal: shape (25)
1- elliptic
2- circular
3- oblate
4- obovate

E — Petal: shape (38)
1- elliptic
2- broad elliptic
3- circular
4- obovate
n.a.

E — Petal: undulation of margin (39)
1- absent
9- present
n.a.

CG — Petal: undulation of margin (26)
1- weak
2- medium
3- strong

E — Calyx: attitude of sepals (34)
1- adpressed to petals
2- touching neither petals nor receptacle
3- touching receptacle
n.a.

CG — Sepal: shape (23)
1- triangular
2- medium ovate
3- broad ovate
4- narrow elliptic
5- medium elliptic

E — Sepal: shape (35)
1- triangular
2- medium ovate
3- broad ovate
4- narrow elliptic
5- medium elliptic
n.a.

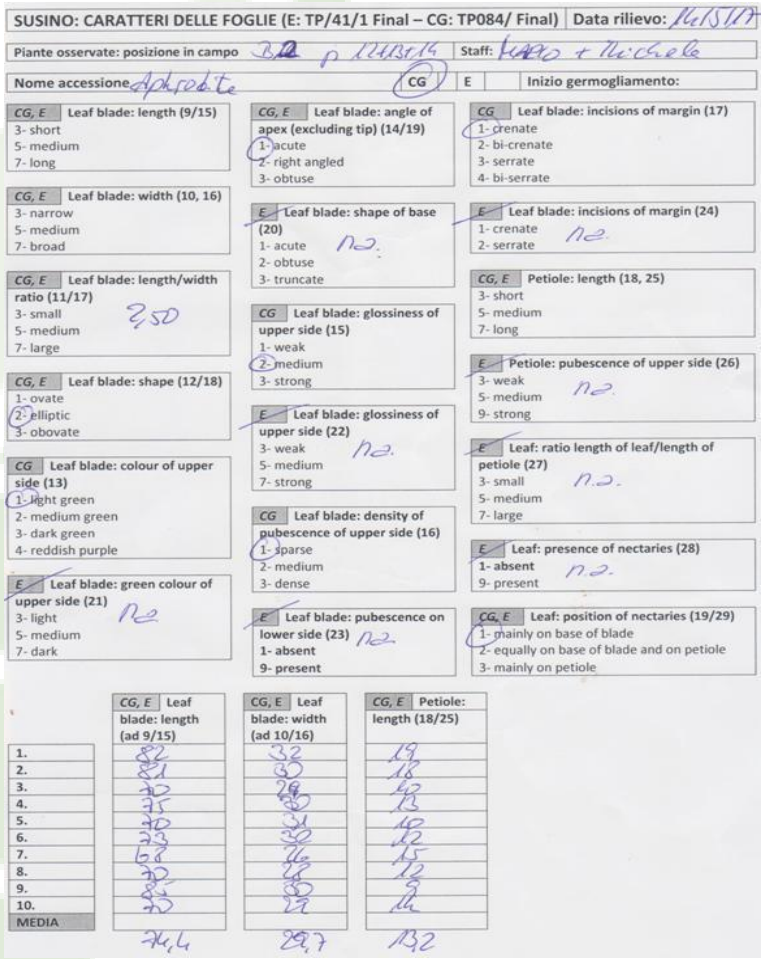
CG, E — Stigma: position in relation to anthers (27, 40)
1- below
2- same level
3- above

E — Anther: colour (just before dehiscence) (41)
1- yellowish
2- reddish orange
n.a.

E — Ovary: pubescence (42)
1- absent
2- present
n.a

	E Number of flowers/ shoot (ad 30)	Pedicel: length mm (ad 32/20)	Flower: diameter mm (ad 31/21)	Flower: size of petals mm (ad 37/24)
1.	n.a.	7,8	16,4	6,8
2.		6,9	14,4	7,6
3.		7,7	16,8	6,5
4.		8,3	16,5	8,2
5.		8,7	16,4	8,7
6.		6,7	17,8	7,5
7.		7,6	16,4	9,2
8.		9,1	16,2	7,1
9.		8,1	15,5	8,1
10.		5,2	14,2	6,9
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
MEDIA		7,21	16,36	7,66

Specific Descriptors: Plum



SUSINO: CARATTERI DELLE FOGLIE (E: TP/41/1 Final – CG: TP084/ Final) Data rilievo: 16/5/17

Piante osservate: posizione in campo [illegible] Staff: [illegible]

Nome accessione Afrodite CG E Inizio germogliamento:

CG, E Leaf blade: length (9/15)
3- short
5- medium
7- long

CG, E Leaf blade: width (10, 16)
3- narrow
5- medium
7- broad

CG, E Leaf blade: length/width ratio (11/17)
3- small
5- medium
7- large
2,50

CG, E Leaf blade: shape (12/18)
1- ovate
2- elliptic
3- obovate

CG Leaf blade: colour of upper side (13)
1- light green
2- medium green
3- dark green
4- reddish purple

E Leaf blade: green colour of upper side (21)
3- light
5- medium
7- dark
n.a.

CG, E Leaf blade: angle of apex (excluding tip) (14/19)
1- acute
2- right angled
3- obtuse

E Leaf blade: shape of base (20)
1- acute
2- obtuse
3- truncate
n.a.

CG Leaf blade: glossiness of upper side (15)
1- weak
2- medium
3- strong

E Leaf blade: glossiness of upper side (22)
3- weak
5- medium
7- strong
n.a.

CG Leaf blade: density of pubescence of upper side (16)
1- sparse
2- medium
3- dense

E Leaf blade: pubescence on lower side (23)
1- absent
9- present
n.a.

CG Leaf blade: incisions of margin (17)
1- crenate
2- bi-crenate
3- serrate
4- bi-serrate

E Leaf blade: incisions of margin (24)
1- crenate
2- serrate
n.a.

CG, E Petiole: length (18, 25)
3- short
5- medium
7- long

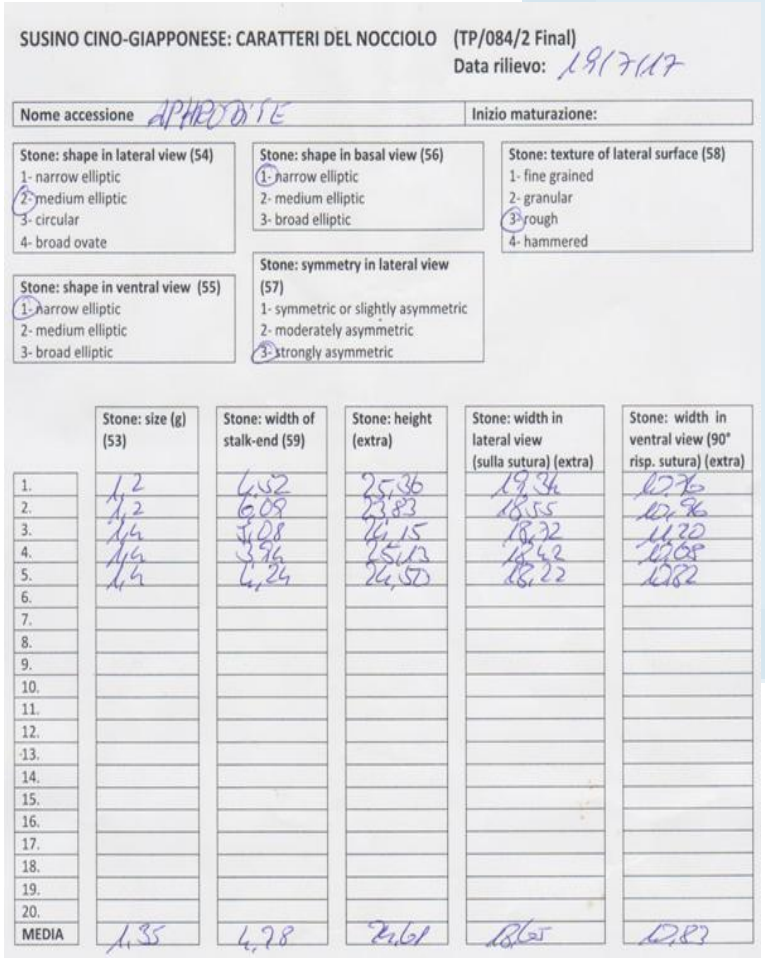
E Petiole: pubescence of upper side (26)
3- weak
5- medium
9- strong
n.a.

E Leaf: ratio length of leaf/length of petiole (27)
3- small
5- medium
7- large
n.a.

E Leaf: presence of nectaries (28)
1- absent
9- present
n.a.

CG, E Leaf: position of nectaries (19/29)
1- mainly on base of blade
2- equally on base of blade and on petiole
3- mainly on petiole

	CG, E Leaf blade: length (ad 9/15)	CG, E Leaf blade: width (ad 10/16)	CG, E Petiole: length (18/25)
1.	82	32	19
2.	81	33	18
3.	70	28	12
4.	75	30	13
5.	70	31	16
6.	73	30	12
7.	68	26	15
8.	70	26	12
9.	83	30	9
10.	75	27	14
MEDIA	74,4	29,7	13,2



SUSINO CINO-GIAPPONESE: CARATTERI DEL NOCCIOLO (TP/084/2 Final)
Data rilievo: 19/7/17

Nome accessione APHRODITE Inizio maturazione:

Stone: shape in lateral view (54)
1- narrow elliptic
2- medium elliptic
3- circular
4- broad ovate

Stone: shape in basal view (56)
1- narrow elliptic
2- medium elliptic
3- broad elliptic

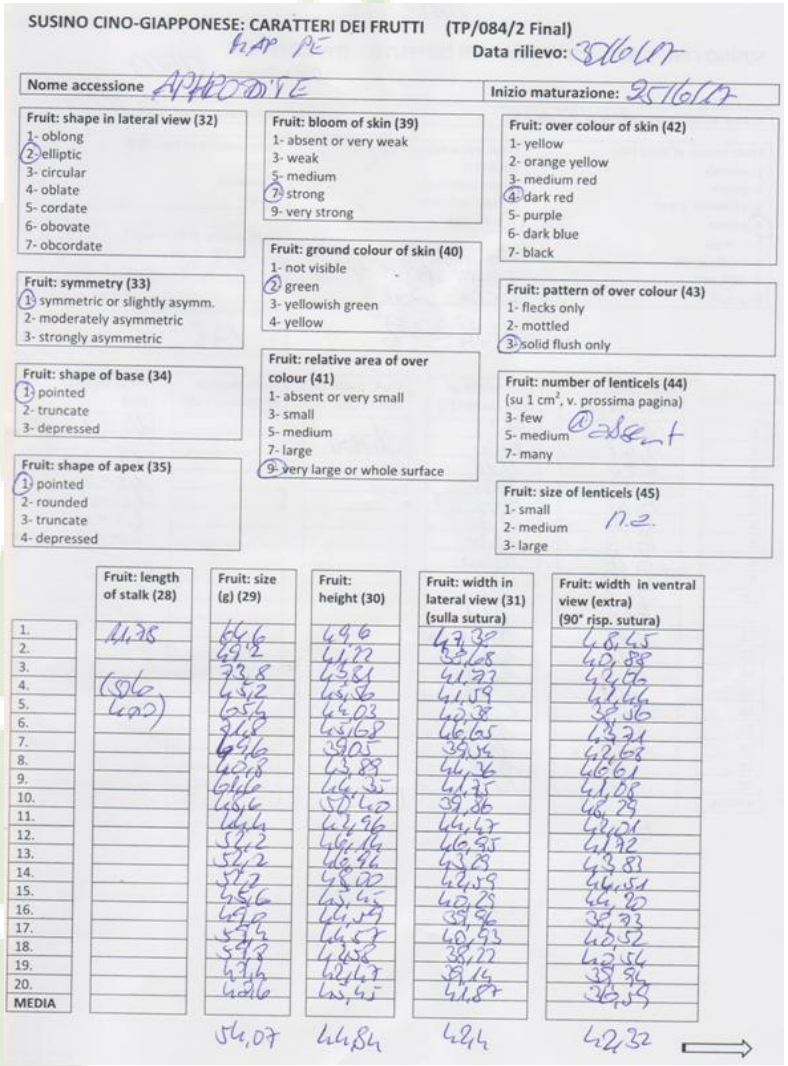
Stone: texture of lateral surface (58)
1- fine grained
2- granular
3- rough
4- hammered

Stone: shape in ventral view (55)
1- narrow elliptic
2- medium elliptic
3- broad elliptic

Stone: symmetry in lateral view (57)
1- symmetric or slightly asymmetric
2- moderately asymmetric
3- strongly asymmetric

	Stone: size (g) (53)	Stone: width of stalk-end (59)	Stone: height (extra)	Stone: width in lateral view (sulla sutura) (extra)	Stone: width in ventral view (90° risp. sutura) (extra)
1.	1,2	4,52	25,36	19,34	10,76
2.	1,2	6,08	23,83	18,55	10,96
3.	1,4	4,08	24,15	18,22	11,20
4.	1,4	3,96	25,17	18,42	11,08
5.	1,4	4,24	24,50	18,22	10,82
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
MEDIA	1,35	4,78	24,61	18,95	10,87

Specific Descriptors: Plum



SUSINO CINO-GIAPPONESE: CARATTERI DEI FRUTTI (TP/084/2 Final)

Data rilievo: 30/6/17

Nome accessione: APHRODITE

Inizio maturazione: 25/6/17

Fruit: shape in lateral view (32)
1- oblong
2- elliptic
3- circular
4- oblate
5- cordate
6- obovate
7- obcordate

Fruit: bloom of skin (39)
1- absent or very weak
3- weak
5- medium
7- strong
9- very strong

Fruit: over colour of skin (42)
1- yellow
2- orange yellow
3- medium red
4- dark red
5- purple
6- dark blue
7- black

Fruit: ground colour of skin (40)
1- not visible
2- green
3- yellowish green
4- yellow

Fruit: symmetry (33)
1- symmetric or slightly asymm.
2- moderately asymmetric
3- strongly asymmetric

Fruit: pattern of over colour (43)
1- flecks only
2- mottled
3- solid flush only

Fruit: shape of base (34)
1- pointed
2- truncate
3- depressed

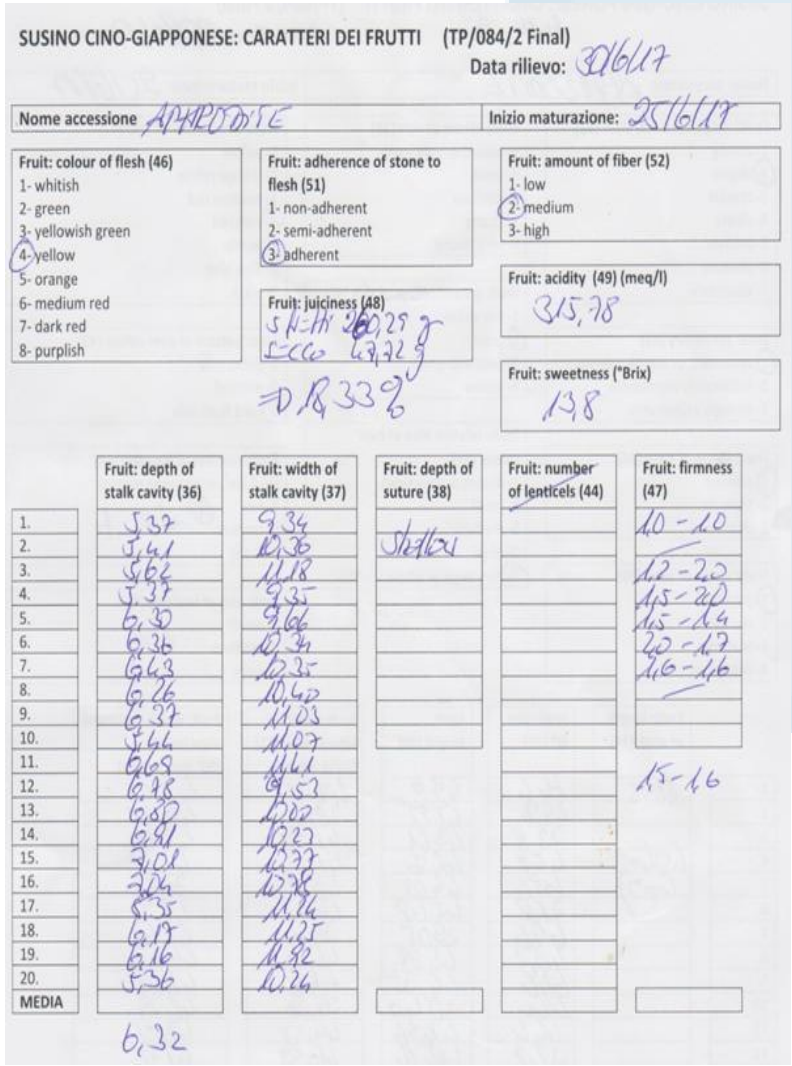
Fruit: relative area of over colour (41)
1- absent or very small
3- small
5- medium
7- large
9- very large or whole surface

Fruit: number of lenticels (44)
(su 1 cm², v. prossima pagina)
3- few
5- medium
7- many
absent

Fruit: shape of apex (35)
1- pointed
2- rounded
3- truncate
4- depressed

Fruit: size of lenticels (45)
1- small
2- medium
3- large
n.e.

	Fruit: length of stalk (28)	Fruit: size (g) (29)	Fruit: height (30)	Fruit: width in lateral view (31) (sulla sutura)	Fruit: width in ventral view (extra) (90° risp. sutura)
1.	4,35	64,6	4,96	4,38	4,8,45
2.		69,2	4,77	5,08	40,88
3.		73,8	4,81	4,77	4,4,6
4.	(56	4,3,2	4,56	4,59	4,4,44
5.	400)	65,4	4,03	4,0,8	38,56
6.		4,4,8	4,3,68	4,6,65	4,3,21
7.		4,4,6	3,9,05	3,9,34	42,68
8.		40,8	4,3,88	4,4,36	4,6,61
9.		6,4,6	4,4,35	4,4,35	41,08
10.		4,4,4	50,40	39,86	46,29
11.		4,4,4	4,4,96	4,4,47	4,4,01
12.		57,2	4,4,14	4,4,95	4,4,32
13.		54,2	4,4,46	4,3,29	43,83
14.		57,7	4,8,00	4,2,39	4,4,51
15.		4,5,6	4,0,45	4,0,29	44,20
16.		4,4,9	4,4,37	39,96	38,33
17.		54,4	4,4,57	4,0,93	40,52
18.		54,3	4,4,58	38,77	4,2,54
19.		4,3,4	4,4,4,7	39,14	39,94
20.		4,0,4,6	4,3,4,5	41,87	36,59
MEDIA		54,07	4,4,84	4,24	42,32



SUSINO CINO-GIAPPONESE: CARATTERI DEI FRUTTI (TP/084/2 Final)

Data rilievo: 30/6/17

Nome accessione: APHRODITE

Inizio maturazione: 25/6/17

Fruit: colour of flesh (46)
1- whitish
2- green
3- yellowish green
4- yellow
5- orange
6- medium red
7- dark red
8- purplish

Fruit: adherence of stone to flesh (51)
1- non-adherent
2- semi-adherent
3- adherent

Fruit: juiciness (48)
SUCCO 40,29 g
=D,R 33%

Fruit: amount of fiber (52)
1- low
2- medium
3- high

Fruit: acidity (49) (meq/l)
315,78

Fruit: sweetness (°Brix)
13,8

	Fruit: depth of stalk cavity (36)	Fruit: width of stalk cavity (37)	Fruit: depth of suture (38)	Fruit: number of lenticels (44)	Fruit: firmness (47)
1.	5,37	9,34			1,0 - 1,0
2.	5,41	10,36	Shallow		
3.	5,62	11,18			1,2 - 2,0
4.	5,37	9,35			1,5 - 2,0
5.	6,30	9,66			1,5 - 1,4
6.	6,36	10,34			2,0 - 1,7
7.	6,43	10,35			1,6 - 1,6
8.	6,26	10,40			
9.	6,37	11,03			
10.	5,44	11,07			
11.	6,69	11,41			1,5 - 1,6
12.	6,18	9,53			
13.	6,80	10,02			
14.	6,41	10,27			
15.	3,01	10,33			
16.	3,04	10,38			
17.	5,35	11,14			
18.	6,17	11,25			
19.	6,16	11,92			
20.	5,36	10,24			
MEDIA	6,32				

- **Qualitative**; in this case one objective is used to describe trait (es. in kiwifruit: flower - shape in profile could be convex, concav or flat);

- **Quantitative**; if to describe trait a measure is necessary (es. fruit: weight) a sample of 20 fruits is chosen, single weight are recorded and the medium value elaborated. For these qualitative descriptors data are collected for more than one year (3 or 4) and, in order to transform these value into a specific category (es. Fruit weight: small, medium or big) statistical analysis are performed. In this way will be possible to translate «a value» into «a judgement» which describe the value. Different statistical analysis would be used.

Perspectives

- **Increase the number of accessions in the Database.**

- **Expand the database with specific descriptors of single species, in order to enable the sharing, at national and international level, of information derived from the activities of characterization which institutions have been carrying out for years.**

- **It is hoped that more istitutions (Universities, Regions, private collectors, …) will join the database in order to make the website a complete reference portal for Plant Genetic Resources preserved in Italy.**








crea
Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria

Thanks for your attention!