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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

MAGNOLIA

UPOV Code(s): MAGNO

Magnolia L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by experts from China
to be considered by the
Technical Working Party for Ornamental Plants and Forest Trees
at its fifty-second session, to be held in Roelofarendsveen, Netherlands,
from 2020-06-08 to 2020-06-12

Disclaimer: this document does not represent UPOV policies or guidance

Alternative names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Magnolia L. , *Michelia* L.	Magnolia	Magnolia	Magnolie	Magnolia

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 *Magnolia* L.

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 the material is to be supplied in the form of plants capable of flowering and expressing all relevant characteristics of the variety during the first or later growing cycle.

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

10 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 The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.

3.1.3 The testing of a variety may be conducted when the competent authority can determine with certainty the outcome of the test.

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

3.3.1 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.

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The color chart and version used should be specified in the variety description.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 6 plants.

3.4.2 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 6 plants or parts of plants taken from each of 6 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 1.

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 The assessment of uniformity for vegetatively propagated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.4 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 6 plants, 1 off-type is 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) Plant: persistence of leaves (characteristic 1)
(b) Plant: position of flower buds (characteristic 6)
(c) Flower: number of tepals (characteristic 26)
(d) First whorl petaloid tepals: main color on outer side (characteristic 32)
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: red
Gr. 5: purple

(e) Time of first leaf-bud burst (characteristic 50)
(f) Beginning time of first flowering (characteristic 51)

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.

Example varieties contained in the Table of Characteristics originally belong to following parent species and have whole name like the left column:

Latin name of example variety	Example variety
Michelia figo‘Purple Queen’	Purple Queen
Magnolia acuminata 'Kenneth 's Delight '	Kenneth's Delight
Magnolia denudata 'Duoban Baiyulan '	Duoban Baiyulan
Magnolia 'Hong Jixing '	Hong Jixing
Magnolia 'Mag 's Pirouette '	Mag 's Pirouette
Magnolia 'Mossman 's Giant '	Mossman 's Giant
Magnolia sprengerii 'Diva'	Diva
Magnolia 'Yellow Bird '	Yellow Bird
Magnolia×soulangiana 'Burgundy '	Burgundy
Magnolia‘Silver Parasol’	Silver Parasol
Magnolia sieboldii 'Qin Xin '	Qingxin
Magnolia grandiflora 'Bracken's Brown Beauty'	Bracken's Brown Beauty
Magnolia virginiana 'Tensaw '	Tensaw
Magnolia 'Lvyi Zijuan '	Lvyi Zijuan

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)-(f) See Explanations on the Table of Characteristics in Chapter 8.1

7 Not applicable

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

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)	**QL VG**	**(a)**				
	Plant: persistence of leaves					
	deciduous					1
	evergreen					9
2. (*)	**QL VG**	**(a)**				
	Plant: main trunk					
	absent					1
	present					9
3. (*)	**PQ VG**	**(+) (a)**				
	Plant: growth habit					
	fastigiate					1
	upright					2
	upright to spreading					3
	spreading					4
	drooping					5
4.	**QN MS/VG**	**(a)**				
	Plant: height					
	very short				Tensaw	2
	short				Hong Jixing	4
	medium				Burgundy	6
	tall				Yellow Bird	8
	very tall				Kenneth's Delight	10
5. (*)	**QN VG**	**(a)**				
	Plant: density					
	loose				Kenneth's Delight	3
	medium				Burgundy	5
	dense				Mag's Pirouette	7
6. (*)	**QL VG/VS**	**(+)**				
	Plant:position of flower buds					
	terminal only					1
	terminal and axillary					2
	axillary only					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
7.	**(*)**	**QL** **MG/MS**					
		Plant: number of terminal or axillary flower					
		one					1
		more than one					2
8.	**(*)**	**PQ** **VG/VS**	**(a)**				
		One-year-old branch: color of upper part					
		green					1
		yellow green					2
		yellow					3
		brown red					4
		brown purple					5
		light brown					6
		medium brown					7
		dark brown					8
		yellow brown					9
9.	**(*)**	**QL** **VG**	**(+)** **(c)**				
		Leaf: spiral arrangement					
		absent					1
		present					2
10.		**PQ** **VG**	**(b)**				
		Young leaf blade: main color of upper side(excluding variegation)					
		green					1
		yellow green					2
		yellow					3
		yellow brown					4
		red					5
		red brown					6

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11.		**PQ**	**VG**		**(b)**	**b**			
		Young leaf blade: color of lower side							
		white							1
		green							2
		grey green							3
		yellow							4
		brown red							5
		brown purple							6
		light brown							7
		medium brown							8
		dark brown							9
		yellow brown							10
12.		**QL**	**VG/VS**		**(b)**				
		Young leaf blade: pubescence on lower side							
		absent or sparse							1
		present							2
13.	**(*)**	**QN**	**MS/VG**		**(c)**				
		Leaf blade: length							
		very short						Tensaw	2
		short						Burgundy	4
		medium						Bracken's Brown Beauty	6
		long						Silver Parasol	8
14.	**(*)**	**PQ**	**VG/VS**	**(+)**	**(c)**				
		Leaf blade: shape							
		broad ovate							1
		medium ovate							2
		narrow ovate							3
		circular							4
		broad elliptic							5
		medium elliptic							6
		narrow elliptic							7
		broad obovate							8
		medium obovate							9
		narrow obovate							10

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
15.	**(*)**	**QL VG**	**(c)**				
		Leaf blade: variegation					
		absent					1
		present					2
16.		**PQ VG**	**(c)**				
		Leaf blade: color of variegation					
		white					1
		yellow					2
17.	**(*)**	**PQ VG/VS**	**(c)**				
		Leaf blade: texture					
		thin-papery				Mag's Pirouette	1
		thick-papery				Duoban Baiyulan	3
		medium leathery				Purple Queen	5
		thick-leathery				Bracken's Brown Beauty	7
18.		**PQ VG/VS**	**(c)**				
		Leaf: glossiness of upper side					
		absent or very weak				Duoban Baiyulan	1
		weak				Diva	2
		medium				Purple Queen	3
		strong				Bracken's Brown Beauty	4
19.		**PQ VG/VS**	**(+)** **(c)**				
		Leaf blade: shape of apex					
		acute					1
		obtuse					2
		rounded					3
		truncate					4
		obcordate					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.		**PQ VG/VS**	**(+) (c)**				
		Leaf blade:shape of tip					
		apiculate					1
		acuminate					2
		caudate					3
		retuse					4
		emarginate					5
21.		**PQ VG/VS**	**(+) (c)**				
		Leaf blade: shape of base					
		decurrent					1
		attenuate					2
		acute cuneate					3
		obtuse cuneate					4
		rounded					5
		truncate					6
		cordate					7
		auriculate					8
22.		**PQ VG/VS**	**(+) (c)**				
		Leaf blade: color in autumn					
		yellow green					1
		yellow					2
		brown red					3
		brown					4
		yellow brown					5
23.	**(*)**	**PQ VG/VS**	**(+) (d)**				
		Flower: attitude					
		erect					1
		semi-erect					2
		pendulous					3
24.	**(*)**	**QN MS/VG**	**(d)**				
		Flower: diameter					
		small				Purple Queen	1
		medium				Burgundy	3
		large				Bracken's Brown Beauty	5
		very large				Mossman's Giant	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.	**(*)**	**PQ VG/VS**	**(+) (d)**				
		Flower: shape					
		obovoid					1
		globose					2
		cup-shaped					3
		campanulate					4
		cup-saucer shaped					5
		bowl-shaped					6
		saucer-shaped					7
		stellate					8
		goldfish-shaped					9
26.	**(*)**	**QN MG/MS**					
		Flower: number of tepals					
		very few				Purple Queen	2
		few				Burgundy	4
		medium				Diva	6
		more					8
		much more				Mag's Pirouette	10
27.	**(*)**	**QL VG/VS**	**(+) (e)**				
		First whorl tepals: petaloid					
		absent					1
		present					2
28.	**(*)**	**QL VG/VS**	**(e)**				
		First whorl tepals: texture					
		membranous				Mag's Pirouette	1
		fleshy				Bracken's Brown Beauty	2
		leathery				Lvyi Zijuan	3
29.		**QN VG/VS**	**(e)**				
		First whorl petaloid tepals: thickness					
		thin				Mag's Pirouette	1
		medium				Yellow Bird	3
		thick				Bracken's Brown Beauty	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.	**(*)**	**PQ VG/VS**	**(+) (d)**				
		First whorl petaloid tepals: attitude					
		erect					1
		upright to spreading					2
		spreading					3
		drooping					4
		reflexed					5
		weeping					6
31.	**(*)**	**QL VG/VS**	**(e), (f)**				
		First whorl petaloid tepals: number of colors on outer side					
		1					1
		2					2
		3					3
32.	**(*)**	**PQ VG/VS**	**(e), (f)**				
		First whorl petaloid tepals: main color on outer side					
		RHS Colour Chart					
33.	**(*)**	**PQ VG/VS**	**(e), (f)**				
		First whorl petaloid tepals: secondary color on outer side					
		RHS Colour Chart (indicate reference number)					
34.	**(*)**	**PQ VG/VS**	**(+) (e), (f)**				
		First whorl petaloid tepals: patterns of secondary color on outer side					
		flush					1
		flush and central narrow bar					2
		flush and central broad bar					3
		narrow marginate					4
		broad marginate					5
		spotted					6
		blotched					7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35. (*)	**PQ VG/VS**	**(+) (e), (f)**				
	First whorl petaloid tepals: distribution of secondary color on outer side					
	at base					1
	basal quarter					2
	basal half					3
	basal three quarters					4
	at tip					5
	distal quarter					6
	distal half					7
	distal three quarters					8
	central					9
	transverse					10
	at margin					11
	throughout					12
36. (*)	**PQ VG/VS**	**(e), (f)**				
	First whorl petaloid tepals: main color on inner side					
	RHS Colour Chart (indicate reference number)					
37.	**PQ VG/VS**	**(e), (f)**				
	First whorl petaloid tepals: secondary color on inner side					
	RHS Colour Chart (indicate reference number)					
38.	**PQ VG/VS**	**(+) (e), (f)**				
	First whorl petaloid tepals: patterns of secondary color on inner side					
	flush					1
	flush and central bar					2
	marginate					3
	spotted					4
	blotches					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39.		**PQ VG/VS**	**(+) (e), (f)**				
		First whorl petaloid tepals: distribution of secondary color on inner side					
		at base					1
		basal quarter					2
		basal half					3
		basal three quarters					4
		at tip					5
		distal quarter					6
		distal half					7
		distal three quarters					8
		central					9
		transverse					10
		at margin					11
		throughout					12
40.		**QN MG/MS**	**(d)**				
		First whorl petaloid tepals: length					
		very short				Purple Queen	1
		short				Mag's Pirouette	3
		medium				Diva	5
		long				Bracken's Brown Beauty	7
		very long				Mossman's Giant	9
41.	**(*)**	**PQ VG/VS**	**(+) (d)**				
		First whorl petaloid tepals: shape					
		medium ovate					1
		narrow ovate					2
		circular					3
		elliptic					4
		oblong					5
		linear					6
		obovate					7
		oblanceolate					8
		spatulate					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42.		**PQ VG/VS**	**(d)**				
		Second whorl petaloid tepals: attitude					
		erect					1
		upright to spreading					2
		spreading					3
		drooping					4
		reflexed					5
		weeping					6
43.	**(*)**	**PQ VG/VS**	**(e), (f)**				
		Second whorl petaloid tepals: main color					
		RHS Colour Chart (indicate reference number)					
44.		**PQ VG/VS**	**(e), (f)**				
		Second whorl petaloid tepals: secondary color on outer side					
		RHS Colour Chart (indicate reference number)					
45.		**PQ VG/VS**	**(+)** **(e), (f)**				
		Second whorl petaloid tepals: patterns of secondary color on outer side					
		flush					1
		flush and central narrow bar					2
		flush and central broad bar					3
		narrow marginate					4
		broad marginate					5
		spotted					6
		blotched					7

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
46.	**PQ VG/VS**	**(+)** **(e), (f)**				
	Second whorl petaloid tepals: distribution of secondary color on outer side					
	at base					1
	basal quarter					2
	basal half					3
	basal three quarters					4
	at tip					5
	distal quarter					6
	distal half					7
	distal three quarters					8
	central					9
	transverse					10
	at margin					11
	throughout					12
47.	**PQ VG/VS**					
	Stamens: color					
	light yellow					1
	yellow					2
	red					3
	purple red					4
	purple					5
48.	**PQ VG/VS**					
	Gynoecium: color					
	green					1
	yellow green					2
	light yellow					3
	yellow					4
	red					5
	purple red					6
	purple					7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
49.		**PQ** **VG**					
		Fruiting					
		absent				Hong Jixing	1
		less				Purple Queen	3
		medium				Bracken's Brown Beauty	5
		more				Duoban Baiyulan	7
50.	**(*)**	**QL** **VG**					
		Time of first leaf-bud burst					
		prior to first flowering					1
		simultaneous with first flowering					2
		later first flowering					3
51.	**(*)**	**QN** **VG**					
		Beginning time of first flowering					
		early				Mag's Pirouette	2
		medium				Burgundy	4
		later				Hong Jixing	6
		very later				Bracken's Brown Beauty	8
52.	**(*)**	**QN** **MG**					
		Duration of first flowering					
		very short					1
		short				Mag's Pirouette	3
		medium				Burgundy	5
		long				Bracken's Brown Beauty	7
		very long				Purple Queen	9
53.	**(*)**	**QL** **VG**					
		Flowering: frequency					
		once					1
		more than once					2

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
54. (*)	**QN VG**					
	End of flowering in current year					
	early				Mag's Pirouette	3
	medium				Qingxin	5
	late				Purple Queen	7
55. (*)	**QN MG/MS**					
	Beginning time of leaf falling					
	early				Kenneth's Delight	3
	medium				Burgundy	5
	late				Hong Jixing	7
	very late				Bracken's Brown Beauty	9

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

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

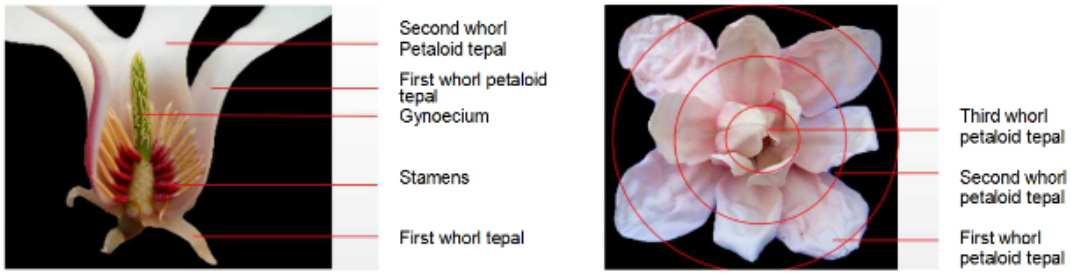
(a) Observations should be made during winter dormancy

(b) Observations should be made on fully developed new leaves on the top of the twig of middle upper part of plant in mid-spring.

(c) Observations should be made on fully developed leaves in the central third of current-year shoot of middle upper part of plant.

(d) Observations on the flower should be made on fully opened flowers at the beginning of anther dehiscence.

(e) Flower diagram:



(f) The main color is the color with the largest surface area present on the upper side of a petal or leaf.
The secondary color is the color with the second largest surface area, on the upper side of a petal or leaf.
If the area of the main and secondary color is nearly equal, the darker color is the main color.

8.2 Explanations for individual characteristics

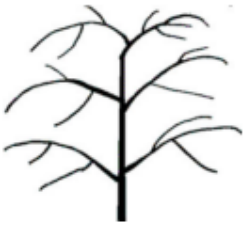
Ad. 3: Plant: growth habit

1
fastigiate

2
upright

3
upright to spreading

4
spreading



5
drooping

Ad. 6: Plant: position of flower buds

1
terminal only

2
terminal and axillary

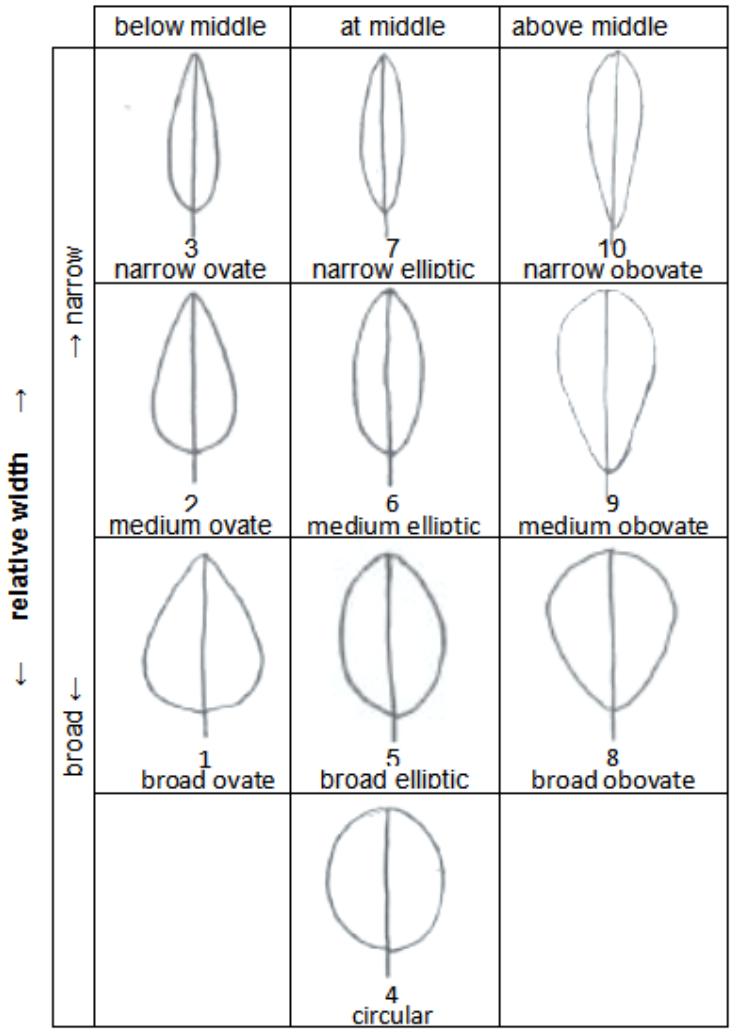
3
axillary only

Ad. 9: Leaf: spiral arrangement

1
absent

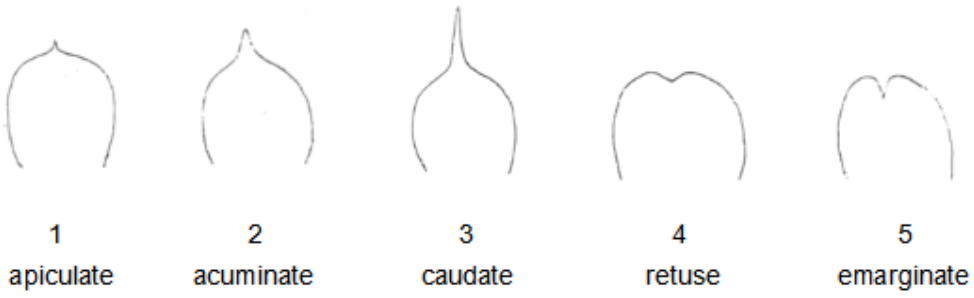
9
present

Ad. 14: Leaf blade: shape

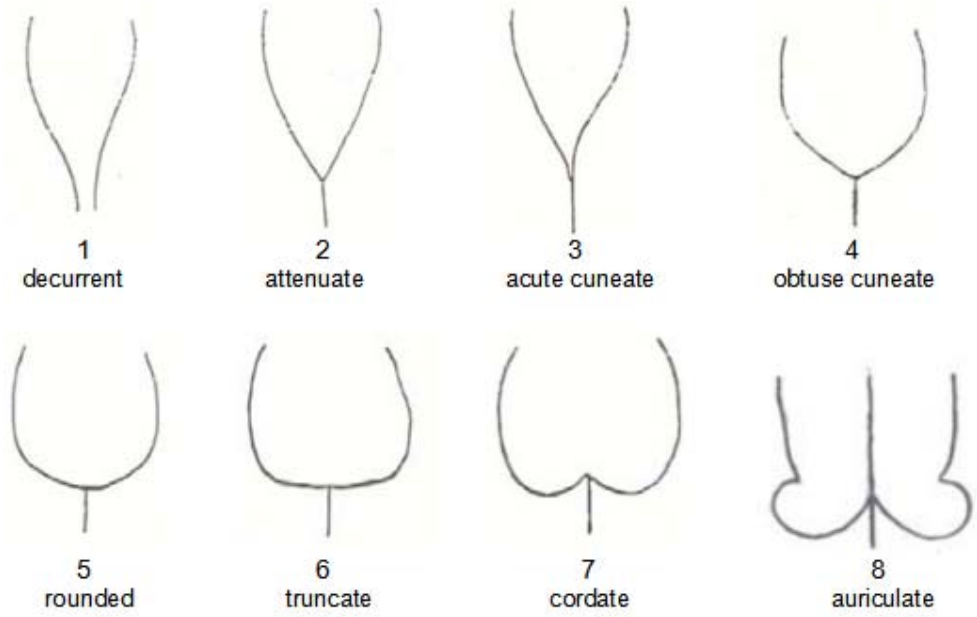


Ad. 19: Leaf blade: shape of apex

Ad. 20: Leaf blade: shape of tip



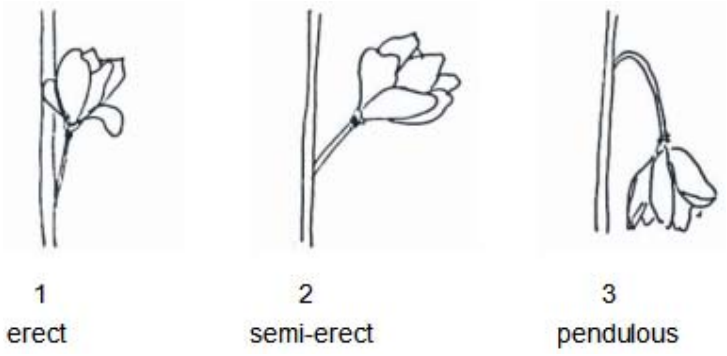
Ad. 21: Leaf blade: shape of base



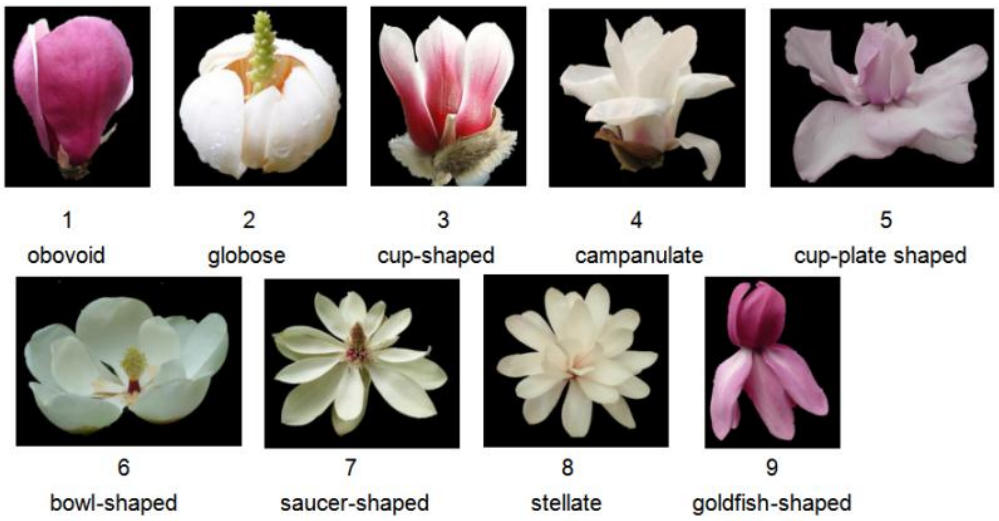
Ad. 22: Leaf blade: color in autumn

Observations on the time when leaves change color in autumn.

Ad. 23: Flower: attitude



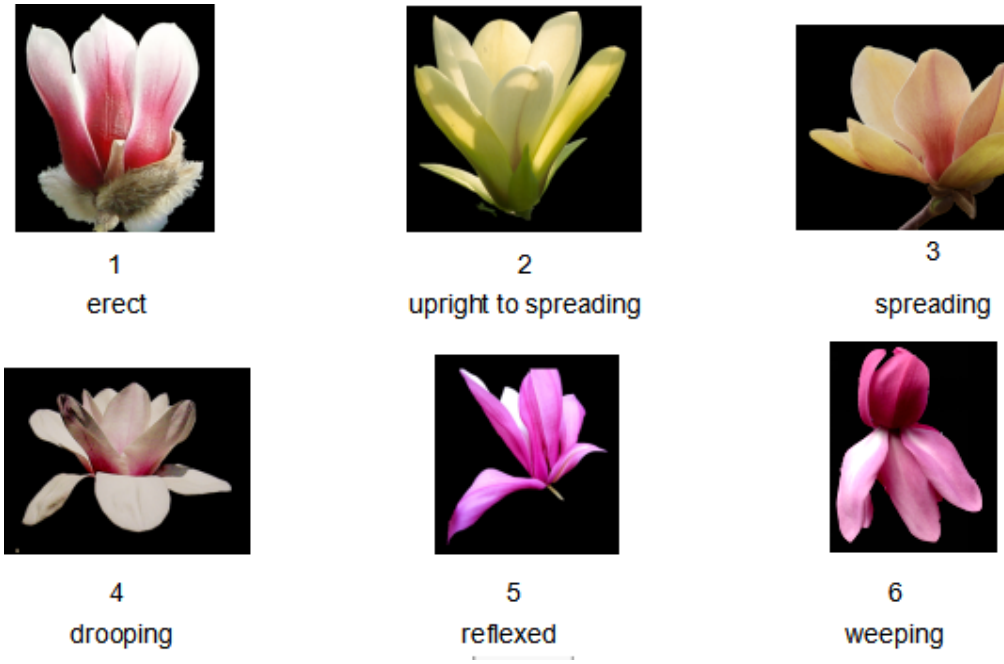
Ad. 25: Flower: shape



Ad. 27: First whorl tepals: petaloid

The shape and texture of first whorl tepals are similar with those inner tepals.

Ad. 30: First whorl petaloid tepals: attitude



Ad. 34: First whorl petaloid tepals: patterns of secondary color on outer side

1 flush

2 flush and central narrow bar

3 flush and central broad bar

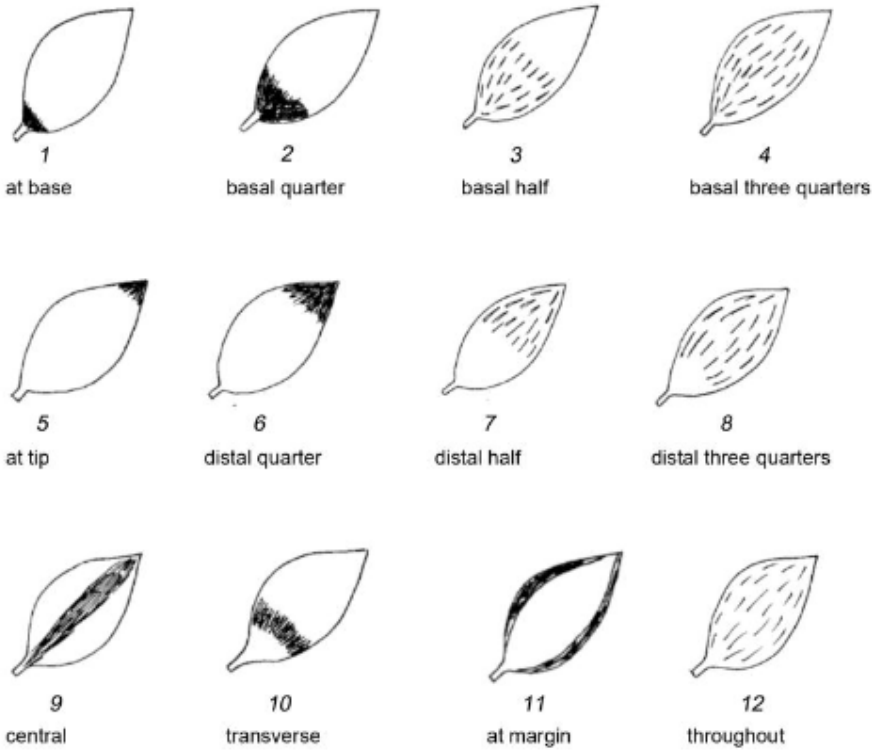
4 narrow marginate

5 broad marginate

6 spotted

7 blotched

Ad. 35: First whorl petaloid tepals: distribution of secondary color on outer side



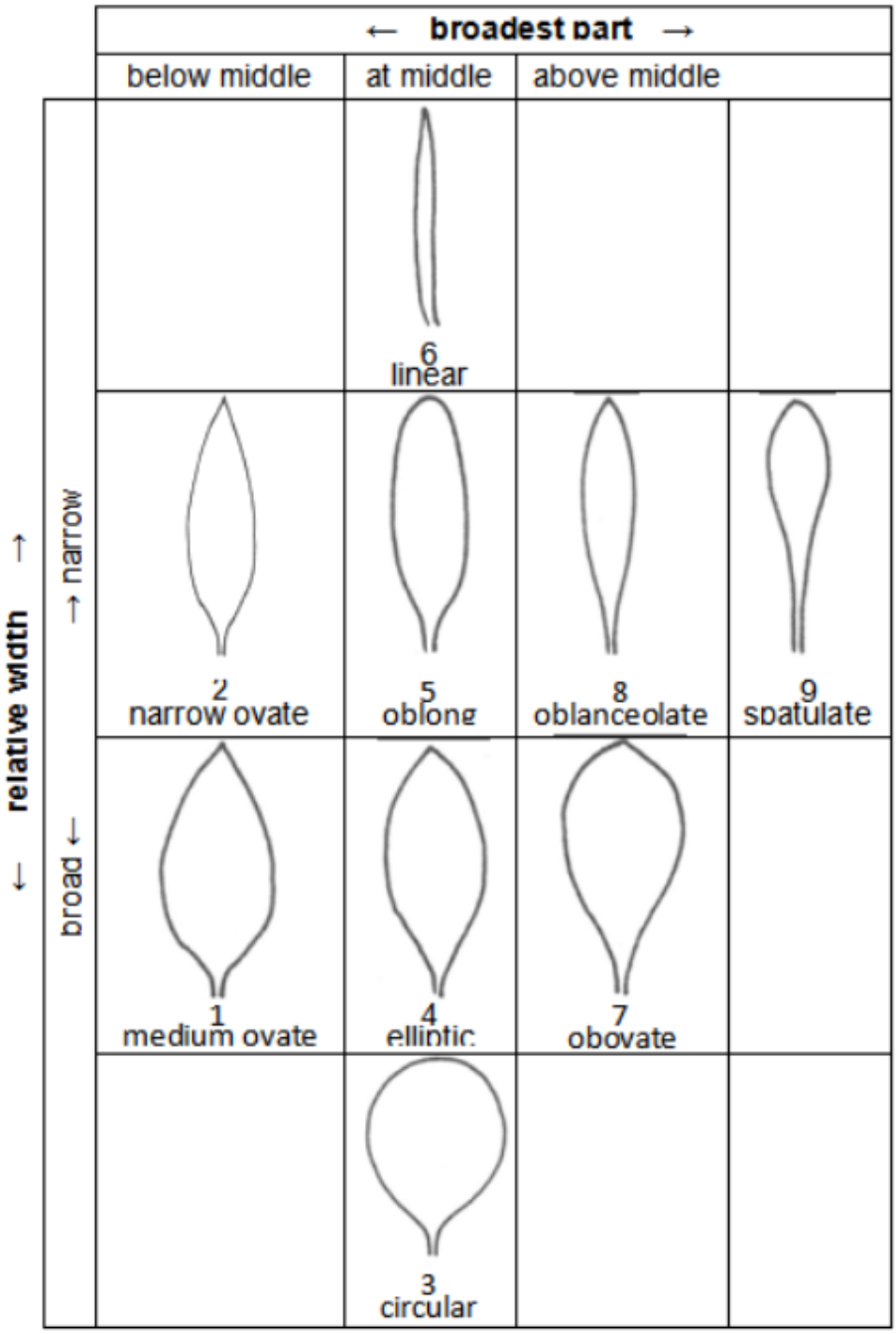
Ad. 38: First whorl petaloid tepals: patterns of secondary color on inner side

Same to Ad.34.

Ad. 39: First whorl petaloid tepals: distribution of secondary color on inner side

Same to Ad.35.

Ad. 41: First whorl petaloid tepals: shape



Ad. 45: Second whorl petaloid tepals: patterns of secondary color on outer side

same to Ad.34.

Ad. 46: Second whorl petaloid tepals: distribution of secondary color on outer side

same to Ad. 35.

9. Literature

Callaway, D. J., 1994: The World of Magnolias. Timber Press, Oregon.
Figlar, R. B., Nooteboom, H. P., 2004: Notes on Magnoliaceae IV. Blumea 49: 87-100.
Xia N.H., Liu Y.H., Nooteboom H.P., 2008: Magnoliaceae. In: Wu ZY *et al*, Flora of China Vol.7. Science Press and Missouri Botanical Garden Press, pp. 47-91.

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 Botanical name	*Magnolia* L.
1.2 Common name	Magnolia

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 variety)

(……..……..) 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 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)	**Plant: persistence of leaves**		
	deciduous		1 [ ]
	evergreen		9 [ ]
5.2 (2)	**Plant: main trunk**		
	absent		1 [ ]
	present		9 [ ]
5.3 (3)	**Plant: growth habit**		
	fastigiate		1 [ ]
	upright		2 [ ]
	upright to spreading		3 [ ]
	spreading		4 [ ]
	drooping		5 [ ]
5.4 (5)	**Plant: density**		
	loose	Kenneth's Delight	3 [ ]
	medium	Burgundy	5 [ ]
	dense	Mag's Pirouette	7 [ ]
5.5 (6)	**Plant:position of flower buds**		
	terminal only		1 [ ]
	terminal and axillary		2 [ ]
	axillary only		3 [ ]
5.6 (7)	**Plant: number of terminal or axillary flower**		
	one		1 [ ]
	more than one		2 [ ]

	Characteristics	Example Varieties	Note
5.7 (8)	**One-year-old branch: color of upper part**		
	green		1 [ ]
	yellow green		2 [ ]
	yellow		3 [ ]
	brown red		4 [ ]
	brown purple		5 [ ]
	light brown		6 [ ]
	medium brown		7 [ ]
	dark brown		8 [ ]
	yellow brown		9 [ ]
5.8 (10)	**Young leaf blade: main color of upper side(excluding variegation)**		
	green		1 [ ]
	yellow green		2 [ ]
	yellow		3 [ ]
	yellow brown		4 [ ]
	red		5 [ ]
	red brown		6 [ ]
5.9 (13)	**Leaf blade: length**		
	very short	Tensaw	2 [ ]
	short	Burgundy	4 [ ]
	medium	Bracken's Brown Beauty	6 [ ]
	long	Silver Parasol	8 [ ]
5.10 (14)	**Leaf blade: shape**		
	broad ovate		1 [ ]
	medium ovate		2 [ ]
	narrow ovate		3 [ ]
	circular		4 [ ]
	broad elliptic		5 [ ]
	medium elliptic		6 [ ]
	narrow elliptic		7 [ ]
	broad obovate		8 [ ]
	medium obovate		9 [ ]
	narrow obovate		10 [ ]

	Characteristics	Example Varieties	Note
5.11 (15)	**Leaf blade: variegation**		
	absent		1 [ ]
	present		2 [ ]
5.12 (17)	**Leaf blade: texture**		
	thin-papery	Mag's Pirouette	1 [ ]
	thick-papery	Duoban Baiyulan	3 [ ]
	medium leathery	Purple Queen	5 [ ]
	thick-leathery	Bracken's Brown Beauty	7 [ ]
5.13 (18)	**Leaf: glossiness of upper side**		
	absent or very weak	Duoban Baiyulan	1 [ ]
	weak	Diva	2 [ ]
	medium	Purple Queen	3 [ ]
	strong	Bracken's Brown Beauty	4 [ ]
5.14 (19)	**Leaf blade: shape of apex**		
	acute		1 [ ]
	obtuse		2 [ ]
	rounded		3 [ ]
	truncate		4 [ ]
	obcordate		5 [ ]
5.15 (20)	**Leaf blade:shape of tip**		
	apiculate		1 [ ]
	acuminate		2 [ ]
	caudate		3 [ ]
	retuse		4 [ ]
	emarginate		5 [ ]
5.16 (22)	**Leaf blade: color in autumn**		
	yellow green		1 [ ]
	yellow		2 [ ]
	brown red		3 [ ]
	brown		4 [ ]
	yellow brown		5 [ ]

	Characteristics	Example Varieties	Note
5.17 (23)	**Flower: attitude**		
	erect		1 [ ]
	semi-erect		2 [ ]
	pendulous		3 [ ]
5.18 (24)	**Flower: diameter**		
	small	Purple Queen	1 [ ]
	medium	Burgundy	3 [ ]
	large	Bracken's Brown Beauty	5 [ ]
	very large	Mossman's Giant	7 [ ]
5.19 (25)	**Flower: shape**		
	obovoid		1 [ ]
	globose		2 [ ]
	cup-shaped		3 [ ]
	campanulate		4 [ ]
	cup-saucer shaped		5 [ ]
	bowl-shaped		6 [ ]
	saucer-shaped		7 [ ]
	stellate		8 [ ]
	goldfish-shaped		9 [ ]
5.20 (26)	**Flower: number of tepals**		
	very few	Purple Queen	2 [ ]
	few	Burgundy	4 [ ]
	medium	Diva	6 [ ]
	more		8 [ ]
	much more	Mag's Pirouette	10 [ ]
5.21 (27)	**First whorl tepals: petaloid**		
	absent		1 [ ]
	present		2 [ ]
5.22 (28)	**First whorl tepals: texture**		
	membranous	Mag's Pirouette	1 [ ]
	fleshy	Bracken's Brown Beauty	2 [ ]
	leathery	Lvyi Zijuan	3 [ ]

	Characteristics	Example Varieties	Note
5.23 (29)	**First whorl petaloid tepals: thickness**		
	thin	Mag's Pirouette	1 [ ]
	medium	Yellow Bird	3 [ ]
	thick	Bracken's Brown Beauty	5 [ ]
5.24 (31)	**First whorl petaloid tepals: number of colors on outer side**		
	1		1 [ ]
	2		2 [ ]
	3		3 [ ]
5.25 (32)	**First whorl petaloid tepals: main color on outer side**		
	RHS Colour Chart		
5.26 (33)	**First whorl petaloid tepals: secondary color on outer side**		
	RHS Colour Chart (indicate reference number)		
5.27 (34)	**First whorl petaloid tepals: patterns of secondary color on outer side**		
	flush		1 [ ]
	flush and central narrow bar		2 [ ]
	flush and central broad bar		3 [ ]
	narrow marginate		4 [ ]
	broad marginate		5 [ ]
	spotted		6 [ ]
	blotched		7 [ ]

	Characteristics	Example Varieties	Note
5.28 (35)	**First whorl petaloid tepals: distribution of secondary color on outer side**		
	at base		1 [ ]
	basal quarter		2 [ ]
	basal half		3 [ ]
	basal three quarters		4 [ ]
	at tip		5 [ ]
	distal quarter		6 [ ]
	distal half		7 [ ]
	distal three quarters		8 [ ]
	central		9 [ ]
	transverse		10 [ ]
	at margin		11 [ ]
	throughout		12 [ ]
5.29 (36)	**First whorl petaloid tepals: main color on inner side**		
	RHS Colour Chart (indicate reference number)		
5.30 (37)	**First whorl petaloid tepals: secondary color on inner side**		
	RHS Colour Chart (indicate reference number)		
5.31 (38)	**First whorl petaloid tepals: patterns of secondary color on inner side**		
	flush		1 [ ]
	flush and central bar		2 [ ]
	marginate		3 [ ]
	spotted		4 [ ]
	blotches		5 [ ]

	Characteristics	Example Varieties	Note
5.32 (39)	**First whorl petaloid tepals: distribution of secondary color on inner side**		
	at base		1 [ ]
	basal quarter		2 [ ]
	basal half		3 [ ]
	basal three quarters		4 [ ]
	at tip		5 [ ]
	distal quarter		6 [ ]
	distal half		7 [ ]
	distal three quarters		8 [ ]
	central		9 [ ]
	transverse		10 [ ]
	at margin		11 [ ]
	throughout		12 [ ]
5.33 (40)	**First whorl petaloid tepals: length**		
	very short	Purple Queen	1 [ ]
	short	Mag's Pirouette	3 [ ]
	medium	Diva	5 [ ]
	long	Bracken's Brown Beauty	7 [ ]
	very long	Mossman's Giant	9 [ ]
5.34 (41)	**First whorl petaloid tepals: shape**		
	medium ovate		1 [ ]
	narrow ovate		2 [ ]
	circular		3 [ ]
	elliptic		4 [ ]
	oblong		5 [ ]
	linear		6 [ ]
	obovate		7 [ ]
	oblanceolate		8 [ ]
	spatulate		9 [ ]

	Characteristics	Example Varieties	Note
5.35 (42)	**Second whorl petaloid tepals: attitude**		
	erect		1 [ ]
	upright to spreading		2 [ ]
	spreading		3 [ ]
	drooping		4 [ ]
	reflexed		5 [ ]
	weeping		6 [ ]
5.36 (43)	**Second whorl petaloid tepals: main color**		
	RHS Colour Chart (indicate reference number)		
5.37 (44)	**Second whorl petaloid tepals: secondary color on outer side**		
	RHS Colour Chart (indicate reference number)		
5.38 (45)	**Second whorl petaloid tepals: patterns of secondary color on outer side**		
	flush		1 [ ]
	flush and central narrow bar		2 [ ]
	flush and central broad bar		3 [ ]
	narrow marginate		4 [ ]
	broad marginate		5 [ ]
	spotted		6 [ ]
	blotched		7 [ ]

	Characteristics	Example Varieties	Note
5.39 (46)	**Second whorl petaloid tepals: distribution of secondary color on outer side**		
	at base		1 [ ]
	basal quarter		2 [ ]
	basal half		3 [ ]
	basal three quarters		4 [ ]
	at tip		5 [ ]
	distal quarter		6 [ ]
	distal half		7 [ ]
	distal three quarters		8 [ ]
	central		9 [ ]
	transverse		10 [ ]
	at margin		11 [ ]
	throughout		12 [ ]
5.40 (49)	**Fruiting**		
	absent	Hong Jixing	1 [ ]
	less	Purple Queen	3 [ ]
	medium	Bracken's Brown Beauty	5 [ ]
	more	Duoban Baiyulan	7 [ ]
5.41 (50)	**Time of first leaf-bud burst**		
	prior to first flowering		1 [ ]
	simultaneous with first flowering		2 [ ]
	later first flowering		3 [ ]
5.42 (51)	**Beginning time of first flowering**		
	early	Mag's Pirouette	2 [ ]
	medium	Burgundy	4 [ ]
	later	Hong Jixing	6 [ ]
	very later	Bracken's Brown Beauty	8 [ ]
5.43 (52)	**Duration of first flowering**		
	very short		1 [ ]
	short	Mag's Pirouette	3 [ ]
	medium	Burgundy	5 [ ]
	long	Bracken's Brown Beauty	7 [ ]
	very long	Purple Queen	9 [ ]

	Characteristics	Example Varieties	Note
5.44 (53)	**Flowering: frequency**		
	once		1 [ ]
	more than once		2 [ ]
5.45 (54)	**End of flowering in current year**		
	early	Mag's Pirouette	3 [ ]
	medium	Qingxin	5 [ ]
	late	Purple Queen	7 [ ]
5.46 (55)	**Beginning time of leaf falling**		
	early	Kenneth's Delight	3 [ ]
	medium	Burgundy	5 [ ]
	late	Hong Jixing	7 [ ]
	very late	Bracken's Brown Beauty	9 [ ]

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	Characteristic(s) in which your candidate variety differs	Describe the expression of the characteristic(s) for the	Describe the expression of the characteristic(s) for **your**
Example			

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

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]