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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

TREE PEONY

UPOV Code: PAEON

Paeonia Sect. *Moutan*

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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 forty-fourth session, to be held in Fukuyama City, Hiroshima Prefecture, Japan
from November 7 to 11, 2011

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Paeonia suffruticosa, Paeonia jishanensis, Paeonia ostii,Paeonia rockii, Paeonia delavayi	Tree peony, Moutan	Pivoine en arbre	Strauchpäonie	Paeonia

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 *Paeonia* Sect. *Moutan* including *Paeonia suffruticosa, Paeonia jishanensis, Paeonia ostii, Paeonia rockii, Paeonia delavayi.*

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 at least one year old plants grafted on a rootstock.

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. The rootstock should be named when the plant material is supplied. The competent authorities may prescribe the rootstock on which the variety should be grafted.

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

The minimum duration of tests should normally be one independent growing cycle.

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 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 / 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 taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

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 second column of 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 For the assessment of uniformity, 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-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: growth habit (characteristic 1)
(b) Plant: height (characteristic 2)
(c) Leaf: type (characteristic 12)
(d) Leaf: number of leaflets (characteristic 13)
(e) Lateral leaflets: depth of sinus (characteristic 20)
(f) Flower: predominant form (characteristic 23)
(g) Flower: diameter (characteristic 24)
(h) Flower: main color (characteristic 26)
(i) Petal: basal blotch (inner side) (characteristic 33)
(j) Only varieties with blotch: Petal: size of blotch (characteristic 35)
(k) Pistil: pubescence of carpels (characteristic 45)
(l) Flowering: time of beginning of the first flowering (characteristic 55）

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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

(*) Asterisked characteristic – see Chapter 6.1.2

QL Qualitative characteristic – see Chapter 6.3
QN Quantitative characteristic – see Chapter 6.3
PQ Pseudo-qualitative characteristic – see Chapter 6.3

MG, MS, VG, VS – see Chapter 4.1.5

(a)-(h) See Explanations on the Table of Characteristics in Chapter 8.1
(+) See Explanations on the Table of Characteristics in Chapter 8.2

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

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
1. **(*)** **(+)**	**VG**	**Plant: growth habit**					
QN	**(a)**	upright				Kao, Shichifukujin	1
		semi-upright				Wu Long Peng Sheng	2
		spreading				Zhao Fen	3
2. (*)	**VG/MG**	**Plant: height**					
QN	**(a)**	short				Shan Hu Tai	3
		medium				Kao, LuoYang Hong	5
		tall				Hanakisoi	7
3. **(*)**	**VG**	**Plant: attitude of flowers**					
QN	**(g)**	upward				Kao	1
		outward				Rou Fu Rong	2
		downward				Dou Lv	3
4. **(*)** **(+)**	**VG**	**Plant: position of flower in relation to foliage**					
QN	**(d)**	within				Cang Zhi Hong	1
		same level or nearly same level				Cong Zhong xiao	2
		above				Kao	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
5. **(+)**	**VG**	**Mixed bud: shape in lateral view**					
PQ	**(b)**	very narrow ovate					1
		narrow ovate				Qing Long Wo MO Chi, Rou Fu Rong	2
		medium ovate				LuoYang Hong	3
		rounded				Cai Xia, Cong zhong xiao,	4
6.	**VG**	**Mixed bud: color**					
PQ	**(b)**	yellow brown				Yang Huang	1
		green				Cui Ye Zi, Zhi Hong,	2
		red				Hu Hong, Zhu Sha Lei	3
		purple				Kao	4
7. **(+)**	**VG**	**Very young shoot: color**					
PQ	**(d)**	yellow green				San Qing Bai	1
		medium green				Bai Hua Du, Shin-jitsugetu	2
		pink				Lu He Hong	3
		purple red				Si He Lian	4
		brown red				Shou An Hong	5
8. **(*)**	**VG/** **MG**	**One year old branch: length**					
QN	**(c)**	short				Shan Hu Tai, Ying Luo Bao Zhu	3
		medium				Luo Yang Hong, Zhao Fen	5
		long				Tian Xiang Zhan Lu, Zi Die Ying Feng	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
9. (*)	**VG**	**Two-year-old branch: number of flowering branches**					
QN		one				Shou An Hong	1
		two				Hanakisoi, Zhu Sha Lei	2
		more than two				Taiyo	3
10. **(*)** **(+)**	**VG/ MG**	**Petiole: length**					
QN	**(e)**	short				Mei Ren Hong, Yi Pin Zhu Yi	3
		medium				Luo Yang Hong	5
		long				Yu Ji Yan Zhuang	7
11. **(+)**	**VG**	**Leaf: attitude in relation to the stem**					
QN	**(e)**	upright				Kinkaku	1
		semi-upright				Cang Zhi Hong, Shou An Hong	2
		horizontal				Dou Lv, Zi Hong Zheng Yan	3
12. **(*)** **(+)**	**VG/ MG**	**Leaf: type**					
QL	**(e)**	pinnate				Zhong Sheng Hei	1
		bipinnate				Luo Yang hong	2
13.	**MG**	**Leaf: number of leaflets**					
QN		3-5				Zhong Sheng Hei	1
		9-15				Luo Yang Hong	2
		More than 15				Xiong Mao	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
14. **(*)** **(+)**	**MG**	**Leaf: length**					
QN	**(e)**	short				Mei Ren Hong	3
		medium				Luo Yang Hong	5
		long				Rou Fu Rong	7
15. **(*)** **(+)**	**MG**	**Leaf: width**					
QN	**(e)**	narrow				Yin Hong Qiao Dui	3
		medium				Luo Yang Hong	5
		broad				Rou Fu Rong	7
16.	**MG**	**Leaf: color of upper side**					
PQ	**(f)**	yellow green				Zhao Fen	1
		medium green				Dou Lv	2
		dark green				Guan Shi Mo Yu, Zhuang Yuan Hong	3
		grey green				Mo Kui	4
17.	**VG**	**Leaf: anthocyanin coloration on upper side**					
QN	**(f)**	absent				Zhao Fen	1
		present				Hu Hong	9
18. **(*)**	**VG**	**Leaf: pubescence on lower side**					
QN	**(f)**	absent or weak				Yin Fen Jin Lin	1
		medium					2
		strong				Dou Lv	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
19. **(*)** **(+)**	**VG**	**Lateral leaflets: shape**					
PQ	**(e)**	lanceolate					1
		ovate					2
		elliptic					3
		broad elliptic					4
		broad ovate					5
20. **(*)** **(+)**	**VG**	**Lateral leaflets: depth of sinus**					
QN	**(e)**	absent or very shallow					1
		shallow					3
		medium					5
		deep					7
		very deep					9
21. **(*)** **(+)**	**VG**	**Flower bud: shape in lateral view**					
PQ	**(g)**	narrow ovate				Yu Mian Tao Hua	1
		broad ovate				Zhu Sha Lei	2
		circular				Shan Hu TAi	3
		oblate				Shou An Hong	4
22. **(+)**	**VG**	**Flowering stem: flower arrangement**					
QN	**(g)**	terminal only (absent laterals)				Luo Yang Hong	1
		terminal and axillary				High noon, Zi Mei You Chun	2

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
23. **(*)** **(+)**	**VG**	**Flower:** **predominant form**					
PQ	**(g)**	single form				Shu Sheng Peng Mo	1
		lotus form				Yu Ban Bai	2
		chrysanthemum form				Cong Zhong Xiao, Ru Hua Si Yu	3
		rose form				Luo Yang Hong	4
		golden stamen form				Yao Huang	5
		anemone form				Yin Si Guan Ding	6
		golden circle form				Fen Mian Tao Hua	7
		crown form				Shou An Hong	8
		globular form				Fen Yu Qiu	9
		hundred proliferate form				Jun Yan Hong	10
		crown proliferate form				Xian Tao	11
24.	**MG**	**Flower: diameter**					
QN	**(g)**	small				Pan Zhong Qu Guo	3
		medium				Luo Yang Hong	5
		large				Bai He Liang Chi, Xian Tao	7
25. **(+)**	**MG**	**<u>Only varieties with crown and proliferate form</u>:** **Flower: height**					
QN	**(g)**	short				Dou Lv	3
		medium				Shou An Hong	5
		tall				Zi Rong Qiu	7
26. **(*)** **(+)**	**VG**	**Flower: main color**					
		RHS Colour Chart					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
27. **(*)** **(+)**	**VG**	**Flower: secondary color**					
		RHS Colour Chart					
28. **(*)** **(+)**	**VG**	**Flower: distribution of secondary color**					
PQ	**(g)**	stripe				He Pin Hua Er Qiao	1
		block				Hua Er Qiao	2
		center				Yuan Yang Pu	3
		circle				Tao Yang Jin	4
29. **(*)**	**VG**	**Flower: petaloid stamens**					
QL	**(g)**	absent				Renkaku	1
		present				Luo Yang Hong	9
30.	**MG/ VG**	**Flower: number of petaloid stamens**					
QN	**(g)**	few				Yu Ban Bai	3
		medium				Luo Yang Hong	5
		many				Kun Shan Ye Guang	7
31. **(+)**	**VG**	**Flower: type of petaloid stamen**					
QL	**(g)**	stamen-like					1
		petal-like					2
32. **(+)**	**VG**	**<u>Only varieties with flower petaloid stamens</u>: Flower: conspicuousness of anthers**					
QN	**(g)**	inconspicuous					1
		moderately conspicuous					2
		very conspicuous					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
33. (*) (+)	**VG**	**Petal: basal blotch (inner side)**					
QL	**(g)(h)**	absent				Zhao Fen	1
		present				Luo Yang Hong	9
34. (*) (+)	**VG**	**Only varieties with blotch: Petal: shape of blotch**					
PQ	**(g)**	lanceolate					1
		narrow ovate					2
		oblong					3
		oblanceolate					4
		ovate					5
		broad oblong					6
		broad ovate					7
		oblate					8
		narrow obovate					9
		obovate					10
		circular					11
		square					12
		obtriangular					13
35.	**VG/MG**	**Only varieties with blotch: Petal: size of blotch**					
QN	**(g)**	very small				Hu Hong	1
		small				Luo Yang Hong	2
		medium				Xiao Hu Die	3
		large				Shu Sheng Peng Mo	4
		very large				Zhong Ban Bai	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
36. **(*)**	**VG**	**<u>Only varieties with blotch</u>: Petal: color of blotch**					
PQ	**(g)**	white				Zheng Chun	1
		red				High Noon	2
		purple red				Xue Hai Dan Xin	3
		red brown				Xue Hai Yin Zhen	4
		dark purple or black				Zi Die Ying Feng	5
37. **(+)**	**VG**	**<u>Only varieties with blotch</u>: Petal: white line in the center of the blotch**					
PQ	**(g)**	absent or very inconspicuous					1
		moderately conspicuous					2
		very conspicuous					3
38.	**VG**	**<u>Excluding varieties with two colors and petal blotch</u>: Petal: change of intensity of color towards base**					
QN	**(g)**	absent or very weak				Renkaku	1
		weak					3
		medium				Zhao Fen	5
		strong				Teni	7
39. **(+)**	**VG**	**Petal: incision of apex (excluding petaloid)**					
QN	**(g)**	weak				Cong Zhong Xiao	1
		medium				Luo Yang Hong	3
		strong				Zi Rong Jian Rong	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
40. **(+)**	**VG**	**Petal: shape (excluding petaloid)**					
PQ	**(g)**	circular					1
		obovate					2
		transverse elliptic					3
41.	**VG**	**Stamen: main color of filaments**					
PQ	**(g)**	white				Renkaku	1
		light yellow				Xue Lian	2
		pink				Zhao Fen	3
		light purple				Luo Yang Hong	4
		dark purple				Yan Long Zi Zhu Pan	5
42.	**MG**	**Pistil: number**					
QN	**(g)**	few				Shou An Hong	1
		medium				Zi Die Ying Feng	2
		many				Luo Yang Hong	3
43. **(*)**	**VG**	**Pistil: color of stigma**					
PQ	**(g)**	light yellow				Renkaku, Yu Ban Bai	1
		pink				Zhao Fen	2
		red				Guo Qi Hong	3
		purple red				Luo Yang Hong	4
		purplish black				Ye Guang Bei	5
		black				Yan Long Zi Zhu Pan	6

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
44. **(*)** **(+)**	**VG**	**Pistil: openness of disc**					
QN	**(g)**	closed					1
		partly open					3
		open					5
45. **(*)**	**VG**	**Pistil: pubescence of carpels**					
QN	**(g)**	absent or sparse				Guo Qi Hong	1
		medium				High Noon	2
		dense				Luo Yang Hong	3
46. **(+)**	**VG**	**Pistil: texture of disc**					
PQ	**(g)**	leathery				Luo Yang Hong	1
		intermediate				Hua Xia Yi Pin Huang	2
		fleshy				Guo Qi Hong	3
47. **(*)**	**VG**	**Pistil: color of disc**					
PQ	**(g)**	yellowish white				Renkaku, Xue Lian	1
		yellow				Hua Xia Yi Pin Huang	2
		pink				Zhao Fen	3
		purple red				Xue Hai Dan Xin	4
		dark purple				Yan Long Zi Zhu Pan	5
48. **(+)**	**VG**	**Pistil: petaloid pistil**					
QL	**(g)**	absent					1
		present					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
49. **(*)** **(+)**	**VG**	**Petaloid pistil: type**					
PQ	**(g)**	only stigma					1
		partly petaloid					2
		completely petaloid					3
50. **(*)**	**VG**	**Petaloid pistil: color**					
PQ	**(g)**	white only				Zhi Hong Zheng Yan	1
		green and white				Yan Zhi Dian Cui	2
		green only				Kun Shan Ye Guang	3
		green and red				Wu Long Peng Sheng	4
51. **(*)**	**VG**	**Flower: fragrance**					
QN	**(g)**	weak				Yu Ban Bai	1
		medium				Luo Yang Hong	2
		strong				Guan Qun Fang	3
52. **(*)** **(+)**	**VG**	**Plant: attitude of flowers**					
QN	**(g)**	upwards				Kao	1
		outwards				Rou Fu Rong	2
		downwards				Dou Lv	3
53. **(*)** **(+)**	**VG**	**Plant: position of flower in relation to foliage**					
QN	**(d)**	within				Cang Zhi Hong	1
		same level or nearly same level				Cong Zhong xiao	2
		above				Kao	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note / Nota
54. **(+)**	**MG**	**Flowering: number of flowering periods in one year**					
QN	**(d)**	only one				Luo Yang Hong	1
		one or two				Cang Zhi Hong	2
		two only				Ao Shuang	3
		more than two				High Noon	4
55. **(+)**	**MG**	**Flowering: time of beginning of the first flowering**					
QN	**(d)**	early				Huo Lian Jin Dan	3
		medium				Luo Yang Hong	5
		late				High Noon	7

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

(a) Plant: All observations on growth habit are made after leaf fall in the winter. All observations on height should be made when plants are in flower.

(b) Mixed bud: a bud yielding both leaves and flowers. Observations on the buds should be made on the first lateral bud from the apex on a current year branch during after leaf fall in the autumn. A current year branch is a branch which is current or belongs to the present year.

(c) Branch: Observations on current year branches should exclude basal shoots. All observation on length should be made after leaf falls. Two year old branches are those developed and flower buds differentiated on last year.

(d) Very young shoots are less than 10 cm in length, some very young shoots have flower buds, some not. Young shoots are longer than 10 cm in length.

(e) All observations on the petiole, leaf and leaflet should be made on the third and fourth fully developed leaves from the base in current year's branch in flower.

(f) All observations on leaf color are made at the beginning of flowering.

(g) Flower, petal, stamen, pistil, plant: all observations on the flower should be made on the terminal flower on a primary branch. All observations on the shape of flower bud should be made when the bud is beginning to show the color. All observations on the petal should be made when the flower is fully open, except for the observations on the petal color which are made on the middle part of the petal at the time of flower opening. All observations on the blotch should be made on the first inner 1~2 wheel petals.

(h) Blotch: an irregularly shaped and sized spot at the base of the petal. All observations should be made when the flower is fully open.

8.2 Explanations for individual characteristics

Ad. 1: Plant: growth habit

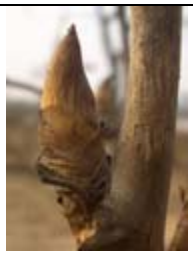
1
upright

2
semi-upright

3
spreading

Ad. 5: Mixed bud: shape in lateral view

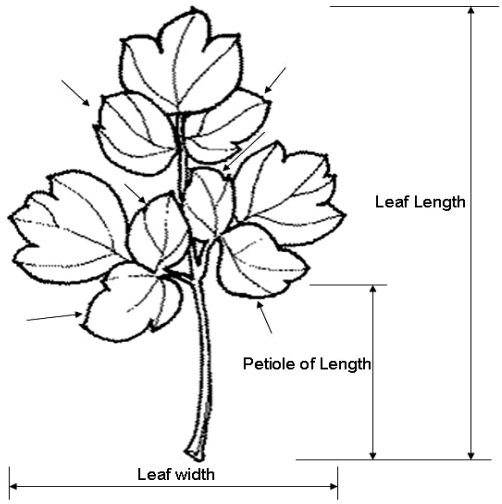
Mixed bud is a bud which produces both leaves and flowers.

	Broadest part width		
	below the middle	at the middle	above middle
elongated		 2 narrow ovate	 1 very narrow ovate
Length/width		 4 rounded	 3 medium ovate
compressed			

Ad. 7: Very young shoot: color

The color of very young shoots excludes that of flower buds.

Ad. 10: Petiole: length
Ad. 14: Leaf: length
Ad. 15: Leaf: width



Ad. 11: Leaf: attitude in relation to the stem

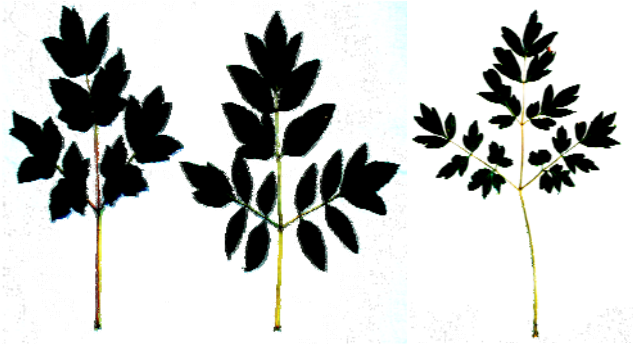
1
upright

2
semi-upright

3
horizontal

Ad. 12: Leaf: type

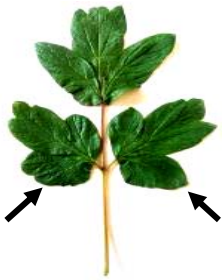
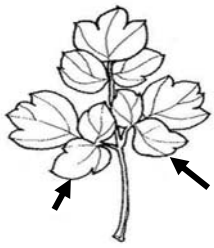
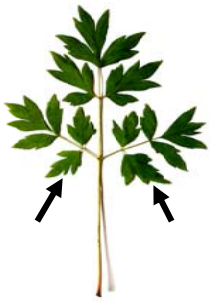
1
pinnate



2
bipinnate

Ad. 19: Lateral leaflets: shape

Indicate the shape and position of observed leaflet blade.

The shape of leaflet blade position of observed leaflet blade

	Broadest part width		
	below the middle	at the middle	above middle
elongated			
	1	3	
	lanceolate	elliptic	
Length/width			
	2	4	
	ovate	broad elliptic	
compressed			
	5		
	broad ovate		

Ad. 20: Lateral leaflets: depth of sinus

				
1	2	3	4	5
absent or very shallow	shallow	medium	deep	very deep

Ad. 21: Flower bud: shape in lateral view

	Broadest part width		
	Below the middle	At the middle	Above middle
elongated	 1 narrow ovate		
Length/width	 2 broad ovate	 3 circular	
compressed		 4 oblate	

Ad. 22: Flowering stem: flower arrangement

1

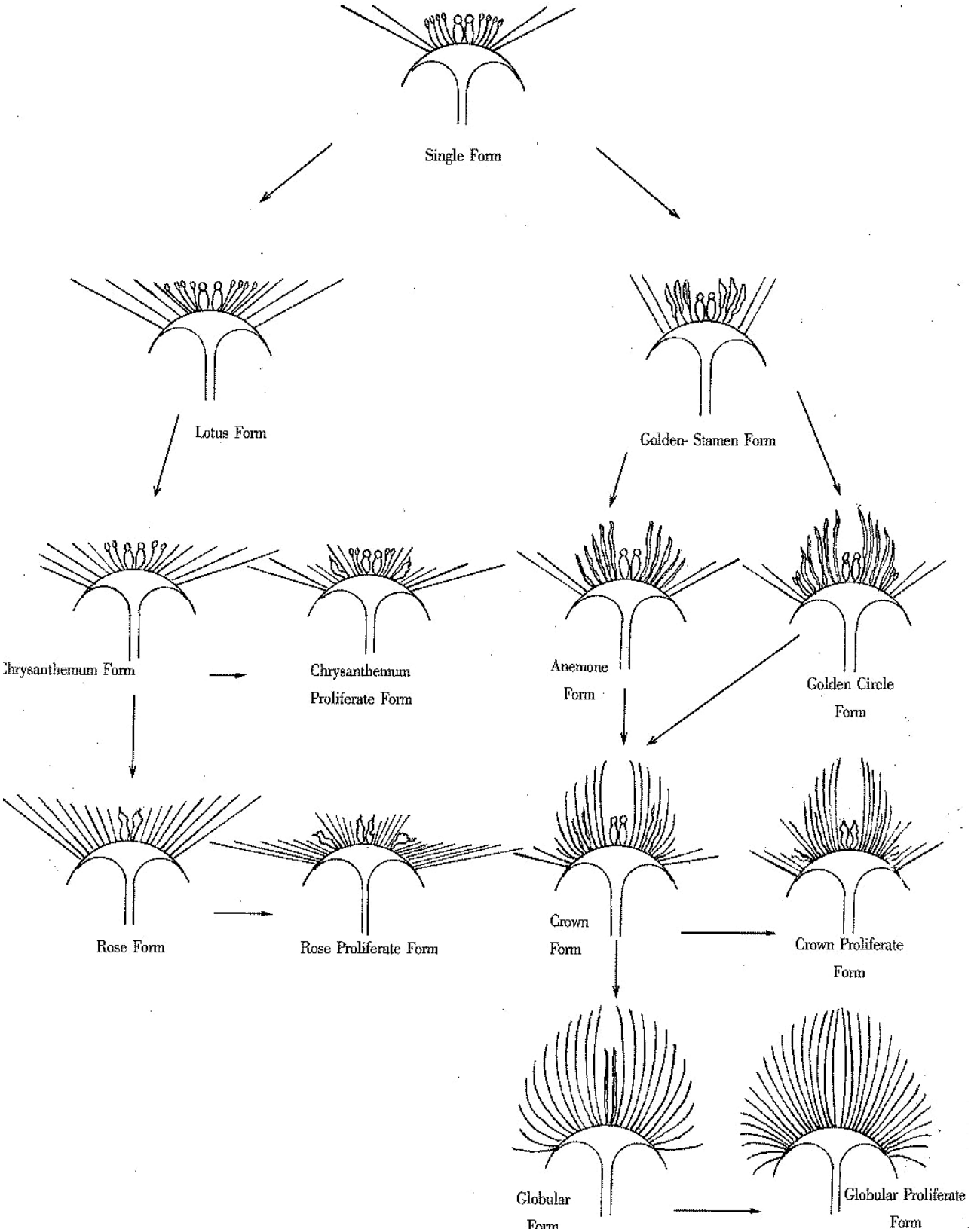
terminal only (absent laterals)

2

terminal and axillary

Ad. 23: Flower: predominant form

A variety may have more than one flower form, but flower form recorded will be the most complex.



1
single form

6
anemone form

2
lotus form

7
golden circle form

3
chrysanthemum form

8
crown form

4
rose form

9
globular form

10
hundred proliferate form

11
crown proliferate form

Ad. 26: Flower: main color

The main color is determined as the color with the largest surface area present on the upper side of a flower. If 50/50, the main color is darker one. The main color excludes the blotch and basal color.

Ad. 28: Flower: distribution of secondary color

stripe
1

block
2

center
3

circle
4

Ad. 31: Flower: type of petaloid stamen

1
stamen-like

2
petal-like

Ad. 32: Only varieties with flower petaloid stamens: Flower: conspicuousness of anthers

1
inconspicuous

2
moderately conspicuous

3
very conspicuous

Ad. 32: Flower: petaloid stamen: white line in the center of the blotch

1
absent or very weak

2
medium

3
obvious

Ad. 33: Petal: basal blotch (inner side)

1
absent

9
present

Ad. 34: Only varieties with blotch: Petal: shape of blotch

Broadest part width

Length/width	below the middle	at the middle	above middle
elongated	 1 lanceloate	 3 oblong	 4 oblanceolate
	    2 narrow ovate 5 ovate	  6 broad oblong	 12 square	 9 narrow obovate
compressed	 7 broad ovate	 8 oblate	 10 circular	 11 obovate	 13 obtriangular

Ad. 39: Petal: incision of apex (excluding petaloid)

1
weak

3
medium

5
strong

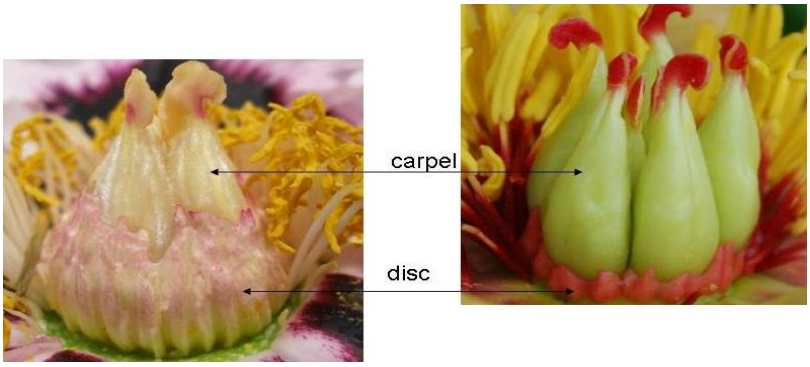
Ad. 40: Petal: shape (excluding petaloid)

1
circular

2
obovate

3
transverse elliptic

Ad. 44: Pistil: openness of disc



The position of the disc and carpel

1
closed

3
partly open

5
open

Ad. 46: Pistil: texture of the disc

1
leathery

2
intermediate

3
fleshy

Ad. 48: Pistil: petaloid pistil

1
absent

9
present

Ad. 49: Petaloid pistil: type

1
only stigma

2
partly petaloid

3
completely petaloid

Ad. 52: Plant: attitude of flowers

1
upwards

2
outwards

3
downwards

Ad. 53: Plant: position of flower in relation to foliage

3
within

5
same level or nearly same level

7
above

Ad. 54: Flowering: number of flowering periods in one year

The number of flowering periods is determined by the number of seasons when the flower opens.

Ad. 55: Flowering: time of beginning of the first flowering

The beginning of flowering is determined when 10% of all flower buds on the trail plants have opened.

9. Literature

Brickell, C., Editor-in Chief, 2003: A-Z Encyclopedia of Garden Plants. The Horticulture Society.

Rogers, A., 1995: Peonies. Timber Press.

Harding, A., 1993: The Peony. Sagapress/Timber press.

Wang Lian-ying, 1997: Pictorial Record of Chinese Tree peony Varieties. Chinese Forestry Publishing House

Li Jia -jue, Zhang,Xi-fang, Zhao Xiao-qing, 2011: Tree peony in China. Chinese Encyclopedia Publishing House.

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	*Paeonia suffruticosa, Paeonia Jishanensis, Paeonia ostii, Paeonia rockii, Paeonia delavayi*
1.2 Common name	Tree Peony

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

Example 1

4.2.1 Seed-propagated varieties

(a) Self-pollination [ ]
(b) Cross-pollination
(i) population [ ]
(ii) synthetic variety [ ]
(c) Hybrid [ ]

(d) Other [ ]
(please provide details)

4.2.2 Vegetatively propagated varieties

4.2.3 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: growth habit**		
	upright	Kao, Shichifukujin	1[ ]
	semi-upright	Wu Long Peng Sheng	2[ ]
	spreading	Zhao Fen	3[ ]
5.2 (2)	**Plant: height**		
	very short		1[ ]
	very short to short		2[ ]
	short	Shan Hu Tai	3[ ]
	short to medium		4[ ]
	medium	Kao, LuoYang Hong	5[ ]
	medium to tall		6[ ]
	tall	Hanakisoi	7[ ]
	tall to very tall		8[ ]
	very tall		9[ ]

TECHNICAL QUESTIONNAIRE Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note
5.3 (8) **One year old branch: length**		
very short		1[ ]
very short to short		2[ ]
short	Shan Hu Tai, Ying Luo Bao Zhu	3[ ]
short to medium		4[ ]
medium	Luo Yang Hong, Zhao Fen	5[ ]
medium to long		6[ ]
long	Tian Xiang Zhan Lu, Zi Die Ying Feng	7[ ]
long to very long		8[ ]
very long		9[ ]
5.4 (10) **Petiole: length**		
very short		1[ ]
very short to short		2[ ]
short	Mei Ren Hong, Yi Pin Zhu Yi	3[ ]
short to medium		4[ ]
medium	Lui Yang Hong	5[ ]
medium to long		6[ ]
long	Yu Ji Yan Zhuang	7[ ]
long to very long		8[ ]
very long		9[ ]

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

	Characteristics	Example Varieties	Note
5.5 (12)	**Leaf: type**		
	pinnate	Zhong Sheng Hei	1[ ]
	bipinnate	Luo Yang hong	2[ ]
5.6 (14)	**Leaf: length**		
	very short		1[ ]
	very short to short		2[ ]
	short	Mei Ren Hong	3[ ]
	short to medium		4[ ]
	medium	Luo Yang Hong	5[ ]
	medium to long		6[ ]
	long	Rou Fu Rong	7[ ]
	long to very long		8[ ]
	very long		9[ ]
5.7 (15)	**Leaf: width**		
	very narrow		1[ ]
	very narrow to narrow		2[ ]
	narrow	Yin Hong Qiao Dui	3[ ]
	narrow to medium		4[ ]
	medium	Luo Yang Hong	5[ ]
	medium to broad		6[ ]
	broad	Rou Fu Rong	7[ ]
	broad to very broad		8[ ]
	very broad		9[ ]

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

	Characteristics	Example Varieties	Note
5.8 (19)	**Lateral leaflets: shape**		
	lanceolate		1[ ]
	ovate		2[ ]
	elliptic		3[ ]
	broad elliptic		4[ ]
	broad ovate		5[ ]
5.9 (20)	**Lateral leaflets: depth of sinus**		
	absent or very shallow		1[ ]
	absent or very shallow to shallow		2[ ]
	shallow		3[ ]
	shallow to medium		4[ ]
	medium		5[ ]
	medium to deep		6[ ]
	deep		7[ ]
	deep to very deep		8[ ]
	very deep		9[ ]

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

	Characteristics	Example Varieties	Note
5.10 (23)	**Flower: predominant form**		
	single form	Shu Sheng Peng Mo	1[ ]
	lotus form	Yu Ban Bai	2[ ]
	chrysanthemum form	Cong Zhong Xiao, Ru Hua Si Yu	3[ ]
	rose form	Luo Yang Hong	4[ ]
	golden stamen form	Yao Huang	5[ ]
	anemone form	Yin Si Guan Ding	6[ ]
	golden circle form	Fen Mian Tao Hua	7[ ]
	crown form	Shou An Hong	8[ ]
	globular form	Fen Yu Qiu	9[ ]
	hundred proliferate form	Jun Yan Hong	10[ ]
	crown proliferate form	Xian Tao	11[ ]
5.11 (26)	**Flower: main color**		
	RHS Colour Chart		
5.12 (27)	**Flower: secondary color**		
	RHS Colour Chart		
5.13 (28)	**Flower: distribution of secondary color**		
PQ	stripe	He Pin Hua Er Qiao	1[ ]
	block	Hua Er Qiao	2[ ]
	center	Yuan Yang Pu	3[ ]
	circle	Tao Yang Jin	4[ ]

TECHNICAL QUESTIONNAIRE Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note
5.18 (29) **Flower: petaloid stamens**		
absent	Renkaku	1[ ]
present	Luo Yang Hong	9[ ]
5.19 (30) **Flower: number of petaloid stamens**		
very few		1[ ]
very few to few		2[ ]
few	Yu Ban Bai	3[ ]
few to medium		4[ ]
medium	Luo Yang Hong	5[ ]
medium to many		6[ ]
many	Kun Shan Ye Guang	7[ ]
many to very many		8[ ]
very many		9[ ]
5.14 (33) **Petal: basal blotch (inner side)**		
absent	Zhao Fen	1[ ]
present	Luo Yang Hong	9[ ]

TECHNICAL QUESTIONNAIRE Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note
5.15 (34) **<u>Only varieties with blotch</u>: Petal: shape of blotch**		
lanceolate		1[ ]
narrow ovate		2[ ]
oblong		3[ ]
oblanceolate		4[ ]
ovate		5[ ]
broad oblong		6[ ]
broad ovate		7[ ]
oblate		8[ ]
narrow obovate		9[ ]
obovate		10[ ]
circular		11[ ]
square		12[ ]
obtriangular		13[ ]
5.15 (35) **<u>Only varieties with blotch</u>: Petal: size of blotch**		
very small	Hu Hong	1[ ]
small	Luo Yang Hong	2[ ]
medium	Xiao Hu Die	3[ ]
large	Shu Sheng Peng Mo	4[ ]
very large	Zhong Ban Bai	5[ ]
5.16 (36) **<u>Only varieties with blotch</u>: Petal: color of blotch**		
white	Zheng Chun	1[ ]
red	Hign Noon	3[ ]
purple red	Xue Hai Dan Xin	4[ ]
red brown	Xue Hai Yin Zhen	5[ ]
dark purple or black	Zi Die Ying Feng	7[ ]

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

	Characteristics	Example Varieties	Note
5.17 (41)	**Stamen: main color of filaments**		
	white	Renkaku	1[ ]
	light yellow	Xue Lian	2[ ]
	pink	Zhao Fen	3[ ]
	light purple	Luo Yang Hong	4[ ]
	dark purple	Yan Long Zi Zhu Pan	5[ ]
5.18 (43)	**Pistil: color of stigma**		
	light yellow	Renkaku, Yu Ban Bai	1[ ]
	pink	Zhao Fen	2[ ]
	red	Guo Qi Hong	3[ ]
	purple red	Luo Yang Hong	4[ ]
	purplish black	Ye Guang Bei	5[ ]
	black	Yan Long Zi Zhu Pan	6[ ]
5.19 (44)	**Pistil: openness of disc**		
	closed		1[ ]
	partly open		3[ ]
	open		5[ ]
5.20 (45)	**Pistil: pubescence of carpels**		
	absent or sparse	Guo Qi Hong	1[ ]
	medium	High Noon	2[ ]
	dense	Luo Yang Hong	3[ ]

TECHNICAL QUESTIONNAIRE Page {x} of {y}	Reference Number:	
Characteristics	Example Varieties	Note
5.21 (47) **Pistil: color of disc**		
yellowish white	Renkaku, Xue Lian	1[ ]
yellow	Hua Xia Yi Pin Huang	2[ ]
pink	Zhao Fen	3[ ]
purple red	Xue Hai Dan Xin	4[ ]
dark purple	Yan Long Zi Zhu Pan	5[ ]
5.22 (48) **Pistil: petaloid pistil**		
absent		1[ ]
present		9[ ]
5.23 (49) **Petaloid pistil: type**		
only stigma		1[ ]
partly petaloid		2[ ]
completely petaloid		3[ ]
5.24 (50) **Petaloid pistil: color**		
white only	Zhi Hong Zheng Yan	1[ ]
green and white	Yan Zhi Dian Cui	2[ ]
green only	Kun Shan Ye Guang	3[ ]
green and red	Wu Long Peng Sheng	4[ ]
5.25 (51) **Flower: fragrance**		
weak	Yu Ban Bai	1[ ]
medium	Luo Yang Hong	2[ ]
strong	Guan Qun Fang	3[ ]

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

	Characteristics	Example Varieties	Note
5.26 (55)	**Flowering: time of beginning of the first flowering**		
	very early		1[ ]
	very early to early		2[ ]
	early	Huo Lian Jin Dan	3[ ]
	early to medium		4[ ]
	medium	Luo Yang Hong	5[ ]
	medium to late		6[ ]
	late	High Noon	7[ ]
	late to very late		8[ ]
	very late		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 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			

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

7.3.1 Main use

(a) garden plant [ ]
(b) pot plant [ ]
(c) cut-flower [ ]
(d) other [ ]
(please provide details)

7.3.2 A representative color photograph of the variety should accompany the Technical Questionnaire.

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.

[#] 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:

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