AGPG:IBPGR/85/36
October 1985
Replacing:
AGP:IBPGR/80/88
August 1981

INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES

DESCRIPTOR LIST FOR ALMOND (Prunus amygdalus) (REVISED)

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Rome

The International Board for Plant Genetic Resources (IBPGR) is an autonomous international scientific organization under the aegis of the Consultative Group on International Agricultural Research (CGIAR). The IBPGR was established by the CGIAR in 1974 and its Executive Secretariat is provided by the Food and Agriculture Organization of the United Nations. The basic function of the IBPGR is to promote and coordinate an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. The Consultative Group mobilizes financial support from its members to meet the budgetary requirements of the Board.

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PREFACE

A draft list of descriptors for almond (Prunus amygdalus) had been prepared by Professor M. Dokuzoguz and Professor R. Gülcan and submitted to a GREMPA (Groupe de Recherches et d'Etudes Méditerraneen Pour l'Amandier) Symposium at Izmir, Turkey, 16-22 June 1980. A preliminary list of descriptors was formulated from this at the Symposium and was subsequently published by the IBPGR in August 1981.

The Prunus Working Group from the European Cooperative Programme for Conservation and Exchange of Crop Genetic Resources, Phase II, recognized the need to update the almond descriptors. Consequently Professor Gülcan prepared a new version.

The IBPGR encourages the collection of data on the first four categories of this list; 1. Accession; 2. Collection; 3. and 4. Characterization and Preliminary evaluation. The IBPGR endorses the information in categories 1 - 4 as the minimum that ideally should be available for any one accession. Other descriptors are given in categories 5 onwards that will enable the simple encoding of further characterization and evaluation data and which can serve as examples for the creation of additional descriptors in the IBPGR form by any user.

The suggested coding should not be regarded as the definitive scheme, although this format has the full backing of the IBPGR and is promoted worldwide. The descriptor list given here provides an international format and thereby produces a universally understood 'language' for all plant genetic resources data. The adoption of this scheme for all data encoding, or at least the production of a transformation method to convert other schemes to the IBPGR format, will produce a rapid, reliable and efficient means for information storage, retrieval and communication. This will greatly assist the utilization of germplasm throughout the international plant genetic resources network. It is recommended, therefore, that information should be produced by closely following this descriptor list with regard to: ordering and numbering descriptors; using the descriptors specified; and using the descriptor states recommended.

Errors and omissions are the responsibility of the editor. Any suggestions for modifications will be welcomed by the IBPGR Secretariat, Rome, and by the editor, especially before encoding new descriptors.

DESCRIPTOR LIST FOR ALMOND

The IBPGR now uses the following definitions in genetic resources documentation:

i) passport (accession identifiers and information recorded by collectors);

ii) characterization (consists of recording those characters which are highly heritable, can be easily seen by the eye and are expressed in all environments);

iii) preliminary evaluation (consists of recording a limited number of additional traits thought desirable by a consensus of users of the particular crop).

Characterization and preliminary evaluation will normally be the responsibility of the curators, while further characterization and evaluation should be carried out by the plant breeder. The data from further evaluation should be fed back to the crop coordinator who will maintain a data file.

The following internationally accepted standards for the scoring or coding of descriptor states should be followed as indicated below:

a) measurements are made in metric units;

b) many descriptors which are continuously variable are recorded on a 1-9 scale. The authors of this list have sometimes described only a selection of the states, e.g. 3, 5 and 7 for such descriptors. Where this has occurred the full range of codes is available for use by extension of the codes given or by interpolation between them - e.g. in 8. (Pest and disease susceptibility) 1 - extremely low susceptibility and 8 - high to extremely high susceptibility;

c) presence/absence of characters are scored as + (present) and 0 (absent);

d) for descriptors which are not generally uniform throughout the accession (e.g. mixed collection, genetic segregation) mean and standard deviation could be reported where the descriptor is continuous or mean and 'x' where the descriptor is discontinuous (frequencies can be recorded in NOTES descriptor, 11);

e) when the descriptor is inapplicable, '0' is used as the descriptor value. For example, if an accession does not form flowers, a '0' would be scored for the following descriptor

Flower colour

1 White
2 Yellow
3 Red
4 Purple

f) blanks are used, for information not yet available;

g) standard colour charts e.g. Royal Horticultural Society Colour Chart, Methuen Handbook of Colour, Munsell Color Charts for Plant Tissues are strongly recommended for all ungraded colour characters. The precise chart used should be specified in the NOTES descriptor, 11.

For the observations on the fruit, 20 typical fruits should be selected out of a minimum of 40 from two trees. All observations on the fruits should be made on fruits ripened on the tree.

PASSPORT

1. ACCESSION DATA

INTRODUCTORY

1.1 ACCESSION NUMBER

This number serves as a unique identifier for an accession at a given site and is assigned by the curator of a particular genebank site when an accession is entered into the site genebank. It must not be re-used even if the accession is lost. Letters should occur before the number to identify the genebank or national system (e.g. PI indicates an accession within the USA system, and EC indicates an accession within the CEC Fruit Genetic Resources Scheme). A site may choose to use a Genetic Resource Scheme (GRS) ACCESSION NUMBER (see 1.4) as the only unique identifier

1.2 DONOR NAME (= Source of acquisition)

The name and address of the person or institute responsible for donating the germplasm to the genebank collection at the site (see 1.14) at which the plants are held

1.3 DONOR IDENTIFICATION NUMBER

The number (or name) assigned by the person or institute above (1.2) donating the accession to the site specified at 1.14

1.4 OTHER NUMBERS ASSOCIATED WITH THE ACCESSION (see also 1.18 and 2.1)

Other identification number known to exist in other collections for this accession, e.g. CEC Genetic Resources Scheme (EC) number or United States Plant Inventory (PI) number. EC and PI numbers serve as unique identifiers for an accession in a particular GRS, and must not be re-used; they are assigned by the EC or PI coordinator, and not by the site curator

1.4.1 EC number (CEC GRS accession number)

1.4.2 PI number (United States Plant Inventory accession number)

1.4.3 Etc.

1.5 SCIENTIFIC NAME (Use Prunus amygdalus for the cultivated almond)

1.5.1 Genus (e.g. Prunus)

1.5.2 Species (e.g. amygdalus)

1.5.3 Subspecies (if applicable)

1.5.4 Botanical variety (if applicable)

For complex hybrids refer to 1.12

1.6 PEDIGREE OF ACCESSIONS

1.6.1 Female parent (of the accession)

1.6.2 Male parent (of the accession)

1.6.3 Mother of female parent

1.6.4 Father of female parent

1.6.5 Mother of male parent

1.6.6 Father of male parent

1.6.7 Nomenclature and designations

Identities and additional pedigree assigned to breeder's material

1.7 ACQUISITION DATE

The month and year in which the accession entered the collection, expressed numerically, e.g. June = 06, 1981 = 1981

1.7.1 Month

1.7.2 Year

1.8 DATE OF LAST REGENERATION OR MULTIPLICATION

The month and year expressed numerically, e.g. October = 10, 1978 - 1978

1.8.1 Month

1.8.2 Year

1.9 ACCESSION SIZE

Approximate number of seeds or plants of accession in collection

1.10 NUMBER OF TIMES ACCESSION REGENERATED

Number of regenerations or multiplications since original collection

1.11 TYPE OF MAINTENANCE

1 Vegetative
2 Seed
3 Pollen
4 Tissue culture
5 More than one type (specify in NOTES descriptor, 11)

1.12 GENETIC ORIGIN

1 Self pollination
2 Intraspecific hybrid
3 Interspecific hybrid
4 Clonal selection
5 Bud spontaneous mutation
6 Bud induced mutation
7 Open pollination
8 Etc.

Specify further information on complex hybrids in the NOTES descriptor, 11

SITE SPECIFIC

1.13 COUNTRY WHERE MAINTAINED

Code letters for country in which plants are grown. Use the three letter abbreviations supported by the Statistical Office of the United Nations. Copies of the abbreviations are available from the IBPGR Secretariat and have been published in the FAO/IBPGR Plant Genetic Resources Newsletter No. 49

e.g. GRC Greece
USA United States of America

1.14 SITE WHERE MAINTAINED

Institute at which plants are grown. (If codes are used they must be unique for a particular country and, to avoid duplication, should be communicated to IBPGR)

e.g. ANGS Station de Recherches d'Arboriculture Fruitière, Angers

EMRS East Malling Research Station, Kent

FRNZ Istituto di Coltivazioni Arboree, Firenze

1.15 CURATOR

The officer responsible for maintaining the genetic resources material held at the site specified above

1.16 LOCAL NAME

The name by which the cultivar or species is listed at the above site. This may be either some combination of the Genetic Identifiers (1.21 and 1.22) or a synonym

1.17 LOCAL CLONE/MUTANT/VARIANT NAME

The clone or mutant name of the cultivar or species (if any) by which it is identified at the above site. This may be either the internationally accepted name (1.22) or a synonym

1.18 LOCAL PLANT NUMBER

This identifies a single plant within a population of plants having the same site accession number. It may be any combination of plot identity, row number, and tree position within the row

1.19 DISTRIBUTION LIMITED

1 Unlimited
2 Limited - specify restrictions in the NOTES descriptor, 11

1.20 YEAR OF PROBABLE DISCARD

Enter year that tree(s) will probably be discarded, e.g. 1988. Regeneration of genebank accessions should take place at least two years before the year of probable discard

1.21 YEAR TREE PLANTED (e.g. 1972)

FURTHER IDENTIFIERS

1.22 GENETIC NAME

The name of the cultivar or species as internationally accepted or defined by the Genetic Resources Scheme coordinator, e.g. Texas

1.23 GRS CLONE/MUTANT/VARIANT NAME

The internationally accepted name (if any) of the clone or mutant of the cultivar or species, e.g. Tardy Nonpareil

1.24 PATENT NUMBER (or Plants Variety Rights Number)

Patented cultivars - record the patent number or, if the patent number is not known write '+'

Non-patented cultivars - record as '0'

1.25 SYNONYMS

Other useful names (excluding those occurring above) in alphabetical order

2. COLLECTION DATA

2.1 COLLECTOR'S NUMBER

Original number assigned by collector of the sample, normally composed of the name or initials of the collector(s) followed by a number. This item is essential for identifying duplicates held in different collections and should always accompany sub-samples wherever they are sent

2.2 COLLECTING INSTITUTE

Institute or person collecting/sponsoring the original sample

2.3 DATE OF COLLECTION OF ORIGINAL SAMPLE

Expressed numerically, e.g. March = 03, 1980 = 1980

2.3.1 Month

2.3.2 Year

2.4 COUNTRY OF COLLECTION OR COUNTRY WHERE CULTIVAR/VARIETY BRED (=Origin)

Use the three letter abbreviations supported by the Statistical Office of the United Nations (see 1.13)

2.5 PROVINCE/STATE

Name of the administrative subdivision of the country in which the sample was collected

2.6 LOCATION OF COLLECTION SITE

2.6.1. Collected in the wild

Number of kilometres and direction from nearest town, village or map grid reference (e.g. IZMIR7S means 7 km south of Izmir)

2.6.2 Postal address

For material originating at a clearly identifiable postal address

2.7 LATITUDE OF COLLECTION SITE

Degrees and minutes followed by N (North) or S (South), e.g. 1030S

2.8 LONGITUDE OF COLLECTION SITE

Degrees and minutes followed by E (East) or W (West), e.g. 7625W

2.9 ALTITUDE OF COLLECTION SITE

Elevation above sea level in metres

2.10 COLLECTION SOURCE

1 Wild
2 Farm land
3 Farm store
4 Backyard
5 Village market
6 Commercial market
7 Institute
8 Other (specify in the NOTES descriptor, 11)

2.11 STATUS OF SAMPLE

1 Wild
2 Weedy
3 Breeders' line
4 Primitive cultivar (landrace)
5 Advanced cultivar (bred)
6 Other (specify in the NOTES descriptor, 11)

2.12 LOCAL/VERNACULAR NAME

Name given by farmer to cultivar/landrace/weed

2.13 NUMBER OF PLANTS SAMPLED

Approximate number of plants collected (sampled) in the field to produce this accession

2.14 PHOTOGRAPH

Was a photograph taken of the accession or environment at collection?

0 No
+ Yes

2.15 HERBARIUM SPECIMEN

0 No
+ Yes

2.16 TYPE OF SAMPLE

1 Vegetative
2 Seed
3 Both

2.17 NATURE OF VEGETATIVE SAMPLE

1 Cuttings - for grafting
2 Cuttings - for rooting
3 Rooted plants
4 Tissue culture
5 Other (specify in the NOTES descriptor, 11)

2.18 VIRUS DISEASE STATUS (including mycoplasma)

1 Virus disease free; specify viruses known to be absent in the NOTES descriptor, 11 and year of last virus test
2 Virus disease present; specify viruses present in the NOTES descriptor, 11 and year of last virus test
3 Not tested
4 Virus free by treatment

2.19 END USE, GENERAL

1 Fruit use
2 Plant use
3 Both

2.20 FRUIT USE

1 Scion cultivar - dessert
2 Scion cultivar - processing including distilling
3 Dual or multipurpose consumption
4 Other (specify in the NOTES descriptor, 11)

2.21 PLANT USE

1 Clonal rootstock
2 Clonal interstock
3 Seedling rootstock
4 Ornamental/pollinator
5 Dual or multipurpose use
6 Botanical (wild) species
7 Other (specify in the NOTES descriptor, 11)

2.22 OTHER NOTES FROM COLLECTOR

Collectors should record ecological/climatic information. For cultivated crops, cultivation practices should be recorded

CHARACTERIZATION AND PRELIMINARY EVALUATION

3. SITE DATA

3.1 COUNTRY OF CHARACTERIZATION AND PRELIMINARY EVALUATION

See 1.13 for coding procedure

3.2 SITE (RESEARCH INSTITUTE)

See 1.14 for coding procedure

3.3 NAME OF PERSON IN CHARGE OF CHARACTERIZATION

3.4 ROOTSTOCK

Name of rootstock on which accession is grafted (if any)

3.5 CONDITION OF TREE

Choose the one condition that best fits the accession

1 Dying
2 Old - declining
3 Mature - diseased
4 Mature - non-vigorous
5 Mature - vigorous
6 Young - not yet bearing
7 Healthy - cropping poorly
8 Healthy - cropping well

3.6 CROPPING

A preliminary assessment of 'cropping efficiency' (descriptor 6.2.9)

3 Cropping poorly
5 Intermediate
7 Cropping well

4. PLANT DATA

4.1 VEGETATIVE

4.1.1 Propagation method

Suitable method(s) employed for multiplication (0 = No, + = Yes)

4.1.1.1 Grafting (including budding)
4.1.1.2 Hardwood cuttings
4.1.1.3 Softwood cuttings
4.1.1.4 Stool beds
4.1.1.5 Layering
4.1.1.6 Micropropagation
4.1.1.7 Seed
4.1.1.8 Etc.

4.1.2 Chromosome number

4.2 INFLORESCENCE AND FRUIT

4.2.1 Season of flowering

Date of full flower

		Reference
1	Extremely early	Caveliera
2	Very early	Desmaye Largueta
3	Early	Nec Plus Ultra
4	Early/intermediate	
5	Intermediate	Nonpareil
6	Intermediate/late	Drake
7	Late	Texas
8	Very late	Ferragnes
9	Extremely late	Tardy Nonpareil

4.2.2 Harvest maturity

Season of maturity for picking. When available, average maturity in terms of days post-blossom can be recorded in the NOTES descriptor, 11

		Reference
1	Extremely early	Caveliera
3	Early	Nonpareil
5	Medium	Ferragnes
7	Late	Marcona
9	Extremely late	Texas

4.3 KERNEL

4.3.1 Kernel size

		Reference
1	Extremely small	Kapareil
3	Small	Texas
5	Intermediate	Nonpareil
7	Large	Ferragnes
9	Extremely large	Bartre

4.3.2 Kernel shape

Expressed by kernel width/length ratio in a sample of 100 nuts

1	Extremely narrow	< .40
2	Narrow	.40 - .48
3	Intermediate	.49 - .55
4	Broad	.56 - .65
5	Extremely broad	> .65

FURTHER CHARACTERIZATION AND EVALUATION

5. SITE DATA

5.1 COUNTRY OF FURTHER CHARACTERIZATION AND EVALUATION

5.2 SITE (RESEARCH INSTITUTE)

5.3 NAME OF PERSON IN CHARGE OF EVALUATION

5.4 ROOTSTOCK

Name of rootstock on which the accession is grafted (if any)

6. PLANT DATA

6.1 VEGETATIVE

SCIONS GRAFTED ON ROOTSTOCKS OR SELF-ROOTED

6.1.1 Tree habit (of branches)

Natural habit of an untrained, non-juvenile tree

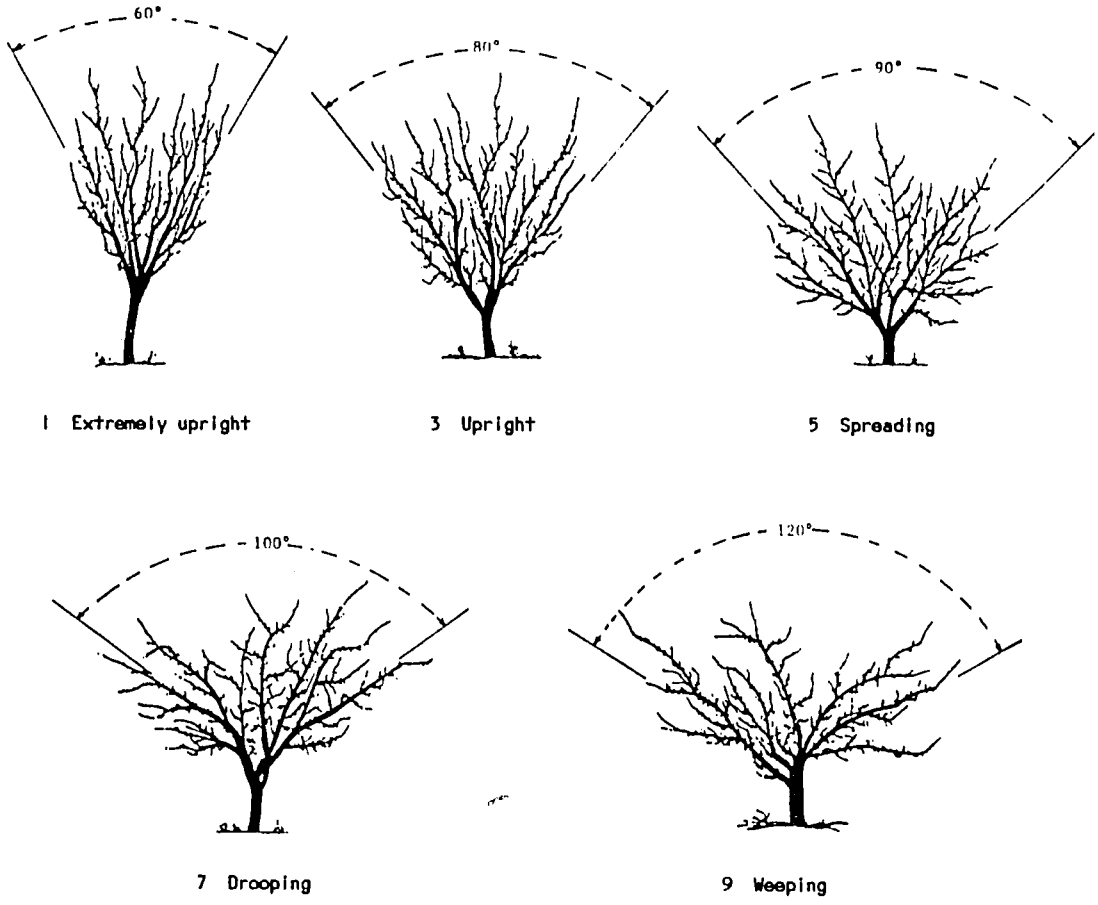
See Fig. 1

		Reference
1	Extremely upright	Bartre
3	Upright	Texas, Ferragnes
5	Spreading	Ne Plus Ultra
7	Drooping	Drake
9	Weeping	A'i, Desmaye

6.1.2 Tree vigour

Based on height and spread measurements of adult trees on their own roots, or relative to reference cultivars on the same rootstock (use reference cultivars or species on a common rootstock for each site)

		Reference
3	Weak	Marcona
5	Intermediate	Nonpareil
7	Strong	Fleur en bas



1 Extremely upright

3 Upright

5 Spreading

7 Drooping

9 Weeping

Fig. 1. Tree habit

6.1.3 Ramification

		Reference
0	Absent	Bartre
3	Sparse	Texas
5	Intermediate	Desmaye Largueta
7	Dense	Marcona
9	Extremely dense	A'i

6.1.4 Coloration of shoot tip

Anthocyanin coloration on one-year old shoots

		Reference
0	No anthocyanin coloration	
3	Low	Desmaye Largueta
5	Intermediate	Bartre
7	Strong	Texas

6.1.5 Foliage density

		Reference
3	Low	Nonpareil
5	Intermediate	Texas
7	Dense	Jordalono

6.1.6 Scion/rootstock compatibility

The compatibility of scion accession on the rootstock named in 5.4

Based on a 1-9 scale where

3	Poor
5	Intermediate
7	Good

6.1.7 Tree chilling requirement

Information concerning the method of recording this character must be included in the NOTES descriptor, 11

		Reference
1	Extremely low	
3	Low	Marcona, Ne Plus Ultra
5	Medium	Texas, Primorskyi
7	High	Tuono, Filippoceo
9	Extremely high	Cristomorto, Ferragnes

6.1.8 Heat requirement for flower bud bursting

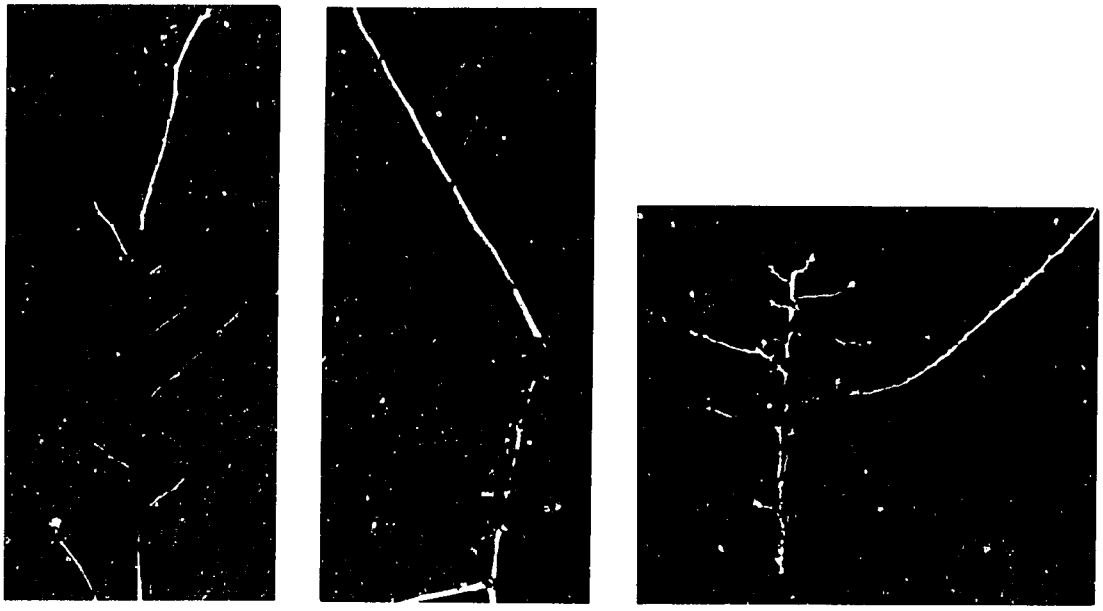
		Reference
1	Extremely low	
3	Low	Tuono, Filippoceo
5	Medium	Desmayo, Ne Plus Ultra
7	High	Nonpareil, Marcona
9	Extremely high	Rachele, Primorskyi

6.2 INFLORESCENCE AND FRUIT

6.2.1 Location of flower buds

See Fig. 2

		Reference
1	Most flower buds on one-year old shoots	A'i
2	Most flower buds on spurs	Tuono
3	Mixed	Texas



1 Most flower buds on one-year old shoots

2 Most flower buds on spurs

3 Mixed

Fig. 2. Location of flower buds

6.2.2 Duration of flowering

In days, on an average of at least four years

6.2.3 Tendency to biennial bearing

		Reference
3	Weak	Nonpareil
5	Intermediate	Marcona
7	Strong	Rachele

6.2.4 Self-compatibility of flowers

0	Incompatible
+	Compatible

6.2.5 Precocity of bearing

A precocious tree is defined as one which starts to crop at an early age relative to other cultivars or species on the same rootstock

		Reference
1	Extremely low	Fleur en bas
3	Low	Bartre
5	Intermediate	Nonpareil
7	High	Marcona

6.2.6 Colour of petals

		Reference
1	White	Bartre
2	Light pink	A'i
3	Pink	Marcona

6.2.7 Double flower in buds

3	Few
5	Intermediate
7	Many

6.2.8 Number of pistils

Flower with the following number of pistils

		Reference
1	One	Nonpareil
2	One to two	Desmaye Largueta
3	Two	
4	One to three	

6.2.9 Cropping efficiency (productivity)

The yield per unit area of land relative to other cultivars on the same rootstock, under the same management system at the same site

		Reference
3	Low	Davey
5	Intermediate	
7	High	Marcona

6.2.10 Ease of harvesting

As indicated by fruit drop

3	Low
5	Intermediate
7	High

6.2.11 Ease of hulling

3	Low
5	Intermediate
7	High

6.2.12 Nut size

		Reference
3	Small	Texas
5	Medium	Nonpareil
7	Large	Ardechoise
9	Extremely large	Bartre

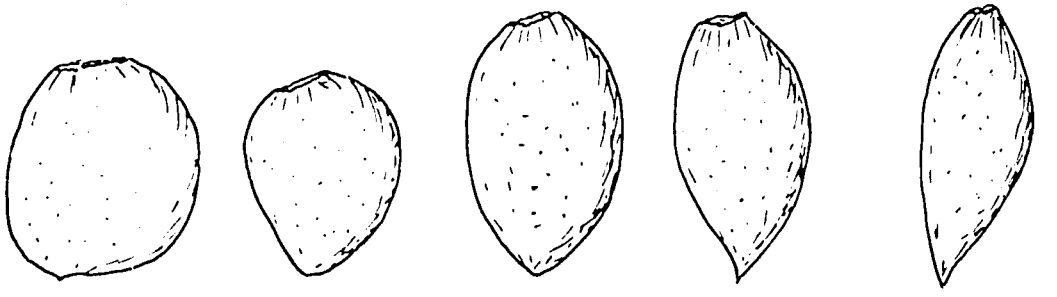
6.2.13 Nut shape

See Fig. 3

		Reference
1	Round	Marcona
2	Ovate	Texas
3	Oblong	A'i
4	Cordate	Cristomorto
5	Extremely narrow	

6.2.14 Shell colour intensity

		Reference
1	Extremely light	Abiod
3	Light	Peerless
5	Intermediate	
7	Dark	Marcona



1 Round 2 Ovate 3 Oblong 4 Cordate 5 Extremely narrow

Fig. 3. Nut shape

6.2.15 Marking of outer shell

See Fig. 4

0	Without pores
3	Sparsely pored
5	Intermediate
7	Densely pored
9	Scribed

3 Sparsely pored 5 Intermediate 7 Densely pored 9 Scribed

Fig. 4. Marking of outer shell

6.2.16 Suture opening of the shell

See Fig. 5

0	Excellent seal (no opening)
5	Open (about 2 mm)
9	Very wide

1 Excellent seal 5 Open 9 Very wide

Fig. 5. Suture opening of the shell

6.2.17 Shell retention

Portion of outer corky layer of shell

See Fig. 6

0 None retained
5 Partly missing
9 All retained

0 None retained 5 Partly missing 9 All retained

Fig. 6. Shell retention

6.2.18 Softness of shell

		Reference
1	Extremely hard (very difficult to break, needs hammer)	Bartre
3	Hard (difficult to break, needs hammer)	Desmaye Largueta
5	Intermediate (broken by hand with effort)	Texas
7	Soft (broken by hand)	Princesse
9	Paper (very thin, easily removed)	Nonpareil

6.3 KERNEL

6.3.1 Kernel colour intensity

		Reference
1	Extremely light	Davey
3	Light	Nonpareil
5	Intermediate	Ne Plus Ultra
7	Dark	Texas
9	Extremely dark	Fournat de Brézenaud

6.3.2 Shrivelling of kernel

See Fig. 7

		Reference
3	Slightly wrinkled	Nonpareil
5	Intermediate	
7	Wrinkled	

3 Slightly wrinkled 5 Intermediate 7 Wrinkled

Fig. 7. Shrivelling of kernel

6.3.3 Kernel pubescence

		Reference
3	Low	Nonpareil
5	Intermediate	Desmaye
7	High	Ferragnes
9	Extremely high	Ardechoise

6.3.4 Kernel taste

		Reference
3	Sweet	Nonpareil
5	Intermediate	Texas
7	Bitter	

6.3.5 Percentage of sound kernels

The percentage of sound kernels in a sample of 100 nuts

6.3.6 Percentage of double kernels

The percentage of double kernels in a sample of 100 nuts (see Fig. 8)

Fig. 8. Example of double kernel

6.3.7 Percentage of twin kernels

The percentage of twin kernels in a sample of 100 nuts. A twin kernel is a seed in which more than one embryo occurs. These can be detected by the outline of the small embryo showing through the seed coat (see Fig. 9)

Fig. 9. Example of twin kernel

7. STRESS SUSCEPTIBILITY

Based on a 1-9 scale of general field susceptibility, where

3 Low susceptibility
5 Medium susceptibility
7 High susceptibility

7.1 LOW TEMPERATURE

Additional information concerning type of susceptibility can be recorded in the NOTES descriptor 11, i.e. minimum temperature without damage, differences in bud and wood susceptibility etc.

7.1.1 Low temperature - spring

Observed at critical stages in relation to flowering

		Reference
1	Extremely hardy	Ardechoise
3	Hardy	1.X.L
5	Intermediate	Peerless
7	Tender	Marcona
9	Extremely tender	Ne Plus Ultra

7.2 HIGH TEMPERATURE

7.3 DROUGHT

7.4 HIGH SOIL MOISTURE

7.5 CHLOROSIS

8. PEST AND DISEASE SUSCEPTIBILITY

Based on a 1-9 scale of general field susceptibility, where

3 Low susceptibility
5 Medium susceptibility
7 High susceptibility

If the race is known, record it in NOTES descriptor, 11

8.1 PESTS

8.1.1 Anthonomus ornatus Reiche

8.1.2 Cimbex quadrimaculata Mull.

8.1.3 Eurytoma amygdali

8.1.4 Odinodiplosis amygdali Anognos

8.1.5 Etc.

8.2 FUNGI

8.2.1 Monilinia laxa (Aderh. et Ruhl.)

	Reference
3	A'i
5	Cristomorto
7	Drake

8.2.2 Botrytis cinerea Pers.

	Reference
3	Cristomorto
5	Peerless
7	Marcona

8.2.3 Fusicoccum amygdali Del.

	Reference
3	Texas
5	Nonpareil
7	Jordanolo

8.2.4 Fusicladium carpophilum (Thöm.) Oud.

	Reference
3	Marcona
5	Nonpareil
7	Ne Plus Ultra

8.2.5 Polystigma echraceum (Wahl.) Sacc.

	Reference
3	A'i, Rachele
5	Nonpareil
7	Tuono

8.2.6 Taphrina deformans (Berk.) Tul.

8.2.7 Coryneum beijerinckii Oud.

8.2.8 Etc.

8.3 BACTERIA

8.3.1 Pseudomonas syringae Van Hall

8.3.2 Agrobacterium tumefaciens (Smith et Town.) Conn

8.3.3 Etc.

8.4 VIRUS AND MYCOPLASMA

8.5 GENETIC DISORDER

8.5.1 Noninfectious Bud Failure (BF)

8.5.2 Etc.

9. ALLOENZYME COMPOSITION

This may prove to be a useful tool for identifying duplicate accessions

10. CYTOLOGICAL CHARACTERS AND IDENTIFIED GENES

11. NOTES

Give additional information where descriptor state is noted as "Other" as, for example, in descriptors 2.10 and 4.1.1.8. Also include here any further relevant information