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UPOV

# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

# DRAFT

[*]

## TREE PAEONY

UPOV Code: PAEON

*Paeonia suffruticosa* Andrews Sect. *Moutan*

## 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-first session, to be held in Wageningen, Netherlands, from June 9 to 13*

Alternative Names:[*]

| *Botanical name* | *English* | *French* | *German* | *Spanish* |
|---|---|---|---|---|
| *Paeonia suffruticosa* Andrews Sect. *Moutan*, *Paenia moutan* Sims | Tree paeony, Moutan paeony | Pivoine en arbre | Strauchpäonie | |

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 suffruticosa* Andrews Sect. *Moutan*.

## 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 three-year-old grafted plants.

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

10 grafted plants.

In the case of grafted plants, the rootstock to be used is specified by the competent authority.

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*

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

### *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.

3.3.3 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.

*3.4 Test Design*

3.4.1 Each test should be designed to result in a total of at least 5 grafted 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 Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations should be made on 5 plants or parts taken from each of 5 plants.

*3.6 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.

*4.2 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 tested, either by growing a further generation, or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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: height (characteristic 2)
(b) Flower: flower form (characteristic 22)
(c) Flower: diameter (characteristic 23)
(d) Flower: main color: double color (characteristic 25)

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*

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.

### *6.3 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

(a)-(e) 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.** **(*)** **(+)** | | **Plant: growth habit** | | | | | |
| **PQ** | **(a)** | upright | | | | Kao, Shichifukujin | 1 |
| | | semi-upright | | | | Wu Long Peng Sheng | 2 |
| | | spreading | | | | Zhao Fen | 3 |
| **2.** (*) | | **Plant: height** | | | | | |
| **QN** | **(a)** | short | | | | Shan Hu Tai | 3 |
| | | medium | | | | Kao, LuoYang Hong | 5 |
| | | tall | | | | Hanakisoi | 7 |
| **3.** | | **Bud: shape** | | | | | |
| **(+)** | | | | | | | |
| **PQ** | **(b)** | ovoid | | | | Cai Xia, Cong zhong xiao, | 1 |
| | | prolate | | | | LuoYang Hong | 2 |
| | | narrow prolate | | | | Qing Long Wo MO Chi, Rou Fu Rong | 3 |
| | | prolate | | | | | 4 |
| **4.** | | **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 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **5.** | | **Branch: one-year-old branch length:** | | | | | |
| | | short (＜15cm) | | | | Shan Hu Tai, Ying Luo Bao Zhu | 1 |
| **QN** | **(c)** | medium (16-45cm) | | | | Luo Yang Hong Zhao Fen | 2 |
| | | long (＞45cm) | | | | Tian Xiang Zhan Lu, Zi Die Ying Feng | 3 |
| **6.** | | **Branch: number of hidden buds in perennial branches** | | | | | |
| **QN** | **(c)** | absent | | | | | 1 |
| | | few | | | | | 2 |
| | | many | | | | High Noon, Kao | 3 |
| **7.** **(+)** | | **Branch: color: 5-10cm new shoot** | | | | | |
| **PQ** | **(c)** | yellow green | | | | Zhao Fen | 1 |
| | | 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.** **(+)** | | **Branch: color: color interrelation of young stalks, young stem and young leaves** | | | | | |
| **QL** | **(c)** | absent | | | | Kao | 1 |
| | | present | | | | Luo Yang Hong, Shin-jitsugetu | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **9.** | | **Branch: number of flowering ones on a biennial branches** | | | | | |
| **QN** | **(c)** | one | | | | Shou An Hong | 1 |
| | | two | | | | Hanakisoi, Zhu Sha Lei | 2 |
| | | more than 2 | | | | Taiyo | 3 |
| **10.** | | **Branch: number of spouting basal shoots (emerging above soil)** | | | | | |
| **QN** | **(c)** | few (1-3) | | | | Shou An Hong | 3 |
| | | medium (4-10) | | | | Hu Hong | 5 |
| | | many (>10) | | | | Luo Yang Hong | 7 |
| **11.** | | **Compound leaf: times of pinnates** | | | | | |
| **QN** | **(d)** | simple pinnate | | | | Zhong Sheng Hei | 1 |
| | | bipinnate | | | | Luo Yang hong | 2 |
| | | polypinnate | | | | Xiong Mao | 3 |
| **12. (*) (+)** | | **Compound leaf: type** | | | | | |
| **PQ** | **(d)** | small circular leaf | | | | Zhu Hong Jue Lun | 1 |
| | | small long leaf | | | | Shan Hu Tai, Yin Luo Bao Zhu | 2 |
| | | middle-sized circular leaf | | | | Cang Zhi Hong Kun Shan Ye Guang | 3 |
| | | middle-sized long leaf | | | | Luo Yang Hong , Zi Mei You Chun | 4 |
| | | large circular leaf | | | | Qing Long Wo Mo Chi Shou An Hong | 5 |
| | | large long leaf | | | | Bing Ling Zhao Hong Shi, Gong Yang Zhuang | 6 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **13.** **(+)** | | **Compound leaf: attachment** | | | | | |
| **QN** | **(d)** | right angle attachment (approximately 90°) | | | | Dou Lv, Zi Hong Zheng Yan | 1 |
| | | diagonal attachment (30°-50°) | | | | Cang Zhi Hong, Shou An Hong | 2 |
| | | diagonally upward attachment (< 30°) | | | | Kinkaku | 3 |
| **14.** **(+)** | | **Compound leaf: shape of lateral leaflet** | | | | | |
| **PQ** | **(d)** | broad ovate | | | | Kun Shan Ye Guang | 1 |
| | | ovate | | | | Dou Lv | 2 |
| | | long ovate | | | | Fen Zhong Guan | 3 |
| | | narrow ovate | | | | Yachiyotsubaki | 4 |
| | | lanceolate | | | | Liu ye Bai, Zui Xi Shi | 5 |
| **15.** **(*)** **(+)** | | **Compound leaf: lobe of lateral leaflet** | | | | | |
| **PQ** | **(d)** | absent or very few | | | | Zui Xi Shi | 1 |
| | | weak | | | | Zhao Fen | 3 |
| | | medium | | | | Luo Yang Hong | 5 |
| | | strong | | | | High Noon | 7 |
| **16.** | | **Compound leaf: color of upper side (in early period of flowering)** | | | | | |
| **PQ** | **(d)** | yellow green | | | | Zhao Fen | 1 |
| | | green | | | | Dou Lv | 2 |
| | | grey green | | | | Mo Kui | 3 |
| | | dark green | | | | Guan Shi Mo Yu, Zhuang Yuan Hong | 4 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **17.** | | **Compound leaf: anthocyanin coloration on upper side (in early period of flowering)** | | | | | |
| **QL** | **(d)** | absent | | | | Zhaoi Fen | 1 |
| | | present | | | | Hu Hong | 9 |
| **18.** | | **Compound leaf: hair on lower side (in early period of flowering)** | | | | | |
| **QL** | **(d)** | absent | | | | Yin Fen Jin Lin | 1 |
| | | present | | | | Dou Lv | 2 |
| **19.** **(+)** | | **Flower: flower bud: shape** | | | | | |
| **PQ** | **(e)** | obloid | | | | Shou An Hong | 1 |
| | | globose | | | | Shan Hu TAi | 2 |
| | | ovoid | | | | Zhu Sha Lei | 3 |
| | | long ovoid | | | | Yu Mian Tao Hua | 4 |
| **20.** | | **Flower: flower bud: lateral flower buds** | | | | | |
| **QL** | **(e)** | absent | | | | Luo Yang Hong | 1 |
| | | present | | | | Zi Mei You Chun High Huang | 9 |
| **21.** | | **Flower: flower form: more than one form** | | | | | |
| **QL** | **(e)** | absent | | | | Shou An Hong | 1 |
| | | present | | | | Zhao Fen | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **22. (*) (+)** | | **Flower: flower form:** | | | | | |
| **QL** | **(e)** | single flower section | | | | | |
| | | hundred petals subsection | | | | | |
| | | 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 |
| | | crown subsection | | | | | |
| | | golden stamen | | | | | 5 |
| | | anemone | | | | Yin Si Guan Ding | 6 |
| | | golden circle | | | | Fen Mian Tao Hua | 7 |
| | | crown | | | | Shou An Hong | 8 |
| | | globular | | | | Fen Yu Qiu | 9 |
| | | proliferate section： | | | | | |
| | | hundred proliferate | | | | Jun Yan Hong | 10 |
| | | crown proliferate | | | | Xian Tao | 11 |
| **23. (*)** | | **Flower: diameter** | | | | | |
| **QN** | **(e)** | small (<14cm) | | | | Pan Zhong Qu Guo | 3 |
| | | medium (14-18cm) | | | | Luo Yang Hong | 5 |
| | | large (>18cm) | | | | Bai He Liang Chi, Xian Tao | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **24.** | | **Only varieties with crown and proliferate form: Flower: height** | | | | | |
| **QN** | **(e)** | short (<8cm) | | | | Dou Lv | 3 |
| | | medium (8-10cm) | | | | Shou An Hong | 5 |
| | | tall (>10cm) | | | | Zi Rong Qiu | 7 |
| **25. (*)** | | **Flower: main color: double color** | | | | | |
| **QL** | **(e)** | absent | | | | Luo Yang Hong | 1 |
| | | present | | | | Hua Er Qian, Shima-nishiki | 9 |
| **26. (*)** | | **Only varieties with double color: Flower: color** | | | | | |
| **PQ** | **(e)** | color 1: RHS Colour Chart (indicate reference number） | | | | | |
| | | color 2: RHS Colour Chart (indicate reference number) | | | | | |
| **27. (*)** | | **Flower: main color** | | | | | |
| **PQ** | **(e)** | RHS Colour Chart (indicate reference number) | | | | | |
| **28. (*)** | | **Flower: blotch at the base of petals** | | | | | |
| **QL** | **(e)** | absent | | | | Zhao Fen | 1 |
| | | present | | | | Luo Yang Hong | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **29. (*)** | | **Only varieties without blotches at the base of petals: Flower: suffusion at base** | | | | | |
| **QL** | **(e)** | absent | | | | Renkaku | 1 |
| | | present | | | | ZhaoFen | 9 |
| **30.** | | **Only varieties with suffusion at the base of petals: Flower** | | | | | |
| **PQ** | **(e)** | red or pink | | | | Teni, Zhao Fen | 1 |
| | | purple red | | | | Hong Xia, Jiu Zui Yang Fei | 2 |
| | | dark purple | | | | Yan Long Zi Zhu Pan | 3 |
| **31. (+)** | | **Only varieties with blotches at the base of petals: Flower: shape of blotches** | | | | | |
| **PQ** | **(e)** | ´`V´-shaped | | | | Wu Xing Yu | 1 |
| | | triangle | | | | Wu Long Peng Sheng | 2 |
| | | elliptic | | | | Xue Hai Ying Zhen | 3 |
| | | trullate | | | | Huo lian Jin Dan | 4 |
| | | linear | | | | Ru Hua Si Yu | 5 |
| **32.** | | **Only varieties with blotches at the base of petals: Flower: color of blotches** | | | | | |
| **PQ** | **(e)** | 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 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **33.** | | **Flower: incision of petal top** | | | | | |
| **PQ** | **(e)** | weak | | | | Cong Zhong Xiao | 3 |
| | | medium | | | | Hu Hong | 5 |
| | | strong | | | | Mo Chi Ying Yue, Zhao Zi | 7 |
| **34.** **(+)** | | **Only varieties with crown and proliferate form: Flower: shape of outer petals** | | | | | |
| **PQ** | **(e)** | circular | | | | | 1 |
| | | obovate | | | | | 2 |
| | | broad obovate | | | | | 3 |
| **35.** | | **Only varieties with crown and proliferate form: Flower: whorls of outer petals** | | | | | |
| **QN** | **(e)** | 1-2 | | | | Jin Yu | |
| | | >2 | | | | Kun Shan Ye Guang | |
| **36.** **(*)** | | **Flower: stamen: amount of petaloid stamens** | | | | | |
| **QN** | **(e)** | absent | | | | Renkaku | 1 |
| | | (<20%）few | | | | Yu Ban Bai | 2 |
| | | (<20-95%) part | | | | Luo Yang Hong | 3 |
| | | (>95%) whole | | | | Kun ShanYe Guang | 4 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **37.** | | **Flower: stamen: main color of filaments** | | | | | |
| **PQ** | **(e)** | white | | | | Renkaku | 1 |
| | | pale yellow | | | | Xue Lian | 2 |
| | | pink | | | | Zhao Fen | 3 |
| | | purple | | | | Luo Yang Hong | 4 |
| | | | | | | Yan Long Zi Zhu Pan | 5 |
| **38.** **(+)** | | **Flower: stamen: anthers bearing on petaloid filaments** | | | | | |
| **PQ** | **(e)** | absent or very weak | | | | Shou An Hong | 1 |
| | | strong | | | | Jin Xin Xue Lang | 3 |
| **39.** **(+)** | | **Flower: stamen: shape of petaloid stamen** | | | | | |
| **QL** | **(e)** | oblong/oblanceolate | | | | Yin Si Guan Ding | |
| | | not oblong/ oblanceolate | | | | Shou An Hong | |
| **40.** | | **Flower: stamen: color of petaloid stamen** | | | | | |
| **QL** | **(e)** | same as original/outer petals | | | | Shou An Hong | 1 |
| | | different from original/outer petals | | | | Tao Yang Jin | 2 |
| **41.** | | **Flower: pistil: amount** | | | | | |
| **QN** | **(e)** | <=3 | | | | Shou An Hong | 1 |
| | | 4-8 | | | | Zi Die Ying Feng | 2 |
| | | >8 | | | | Luo Yang Hong | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **42.** | | **Flower: pistil: color of stigma** | | | | | |
| **PQ** | **(e)** | pale yellow | | | | Renkaku, Yu Ban Bai, | 1 |
| | | pink | | | | Zhao Fen | 2 |
| | | purple red | | | | Luo Yang Hong | 3 |
| | | purple black or black | | | | Yan Long Zi Zhu Pan | 4 |
| **43.** **(*)** | | **Only varieties with petaloid pistil: Flower: pistil: petaloidying** | | | | | |
| **PQ** | **(e)** | only stigma | | | | Huang Jin Cui | 1 |
| | | partly petaloid | | | | Juan Ye Hong | 2 |
| | | completely petaloid | | | | Zi Hong Zheng Yan | 3 |
| | | deterioration | | | | Jin Yu | 4 |
| **44.** **(*)** | | **Only varieties with petaloid pistil: Flower: pistil: color of petaloid pistil** | | | | | |
| **PQ** | **(e)** | white | | | | Zhi Hong Zheng Yan | 1 |
| | | green | | | | Kun Shan Ye Guang | 2 |
| | | green and white | | | | Yan Zhi Dian Cui | 3 |
| | | green and red | | | | Wu Long Peng Sheng | 4 |
| | | similar to original petal | | | | Shou An Hong | 5 |
| **45.** **(+)** | | **Flower: pistil: state of carpel-enclosing disc** | | | | | |
| **QN** | **(e)** | weak/less than 20%, only enclosing at base | | | | Qing Long Wo Mo Chi, Zhi Hong | 3 |
| | | medium/partly | | | | Hu Hong, Yan Long Zi Zhu Pan, Zi Die Ying Feng | 5 |
| | | strong/totally or more than 80% | | | | Xue Hai Dan Xin | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **46.** | | **Flower: pistil: density of hair on carpels** | | | | | |
| **QL** | **(e)** | absent | | | | High Noon | 1 |
| | | sparse | | | | Xue Hai Ying zhen | 2 |
| | | dense | | | | Luo Yang Hong | 3 |
| **47.** | | **Flower: pistil: texture of disc** | | | | | |
| **PQ** | **(e)** | leathery /vaginate | | | | Luo Yang Hong | |
| | | medium | | | | | |
| | | succulent | | | | High Noon | |
| **48. (*)** | | **Flower: pistil: color of disc** | | | | | |
| **PQ** | **(e)** | light white | | | | Renkaku, Xue Lian | 1 |
| | | pink | | | | Zhao Fen | 2 |
| | | purple red | | | | Xue Hai Dan Xin | 3 |
| | | dark purple | | | | Yan Long Zi Zhu Pan | 4 |
| **49.** | | **Flower: angance** | | | | | |
| **QN** | **(e)** | weak | | | | Zhao Xia Ying Ri | 3 |
| | | medium | | | | Luo Yang Hong | 5 |
| | | strong | | | | Guan Qun Fang | 7 |
| **50.** | | **Flowering: more then 2 times of natural flowering within one y**ear | | | | | |
| **PQ** | **(e)** | absent | | | | Luo Yang Hong | 1 |
| | | present | | | | High Noon | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **51. (*)** | | **Flowering: time of beginning of flowering in spring** | | | | | |
| **QN** | **(e)** | early | | | | Huo Lian Jin Dan | |
| | | medium | | | | Luo Yang Hong | |
| | | late | | | | High Noon | |
| **52. (*) (+)** | | **Flowering: attitude** | | | | | |
| **PQ** | **(e)** | upward | | | | Kao | 1 |
| | | outward | | | | Rou Fu Rong | 2 |
| | | downward | | | | Dou Lv | 3 |
| **53.** | | **Flowering: position** | | | | | |
| **PQ** | **(e)** | within canopy | | | | Cang Zhi Hong | 3 |
| | | as same level | | | | Cong Zhong xiao | 5 |
| | | above canopy | | | | Kao | 7 |
| **54. (*)** | | **Flowering: flowering branches/branches** | | | | | |
| **QN** | **(e)** | few (<1/3) | | | | Wu Long Wo Mo chi | 3 |
| | | medium (1/3-2/3) | | | | Hanakisoi | 5 |
| | | many (>2/3) | | | | Kao | 7 |
| **55.** | | **Seeds:** | | | | | |
| **QN** | **(e)** | none or very few | | | | Shou An Hong | 3 |
| | | medium | | | | Taiyo | 5 |
| | | many | | | | Zhu Sha Lei | 7 |

## 8. Explanations on the Table of Characteristics

### *8.1 Explanations covering several characteristics*

(a) Plant: The observation of growth habit is better to be made during deciduous period, the height of it should be made during flowering period.
(b) Bud: Observations on the buds should be made on the first lateral bud on one-year old branch during the period after the leaves fallen and before first frost.
(c) Branch: Observations on the branch should exclude basal shoots, excluding character 8.
(d) Compound leaf: Observations on the compound should be made on the third and fourth fully developed leafs from the end in current year's branch in flowering period.
(e) Flower: The observation on the flower should be made on the top flower on the main branch. The shape of flower bud should be made on the period when it will show its color, other observations should be made in the period of full bloom.

### *8.2 Explanations for individual characteristics*

Ad.1: Plant: growth habit

1
upright

2
semi-spreading

3
spreading

Ad. 3: Bud: shape

1
ovoid

2
prolate

3
narrow prolate

4
prolate

Ad.7: Branch: color: 5-10cm new shoot

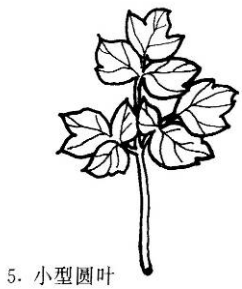


| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| yellow green | green | pink | purple red | brown red |

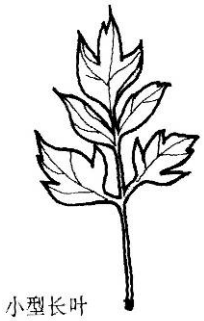
Ad. 8: Branch: color: color interrelation of young stalks, young stem and young leaves


| 1 | 9 |
|---|---|
| absent | present |

Ad.12: Compound leaf: type

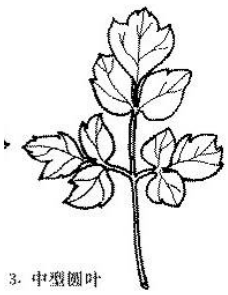



The total length is about 20-30cm and the width is less than 20cm, the leaflet is small, its shape is the same as other circular leaf.




The size and shape are similar to that of the small circular leaf. Its leaflet is also the same as other long leaf.

| 1 | 2 |
|---|---|
| small circular leaf | small long leaf |

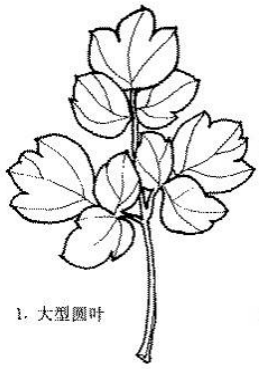



The size is intermediate, the total length between 30and 40cm and width of approximately 20-25cm.The leaflet is also an intermediate size, its other shapes are similar to those of large circular leaf.

3
middle-sized circular leaf

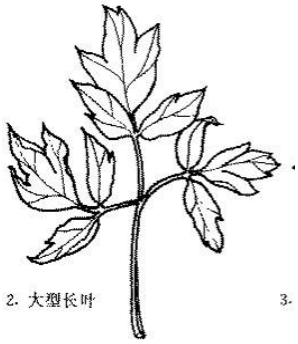

The size of it is the same of middle-sized circular leaf, while the shape of its leaflets is similar to that of the large long leaf, but with more and sharper incisions.

4
middle-sized long leaf




The size is the same as that of a large long leaf the leaflets are wide, roundish and fleshy and ovate or wider, the lateral leaflet is flat with fewer incision on its edge.

5
large circular leaf




Total length greater than 40cm and width greater than 25cm, the leaflets are long val, there are fewer but more tapering incision at the lateral edge.

6
large long leaf

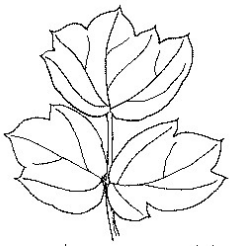
Ad.13: Compound leaf: attachment


1
right angle attachment (approximately 90°)

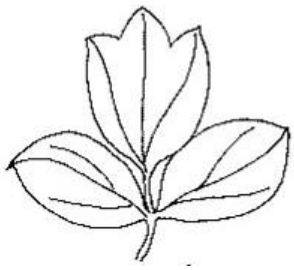

2
diagonal attachment (30°-50°)


3
diagonally upward attachment (< 30°)

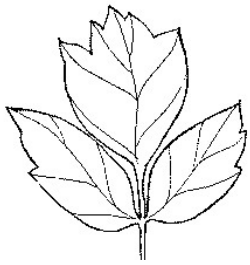
Ad.14: Compound leaf: shape of lateral leaflet



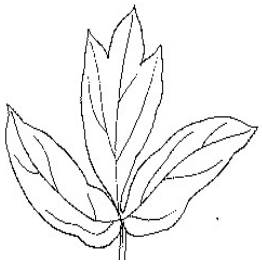
1
broad ovate



2
ovate



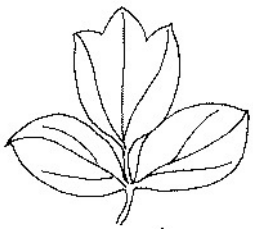
3
long ovate



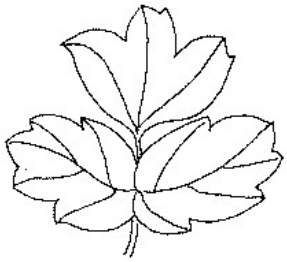
4
narrow ovate

5
lanceolate

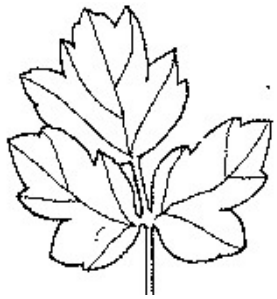
Ad. 15: Compound leaf: lobe of lateral leaflet



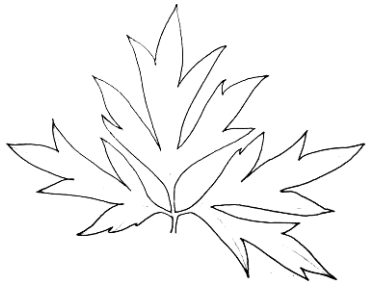
1
absent or very few



3
weak



5
medium



7
strong

Ad.19: Flower: flower bud: shape

1
obloid

2
globose

3
ovoid

4
long ovoid

Ad. 22**:** Flower: flower form

[to be updated]

1
single form

2
lotus form

3
chrysanthemum form

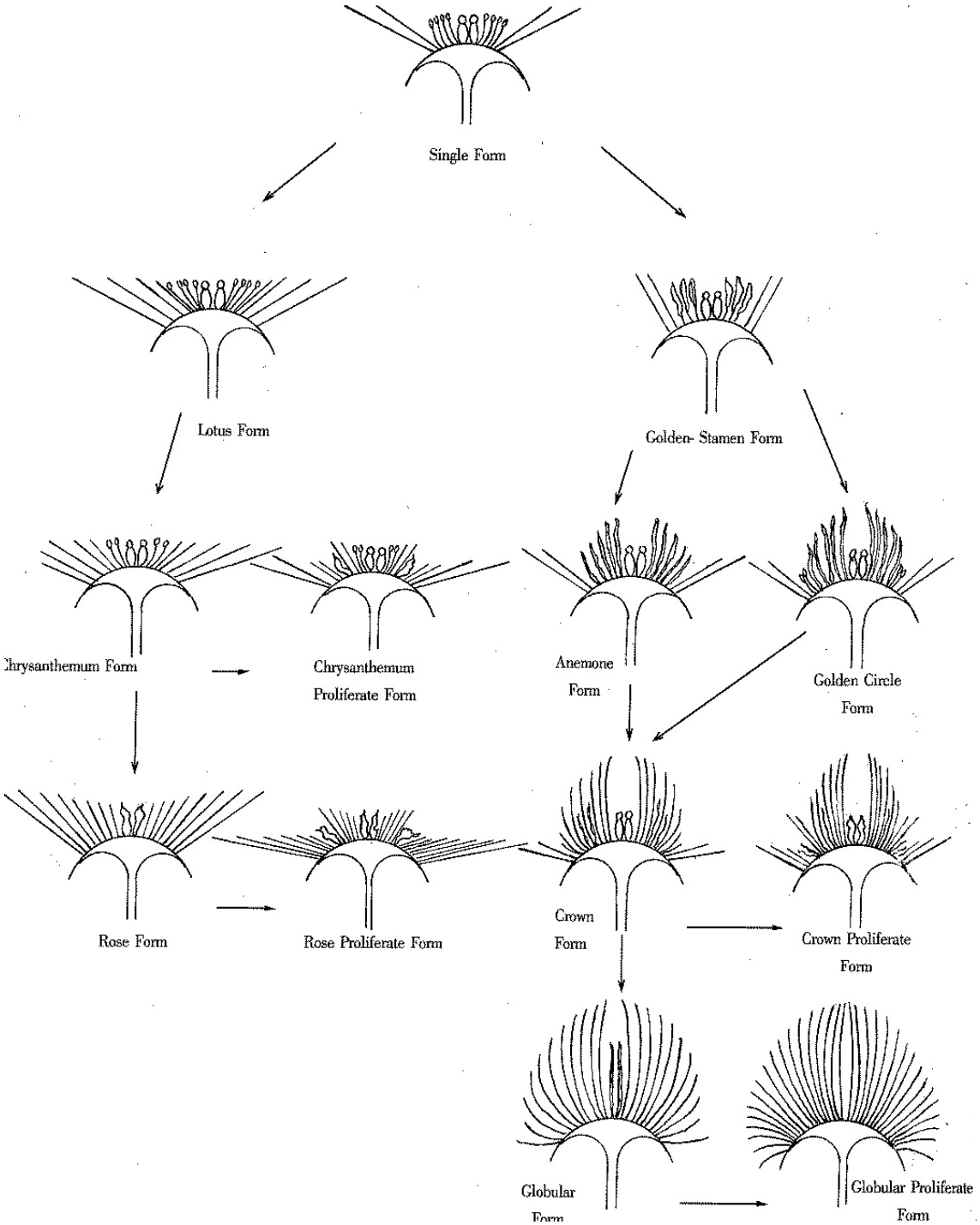
4
rose form

6
anemone

7
golden circle

8
crown

9
globular


Single Form
Lotus Form
Golden- Stamen Form
Chrysanthemum Form
Chrysanthemum Proliferate Form
Anemone Form
Golden Circle Form
Rose Form
Rose Proliferate Form
Crown Form
Crown Proliferate Form
Globular Form
Globular Proliferate Form

1
single form

6
anemone form

2
lotus form

8
crown form

3
chrysanthemum form

8
crown form

4
rose form

9
globular form

10
hundred proliferate form

11
crown proliferate form

Ad.31: Flower: Only varieties with blotches at the base of petals: shape of blotches



| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| V | triangle | elliptic | trullate | linear |

Ad. 34: Only varieties with crown and proliferate form: Flower: shape of outer petals

[to be provided]

Ad. 38: Flower: stamen: anthers bearing on petaloid filaments

1
absent or very weak

3
strong

Ad. 39: Flower: stamen: shape of petaloid stamen

1
oblong/oblanceolate

9
not oblong/ oblanceolate

Ad. 45: Flower: pistil: state of carpel-enclosing disc
Ad. 48: Flower: pistil color of disc


3
weak, less than 20%, only enclosing at base


5
medium/partly


7
strong/totally or more than 80%

Ad.52: Flowering: attitude

1
upright

2
outward

3
downward

## 9. Bibliography

[to be provided]

10. Technical Questionnaire

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

| | Application date:<br>(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* Andrews Sect. *Moutan* |
| 1.2 Common name | Tree paeony |

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)
(b) partially known cross [ ]
(please state known parent variety(ies))
(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)

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) grafted [ ]
(b) division [ ]
(c) other (state method) [ ]

4.2.2 Seed [ ]

4.2.3 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: |
|---|---|---|

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 (12)** | **Compound leaf: type** | | |
| | small circular leaf | Zhu Hong Jue Lun | 1[ ] |
| | small long leaf | Shan Hu Tai, Yin Luo Bao Zhu | 2[ ] |
| | middle-sized circular leaf | Cang Zhi Hong Kun Shan Ye Guang | 3[ ] |
| | middle-sized long leaf | Luo Yang Hong , Zi Mei You Chun | 4[ ] |
| | large circular leaf | Qing Long Wo Mo Chi Shou An Hong | 5[ ] |
| | large long leaf | Bing Ling Zhao Hong Shi, Gong Yang Zhuang | 6[ ] |
| **5.3 (15)** | **Compound leaf: lobe of lateral leaflet** | | |
| | absent or very few | Zui Xi Shi | 1[ ] |
| | weak | Zhao Fen | 3[ ] |
| | medium | Luo Yang Hong | 5[ ] |
| | strong | High Noon | 7[ ] |

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

**5.4 (22) Flower: flower 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 | | 5[ ] |
| anemone form | Yin Si Guan Ding | 6[ ] |
| golden circle form | Fen Mian Tao Hua | 7[ ] |
| crown form | Shou An Hong | 8[ ] |
| golbular form | Fen Yu Qiu | 9[ ] |
| hundred proliferate form | Jun Yan Hong | 10[ ] |
| crown proliferate form | Xian Tao | 11[ ] |

**5.5 (23) Flower: diameter**

| | | |
|---|---|---|
| small (<14cm) | Pan Zhong Qu Guo | 3[ ] |
| medium (14-18cm) | Luo Yang Hong | 5[ ] |
| large (>18cm) | Bai He Liang Chi, Xian Tao | 7[ ] |

**5.6 (25) Flower: main color:double color**

| | | |
|---|---|---|
| absent | Luo Yang Hong | 1[ ] |
| present | Hua Er Qian, Shima-nishiki | 9[ ] |

**5.7 (26) Flower: color: only varieties with double color**

color 1: RHS Colour Chart (indicate reference number)

color 2: RHS Colour Chart (indicate reference number)

**5.8 (27) Flower: main color**

RHS Colour Chart (indicate reference number)

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

| | | | |
|---|---|---|---|
| **5.9 (28)** | **Flower: blotch at the base of petals** | | |
| | absent | Zhao Fen | 1[ ] |
| | present | Luo Yang Hong | 9[ ] |
| **5.10 (29)** | **Flower:Only varieties without blotches at the base of petals: suffusion at base** | | |
| | absent | Renkaku | 1[ ] |
| | present | ZhaoFen | 9[ ] |
| **5.11 (36)** | **Flower:stamen: amount of petaloid stamens** | | |
| | absent | Renkaku | 1[ ] |
| | (<20%) few | Yu Ban Bai | 2[ ] |
| | (<20-95%) part | Luo Yang Hong | 3[ ] |
| | (>95%) whole | Kun ShanYe Guang | 4[ ] |
| **5.12** | **Flower: pistil: only varieties with petaloid pistil: petaloidying** | | |
| **(43)** | only stigma | Huang Jin Cui | 1[ ] |
| | partly petaloid | Juan Ye Hong | 2[ ] |
| | completely petaloid | Zi Hong Zheng Yan | 3[ ] |
| | deterioration | Jin Yu | 4[ ] |
| **5.13** | **Flower: pistil: only varieties with petaloid pistil: color of petaloid pistil** | | |
| **(44)** | white | Zhi Hong Zheng Yan | 1[ ] |
| | green | Kun Shan Ye Guang | 2[ ] |
| | green and white | Yan Zhi Dian Cui | 3[ ] |
| | green and red | Wu Long Peng Sheng | 4[ ] |
| | similar to original petal | Shou An Hong | 5[ ] |

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

| | | | |
|---|---|---|---|
| **5.14 (48)** | **Flower: pistil:color of disc** | | |
| | light white | Renkaku, Xue Lian | 1[ ] |
| | pink | Zhao Fen | 2[ ] |
| | purple red | Xue Hai Dan Xin | 3[ ] |
| | dark purple | Yan Long Zi Zhu Pan | 4[ ] |
| **5.15 (51)** | **Flowering: time of beginning of flowering in spring** | | |
| | early | Huo Lian Jin Dan | 3[ ] |
| | medium | Luo Yang Hong | 5[ ] |
| | late | High Noon | 7[ ] |
| **5.16 (52)** | **Flowering: attitude** | | |
| | upward | Kao | 1[ ] |
| | outward | Rou Fu Rong | 2[ ] |
| | downward | Dou Lv | 3[ ] |
| **5.17 (54)** | **Flowering: flowering branches/branches** | | |
| | few (<1/3) | Wu Long Wo Mo chi | 3[ ] |
| | midium (1/3-2/3) | Hanakisoi | 5[ ] |
| | many (>2/3) | Kao | 7[ ] |

| 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* | *Flower color* | *red* | *orange red* |
| | | | |
| | | | |
| | | | |

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: |
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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