



## INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

### GINKGO

UPOV Code(s): GINKG\_BIL

*Ginkgo biloba* L.

### GUIDELINES

#### FOR THE CONDUCT OF TESTS

#### FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by an expert from China*

*to be considered by the*

*Technical Working Party for Ornamental Plants and Forest Trees at its fifty-seventh session,  
to be held in Roelofarendsveen, Kingdom of the Netherlands,  
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*Disclaimer: this document does not represent UPOV policies or guidance*

Alternative Names:\*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Ginkgo biloba</i> L.	Ginkgo, Maidenhair	Arbre aux quarante écus, Ginkgo	Ginkgo	Gingco, Ginkgo

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](http://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 *Ginkgo biloba* 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 vegetatively propagated plants.

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 a single growing cycle.

3.1.2 The testing of a variety may be concluded 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*

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.

3.4.2 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 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, no 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) Leaf blade: shape (characteristic 8)
- (b) Leaf blade: variegation (characteristic 11)
- (c) Leaf blade: main color (characteristic 12)
- (d) Only varieties with fan-shaped leaves: Leaf blade: shape of leaf base (characteristic 16)
- (e) Nut: symmetry (characteristic 26)
- (f) Only varieties with Nut: symmetry: present: Nut: shape in lateral view (characteristic 27)

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 All relevant states of expression are presented in the characteristic.

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

7 Growth stage key (if applicable) See Explanations on the Table of Characteristics in Chapter 8.3

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

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>1.</b>	<b>QL</b>	<b>VG</b>						
	<b>Plant: sex</b>							
	female						Jia Fo Zhi, Variegata	1
	male						Fairmount, Kui Wu	2
<b>2.</b>	<b>QN</b>	<b>MG/VG</b>		<b>(a)</b>				
	<b>Plant: height</b>							
	short						Mariken	1
	short to medium						Barabits Nana	2
	medium						Heksenbezem Leiden	3
	medium to tall						Beijing Gold	4
	tall						Menhir	5
<b>3.</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Plant: shape of crown</b>							
	conic						Menhir	1
	cylindric						Tian Zhu	2
	ovoid							3
	globose						Globosa	4
	obloid							5
	semi-ellipsoid							6
<b>4.</b>	<b>PQ</b>	<b>VG</b>	<b>(+)</b>	<b>(a)</b>				
	<b>Plant: growth habit</b>							
	fastigate							1
	upright						Tian Zhu	2
	semi-upright						Piedmont Pillar	3
	spreading						Horizontalis	4
	drooping						Mayfield	5
	weeping						Pendula	6

	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
<b>5.</b>	<b>QN</b> <b>MG/VG</b>	<b>(+)</b>				
	<b>Branch: length of internode</b>					
	short				Heksenbezem Leiden	1
	short to medium					2
	medium				Fairmount	3
	medium to long					4
	long				Dong Ting Huang	5
<b>6.</b>	<b>(*)</b> <b>PQ</b> <b>VG</b>	<b>(b)</b>				
	<b>Young leaf blade: main color</b>					
	green				Fastigiata	1
	yellow green					2
	light yellow				Californian Sunset	3
	medium yellow				Wan Nian Jin	4
<b>7.</b>	<b>(*)</b> <b>QL</b> <b>VG</b>	<b>(+)</b>	<b>(c)</b>			
	<b>Leaf: attitude</b>					
	upwards				Fastigiata	1
	downwards				Chui Ye, Saratoga	2
<b>8.</b>	<b>(*)</b> <b>PQ</b> <b>VG</b>	<b>(+)</b>	<b>(c)</b>			
	<b>Leaf blade: shape</b>					
	only fan-shaped				Fastigiata	1
	only funnel-shaped				Tubifolia	2
	fan-shaped and terete				Santa Cruz	3
	fan-shaped and acicular				Song Zhen	4

		English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9.		<b>QN</b>	<b>MG/MS</b>	<b>(+)</b>	<b>(c)</b>				
		<b>Only varieties with fan-shaped leaves: Leaf blade: length</b>							
		very short					Zhai Guan	1	
		very short to short						2	
		short					Wen Bi	3	
		short to medium						4	
		medium					Shan Nong Guo 2	5	
		medium to long						6	
		long					Heksenbezem Leiden	7	
		long to very long						8	
		very long					Shan Nong F-2	9	
10.		<b>QN</b>	<b>MG/MS</b>	<b>(+)</b>	<b>(c)</b>				
		<b>Only varieties with fan-shaped leaves: Leaf blade: width</b>							
		very narrow					Zhai Guan	1	
		very narrow to narrow						2	
		narrow					Wen Bi	3	
		narrow to medium						4	
		medium					Shan Nong Guo 2	5	
		medium to broad						6	
		broad					Heksenbezem Leiden	7	
		broad to very broad						8	
		very broad					Shan Nong F-2	9	
11.	(*)	<b>QL</b>	<b>VG</b>		<b>(c)</b>				
		<b>Leaf blade: variegation</b>							
		absent					Blagon	1	
		present					Santa Cruz	9	

		English		français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
12.	(*)	PQ	VG	(b),(c)				
		<b>Leaf blade: main color</b>						
		whitish						1
		medium green					Fastigiata	2
		dark green					Jade Butterflies, Shan Nong Yin 1	3
		yellow green					Saratoga	4
		yellow					Wan Nian Jin	5
13.		PQ	VG	(b),(c)				
		<b><u>Only varieties with Leaf blade: variegation: present: Leaf blade: secondary color</u></b>						
		white					Snow Cloud, Vanilla Swirl	1
		yellow green					Majestic Butterfly	2
		yellow					Tai Shan Ban Ye	3
14.		PQ	VG	(b),(c)				
		<b><u>Only varieties with Leaf blade: variegation: present: Leaf blade: distribution of secondary color</u></b>						
		irregularly speckled						1
		marginal					Snow Cloud	2
		irregularly striped					Jade Butterflies	3
15.		QL	VG	(b),(c)				
		<b><u>Only varieties with Leaf blade: variegation: present: Leaf blade: tertiary color</u></b>						
		absent					Ban Ye	1
		present					Majestic Butterfly	9

		English		français		deutsch		español		Example Varieties Exemples Beispielssorten Variedades ejemplo		Note/ Nota	
16.	(*)	PQ	VG	(+)	(c)								
		<b>Only varieties with fan-shaped leaves: Leaf blade: shape of leaf base</b>											
		cuneate								Shan Nong Yin 2		1	
		truncate								Piedmont Pillar		2	
		cordate								Horizontalis		3	
17.	(*)	QL	VG	(+)	(c)								
		<b>Only varieties with fan-shaped leaves: Leaf blade: number of incisions</b>											
		none										1	
		one								Jade Butterflies		2	
		five								Wen Bi		3	
18.	(*)	QN	VG	(+)	(c)								
		<b>Only varieties with fan-shaped leaves: Leaf blade: depth of central incision</b>											
		shallow								Autumn Gold		1	
		shallow to medium								Princeton Sentry		2	
		medium								Princeton Gold		3	
		medium to deep								Fairmount		4	
		deep								Wen Bi		5	
19.		QN	VG	(+)	(c)								
		<b>Only varieties with fan-shaped leaves: Leaf blade: depth of marginal serrations</b>											
		shallow								Da Hai He		1	
		medium								Zhai Guan		2	
		deep								Saratoga		3	

		English		français		deutsch		español		Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
20.	(*)	QL	VG	(+)	(d)						
		<b>Fruit: position</b>									
		only branchlets							Bian Fo Zhi, Tremonia		1
		branchlets and leaves							Epiphylla, Ye Zi		9
21.	(*)	PQ	VG		(d)						
		<b>Fruit: color</b>									
		yellow green							Yu Xiang		1
		yellow							Tan 107		2
		orange							Qi Xing Guo		3
		black							Qi Xing Hai He		4
22.		QN	VG	(+)	(d)						
		<b>Fruit: intensity of bloom</b>									
		weak							Nan Lin Guo 1		1
		medium							Qi Xing Guo		2
		strong							Dong Ting Huang		3
23.		QN	MG/MS/VG	(+)	(d)						
		<b>Nut: length</b>									
		short							Shan Nong Guo 1		1
		short to medium									2
		medium							Shan Nong Guo 5		3
		medium to long									4
		long							Bian Fo Zhi		5
24.		QN	MG/MS/VG	(+)	(d)						
		<b>Nut: width in lateral view</b>									
		narrow							Jia Fo Zhi		1
		narrow to medium									2
		medium							Ma Ling 5		3
		medium to broad									4
		broad							An Yin 1		5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
25.		<b>QN</b> <b>MG/MS/VG</b>	<b>(+)</b> <b>(d)</b>				
		<b>Nut: thickness</b>					
		thin				Chang Nuo Bai Guo	1
		thin to medium					2
		medium				Shan Nong Guo 5	3
		medium to thick					4
		thick				An Yin 1	5
26.		<b>QL</b> <b>VG</b>	<b>(+)</b> <b>(d)</b>				
		<b>Nut: symmetry</b>					
		absent				Xin Yu	1
		present				Shan Nong Guo 1	9
27.	(*)	<b>PQ</b> <b>VG</b>	<b>(+)</b> <b>(d)</b>				
		<b>Only varieties with Nut: symmetry: present: Nut: shape in lateral view</b>					
		ovate				Jin Bing Wei	1
		oblate					2
		circular				Shan Nong Guo 1	3
		medium elliptic				Hai Yang Huang	4
		narrow elliptic				Jia Fo Zhi	5
		obovate				Shan Nong Guo 2	6
28.	(*)	<b>PQ</b> <b>VG</b>	<b>(+)</b> <b>(d)</b>				
		<b>Nut: shape of base</b>					
		cuneate					1
		convex					2
		truncate					3
		concave					4
29.		<b>PQ</b> <b>VG</b>	<b>(+)</b> <b>(d)</b>				
		<b>Nut: shape of apex</b>					
		obtuse				Jin Zhui Zi	1
		rounded				Hai Yang Huang	2
		truncate				Qi Xing Guo	3
		retuse				Chang Nuo Bai Guo	4

	English		français		deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
30.	QL	VG		(d)				
	<b>Nut: ridge</b>							
	absent							1
	present							9
31.	QN	VG	(+)	(d)				
	<b>Nut: position of ridge</b>							
	distal third						Gan Lan Guo	1
	distal half						Hai Yang Huang	2
	distal two thirds							3
	entire						Qi Xing Guo	4
32.	QN	VG	(+)	(d)				
	<b>Nut: width of ridge</b>							
	narrow							1
	medium							2
	broad							3
33.	QL	VG	(+)	(d)				
	<b>Nut: pitting on surface</b>							
	absent						Shan Nong Guo 5	1
	present						Qi Xing Guo	9
34.	(*)	PQ	VG	(+)	(d)			
	<b>Kernel: color</b>							
	yellow white						Gui 048	1
	yellow green						Shen Nong 1	2
	green							3
35.	(*)	QN	MG/VG	(+)				
	<b>Time of beginning of leaf color change</b>							
	early						Xin Yu	1
	medium						Shan Nong Guo 1	2
	late						Nan Lin Guo 5	3

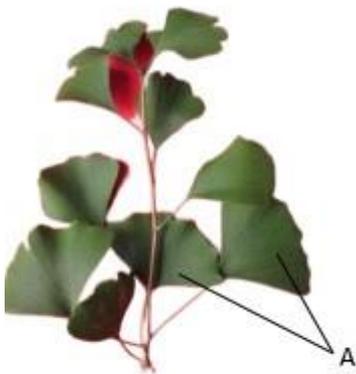
		English		français		deutsch		español		Example Varieties Exemples Beispielssorten Variedades ejemplo		Note/ Nota	
36.	(*)	QN	MG/VG	(+)									
		<b>Time of beginning of fruit maturity</b>											
		early								Xin Yu			1
		early to medium											2
		medium								Shan Nong Guo 1			3
		medium to late											4
		late								Nan Lin Guo 5			5

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

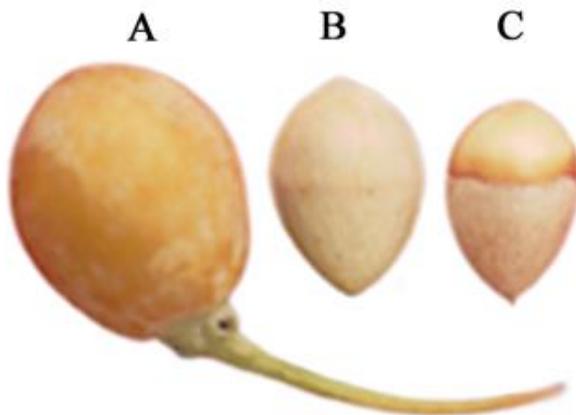
Characteristics containing the following key in the Table of Characteristics should be examined as indicated below:

- (a) Observations should be made on the whole mature plant in the dormant period.
- (b) The main color is the color with the largest surface area. The secondary color is the color with the second largest surface area. In cases where the areas of the main and secondary color are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color. The tertiary color is the color with the third largest surface area. In cases where the areas of the secondary and tertiary color are too similar to reliably decide which color has the largest area, the darker color is considered to be the secondary color.
- (c) Observations should be made on the 3rd or 4th fully developed leaf from the base of the current year branches in summer.



A: 3rd ~ 4th leaves from the base of the current year branches.

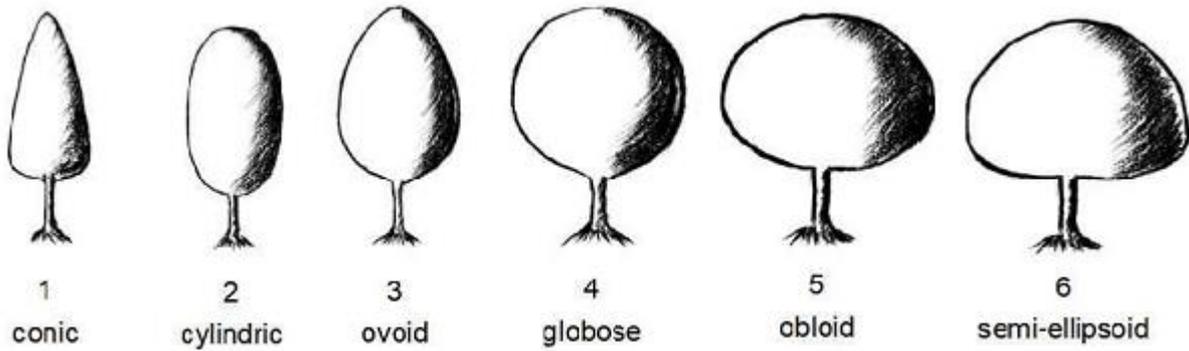
- (d) Observations should be made on the fully developed fruits in autumn.



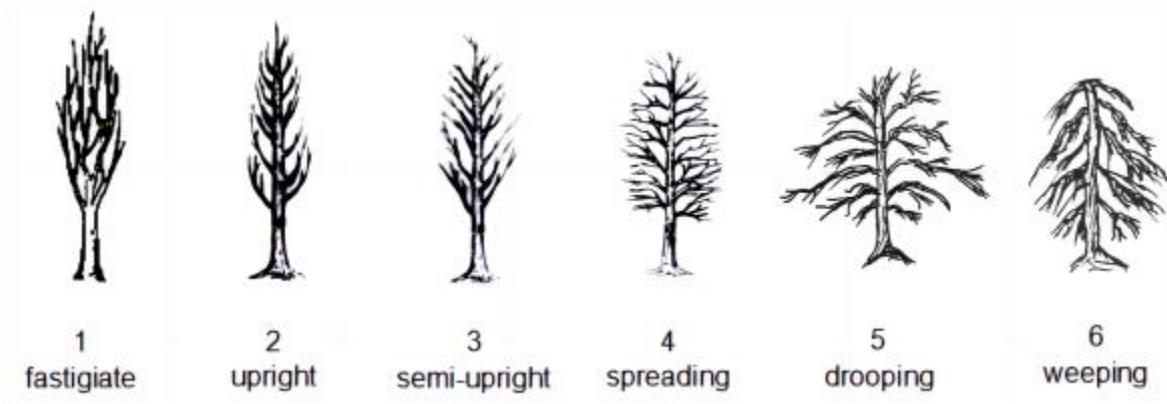
A: Fruit  
B: Nut  
C: Kernel(Seed)

8.2 Explanations for individual characteristics

Ad. 3: Plant: shape of crown

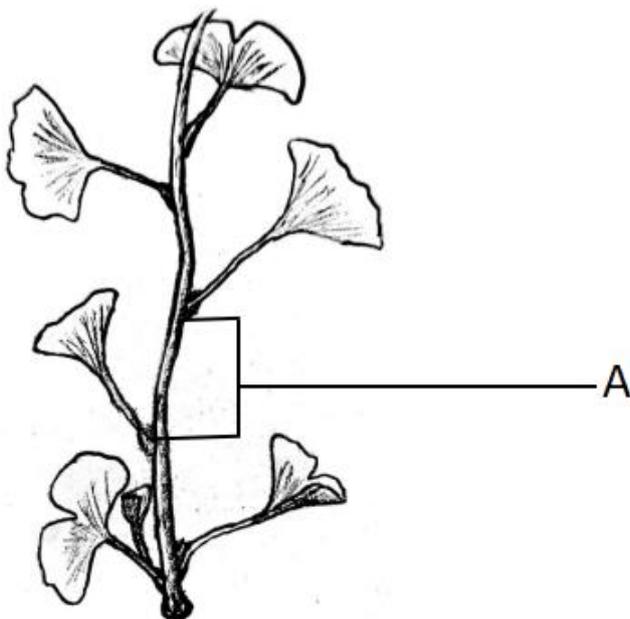


Ad. 4: Plant: growth habit



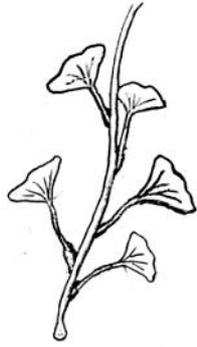
Ad. 5: Branch: length of internode

Observations should be made on the one-year-old long branches when they cease growth in autumn.



A: Internode

Ad. 7: Leaf: attitude



1  
upwards



2  
downwards

Ad. 8: Leaf blade: shape



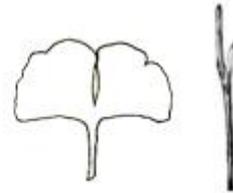
1  
only fan-shaped



2  
only funnel-shaped

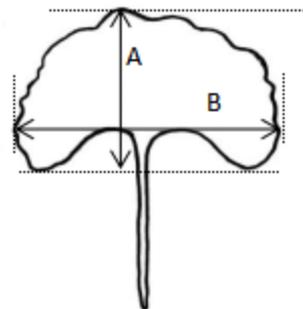
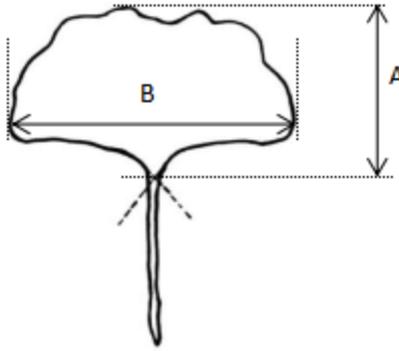
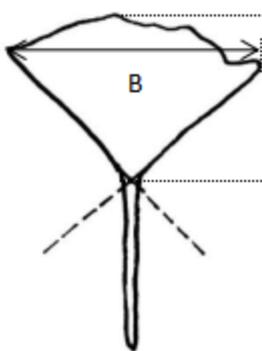


3  
fan-shaped and terete



4  
fan-shaped and acicular

Ad. 9: Only varieties with fan-shaped leaves: Leaf blade: length

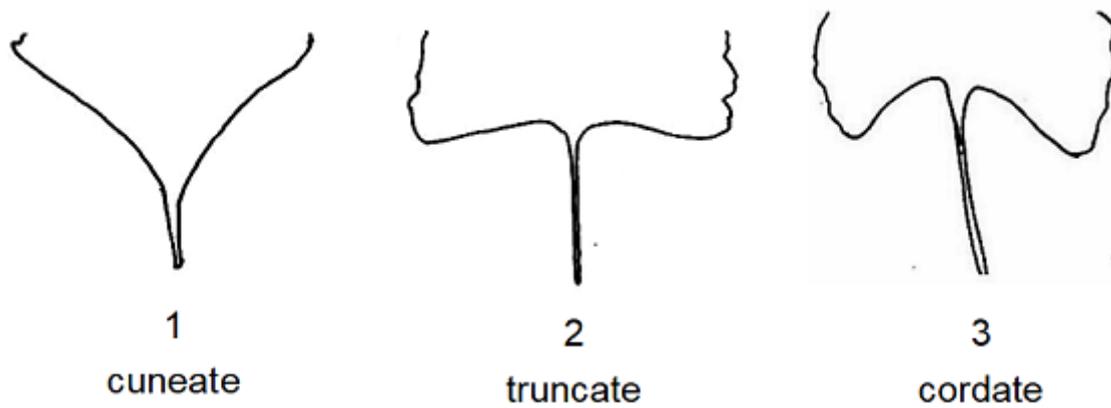


A= Leaf blade: length  
B= Leaf blade: width

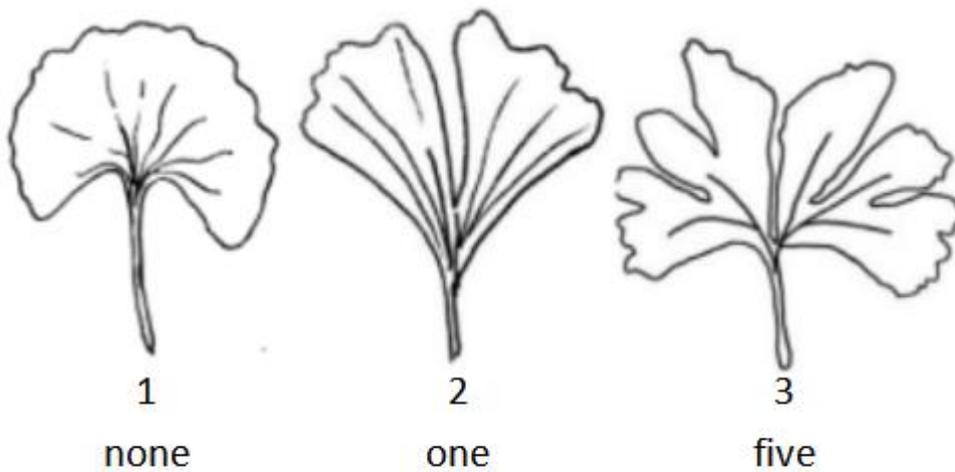
Ad. 10: Only varieties with fan-shaped leaves: Leaf blade: width

See Ad. 9.

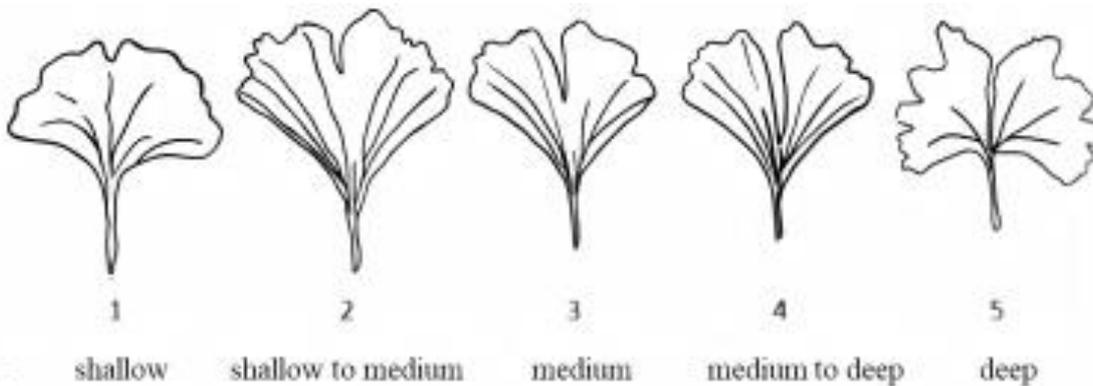
Ad. 16: Only varieties with fan-shaped leaves: Leaf blade: shape of leaf base



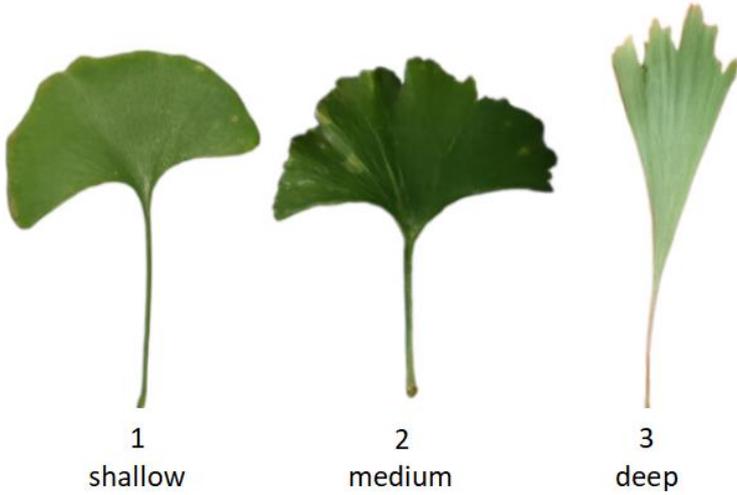
Ad. 17: Only varieties with fan-shaped leaves: Leaf blade: number of incisions



Ad. 18: Only varieties with fan-shaped leaves: Leaf blade: depth of central incision



Ad. 19: Only varieties with fan-shaped leaves: Leaf blade: depth of marginal serrations



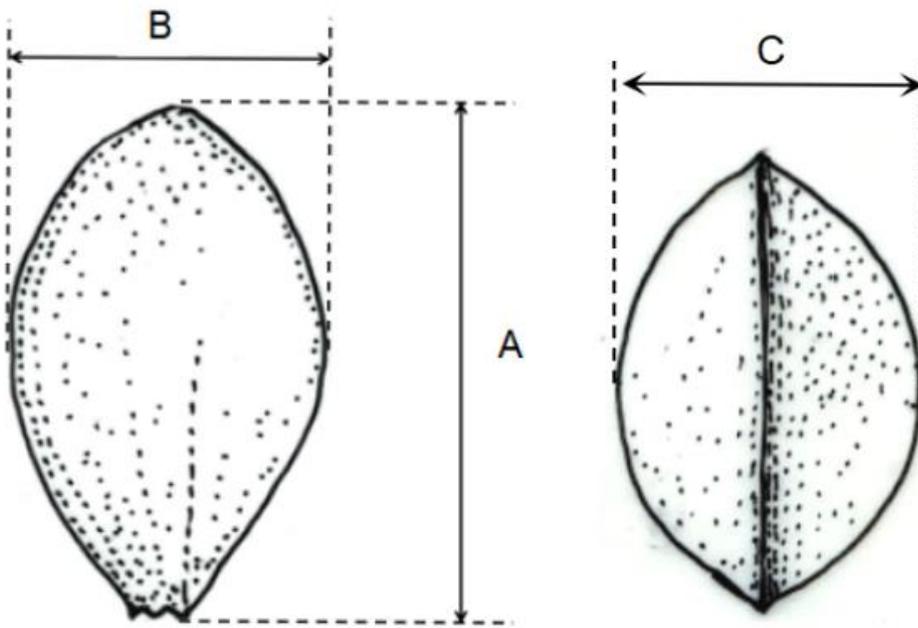
Ad. 20: Fruit: position



Ad. 22: Fruit: intensity of bloom

The bloom is the waxy layer that can be removed by rubbing.

Ad. 23: Nut: length



A=Nut: length  
B=Nut: width in lateral view  
C=Nut: thickness

Ad. 24: Nut: width in lateral view

See Ad. 23.

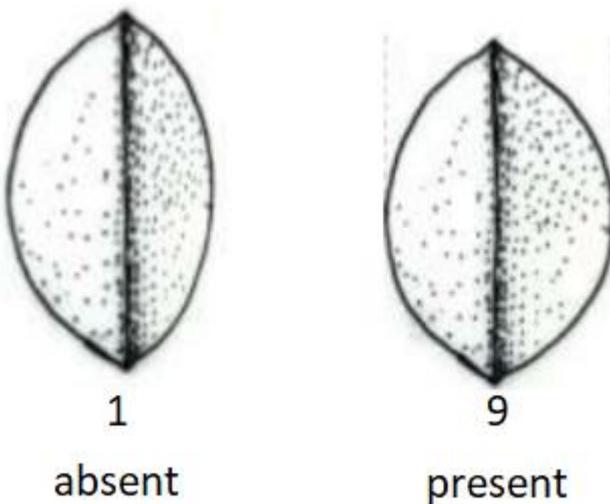
Observations should be made on the broadest part (including the ridge).

Ad. 25: Nut: thickness

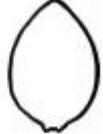
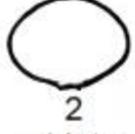
See Ad. 23.

Ad. 26: Nut: symmetry

Observations should be made facing the suture.



Ad. 27: Only varieties with Nut: symmetry: present: Nut: shape in lateral view

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

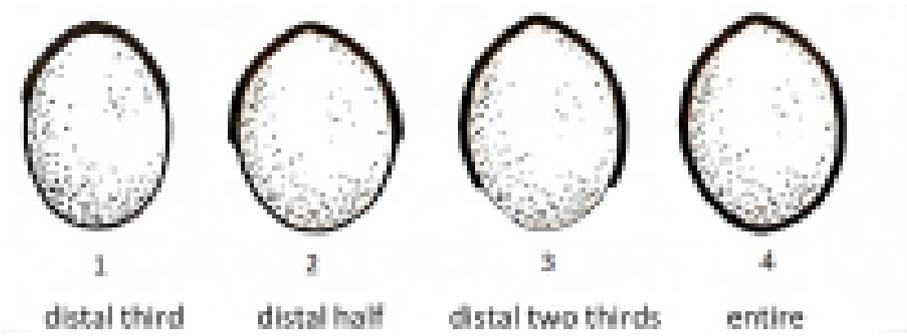
Ad. 28: Nut: shape of base



Ad. 29: Nut: shape of apex



Ad. 31: Nut: position of ridge



Ad. 32: Nut: width of ridge



Ad. 33: Nut: pitting on surface



1  
absent



2  
present

Ad. 34: Kernel: color

Observations should be made on the half-cut kernels.

Ad. 35: Time of beginning of leaf color change

The time of beginning of leaf color change is determined when 30% of leaves have changed color in autumn.

Ad. 36: Time of beginning of fruit maturity

The time of beginning of fruits mature is determined when 30% of fruits have changed color.

## 9. Literature

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10. Technical Questionnaire

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Application date: (not to be filled in by the applicant)
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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

1.1.2 Common name

2. Applicant

Name

Address

Telephone No.

Fax No.

E-mail address

Breeder (if different from applicant)

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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3. Proposed denomination and breeder's reference	
Proposed denomination (if available)	<input type="text"/>
Breeder's reference	<input type="text"/>

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

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) Other (please provide details) [ ]

4.2.2 Vegetative propagation

(a) Cuttings [ ]

(b) Budding or grafting [ ]

(c) Other (state method) [ ]

4.2.3 Other (Please provide details) [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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
<b>5.1 (1)</b>	<b>Plant: sex</b>		
	female	Jia Fo Zhi, Variegata	1 [ ]
	male	Fairmount, Kui Wu	2 [ ]
<b>5.2 (6)</b>	<b>Young leaf blade: main color</b>		
	green	Fastigiata	1 [ ]
	yellow green		2 [ ]
	light yellow	Californian Sunset	3 [ ]
	medium yellow	Wan Nian Jin	4 [ ]
<b>5.3 (7)</b>	<b>Leaf: attitude</b>		
	upwards	Fastigiata	1 [ ]
	downwards	Chui Ye, Saratoga	2 [ ]
<b>5.4 (8)</b>	<b>Leaf blade: shape</b>		
	only fan-shaped	Fastigiata	1 [ ]
	only funnel-shaped	Tubifolia	2 [ ]
	fan-shaped and terete	Santa Cruz	3 [ ]
	fan-shaped and acicular	Song Zhen	4 [ ]
<b>5.5 (9)</b>	<b><u>Only varieties with fan-shaped leaves:</u> Leaf blade: length</b>		
	very short	Zhai Guan	1 [ ]
	very short to short		2 [ ]
	short	Wen Bi	3 [ ]
	short to medium		4 [ ]
	medium	Shan Nong Guo 2	5 [ ]
	medium to long		6 [ ]
	long	Heksenbezem Leiden	7 [ ]
	long to very long		8 [ ]
	very long	Shan Nong F-2	9 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Characteristics	Example Varieties	Note
<b>5.6 (10)</b>	<b><u>Only varieties with fan-shaped leaves:</u> Leaf blade: width</b>		
	very narrow	Zhai Guan	1 [ ]
	very narrow to narrow		2 [ ]
	narrow	Wen Bi	3 [ ]
	narrow to medium		4 [ ]
	medium	Shan Nong Guo 2	5 [ ]
	medium to broad		6 [ ]
	broad	Heksenbezem Leiden	7 [ ]
	broad to very broad		8 [ ]
	very broad	Shan Nong F-2	9 [ ]
<b>5.7 (11)</b>	<b>Leaf blade: variegation</b>		
	absent	Blagon	1 [ ]
	present	Santa Cruz	9 [ ]
<b>5.8 (12)</b>	<b>Leaf blade: main color</b>		
	whitish		1 [ ]
	medium green	Fastigiata	2 [ ]
	dark green	Jade Butterflies, Shan Nong Yin 1	3 [ ]
	yellow green	Saratoga	4 [ ]
	yellow	Wan Nian Jin	5 [ ]
<b>5.9 (16)</b>	<b><u>Only varieties with fan-shaped leaves:</u> Leaf blade: shape of leaf base</b>		
	cuneate	Shan Nong Yin 2	1 [ ]
	truncate	Piedmont Pillar	2 [ ]
	cordate	Horizontalis	3 [ ]
<b>5.10 (17)</b>	<b><u>Only varieties with fan-shaped leaves:</u> Leaf blade: number of incisions</b>		
	none		1 [ ]
	one	Jade Butterflies	2 [ ]
	five	Wen Bi	3 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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	Characteristics	Example Varieties	Note
<b>5.11 (18)</b>	<b><u>Only varieties with fan-shaped leaves:</u> Leaf blade: depth of central incision</b>		
	shallow	Autumn Gold	1 [ ]
	shallow to medium	Princeton Sentry	2 [ ]
	medium	Princeton Gold	3 [ ]
	medium to deep	Fairmount	4 [ ]
	deep	Wen Bi	5 [ ]
<b>5.12 (20)</b>	<b>Fruit: position</b>		
	only branchlets	Bian Fo Zhi, Tremonia	1 [ ]
	branchlets and leaves	Epiphylla, Ye Zi	9 [ ]
<b>5.13 (21)</b>	<b>Fruit: color</b>		
	yellow green	Yu Xiang	1 [ ]
	yellow	Tan 107	2 [ ]
	orange	Qi Xing Guo	3 [ ]
	black	Qi Xing Hai He	4 [ ]
<b>5.14 (34)</b>	<b>Kernel: color</b>		
	yellow white	Gui 048	1 [ ]
	yellow green	Shen Nong 1	2 [ ]
	green		3 [ ]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 <b>similar</b> variety(ies)	Describe the expression of the characteristic(s) for <b>your</b> candidate variety
<i>Example</i>	<i>Leaf: variegation</i>	<i>absent</i>	<i>present</i>

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<p>Comments</p>
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TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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.]

Is your candidate variety a dwarf type?

Yes  No

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

\_\_\_\_\_

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]

(please provide details as specified by the Authority)

No [ ]

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]