TG/HOSTA(proj.5)
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UPOV

# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

**DRAFT**

**HOSTA**

UPOV Code: HOSTA

*Hosta* Tratt.

[*]

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*prepared by experts from the Netherlands*

*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* |
|---|---|---|---|---|
| *Hosta* Tratt. | Funkia, Hosta, Plantain Lily | Funkia, Hémérocalle du Japon | Funkie | Hosta |

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 *Hosta* Tratt..

## 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 two years old plants ready to flower and able to express all their characteristics in the first year of examination.

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

20 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*

The minimum duration of tests should normally be two 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.

3.3.2 Observation of color by eye

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 20 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 10 plants or parts taken from each of 10 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 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 20 plants, 1 off-type is allowed.

*4.3 Stability*

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

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

## 5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Leaf blade: shape (characteristic 11)
(b) Leaf blade: color 1 (characteristic (14)

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

## 6. Introduction to the Table of Characteristics

### *6.1 Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

### *6.2 States of Expression and Corresponding Notes*

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

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

| State | Note |
|---|---|
| small | 3 |
| medium | 5 |
| large | 7 |

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

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

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

*6.3 Types of Expression*

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

*6.4 Example Varieties*

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

*6.5 Legend*

(*) 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)-(d) 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 ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **1. (*) (+)** | | **Plant: color of first scaly leaves** | | | | | |
| **PQ** | **(a)** | green | | | | | 1 |
| **VG** | | purple | | | | | 2 |
| | | brown | | | | | 3 |
| **2. (*)** | **MG** | **Plant: height (inflorescence excluded)** | | | | | |
| **QN** | **(a)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | tall | | | | | 7 |
| **3.** | **MG** | **Plant: diameter** | | | | | |
| **QN** | **(a)** | very small | | | | H. sieboldii ‘Alba’, Pandora’s Box | 1 |
| | | small | | | | | 3 |
| | | medium | | | | | 5 |
| | | large | | | | | 7 |
| | | very large | | | | Big Boy | 9 |
| **4. (*)** | **MG** | **Petiole: length** | | | | | |
| **QN** | **(a)** | very short | | | | | 1 |
| | | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| | | very long | | | | Big Boy, Flower Power, Green Acres | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **5.** | **VG** | **Petiole: shape in cross-section** | | | | | |
| **PQ** | **(a)** | flat | | | | H. sieboldii 'Alba', Peter Pan | 1 |
| | | V-shape | | | | H. kiyosumiensis | 2 |
| | | U-shape | | | | June, Red Oktober | 3 |
| **6.** | **VG** | **Petiole: color** | | | | | |
| **PQ** | **(a)** | yellow | | | | | 1 |
| | | yellow green | | | | | 2 |
| | | light green | | | | | 3 |
| | | medium green | | | | | 4 |
| | | dark green | | | | | 5 |
| | | blue green | | | | | 6 |
| | | blue grey | | | | | 7 |
| **7.** | **VG** | **Petiole: distribution of anthocyanin coloration** | | | | | |
| **PQ** | **(a)** | none | | | | | 1 |
| | | flush | | | | | 2 |
| | | spotted | | | | | 3 |
| **8. (*)** | **MG** | **Leaf blade: length** | | | | | |
| **QN** | **(a)** | very short | | | | Tardiflora | 1 |
| | | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| | | very long | | | | Big Boy | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **9. (*)** | **MG** | **Leaf blade: width** | | | | | |
| **QN** | **(a)** | very narrow | | | | Tardiflora | 1 |
| | | narrow | | | | | 3 |
| | | medium | | | | | 5 |
| | | broad | | | | | 7 |
| | | very broad | | | | Sum and Substance, Big Boy | 9 |
| **10.** | **VG** | **Leaf blade: position of the broadest part** | | | | | |
| **QN** | **(a)** | in the middle | | | | | 1 |
| | | slightly towards base | | | | | 2 |
| | | moderately towards base | | | | | 3 |
| | | strongly towards base | | | | | 4 |
| **11. (*) (+)** | **VG** | **Leaf blade: shape** | | | | | |
| **PQ** | **(a)** | very narrow oblong (linear) | | | | | 1 |
| | | very narrow ovate (lanceolate) | | | | Stiletto | 2 |
| | | narrow ovate | | | | | 3 |
| | | medium ovate | | | | Sagae | 4 |
| | | broad ovate | | | | Sum and Substance | 5 |
| | | round | | | | Abiqua Drinking Gourd | 6 |
| | | narrow elliptic | | | | Saishu Jima | 7 |
| | | medium elliptic | | | | Pineapple poll | 8 |
| | | broad elliptic | | | | | 9 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **12. (*) (+)** | **VG** | **Leaf blade: shape of base** | | | | | |
| **PQ** | **(a)** | attenuate | | | | Saishu Jima, Sea Octopus | 1 |
| | | cuneate | | | | Hoosier Harmony | 2 |
| | | truncate | | | | H. nakaiana | 3 |
| | | cordate | | | | Minnie Klopping, Pacific Blue Edger | 4 |
| **13. (+)** | **VG** | **Leaf blade: shape of apex (excluding tip)** | | | | | |
| **PQ** | **(a)** | acute | | | | Otome-no-ka | 1 |
| | | obtuse | | | | Oriana | 2 |
| | | rounded | | | | Great Expectations, Tokudama Aureonebulosa | 3 |
| **14. (*)** | | **Leaf blade: color 1** | | | | | |
| **PQ** | **(a)** | RHS Colour Chart (indicate reference number) | | | | | |
| | **(b)** | | | | | | |
| **15.** | **VG** | **Leaf blade: area of color 1 as a proportion of the total leaf area** | | | | | |
| **QN** | **(a)** | small | | | | | 3 |
| | | medium | | | | | 5 |
| | | large | | | | | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **16.** | **VG** | **Leaf blade: distribution of color 1** | | | | | |
| **PQ** | **(a)** | at base | | | | | 1 |
| | | at centre | | | | | 2 |
| | | at top | | | | | 3 |
| | | at margin | | | | | 4 |
| | | scattered | | | | | 5 |
| **17.** **(+)** | **VG** | **Leaf blade: color pattern of color 1** | | | | | |
| **PQ** | **(a)** | equal | | | | | 1 |
| | | flamed | | | | June, Little Sun Spot | 2 |
| | | striped | | | | H. sieboldiana ‘Thunderbolt’, On stage, Spilt Milk | 3 |
| | | spotted | | | | Kiwi Forest | 4 |
| | | in sectors | | | | Pin Stripe Sister | 5 |
| | | marbled | | | | H. sieboldiana ‘Northern Mist’, Striptease | 6 |
| | | marginated | | | | | 7 |
| **18.** **(*)** | **VG** | **Leaf blade: color 2** | | | | | |
| **PQ** | **(a)** **(b)** | RHS Colour Chart (indicate reference number) | | | | | |
| **19.** | **VG** | **Leaf blade: area of color 2 as a proportion of the total leaf area** | | | | | |
| **QN** | **(a)** | small | | | | | |
| | | medium | | | | | |
| | | large | | | | | |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **20.** | **VG** | **Leaf blade: distribution of color 2** | | | | | |
| **PQ** | **(a)** | at base | | | | | 1 |
| | | at centre | | | | | 2 |
| | | at top | | | | | 3 |
| | | at margin | | | | | 4 |
| | | scattered | | | | | 5 |
| **21.** **(+)** | **VG** | **Leaf blade: color pattern of color 2** | | | | | |
| **PQ** | **(a)** | flamed | | | | June, Little Sun Spot | 1 |
| | | striped | | | | H. sieboldiana ‘Thunderbolt’, On stage, Spilt Milk | 2 |
| | | spotted | | | | Kiwi Forest | 3 |
| | | in sectors | | | | Pin Stripe Sister | 4 |
| | | marbled | | | | H. sieboldiana ‘Northern Mist’ | 5 |
| | | marginated | | | | | 6 |
| **22.** **(*)** | **VG** | **Leaf blade: color 3** | | | | | |
| **PQ** | **(a)** | RHS Colour Chart (indicate reference number) | | | | | |
| | **(b)** | | | | | | |
| **23.** | **VG** | **Leaf blade: area of color 3 as a proportion of the total leaf area** | | | | | |
| **QN** | **(a)** | small | | | | | 3 |
| | | medium | | | | | 5 |
| | | large | | | | | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **24.** | **VG** | **Leaf blade: distribution of color 3** | | | | | |
| **PQ** | **(a)** | at base | | | | | 1 |
| | | at centre | | | | | 2 |
| | | at top | | | | | 3 |
| | | at margin | | | | | 4 |
| | | scattered | | | | | 5 |
| **25.** **(+)** | **VG** | **Leaf blade: color pattern of color 3** | | | | | |
| **PQ** | **(a)** | flamed | | | | June, Little Sun Spot | 1 |
| | | striped | | | | H. sieboldiana ‘Thunderbolt’, On stage, Spilt Milk | 2 |
| | | spotted | | | | Kiwi Forest | 3 |
| | | in sectors | | | | Pin Stripe Sister | 4 |
| | | marbled | | | | H. sieboldiana ‘Northern Mist’, Striptease | 5 |
| | | marginated | | | | | 6 |
| **26.** **(*)** | **VG** | **Leaf blade: color 4** | | | | | |
| **PQ** | **(a)** **(b)** | RHS Colour Chart (indicate reference number) | | | | | |
| **27.** | **VG** | **Leaf blade: area of color 4 as a proportion of the total leaf area** | | | | | |
| **QN** | **(a)** | small | | | | | 3 |
| | | medium | | | | | 5 |
| | | large | | | | | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **28.** | **VG** | **Leaf blade: distribution of color 4** | | | | | |
| **PQ** | **(a)** | at base | | | | | 1 |
| | | at centre | | | | | 2 |
| | | at top | | | | | 3 |
| | | at margin | | | | | 4 |
| | | scattered | | | | | 5 |
| **29.** **(+)** | **VG** | **Leaf blade: color pattern of color 4** | | | | | |
| **PQ** | **(a)** | flamed | | | | June, Little Sun Spot | 1 |
| | | striped | | | | H. sieboldiana ‘Thunderbolt’, On stage, Spilt Milk | 2 |
| | | spotted | | | | Kiwi Forest | 3 |
| | | in sectors | | | | Pin Stripe Sister | 4 |
| | | marbled | | | | H. sieboldiana ‘Northern Mist’, Striptease | 5 |
| | | marginated | | | | | 6 |
| **30.** **(*)** | **VG** | **Leaf blade: color 5** | | | | | |
| **PQ** | **(a)** | RHS Colour Chart (indicate reference number) | | | | | |
| | **(b)** | | | | | | |
| **31.** | **VG** | **Leaf blade: area of color 5 as a proportion of the total leaf area** | | | | | |
| **QN** | **(a)** | small | | | | | 3 |
| | | medium | | | | | 5 |
| | | large | | | | | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **32.** | **VG** | **Leaf blade: distribution of color 5** | | | | | |
| **PQ** | **(a)** | at base | | | | | 1 |
| | | at centre | | | | | 2 |
| | | at top | | | | | 3 |
| | | at margin | | | | | 4 |
| | | scattered | | | | | 5 |
| **33.** | **VG** | **Leaf blade: color pattern of color 5** | | | | | |
| **(+)** | | | | | | | |
| **PQ** | **(a)** | flamed | | | | June, Little Sun Spot | 1 |
| | | striped | | | | H. sieboldiana ‘Thunderbolt’, On stage, Spilt Milk | 2 |
| | | spotted | | | | Kiwi Forest | 3 |
| | | in sectors | | | | Pin Stripe Sister | 4 |
| | | marbled | | | | H. sieboldiana ‘Northern Mist’, Striptease | 5 |
| | | marginated | | | | | 6 |
| **34.** | **VG** | **Leaf blade: cross section** | | | | | |
| **QN** | **(a)** | convex | | | | Big Daddy | 1 |
| | | flat | | | | | 2 |
| | | shallow concave | | | | | 3 |
| | | deeply concave | | | | Love Pat | 4 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **35.** **(+)** | **VG** | **Leaf blade: number of parallel veins** | | | | | |
| **QN** | **(a)** | few | | | | Sum and Substance | 3 |
| | | medium | | | | | 5 |
| | | many | | | | Finlandia | 7 |
| **36.** **(+)** | **VG** | **Leaf blade: degree of bulging** | | | | | |
| **QN** | **(a)** | absent or very weak | | | | Peter Pan | 1 |
| | | weak | | | | | 3 |
| | | medium | | | | | 5 |
| | | strong | | | | | 7 |
| | | very strong | | | | | 9 |
| **37.** **(+)** | **VG** | **Leaf blade: degree of blistering** | | | | | |
| **QN** | **(a)** | absent or weak | | | | | 1 |
| | | medium | | | | Sea Dream | 2 |
| | | strong | | | | Midas Touch | 3 |
| **38.** **(+)** | **VG** | **Leaf blade: undulation of margin** | | | | | |
| **QN** | **(a)** | absent or weak | | | | Silvery Slugproof | 1 |
| | | medium | | | | | 2 |
| | | strong | | | | Sparky | 3 |
| **39.** | **VG** | **Leaf blade: twisting** | | | | | |
| **QL** | **(a)** | absent or weak | | | | | 1 |
| | | moderate | | | | | 2 |
| | | strong | | | | Green Power | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **40.** | **MG** | **Inflorescence: length** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(d)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **41.** | **MG** | **Inflorescence: number of flowers** | | | | | |
| **QN** | **(d)** | few | | | | | 3 |
| | | medium | | | | | 5 |
| | | many | | | | | 7 |
| **42.** | **VG** | **Inflorescence: attitude of flowers** | | | | | |
| **QN** | **(c)** | erect | | | | | 1 |
| | | horizontal | | | | | 2 |
| | | drooping | | | | | 3 |
| **43.** | **VG** | **Peduncle: color** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |
| **44.** | **VG** | **Inflorescence: presence of bract** | | | | | |
| **QL** | **(c)** | absent | | | | | 1 |
| | | present | | | | | 9 |
| **45.** | **MG** | **Bract: length** | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **46.** | **MG** | **Bract: width** | | | | | |
| **QN** | **(c)** | narrow | | | | | 3 |
| | | medium | | | | | 5 |
| | | broad | | | | | 7 |
| **47.** | **VG** | **Bract: cross-section** | | | | | |
| **QN** | **(c)** | concave | | | | | 1 |
| | | flat | | | | | 2 |
| | | convex | | | | | 3 |
| **48.** | **VG** | **Bract: color** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |
| **49.** | **MG** | **Pedicel: length** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **50.** | **VG** | **Pedicel: color** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |
| **51.** | **VG** | **Flower: type** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | single | | | | | 1 |
| | | semi-double | | | | | 2 |
| | | double | | | | | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **52.** | **MG** | **Perianth: length** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **53.** | **MG** | **Perianth: width** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | narrow | | | | | 3 |
| | | medium | | | | | 5 |
| | | broad | | | | | 7 |
| **54.** | **VG** | **Perianth: shape in side-view** | | | | | |
| **(+)** | | | | | | | |
| **PQ** | **(c)** | tubular | | | | | 1 |
| | | flared | | | | | 2 |
| | | funnel | | | | | 3 |
| | | campanulate | | | | | 4 |
| **55.** | **MG** | **Tube: length** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **56.** | **VG** | **Tube: color of outer side** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **57.** **(+)** | **MG** | **Corolla: length of outer lobes** | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **58.** | **VG** | **Corolla: shape of outer lobes** | | | | | |
| **PQ** | **(c)** | very narrow ovate (lanceolate) | | | | | 1 |
| | | narrow ovate | | | | | 2 |
| | | medium ovate | | | | | 3 |
| | | broad ovate | | | | | 4 |
| | | round | | | | | 5 |
| | | narrow elliptic | | | | | 6 |
| | | medium elliptic | | | | | 7 |
| | | broad elliptic | | | | | 8 |
| **59.** **(*)** | **VG** | **Corolla: color on outer side of outer lobes** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |
| **60.** | **VG** | **Corolla: shape of apex of outer lobes** | | | | | |
| **PQ** | **(c)** | acute | | | | | 1 |
| | | obtuse | | | | | 2 |
| | | rounded | | | | | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **61.** | **MG** | **Corolla: length of inner lobes** | | | | | |
| **(+)** | | | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **62.** | **VG** | **Corolla: shape of inner lobes** | | | | | |
| **PQ** | **(c)** | very narrow ovate (lanceolate) | | | | | 1 |
| | | narrow ovate | | | | | 2 |
| | | medium ovate | | | | | 3 |
| | | broad ovate | | | | | 4 |
| | | round | | | | | 5 |
| | | narrow elliptic | | | | | 6 |
| | | medium elliptic | | | | | 7 |
| | | broad elliptic | | | | | 8 |
| **63.** | **VG** | **Corolla: color on outer side of inner lobes** | | | | | |
| **PQ** | **(c)** | RHS Colour Chart (indicate reference number) | | | | | |
| **64.** | **VG** | **Corolla: shape of apex of inner lobes** | | | | | |
| **PQ** | **(c)** | acute | | | | | 1 |
| | | obtuse | | | | | 2 |
| | | rounded | | | | | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **65.** | **MG** | **Filament: length** | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **66.** | **VG** | **Filament: color** | | | | | |
| **PQ** | **(c)** | white or whitish | | | | | 1 |
| | | light green | | | | | 2 |
| | | medium green | | | | | 3 |
| **67.** | **VG** | **Anther: color** | | | | | |
| **PQ** | **(c)** | yellow | | | | | 1 |
| | | yellow with purple | | | | | 2 |
| | | purple | | | | | 3 |
| | | brown purple | | | | | 4 |
| **68.** | **MG** | **Style: length** | | | | | |
| **QN** | **(c)** | short | | | | | 3 |
| | | medium | | | | | 5 |
| | | long | | | | | 7 |
| **69.** | **VG** | **Style: color** | | | | | |
| **PQ** | **(c)** | white or whitish | | | | | 1 |
| | | light green | | | | | 2 |
| | | medium green | | | | | 3 |

| | | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplos | Note/ Nota |
|---|---|---|---|---|---|---|---|
| **70.** | **VG** | **Style: color of stigma** | | | | | |
| **PQ** | **(c)** | white or whitish | | | | | 1 |
| | | light green | | | | | 2 |
| | | medium green | | | | | 3 |
| | | light yellow | | | | | 4 |
| | | light purple | | | | | 5 |
| | | light violet blue | | | | | 6 |
| **71.** | **VG** | **Pollen: color** | | | | | |
| **PQ** | **(c)** | medium yellow | | | | | 1 |
| | | dark yellow | | | | | 2 |
| | | yellow orange | | | | | 3 |
| | | orange | | | | | 4 |

## 8. Explanations on the Table of Characteristics

### *8.1 Explanations covering several characteristics*

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

(a) Plant, petiole and leaf characteristics should be observed before flowering.
(b) The order of colors should follow the RHS Colour Chart: color 1 is the color with the lowest RHS Colour Chart number; color 2 is the second lowest RHS Colour Chart number; color 3 is the third lowest….. etc.
(c) Characteristics of the inflorescence should be observed when first flowers are open.
(d) Length of peduncle should be observed when all flowers are open.

Characteristics on the bract should be observed on the bract of the first flower (when present).

### *8.2 Explanations for individual characteristics*

Ad. 1: Plant: color of first scaly leaves

Plant shoot: color of the first scaly leaves: Characteristic should be observed at the moment the first shoots emerge and before opening.

Ad. 11: Leaf blade: shape

1
very narrow oblong (linear)

3
narrow ovate

4
medium ovate

5
broad ovate

6
round

8
medium elliptic

Ad. 12: Leaf blade: shape of base

1
attenuate

2
cuneate

3
truncate

4
cordate

Ad. 13: Leaf blade: shape of apex (excluding tip)

1
acute

2
obtuse

3
rounded

Ad. 17: Leaf blade: color pattern of color 1
Ad. 21: Leaf blade: color pattern of color 2
Ad. 25: Leaf blade: color pattern of color 3
Ad. 29: Leaf blade: color pattern of color 4
Ad. 33: Leaf blade: color pattern of color 5

1
flamed

2
striped

3
spotted

4
in sectors

5
marbled

6
marginated

Ad. 35: Leaf blade: number of parallel veins

3
few

7
many

Ad. 36: Leaf blade: degree of bulging

1
absent or very weak

9
very strong

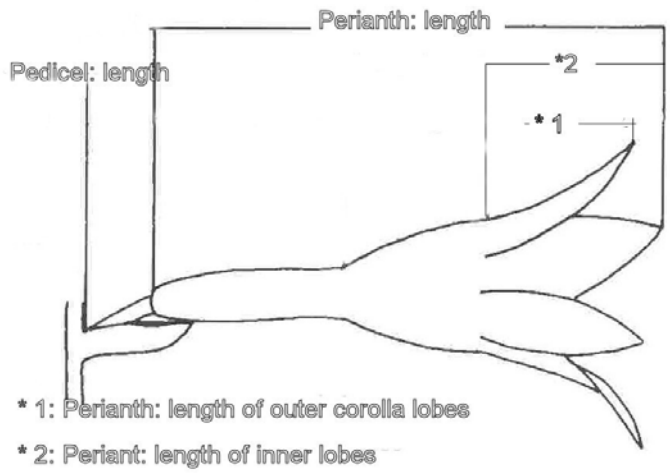
Ad. 37: Leaf blade: degree of blistering

1
absent or very weak

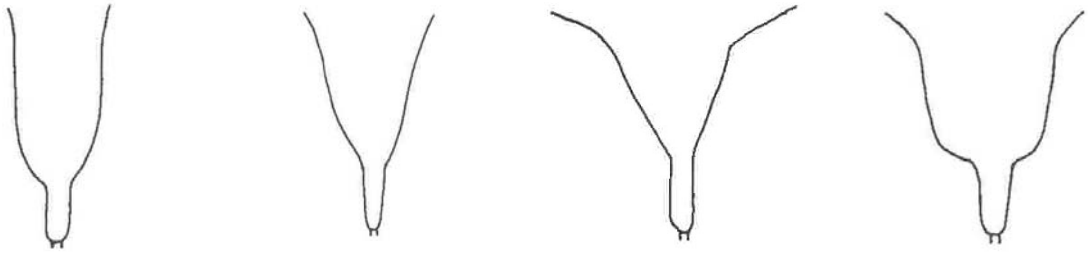
2
medium

3
strong

Ad. 49: Pedicel: length
Ad. 52: Perianth: length
Ad. 53: Perianth: width
Ad. 55: Tube: length
Ad. 57: Corolla: length of outer lobes
Ad. 61: Corolla: length of inner lobes



Ad. 54: Perianth: shape in side view



| 1 | 2 | 3 | 4 |
|---|---|---|---|
| tubular | flared | funnel | campanulate |

## 9. Literature

Grenfell, D., Shadrack, M., 2004: The color encyclopedia of Hosta's. Timber Press, Inc.. Cambridge, GB, ISBN 0-88192-618-3

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 | *Hosta* Tratt. |
| 1.2 Common name | Hosta |

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 discoveredand how developed)

4.1.4 Other [ ]
(please provide details)

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

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

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 Seed [ ]

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 (2)** | **Plant: height (inflorescence excluded)** | | |
| | very short | | 1[ ] |
| | very short or short | | 2[ ] |
| | short | | 3[ ] |
| | short to medium | | 4[ ] |
| | medium | | 5[ ] |
| | medium to tall | | 6[ ] |
| | tall | | 7[ ] |
| | tall to very tall | | 8[ ] |
| | very tall | | 9[ ] |
| **5.4 (11)** | **Leaf blade: shape** | | |
| | very narrow oblong (linear) | | 1[ ] |
| | very narrow ovate (lanceolate) | Stiletto | 2[ ] |
| | narrow ovate | | 3[ ] |
| | medium ovate | Sagae | 4[ ] |
| | broad ovate | Sum and Substance | 5[ ] |
| | round | Abiqua Drinking Gourd | 6[ ] |
| | narrow elliptic | Saishu Jima | 7[ ] |
| | medium elliptic | Pineapple poll | 8[ ] |
| | broad elliptic | | 9[ ] |

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

**5.2 (13) Leaf blade: variegation**

| | |
|---|---|
| absent | 1 [ ] |
| present | 9 [ ] |

**5.3 (14) Leaf blade: pattern of variegation**

| | |
|---|---|
| flamed | 1 [ ] |
| striped | 2 [ ] |
| spotted | 3 [ ] |
| sectors | 4 [ ] |
| marbled | 5 [ ] |
| streaked | 6 [ ] |

| 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* | *orange* | *orange red* |
| *to be completed* | | | |
| | | | |
| | | | |

Comments:

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

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

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

Yes [ ] No [ ]

(If yes, please provide details)

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

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

A representative color photograph of the variety 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”.

……

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]