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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

MACADAMIA *

UPOV Code(s): MACAD_INT; MACAD_TET

Macadamia integrifolia Maiden et Betche; *Macadamia tetraphylla* L. Johns.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from Australia
to be considered by the
Technical Working Party for Fruit Crops
at its forty-ninth session, to be held in Santiago de Chile, Chile,
from 2018-11-19 to 2018-11-23

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Macadamia integrifolia Maiden et Betche	Macadamia, Queensland Nut	Macadamia	Macadamia	Macadamia
Macadamia tetraphylla L. Johns.	Macadamia, Queensland Nut	Macadamia	Macadamia	Macadamia

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Macadamia integrifolia* Maiden et Betch and *Macadamia tetraphylla* L. Johns. and hybrids of these species..

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of grafted plants on a rootstock specified by the authority.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

5 plants

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Number of Growing Cycles

3.1.1 The minimum duration of tests should normally be two independent growing cycles.

3.1.2 In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

3.1.3 The growing cycle is considered to be the period ranging from the beginning of active vegetative growth or flowering, continuing through active vegetative growth or flowering and fruit development and concluding with the harvesting of fruit.

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 5 Plants.

3.4.0 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts of plants taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 These Test Guidelines have been developed for the examination of vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

4.2.3 For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 5 plants, 0 off-types are allowed.

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Tree: growth habit (characteristic 1)
(b) Tree: height (characteristic 2)
(c) Tree: angle of primary branches (characteristic 3)
(d) Stem: texture of surface (characteristic 5)
(e) Inflorescence: color (characteristic 24)
(f) Shell: shape (characteristic 29)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 States of Expression and Corresponding Notes

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 In the case of qualitative and pseudo-qualitative characteristics (see Chapter 6.3), all relevant states of expression are presented in the characteristic. However, in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used to minimize the size of the Table of Characteristics. For example, in the case of a quantitative characteristic with 9 states, the presentation of states of expression in the Test Guidelines may be abbreviated as follows:

State	*Note*
small	3
medium	5
large	7

However, it should be noted that all of the following 9 states of expression exist to describe varieties and should be used as appropriate:

State	*Note*
very small	1
very small to small	2
small	3
small to medium	4
medium	5
medium to large	6
large	7
large to very large	8
very large	9

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.

6.3 Types of Expression

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 Example Varieties

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 Legend

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1 2	**3 4**	**5 6**	**7**			
	Name of characteristics in English	**Nom du caractère en français**	**Name des Merkmals auf Deutsch**	**Nombre del carácter en español**		
	states of expression	types d'expression	Ausprägungsstufen	tipos de expresión		

1 Characteristic number

2 (*) Asterisked characteristic – see Chapter 6.1.2

3 Type of expression
QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

4 Method of observation (and type of plot, if applicable)
MG, MS, VG, VS – see Chapter 4.1.5

5 (+) See Explanations on the Table of Characteristics in Chapter 8.2

6 (a)-(b) See Explanations on the Table of Characteristics in Chapter 8.1

7 Growth stage key See Explanations on the Table of Characteristics in Chapter 8

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*) PQ VG		**(+)**				
	Tree: growth habit					
	upright				Hidden Valley A16, MRG-20	1
	upright to spreading					2
	spreading					3
	drooping				KRG-15	4
2. (*) QN VG						
	Tree: height					
	short				Daleys Dwarf, MiniMaca	3
	medium				Hidden Valley A4, Own Venture	5
	tall				Daddow, Own Choice	7
3. (*) QN VG						
	Tree: angle of primary branches					
	acute				MiniMaca	1
	intermediate					2
	obtuse					3
4. QN VG		**(+)**				
	Tree: density of foliage	**Plante : densité du feuillage**	**Pflanze: Dichte des Laubes**	**Planta: densidad del follaje**		
	sparse	lâche	locker	laxa	Hidden Valley A4	3
	medium	moyenne	mittel	media	Daddow	5
	dense	dense	dicht	densa	Hidden Valley A16, Own Choice	7
5. (*) QN VG		**(+)**				
	Stem: texture of surface	**Tige : texture de l'écorce**	**Trieb: Beschaffenheit der Rinde**	**Tallo: textura de la corteza**		
	smooth	lisse	glatt	lisa		1
	medium					2
	rough					3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**QN VG**	**(+)**				
	Branch: number of leaves per whorl					
	three				EMB-1, KRG-15, MRG-20, MRG-25	1
	four				KMB-3	2
	five					3
7.	**QL VG**		**(a)**			
	Leaf: petiole	**Feuille : pétiole**	**Blatt: Blattstiel**	**Hoja: peciolo**		
	absent				Kabere, MiniMaca	1
	present				KMB-3, KRG-15, MRG-20, MRG-25, Own Venture	9
8.	**QN MS/VG**		**(a)**			
	Petiole: length					
	short				Hidden Valley A16, KMB-3, MRG-20, MRG-25	1
	medium				Daddow, EMB-1	2
	long				KRG-15, Own Venture	3
9.	**QN VG**	**(+)**	**(a)**			
	Leaf: conspicuousness of secondary veins					
	weak				EMBU-1, KRG-15	1
	medium				KMB-3, MRG-20	2
	strong				Kabere	3
10.	**QN MS/VG**		**(a)**			
	Leaf blade: length	**Limbe : longueur**	**Blattspreite: Länge**	**Limbo: longitud**		
	short				MiniMaca	3
	medium				Daleys Dwarf, Hidden Valley A4, KRG-15, MRG-20, MRG-25	5
	long				Own Venture	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**QN MS/VG**	**(a)**				
		Leaf blade: width	**Limbe : largeur**	**Blattspreite: Breite**	**Limbo: anchura**		
		narrow				Hidden Valley A4	3
		medium				Own Choice	5
		broad				Hidden Valley A16	7
12.	**(*)**	**PQ VG**	**(+)**				
		Leaf blade: shape					
		lanceolate					1
		ovate					2
		oblong					3
		elliptic				Hidden Valley A4	4
		obovate				Daddow	5
		oblanceolate				Own Venture	6
13.		**QL VG**	**(+)**	**(a)**			
		Leaf blade: tip					
		none					1
		apiculate					2
		acuminate					3
		mucronate					4
14.		**PQ VG**	**(+)**	**(a)**			
		Leaf blade: shape of apex excluding tip	**Feuille : forme du sommet**	**Blatt: Form der Spitze**	**Hoja: forma del ápice**		
		acute				Hidden Valley A4, Kabere, KMB-3, KRG-15	1
		obtuse				Daleys Dwarf, EMBU-1, MRG-20, MRG-25, Own Venture	2
		rounded				Daddow, Nelmak 26	3
15.		**PQ VG**		**(a)**			
		Leaf blade: shape of base	**Limbe : forme de la base**	**Blattspreite: Form der Basis**	**Limbo: forma de la base**		
		attenuate					1
		acute					2
		obtuse					3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*) QN VG		**(a)**				
	Leaf blade: undulation of margin	**Limbe: ondulation du bord**	**Blattspreite: Randwellung**	**Limbo: ondulación del borde**		
	very weak					1
	weak				Daleys Dwarf, EMB-1, Hidden Valley A4, MRG-25	2
	medium				KMB-3, KRG-15, MRG-20, Own Venture	3
	strong					4
	very strong				MiniMaca	5
17. QN VG		**(a)**				
	Leaf blade: depth of incisions of margin	**Feuille : incisions du bord**	**Blatt: Randeinschnitte**	**Hoja: incisiones del borde**		
	shallow					1
	medium					2
	deep					3
18. (*) QN VG		**(a)**				
	Leaf blade: number of spines on margin					
	absent or very few				Daleys Dwarf	1
	few				MRG-20	3
	medium				EMB-1, KRG-15	5
	many				KMB-3, MiniMaca	7
	very many				Kabere	9
19. PQ VG		**(+)**				
	Young leaf blade: color	**Limbe foliaire : couleur des nervures**	**Blattspreite: Farbe der Adern**	**Limbo: color de las venas**		
	yellow green					1
	light green				EMB-1, KRG-15, MRG-20	2
	medium green					3
	reddish					4
	purple					5
	brown				KMB-3	6

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.		**QN VG**	**(a)**				
		Leaf blade: intensity of green color on upper side					
		light					1
		medium					2
		dark					3
21.		**QN MS/VG**					
		Inflorescence: length					
		short					3
		medium					5
		long					7
22.		**QN VG**					
		Inflorescence: density of flowers					
		sparse					1
		medium					2
		dense					3
23.		**PQ VG**					
		Inflorescence: attitude					
		semi erect to horizontal					1
		horizontal					2
		semi drooping					3
		drooping					4
24.	**(*)**	**QL VG**					
		Inflorescence: color					
		white				Daleys Dwarf, EMB-1, KRG-15, MRG-20, MRG-25	1
		pink				KMB-3, MiniMaca	2
25.		**QN VG**	**(b)**				
		Husk: size of neck					
		absent or small				H2	1
		medium				Daddow, Own Choice	2
		large				Hidden Valley A38	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26.		**QN VG**	**(b)**				
		Husk: size of apical point					
		small				EMB-1, MRG-20	3
		medium				KMB-3, KRG-15, MRG-25	5
		large				Kabere	7
27.		**QN VG**	**(b)**				
		Husk: thickness of pericarp					
		very thin				Kabere	1
		thin				EMB-1, KMB-3, KRG-15	3
		medium				MRG-20, MRG-25	5
		thick					7
28.		**QN VG**	**(+)** **(b)**				
		Shell: size					
		small					1
		medium					2
		large					3
29.	**(*)**	**PQ VG**	**(+)** **(b)**				
		Shell: shape					
		ovate				Hidden Valley A16, Hidden Valley A4	1
		oblate				H2, MRG-20, MRG-25	2
		circular				Daleys Dwarf, EMB-1, Hidden Valley A38, KMB-3, MiniMaca	3
		elliptic				Nelmak 1	4
		obovate				Kabere	5
30.		**QN VG**	**(b)**				
		Shell: texture of surface					
		smooth				Daleys Dwarf, EMB-1, Hidden Valley A38, KRG-15, MRG-25	1
		slightly rough				MiniMaca	2
		moderately rough				KMB-3, MRG-20	3
		very rough					4

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31.	**QN MS/VG**	**(b)**				
	Shell: thickness					
	thin					3
	medium					5
	thick					7
32.	**QN VG**	**(b)**				
	Shell: conspicuousness of suture	**Fruit : netteté de la suture**	**Frucht: Ausprägung der Naht**	**Fruto: visibilidad de la sutura**		
	weak				Kabere, KMB-3, MRG-20	1
	medium					2
	strong				MiniMaca	3
33.	**QN VG**	**(b)**				
	Kernel: size	**Amande : taille**	**Kern: Größe**	**Almendra: tamaño**		
	very small					1
	small				Keaau (660)	3
	medium					5
	large				Hidden Valley A4	7
	very large					9
34.	**PQ VG**	**(b)**				
	Kernel: color					
	white					1
	yellowish white					2
	light brown					3
	medium brown					4
	dark brown					5
35.	**QN VG**	**(+)** **(b)**				
	Kernel: micropyle					
	closed				KMB-3, KRG-15, MRG-20	1
	partially open					2
	fully open				Kabere	3

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36.	**QN MS/VG**	**(+) (b)**				
	Kernel: length					
	short					3
	medium					5
	long					7
37.	**QN MS/VG**	**(+) (b)**				
	Kernel: width					
	narrow					3
	medium					5
	broad					7

8. Explanations on the Table of Characteristics

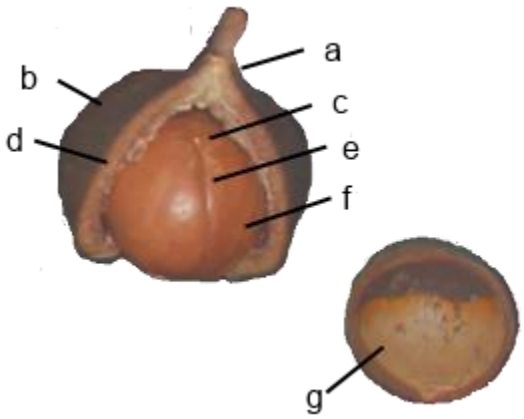
8.1 Explanations covering several characteristics

Unless otherwise indicated, observations should be made on at least 3 year old trees.

Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

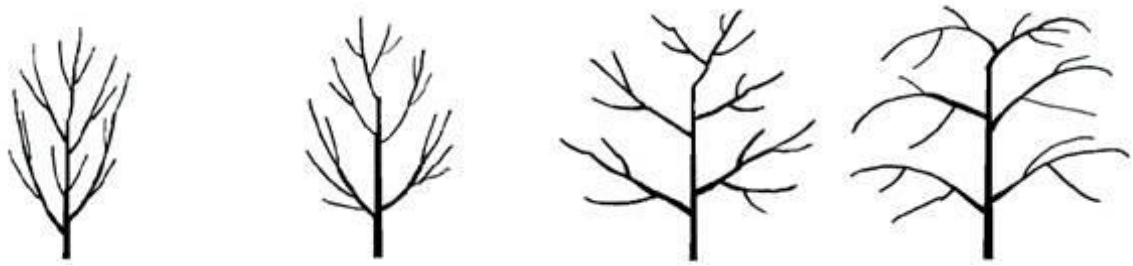
(a) Observations on leaves should be made on basal leaves of new vegetative flush in mid to late summer.

(b)

	a: neck b: husk c: micropyle d: pericarp e: suture f: shell g: kernel

8.2 Explanations for individual characteristics

Ad. 1: Tree: growth habit



1	2	3	4
upright	upright to spreading	spreading	drooping

Ad. 4: Tree: density of foliage

Observations should be made at time of flowering.

Ad. 5: Stem: texture of surface

Observations should be made on the middle third of the main stem.

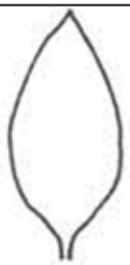
Ad. 6: Branch: number of leaves per whorl

Observations should be made at flowering.

Ad. 9: Leaf: conspicuousness of secondary veins

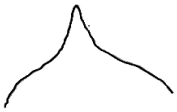
Observations should be made on fully developed leaf.

Ad. 12: Leaf blade: shape

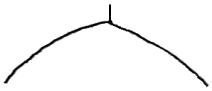
width (ratio length/width)	← broadest part →		
	below middle	at middle	above middle
narrow (high)	 2 lanceolate	 4 oblong	 6 oblanceolate
medium (medium)	 1 ovate	 3 elliptic	
broad (low)			 5 obovate

Ad. 13: Leaf blade: tip

2
apiculate



3
acuminate



4
mucronate

Ad. 14: Leaf blade: shape of apex excluding tip

1
acute

2
obtuse

3
rounded

Ad. 19: Young leaf blade: color

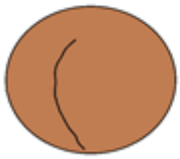
Observations should be made on terminal leaves of new vegetative flush in late winter to early spring.

Ad. 28: Shell: size

Observations should be made in lateral view.

Ad. 29: Shell: shape

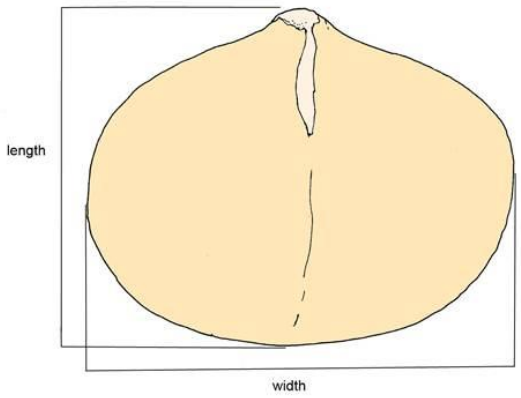
Observations should be made in lateral view

width (ratio length/ width)	← broadest part →		
	below middle	at middle	above middle
narrow (high)		 4 elliptic	
medium (medium)	 1 ovate	 3 circular	 5 obovate
broad (low)		 2 oblate	

Ad. 35: Kernel: micropyle

The micropyle is the white spot at the end of the nut that allows water to enter for the initiation of germination (see 8.1).

Ad. 36: Kernel: length



Ad. 37: Kernel: width

See Ad. 36

9. Literature

Vock, N., Bell, D., Bryen, L., Firth, D., Jones, K., Gallagher, E., McConachie, I., O'Hare, P. and Stephenson, R., 1998: Macadamia Variety Identifier, Agrilink, Queensland Department of Primary Industries, Nambour, Queensland, Australia, 62pp

10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1.1	Botanical name	*Macadamia integrifolia* Maiden et Betche	[ ]
1.1.2	Common name	Macadamia, Queensland Nut	
1.2.1	Botanical name	*Macadamia tetraphylla* L. Johns.	[ ]
1.2.2	Common name	Macadamia, Queensland Nut	

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

#4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]

(please state parent varieties)

(……..……..…) x (……..……..…)

female parent male parent

(b) partially known cross [ ]

(please state known parent variety(ies))

(……..……..…) x (……..……..…)

female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation [ ]

(please state parent variety)

4.1.3 Discovery and development [ ]

(please state where and when discovered and how developed)

4.1.4 Other [ ]

(please provide details)

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) Cuttings [ ]
(b) Other (state method) [ ]

4.2.2 Other [ ]
(Please provide details)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	**Tree: growth habit**		
	upright	Hidden Valley A16, MRG-20	1 [ ]
	upright to spreading		2 [ ]
	spreading		3 [ ]
	drooping	KRG-15	4 [ ]
5.2 (2)	**Tree: height**		
	short	Daleys Dwarf, MiniMaca	3 [ ]
	medium	Hidden Valley A4, Own Venture	5 [ ]
	tall	Daddow, Own Choice	7 [ ]
5.3 (3)	**Tree: angle of primary branches**		
	acute	MiniMaca	1 [ ]
	intermediate		2 [ ]
	obtuse		3 [ ]
5.4 (5)	**Stem: texture of surface**		
	smooth		1 [ ]
	medium		2 [ ]
	rough		3 [ ]
5.5 (24)	**Inflorescence: color**		
	white	Daleys Dwarf, EMB-1, KRG-15, MRG-20, MRG-25	1 [ ]
	pink	KMB-3, MiniMaca	2 [ ]
5.6 (29)	**Shell: shape**		
	ovate	Hidden Valley A16, Hidden Valley A4	1 [ ]
	oblate	H2, MRG-20, MRG-25	2 [ ]
	circular	Daleys Dwarf, EMB-1, Hidden Valley A38, KMB-3, MiniMaca	3 [ ]
	elliptic	Nelmak 1	4 [ ]
	obovate	Kabere	5 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Plant: growth habit*	*upright*	*spreading*

Comments:

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

#7. Additional information which may help in the examination of the variety

7.1 In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

Yes [ ] No [ ]

(If yes, please provide details)

7.2 Are there any special conditions for growing the variety or conducting the examination?

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder's reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)"

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (http://www.upov.int/tgp/en/).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

9. Information on plant material to be examined or submitted for examination

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a)	Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes [ ]	No [ ]
(b)	Chemical treatment (e.g. growth retardant, pesticide)	Yes [ ]	No [ ]
(c)	Tissue culture	Yes [ ]	No [ ]
(d)	Other factors	Yes [ ]	No [ ]

Please provide details for where you have indicated “yes”.

.....

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant’s name

Signature Date

[End of document]