nak tuinbouw

NARO 農研機構
National Agriculture and Food Research Organization

CALIBRATION MANUAL

Harmonized with

Naktuinbouw and NCSS(/NARO)

DUS Test for Dianthus

Dianthus L.

Established in November 21, 2017

Comply with UPOV TG/25/9

CALIBRATION MANUAL
DUS Test for Dianthus

Contents

1. Purpose

This Calibration Manual was established by collaborative activities between Naktuinbouw (Netherlands) and NCSS (/NARO) (Japan).
The purpose of this Calibration Manual is to harmonize technique of DUS examination in the two countries and use it also internationally.

2. Use of this Calibration Manual

This Calibration Manual indicates only methods of observation for morphological characteristics included in UPOV Test Guidelines.

3. Growth types of varieties

Cut flower types (C)

In general varieties bred as cut flower have the following features:

・ not very tolerant to low temperatures: heated greenhouses required for good crop development in temperate zones;

・ to grow the varieties properly, sufficient support (horizontal nets) need to be provided

spray (Cs) and one flower per stem (Co)

・Breeding is done in a limited gene pool.

・in varieties bred to be grown as one flower per stem carnation, the lateral flower heads or lateral shoots (if existing) are removed at an early stage to leave just the terminal flower head

umbrella (D. barbatus) (Cu)

・All types of varieties belong to D. barbatus

・produce clusters of flowers

Garden types (G)

Breeding is done in a rather large gene pool, in most cases much broader and different from other types.

In general varieties bred as Garden types have the following features:

・ tolerant to lower temperatures in general;

・ plants with limited plant height;

・ all flower types (single and double) can be seen in garden types;

Pot types (P)

Breeding is mainly done in a gene pool which is different from garden types.

In general varieties bred as Pot types have the following features:

- not very tolerant to low temperatures: heated greenhouses required for good crop development in temperate zones;
- concern only types produced in greenhouses or other sheltered conditions;
- plants with limited plant height;
- nearly always have double flowers.

4. Grouping characteristics:

The following have been agreed as useful grouping characteristics:

Only for pot and garden types:

(a) Plant: height (characteristic 2)

(b) Plant: position of flowers compared to foliage (characteristic 4)

For all types (including pot and garden types):

(c) Flower: type (characteristic 37)

(d) Petal: main color (characteristic 50), with the following groups:

Gr. 1: white or near white

Gr. 2: green

Gr. 3: yellow

Gr. 4: orange

Gr. 5: pink

Gr. 6: medium red

Gr. 7: dark red

Gr. 8: violet red

Gr. 9: purple

Gr. 10: pink purple

Gr. 11: purple violet

Gr. 12: violet

Gr. 13: brownish

(e) Petal: secondary color (characteristic 51), with the following groups:

Gr. 1: none

Gr. 2: white or near white

Gr. 3: green

Gr. 4: yellow

Gr. 5: orange

Gr. 6: pink

Gr. 7: medium red

Gr. 8: dark red

Gr. 9: violet red

Gr. 10: purple

Gr. 11: pink purple

Gr. 12: purple violet

Gr. 13: violet

Gr. 14: brownish

(f) Petal: color pattern of secondary color, if present, with the following groups (combination of Characteristics 52 to 56):

1: marginated

2: striped

3: speckled

4: flushed

5: maculated

5. Disclaimer

The information contained in this Calibration Manual is for general information purposes only. The information is provided by Naktuinbouw and NCSS(/NARO) and while we endeavor to keep the information up to date and correct, we make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the

Calibration Manual or the information contained on the Calibration Manual for any purpose. Any reliance you place on such information is therefore strictly at your own risk.The images(char.18:Leaf:color, char.65:Stigma:color)serve only to illustrate the variation present in the varieties and should not be used as an absolute reference.

6. Method of Observation

Legend

Method of Observation

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.

Types of Expression of Characteristics

To enable the appropriate use of characteristics in DUS testing, it is important to understand the different ways in which characteristics can be expressed. The following section identifies the different types of expression and considers their application in DUS testing.

QL: Qualitative Characteristics

“Qualitative characteristics” are those that are expressed in discontinuous states (e.g. sex of plant: dioecious female (1), dioecious male (2), monoecious unisexual (3), monoecious hermaphrodite(4)). These states are self-explanatory and independently meaningful. All states are necessary to describe the full range of the characteristic, and every form of expression can be described by a single state. The order of states is not important. As a rule, the characteristics are not influenced by environment.

QN: Quantitative Characteristics

“Quantitative characteristics” are those where the expression covers the full range of variation from one extreme to the other. The expression can be recorded on a one-dimensional, continuous or discrete, linear scale. The range of expression is divided into a number of states for the purpose of description (e.g. length of stem: very short (1), short (3), medium (5), long (7), very long (9)). The division seeks to provide, as far as is practical, an even distribution across the scale. The Test Guidelines do not specify the difference needed for distinctness. The states of expression should, however, be meaningful for DUS assessment.

PQ: Pseudo-Qualitative Characteristics

In the case of “pseudo-qualitative characteristics,” the range of expression is at least partly continuous, but varies in more than one dimension (e.g. shape: ovate (1), elliptic (2), circular (3),obovate (4)) and cannot be adequately described by just defining two ends of a linear range. In a similar way to qualitative (discontinuous) characteristics – hence the term “pseudo-qualitative” – each individual state of expression needs to be identified to adequately describe the range of the characteristic.

(*) Asterisked characteristic

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.

(+) Explanations on the Table of Characteristics is indicated by TG/25/9,Chapter 8.2.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
1 (*) (+)	**[C] VG/ MS**	**Plant: length of stem**				
QN		short	Barmalyn (Cs), Hilbrequeen (Cu)	Barmalyn (Cs), Hilbrequeen (Cu)	Hilbrequeen (Cu)	3
		medium	Fire Queen (Cs), Hilbacer (Cs)	Fire Queen (Cs), Hilbacer (Cs)	Hilbacer(Cs)	5
		long	Fransesco (Co), White Giant (Co)	Fransesco (Co), White Giant (Co)	Fransesco (Co),	7

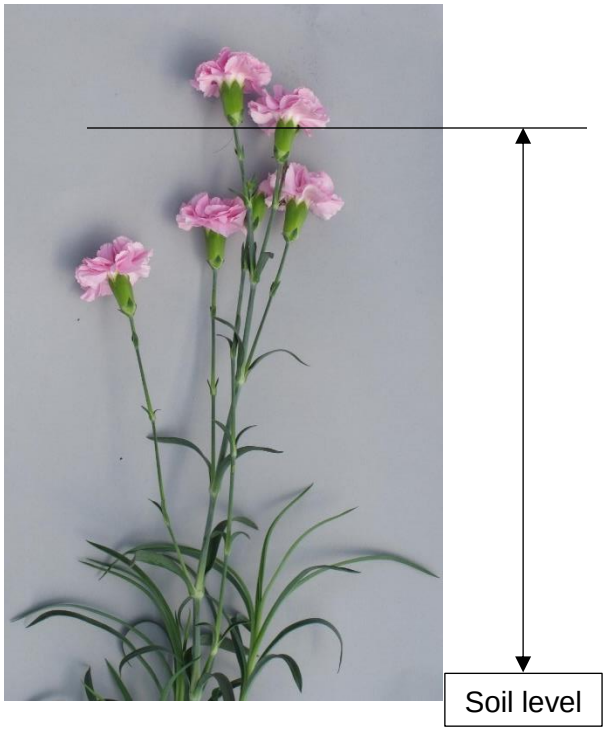
Remarks

Only to be examined in cut flower types.

Stage of observation: At the time of full flowering.

Method of observation: Length of stem should be observed from soil level to the top of a plant, excluding the flowers.

Assessment: VG: The length of a stem, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
2 (*) (+)	**[G] [P] VG/ MS**	**Plant: height**				
QN		short	Hiljoli (P), Shooting Star (G)	Hiljoli (P), Shooting Star (G)	, CFPC Mel (P) Shooting Star (G)	3
		medium	Houndspool Cheryl (G), WP08 IAN04 (G)	Houndspool Cheryl (G), WP08 IAN04 (G)		5
		tall	Devon Wizard (G)	Devon Wizard (G)		7

Remarks

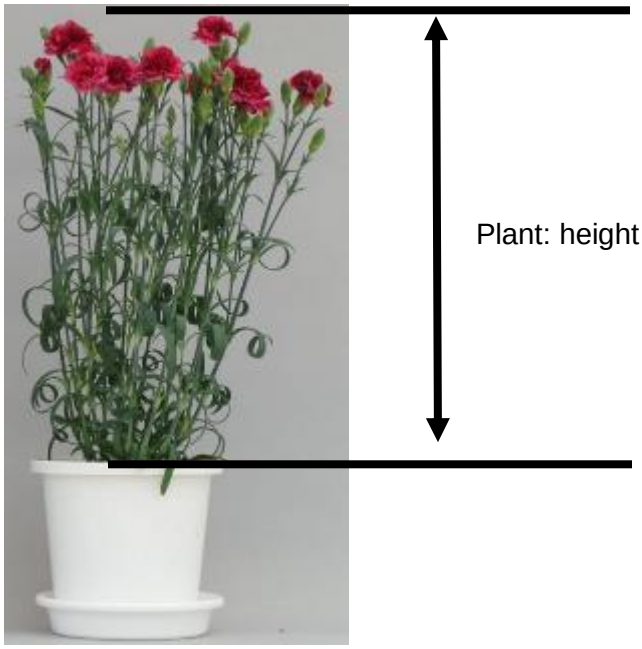
Only to be examined in garden and pot types.

Stage of observation: At the time of full flowering.

Method of observation: Plant height should be observed from soil level to the top of the plant, including the flowers.

Assessment: VG: The height of a plant, which represents the variety, is measured and converted into a note.(NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

Pot type



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
3 **(+)**	**[G] [P] VG**	**Plant: density**				
QN		sparse	Devon Wizard (G), Fontaine Darkred (P)	Devon Wizard (G), Fontaine Darkred (P)		1
		medium	Koviol (P), Waterloo Sunset (G)	Koviol (P), Waterloo Sunset (G)		2
		dense	Coral Reef (G), Hiljoli (P)	Coral Reef (G), Hiljoli (P)	Coral Reef (G),	3

Remarks

Only to be examined in garden and pot types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation. Plant density is a combination of the amount of branching and the number of leaves.





1. sparse

2. medium

3. dense

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
4 (*) (+)	**[G] [P] VG**	**Plant: position of flowers compared to foliage**				
QN		same level or slightly above	Coral Reef (G), Hiljoli (P)	Coral Reef (G), Hiljoli (P)	Coral Reef (G),	1
		moderately above	Houndspool Cheryl (G), Koviol (P)	Houndspool Cheryl (G), Koviol (P)		2
		far above	Waterloo Sunset (G)	Waterloo Sunset (G)		3

Remarks

Only to be examined in garden and pot types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

same level or slightly above

2.

moderately above

3.

far above

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
5 (+)	**[Cs] VG**	**Plant: laterals without flower buds or flowers**				
QL		absent	Hilboska (Cs)	Hilboska (Cs)	Hilboska (Cs)	1
		present	Martina (Cs)	Martina (Cs)	Hilbacer (Cs) Martina (Cs)	9

Remarks

Only to be examined in cut flower ‘spray’ types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

6. Method of observation (example of characterization)

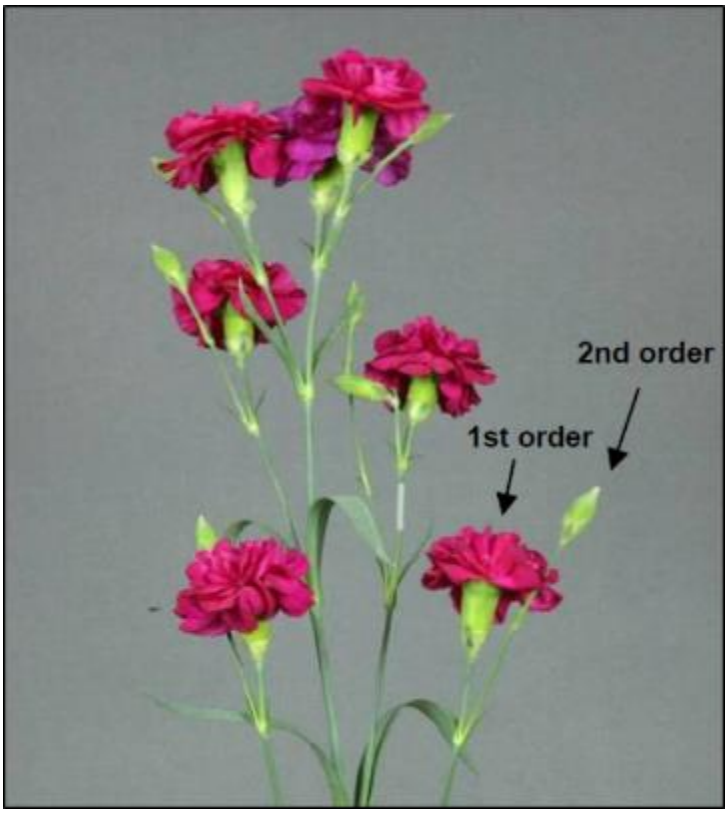
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
6 (*) (+)	**[Cs] VG**	**Plant: laterals with flower buds or flowers of second order**				
QN		absent or very few	Barnita (Cs)	Barnita (Cs)		1
		few	KLEDM10631 (Cs)	KLEDM10631 (Cs)		3
		medium	Barocior (Cs), Weslupe (Cs)	Barocior (Cs), Weslupe (Cs)	Barocior (Cs),	5
		many	KLEDM10629 (Cs)	KLEDM10629 (Cs)	Hilbacer (Cs)	7

Remarks

Only to be examined in cut flower ‘spray’ types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
7 (*) (+)	**[Cs] VG**	**Plant: flower clustering on lateral branches**				
QN		none	Barnita (Cs), Lekprewi (Cs)	Barnita (Cs), Lekprewi (Cs)		1
		in some lateral branches	Beam Cherry (Cs), Martina (Cs)	Beam Cherry (Cs), Martina (Cs)	Beam Cherry (Cs), Martina (Cs)	2
		in all lateral branches	Westcherry (Cs)	Westcherry (Cs)	Westcherry (Cs)	3

Remarks

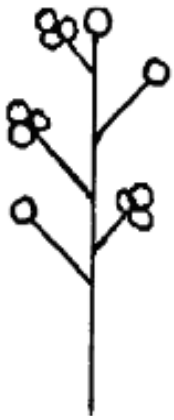
Only to be examined in cut flower ‘spray’ types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

none

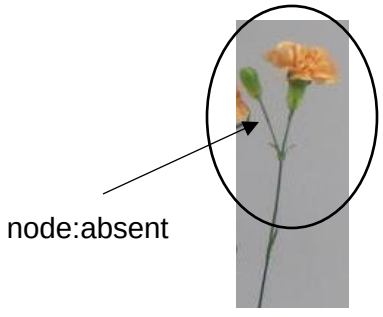


2.

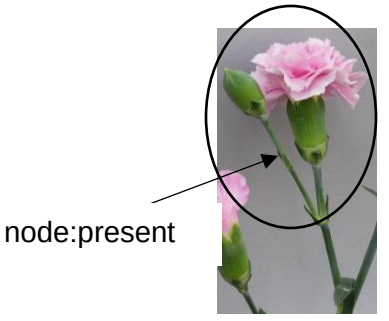
in some lateral branches

3.

in all lateral branches



clustering



no-clustering

6. Method of observation (example of characterization)

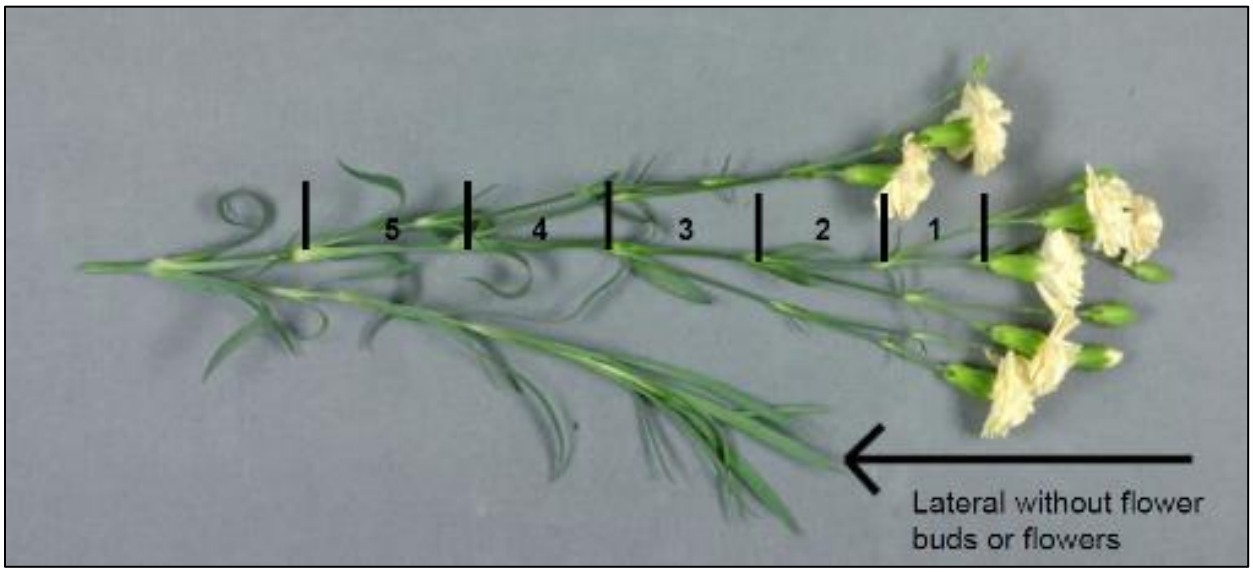
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
8 (*) (+)	**[Cs] VG/ MS**	**Stem: number of internodes**				
QN		four	KLEDM06005 (Cs)	KLEDM06005 (Cs)		1
		five	Hilboska (Cs), Martina (Cs)	Hilboska (Cs), Martina (Cs)	Hilboska (Cs), Martina (Cs)	2
		six	Barocior (Cs), Hilqueen (Cs)	Barocior (Cs), Hilqueen (Cs)	Barocior (Cs), Hilqueen (Cs)	3
		more than six	Hilbacer (Cs)	Hilbacer (Cs)	Hilbacer (Cs)	4

Remarks

Only to be examined in cut flowers ‘spray’ types.

Stage of observation: At the time of full flowering.

Method of observation: The number of internodes should be observed between the epicalyx and the lowest node with a lateral with flower buds or flowers.



6. Method of observation (example of characterization)

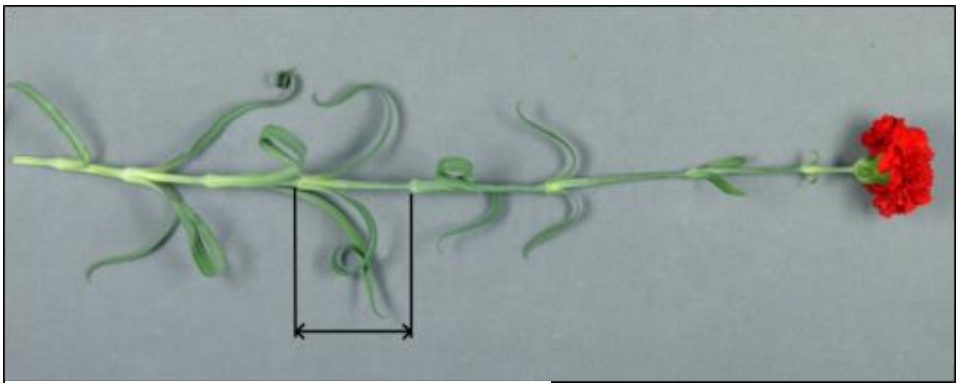
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
9 (*)	**VG/ MS**	**Stem: length of internode**				
QN	**(a)**	short	Devon Wizard (G)	Devon Wizard (G)		3
		medium	Komari (Co), Lonaveiro (Cs)	Komari (Co), Lonaveiro (Cs)	Lonaveiro (Cs)	5
		long	KLEDS06013 (Co)	KLEDS06013 (Co)	KLEDS06013 (Co) Barlo(Co)	7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: The main stem is the most direct line from the top-flower to the base. In cut flower varieties, the fifth internode directly below the flower should be observed. In pot and garden carnations, the third internode directly below the flower should be observed.

Assessment:VG: The length of an internode of a plant, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)



Cut flower type: one flower per stem

Cut flower type: spray

9 Stem: length of internode

Pot type and Garden type

6. Method of observation (example of characterization)

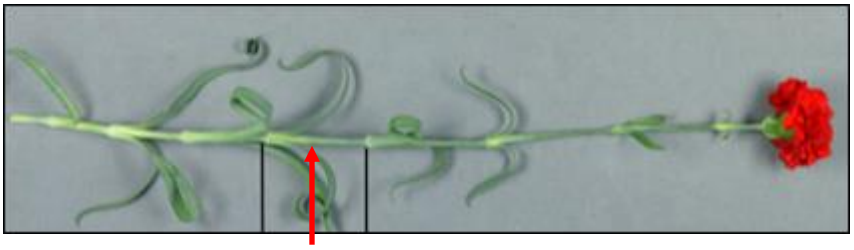
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
10 (*)	**VG/ MS**	**Stem: thickness of internode**				
QN	**(a)**	very thin	Hiljoli (P)	Hiljoli (P)		1
		thin	Devon Glow (G)	Devon Glow (G)	MINIPARASORU ROZUPINKU (P)	3
		medium	Komari (Co), Lekprewi (Cs)	Komari (Co), Lekprewi (Cs)	Hibacer(Cs)	5
		thick	Hilbrequeen (Cu), Tico Tico (Co)	Hilbrequeen (Cu), Tico Tico (Co)	Hilbrequeen (Cu), Tico Tico (Co)	7
		very thick	Westcrystal (Cs)	Westcrystal (Cs)	Westcrystal (Cs)	9

Remarks

Stage of observation: At the time of full flowering.

Method of observation: The main stem is the most direct line from the top-flower to the base. In cut flower varieties, the fifth internode directly below the flower should be observed. In pot and garden carnations, the third internode directly below the flower should be observed. Observations should be made half way between nodes.

Assessment: VG: The thickness of an internode of a plant, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)



Cut flower type: one flower per stem

Cut flower type: spray

10 Stem: thickness of internode

Pot type and Garden type

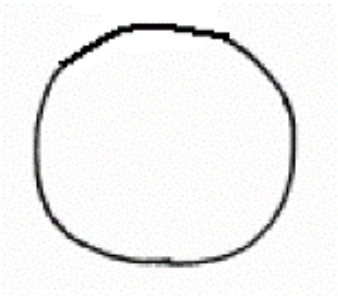
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
11 (*) (+)	**VG**	**Stem: shape in cross section**				
PQ	**(a)**	circular	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	1
		slightly angular	KLEDP07089 (P)	KLEDP07089 (P)		2
		strongly angular	Komari (Co), Martina (Cs), SUNRRB126 (P)	Komari (Co), Martina (Cs), SUNRRB126 (P)	, Martina (Cs),	3

Remarks

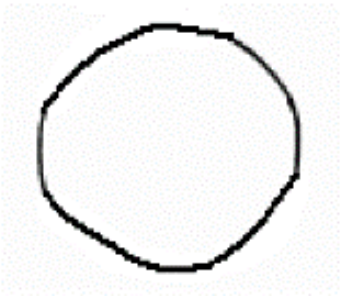
Stage of observation: At the time of full flowering.

Method of observation: The main stem is the most direct line from the top-flower to the base. In cut flower varieties, the fifth internode directly below the flower should be observed. In pot and garden carnations, the third internode directly below the flower should be observed. Observations should be made half way between nodes. By rolling the stem between thumb and forefinger you can feel whether the stem is round or (slightly) angular.



1.

circular



2.

slightly angular

3.

strongly angular

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
12 (*) (+)	**VG**	**Stem: hollowness**				
QL	**(a)**	absent	Komari (Co), Martina (Cs), SUNRRB126 (P)	Komari (Co), Martina (Cs), SUNRRB126 (P)	, Martina (Cs),	1
		present	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	9

Remarks

Stage of observation: At the time of full flowering.

Method of observation: The main stem is the most direct line from the top-flower to the base. In cut flower varieties, the fifth internode directly below the flower should be observed. In pot and garden carnations, the third internode directly below the flower should be observed. Observations should be made half way between nodes.

1.

absent

9.

present

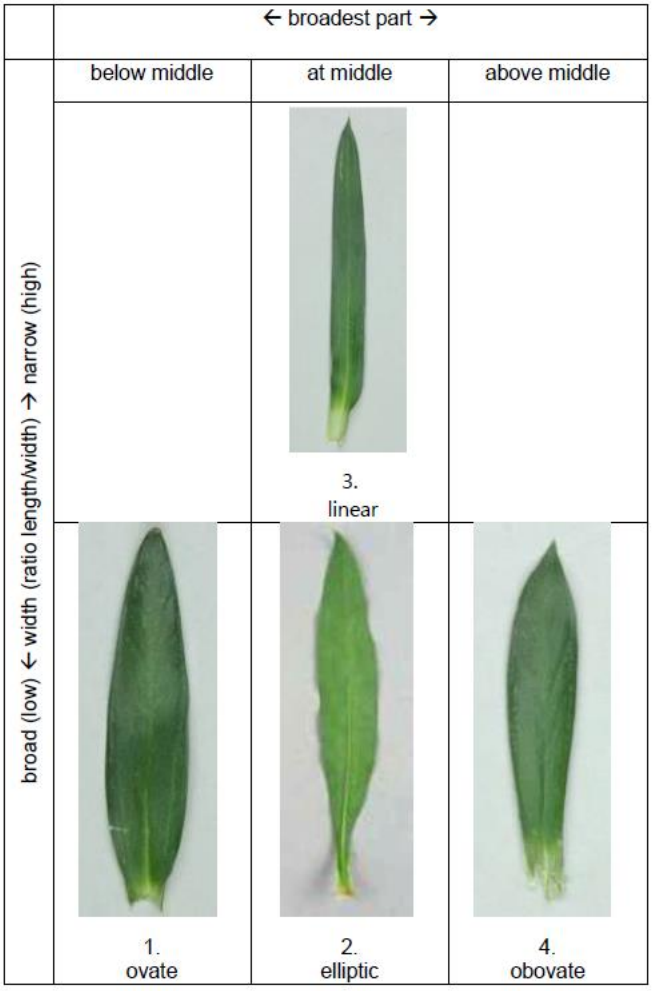
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
13 (*) (+)	**VG**	**Leaf: shape**				
PQ	**(b)**	ovate	Tico Tico (Co)	Tico Tico (Co)	Tico Tico (Co)	1
		elliptic	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)		2
		linear			Barlo (Co)	3
		obovate	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
14 (*)	**VG/ MS**	**Leaf: length**				
QN	**(b)**	short	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	3
		medium	Hilbrebar (Cu), Martina (Cs)	Hilbrebar (Cu), Martina (Cs)	Martina (Cs)	5
		long	KLEDS06542 (Co), Komari (Co)	KLEDS06542 (Co), Komari (Co)		7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower.

Assessment: VG: The length of a leaf of a plant, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
15 (*)	**VG/ MS**	**Leaf: width**				
QN	**(b)**	narrow	Lonaveiro (Cs), SUNRWB135 (P)	Lonaveiro (Cs), SUNRWB135 (P)	Lonaveiro (Cs),	3
		medium	Hyslam (Co), Komari (Co)	Hyslam (Co), Komari (Co)	Hyslam (Co)	5
		broad	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower.

Assessment: VG: The width of a leaf of a plant, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
16 (*) (+)	**VG**	**Leaf: curvature**				
QN	**(b)**	absent or very weakly recurved	Devon Wizard (G), Komari (Co), SUNRWB135 (P)	Devon Wizard (G), Komari (Co), SUNRWB135 (P)	Devon Wizard (G),	1
		weakly recurved	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	2
		moderately recurved	Hilbrebar (Cu), Martina (Cs)	Hilbrebar (Cu), Martina (Cs)	Hilbrebar (Cu), Martina (Cs)	3
		strongly recurved	Prado Pino (Co)	Prado Pino (Co)		4
		very strongly recurved	Raspberry Ripple (G)	Raspberry Ripple (G)	Bario (Co)	5

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower.

1 absent or very weakly recurved

2 weakly recurved

3 moderately recurved

4 strongly recurved

5 very strongly recurved

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
17 (*) (+)	**VG**	**Leaf: cross section**				
QN	**(b)**	flat or very weakly concave	Beam Cherry (Cs), KLEDP09102 (P)	Beam Cherry (Cs), KLEDP09102 (P)	Bario (Co) Beam Cherry (Cs),	1
		weakly concave	Leila (Co), Martina (Cs), Tico Tico (Co)	Leila (Co), Martina (Cs), Tico Tico (Co)	Leila (Co), Martina (Cs), Tico Tico (Co)	2
		moderately concave	Hilbreking (Cu), Lonkiro (Co), SUNRRB126 (P)	Hilbreking (Cu), Lonkiro (Co), SUNRRB126 (P)	Hilbreking (Cu), Lonkiro (Co),	3
		strongly concave	Barabril (Cs), Wesroman (Cs)	Barabril (Cs), Wesroman (Cs)	Barabril (Cs),	4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower. It should be observed the cross section of leaves in the middle.

1.

flat or very weakly concave

2.

weakly concave

3.

moderately concave

4.

strongly concave

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
18 (*)	**VG**	**Leaf: color**				
PQ	**(b)**	medium green	Leila (Co), Hilbreking (Cu), SUNRRB126 (P)	Leila (Co), Hilbreking (Cu), SUNRRB126 (P)	Leila (Co), Hilbreking (Cu),	1
		dark green	Hilmose (Co), KLET04064 (P), Starburst (G)	Hilmose (Co), KLET04064 (P), Starburst (G)		2
		grey green	Barcoquette (Cs), Devon Winnie (G), White Liberty (Co)	Barcoquette (Cs), Devon Winnie (G), White Liberty (Co)	, White Liberty (Co)	3

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower.

1 medium green

2 dark green

3 grey green

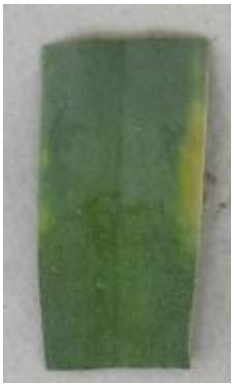
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
19 (*)	**VG**	**Leaf: glaucosity**				
QN	**(b)**	weak	Hilbreking (Cu), SUNRRB126 (P)	Hilbreking (Cu), SUNRRB126 (P)	Hilbreking (Cu),	1
		medium	Hyslam (Co), Tico Tico (Co)	Hyslam (Co), Tico Tico (Co)	Tico Tico (Co) Hyslam (Co)	2
		strong	Komari (Co), Lekprewi (Cs)	Komari (Co), Lekprewi (Cs)		3

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower. To be observed by rubbing your finger over the upper surface of the leaves. The degree of changing in color is the degree of glaucosity.



1

weak

3

strong

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
20 (*) (+)	**VG**	**Leaf: spiny ciliation of margin**				
QL	**(b)**	absent	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)	Martina (Cs)	1
		present	Hilbreking (Cu), Whatfield Can Can (G)	Hilbreking (Cu), Whatfield Can Can (G)	Hilbreking (Cu), Whatfield Can Can (G)	9

Remarks

Stage of observation: At the time of full flowering.

Method of observation: In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations to be observed on leaves of the third node directly below the flower. To be observed by gently rubbing to and fro by finger along the margin of the leaf.

1. absent

9. present

6. Method of observation (example of characterization)

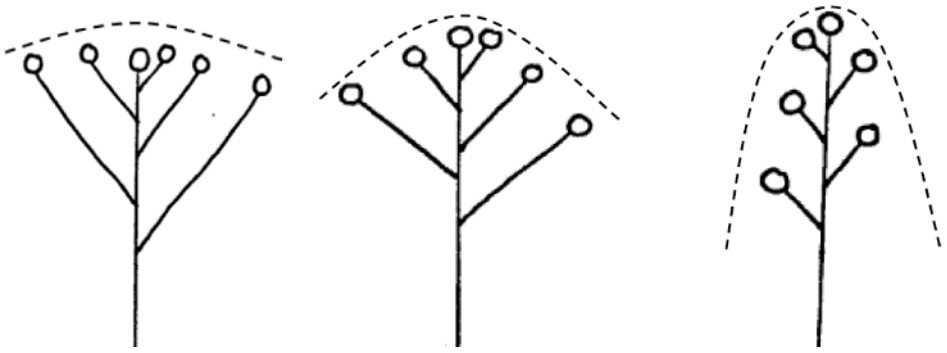
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
21 (+)	**[Cs] VG**	**Inflorescence: form**				
QN		flat or slightly domed				1
		moderately domed	Martina (Cs)	Martina (Cs)	Martina (Cs)	2
		strongly domed	Hilopta (Cs)	Hilopta (Cs)	Hilopta (Cs)	3

Remarks

Only to be examined in cut flower ‘spray’ types.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. flat or slightly domed 2. moderately domed 3. strongly domed

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
22 (*) (+)	**VG**	**Bud: shape**				
PQ		ovate	KLEDCS05045 (Co)	KLEDCS05045 (Co)		1
		circular	Baryetar (Co)	Baryetar (Co)		2
		elliptic	Fontaine Darkred (P), Hiltespret (Cs)	Fontaine Darkred (P), Hiltespret (Cs)	Bario (Co), Fransesco (Co), Hiltespret (Cs)	3
		oblong	Lonkiro (Co)	Lonkiro (Co)	Hibacer(Cs)	4
		obovate	Komari (Co), Leila (Co), Martina (Cs)	Komari (Co), Leila (Co), Martina (Cs)	Leila (Co), Martina (Cs), Cfpc Eos (P)	5

Remarks

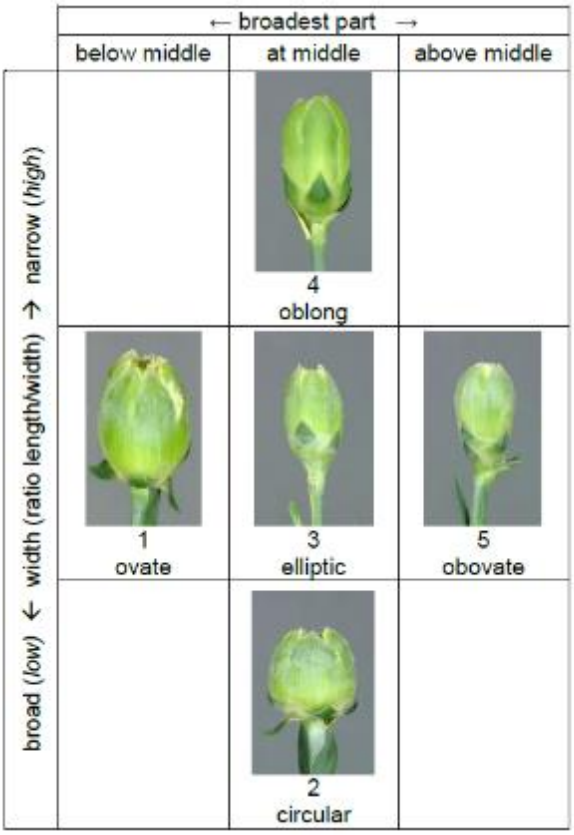
Picture 1 and 2 shows the correct bud stage for observations.

Stage of observation: In bud stage. To be observed immediately before color appears.

Method of observation: Visual observation.

picture 1: correct bud stage top view

picture 2: correct bud stage side view



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
23 (*) (+)	**VG**	**Bud: extrusion of styles**				
QL		absent	Komari (Co), Leila (Co), Martina (Cs)	Komari (Co), Leila (Co), Martina (Cs)	Martina (Cs)	1
		present	Hilvulca (P), KLEDS07504 (Co)	Hilvulca (P), KLEDS07504 (Co)	KLEDS07504 (Co)	9

Remarks

Stage of observation: In bud stage. To be observed immediately before color appears.

Method of observation: Visual observation.

1. absent

9. present

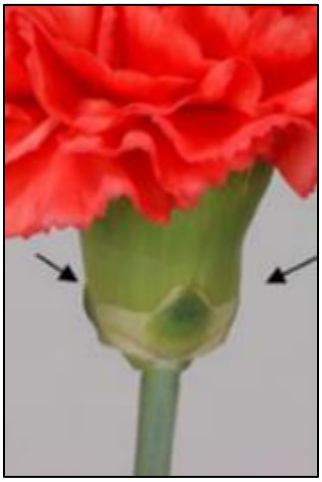
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
24 (+)	**VG**	**Epicalyx: position of outer lobes in relation to calyx**				
QN		adpressed	Komari (Co), Martina (Cs), Tico Tico (Co)	Komari (Co), Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	1
		adpressed and free				2
		free	Leila (Co), KLEDC05008 (Cs)	Leila (Co), KLEDC05008 (Cs)	Leila (Co),	3

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation. Observe if the outer lobes are free or adpressed to the calyx. Sometimes the epicalyx is both free and adpressed.



1.

adpressed

2.

adpressed and free

3.

free

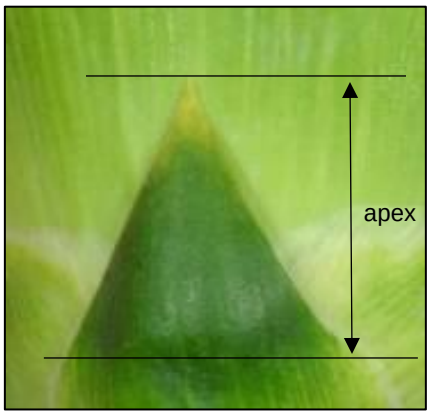
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
25 (+)	**VG**	**Epicalyx: apex of outer lobes**				
QN		acute	Komari (Co), Martina (Cs), Tico Tico (Co)	Komari (Co), Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	1
		short acuminate				2
		medium acuminate	Lonkiro (Co)	Lonkiro (Co)		3

Remarks

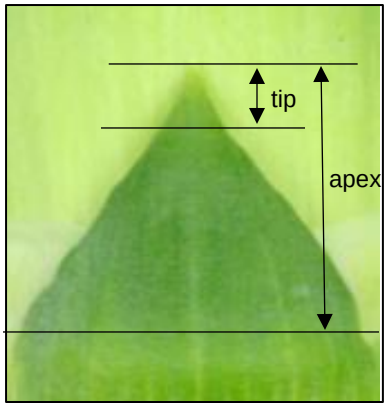
Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



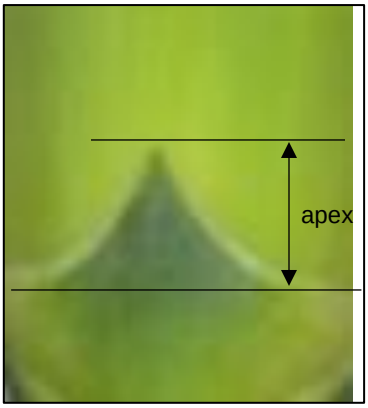
1.

acute



2.

short acuminate



3.

medium acuminate

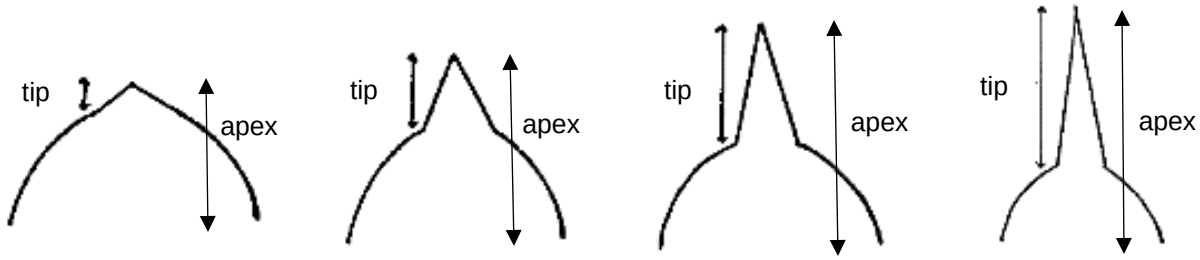
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
26 (+)	**VG/ MS**	**Epicalyx: length of tip of outer lobes**				
QN		absent or very short				1
		short	Komari (Co), Martina (Cs), Tico Tico (Co)	Komari (Co), Martina (Cs), Tico Tico (Co)		2
		medium	Devon Glow (G), Leila (Co)	Devon Glow (G), Leila (Co)	Leila (Co)	3
		long	SUNRRB126 (P), Westcrystal (Cs)	Westcrystal (Cs)	Westcrystal (Cs)	4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. absent or very short

2. short

3. medium

4. long

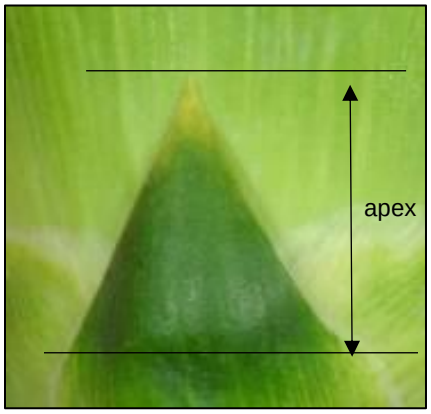
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
27 (+)	**VG**	**Epicalyx: apex of inner lobes**				
QN		acute	Komari (Co), Martina (Cs), Tico Tico (Co)	Komari (Co), Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	1
		short acuminate				2
		medium acuminate	Lonkiro (Co)	Lonkiro (Co)	Lonkiro (Co)	3

Remarks

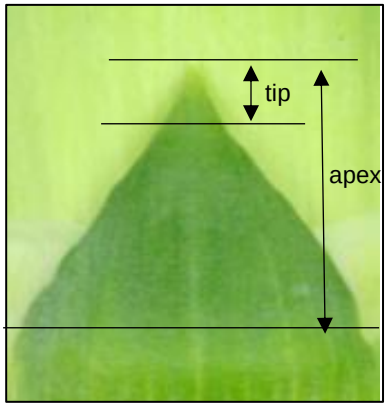
Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



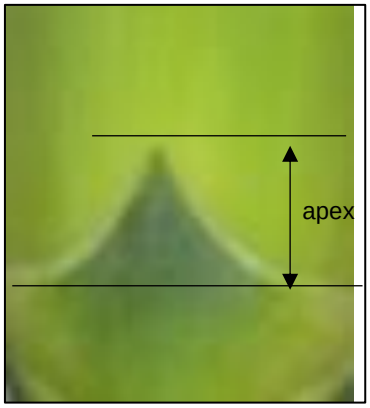
1.

acute



2.

short acuminate



3.

medium acuminate

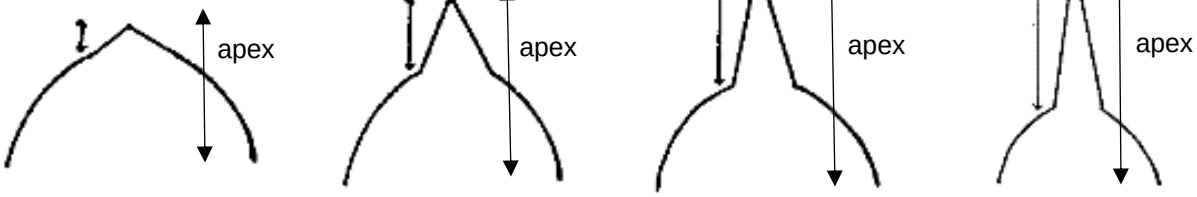
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
28 (+)	**VG/ MS**	**Epicalyx: length of tip of inner lobes**				
QN		absent or very short				1
		short	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)		2
		medium	SUNRRB126 (P)	SUNRRB126 (P)		3
		long	Westcrystal (Cs)	Westcrystal (Cs)	Westcrystal (Cs)	4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. absent or very short

2. short

3. medium

4. long

6. Method of observation (example of characterization)

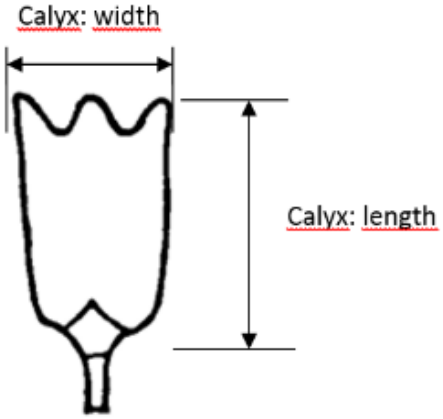
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
29 (*) (+)	**VG/ MS**	**Calyx: length**				
QN		short	Hilbreking (Cu), Whatfield Can Can (G)	Hilbreking (Cu), Whatfield Can Can (G)	Hilbreking (Cu), Whatfield Can Can (G)	3
		medium	Komari (Co), Leila (Co), Martina (Cs)	Komari (Co), Leila (Co), Martina (Cs)	Leila (Co), Martina (Cs)	5
		long	KLEDS10624 (Co), Princess (P)	KLEDS10624 (Co), Princess (P)		7

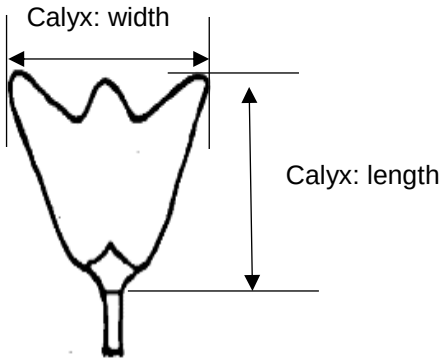
Remarks

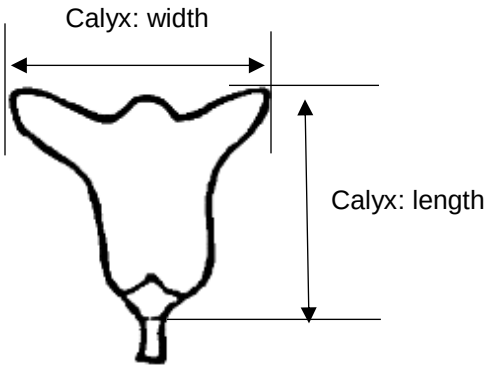
Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement.

Assessment: VG: The length of a calyx of a flower, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)







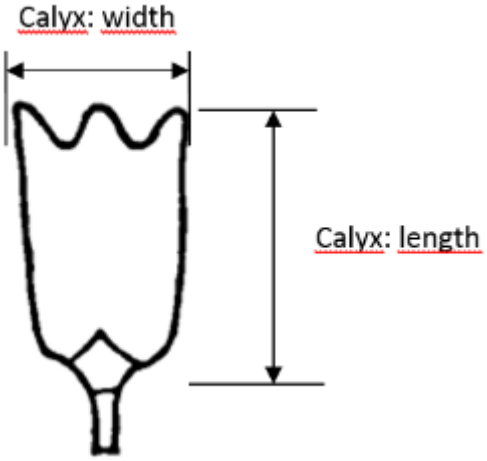
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
30 (*) (+)	**VG/ MS**	**Calyx: width**				
QN		narrow	SUNRRB126 (P)	SUNRRB126 (P)		3
		medium	Komari (Co)	Komari (Co)		5
		broad	KLEDS10624 (Co)	KLEDS10624 (Co)		7

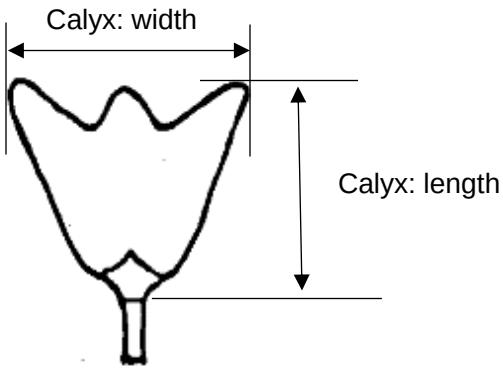
Remarks

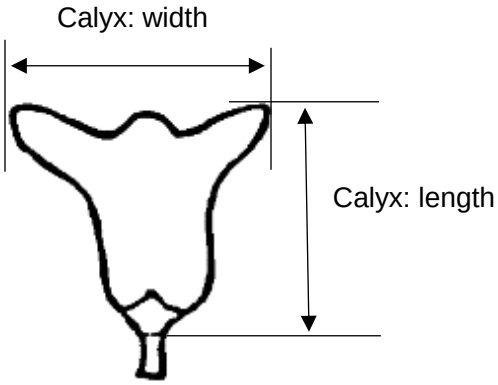
Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement

Assessment: VG: The width of a calyx of a flower, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)







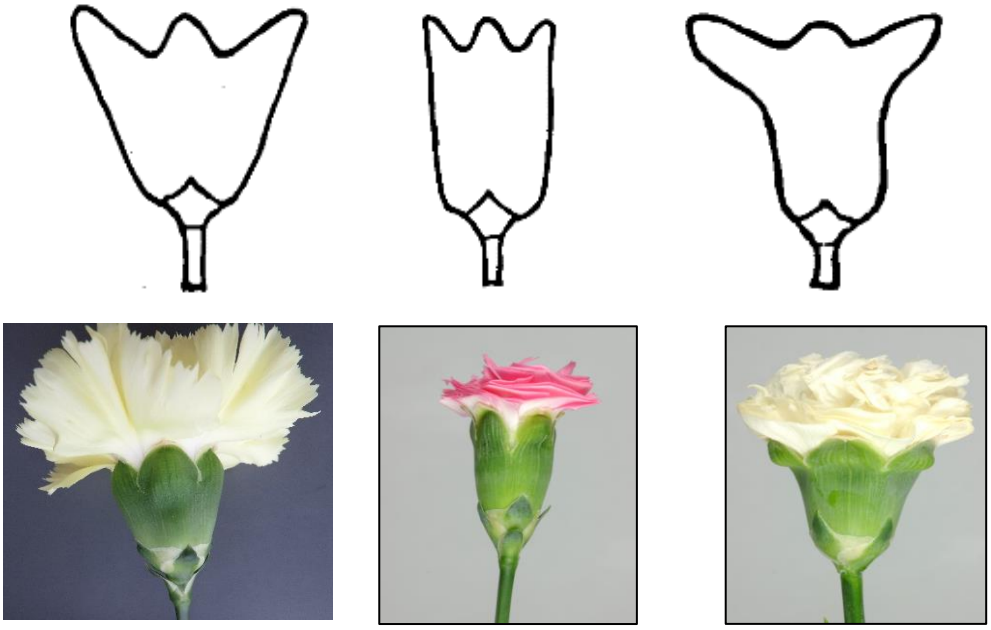
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
31 (*) (+)	**VG**	**Calyx: shape**				
PQ		funnel-shaped	Lonkiro (Co), Tico Tico (Co)	Lonkiro (Co), Tico Tico (Co)	Tico Tico (Co)	1
		cylindrical	Hilbreking (Cu), Martina (Cs), SUNRRB126 (P)	Hilbreking (Cu), Martina (Cs), SUNRRB126 (P)	Hilbreking (Cu), Martina (Cs),	2
		campanulate	Gaudina (Co), Komari (Co), Leila (Co)	Gaudina (Co), Komari (Co), Leila (Co)	Gaudina (Co), Leila (Co)	3

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. funnel-shaped

2. cylindrical

3. campanulate

6. Method of observation (example of characterization)

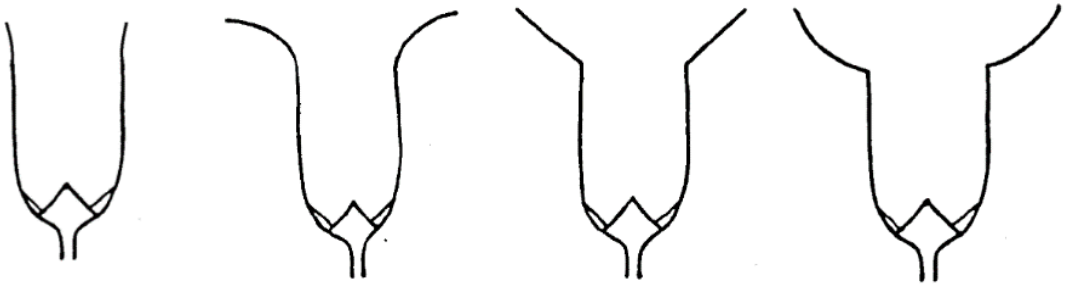
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
32 (*) (+)	**VG**	**Calyx: longitudinal axis of lobes**				
PQ		straight	SUNRRB126 (P), Whatfield Can Can (G)	SUNRRB126 (P), Whatfield Can Can (G)	Whatfield Can Can (G)	1
		concave	Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	2
		angled	Hilopta (Cs)	Hilopta (Cs)	Hilopta (Cs)	3
		convex	Gaudina (Co), Komari (Co), Leila (Co)	Gaudina (Co), Komari (Co), Leila (Co)	Gaudina (Co), Bario (Co), Leila (Co)	4

Remarks

The tip of the lobes should be excluded.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. straight

2. concave

3. angled

4. convex

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
33 (*)	**VG**	**Calyx: intensity of anthocyanin coloration**				
QN		absent or very weak				1
		weak	Lonaveiro (Cs)	Lonaveiro (Cs)	Lonaveiro (Cs)	2
		medium	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	3
		strong	Simba (P), SUNRE130 (P)	Simba (P), SUNRE130 (P)		4

Remarks

Stage of observation: At the time of full flowering. It should be observed on all flowers and buds.

Method of observation: Visual observation. The intensity of anthocyanin coloration should be observed, not the area.

1

absent or very weak

2

weak

3

medium

4

strong

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
34 (*)	**VG**	**Calyx: distribution of anthocyanin coloration**				
PQ		margin of lobe	Lonaveiro (Cs), SUNRRB126 (P)	Lonaveiro (Cs), SUNRRB126 (P)	Lonaveiro (Cs)	1
		whole lobe	Hilbrebar (Cu), Houndspool Cheryl (G)	Hilbrebar (Cu), Houndspool Cheryl (G)	Hilbrebar (Cu)	2
		whole calyx	Calypso Star (G)	Calypso Star (G)	Calypso Star (G)	3

Remarks

Stage of observation: At the time of full flowering. It should be observed on all flowers and buds.

Method of observation: Visual observation.

1.

margin of lobe

2.

whole lobe

3.

whole calyx

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
35 (+)	**VG**	**Calyx: shape of apex of lobe**				
QN		acute	Komari (Co), Lonaveiro (Cs), Lonkiro (Co), SUNRRB126 (P)	Komari (Co), Lonaveiro (Cs), Lonkiro (Co), SUNRRB126 (P)	Lonaveiro (Cs), Lonkiro (Co)	1
		acute to acuminate				2
		acuminate	Barfenix (Co)	Barfenix (Co)	Barfenix (Co)	3

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

acute

2.

acute to acuminate

3.

acuminate

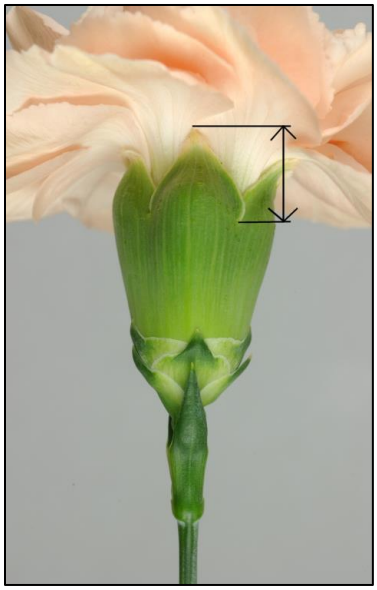
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
36 (*)	**VG**	**Calyx: length of lobe**				
QN		short	Komari (Co), Lonkiro (Co), Tico Tico (Co)	Komari (Co), Lonkiro (Co), Tico Tico (Co)	Lonkiro (Co), Tico Tico (Co)	3
		medium	Leila (Co), Lonaveiro (Cs)	Leila (Co), Lonaveiro (Cs)	Leila (Co), Lonaveiro (Cs)	5
		long	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
37 (*) (+)	**VG**	**Flower: type**				
QL		single	Calypso Star (G), Hilbreking (Cu)	Calypso Star (G), Hilbreking (Cu)	Calypso Star (G), Hilbreking (Cu)	1
		double	Sam's Pride (Cs), William Sim (Co)	Sam's Pride (Cs), William Sim (Co)		2

Remarks

Double flowers have more than 5 petals.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

single

2.

double

6. Method of observation (example of characterization)

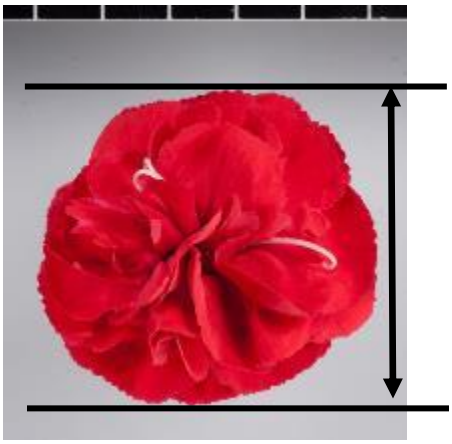
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
38 (*)	**VG/ MS**	**Flower: diameter**				
QN		small	Hilbrebar (Cu), Shooting Star (G), SUNRWB135 (P)	Hilbrebar (Cu), Shooting Star (G), SUNRWB135 (P)	Hilbrebar (Cu), Shooting Star (G),	3
		medium	Devon Wizard (G)	Devon Wizard (G)	Hibacer(Cs)	5
		large	Farida (Co), Komari (Co), Leila (Co)	Farida (Co), Komari (Co), Leila (Co)	Bario (Co), Farida (Co), Leila (Co)	7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement.

Assessment: VG: The diameter of a flower of a plant, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
39 (*)	**VG/ MS**	**Only varieties with flower: type: double: Flower: number of petals**				
QN		few	Lekclaudia (Cs), SUNRRB126 (P)	Lekclaudia (Cs), SUNRRB126 (P)	Kakegawa AX3 (P)	3
		medium	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)	Martina (Cs)	5
		many	Hyslam (Co), Tico Tico (Co)	Hyslam (Co), Tico Tico (Co)	Hyslam (Co), Tico Tico (Co)	7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement.

Assessment: VG: The number of petals of a flower, which represents the variety, are counted and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

6. Method of observation (example of characterization)

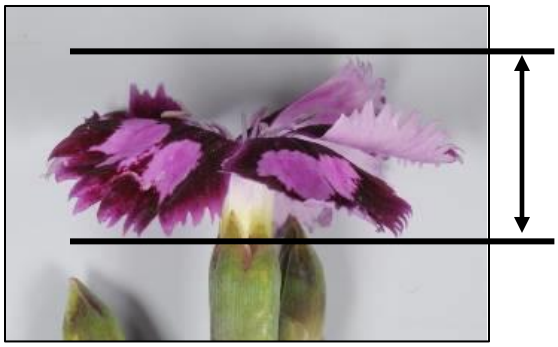
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
40 (*) (+)	**VG/ MS**	**Corolla: height**				
QN		short	SUNRWB135 (P), Whatfield Can Can (G)	SUNRWB135 (P), Whatfield Can Can (G)	Whatfield Can Can (G)	3
		medium	Farida (Co)	Farida (Co)	Farida (Co)	5
		tall	KLEDS13A01 (Co)	KLEDS13A01 (Co)		7

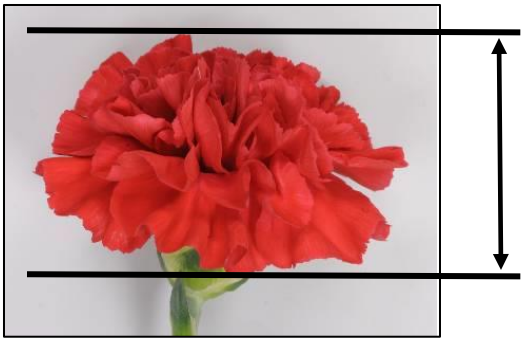
Remarks

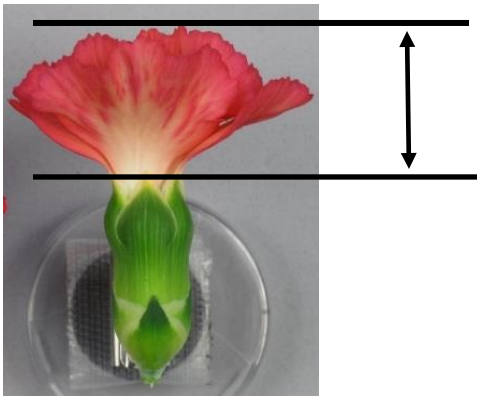
Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement**.**

Assessment: VG: The height of a corolla of a flower, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)







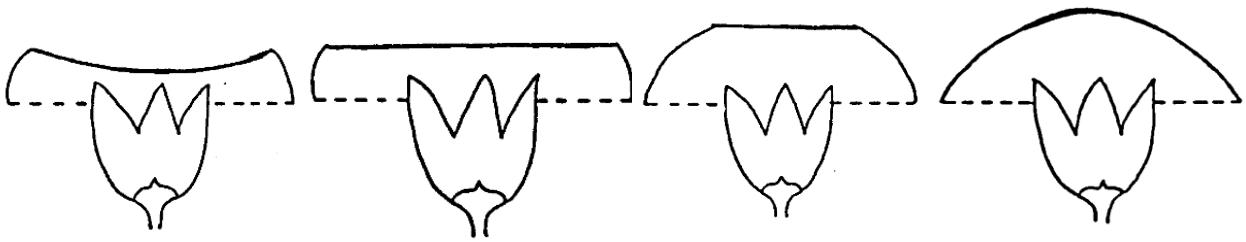
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
41 (*) (+)	**VG**	**Corolla: profile of upper part in lateral view**				
PQ		concave	Night Star (G)	Night Star (G)	Night Star (G)	1
		flat	Hilbrequeen (Cu), Shooting Star (G)	Hilbrequeen (Cu), Shooting Star (G)	Hilbrequeen (Cu),	2
		flat convex	Komari (Co), Lonkiro (Co), SUNRRB126 (P)	Komari (Co), Lonkiro (Co), SUNRRB126 (P)	, Lonkiro (Co),	3
		convex	Leila (Co), Martina (Cs), Tico Tico (Co)	Leila (Co), Martina (Cs), Tico Tico (Co)	Leila (Co), Martina (Cs), Tico Tico (Co)	4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. concave

2. flat

3. flat convex

4. convex

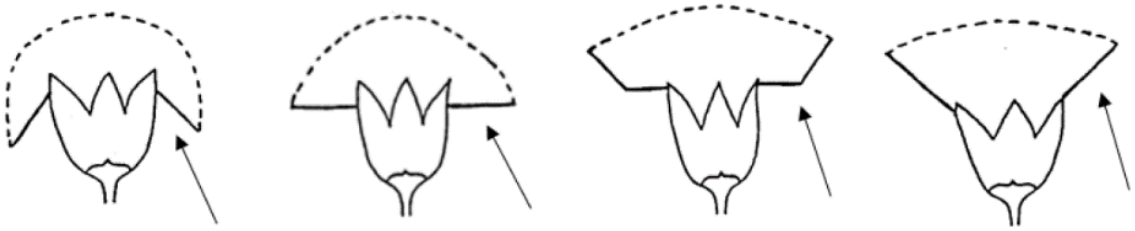
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
42 (*) (+)	**VG**	**Corolla: profile of lower part in lateral view**				
PQ		concave	Komari (Co), Martina (Cs), SUNRRB126 (P)	Komari (Co), Martina (Cs), SUNRRB126 (P)	Barlo (Co), Martina (Cs),	1
		flat	Hilbrequeen (Cu), Whatfield Can Can (G)	Hilbrequeen (Cu), Whatfield Can Can (G)	Hilbrequeen (Cu),	2
		flat convex	Leila (Co), Night Star (G)	Leila (Co), Night Star (G)	Leila (Co), Night Star (G)	3
		convex	Coral Reef (G), Waterloo Sunset (G)	Coral Reef (G), Waterloo Sunset (G)		4

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1. concave

2. flat

3. flat convex

4. convex

6. Method of observation (example of characterization)

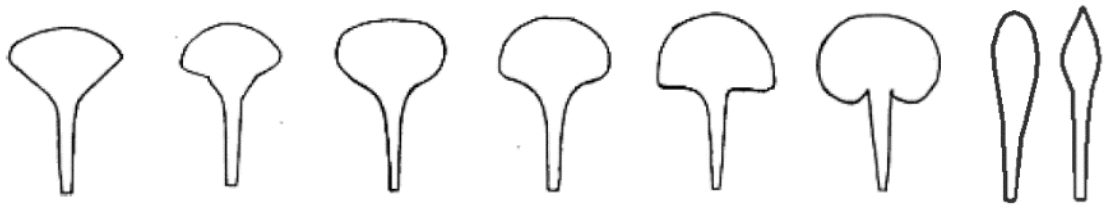
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
43 (+)	**VG**	**Petal: predominant shape**				
PQ	**(c)**	type 1	Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	Martina (Cs), Tico Tico (Co)	1
		type 2	Baltico (Co)	Baltico (Co)	Baltico (Co)	2
		type 3	Hilbreking (Cu), SUNRWB135 (P)	Hilbreking (Cu), SUNRWB135 (P)	Hilbreking (Cu), Bario (Co),	3
		type 4	Nobroc (Co), SUNRRB126 (P)	Nobroc (Co), SUNRRB126 (P)	Nobroc (Co),	4
		type 5	Barlgraa (Co), WP08 IAN04 (G)	Barlgraa (Co), WP08 IAN04 (G)		5
		type 6	Gaudina (Co)	Gaudina (Co)	Gaudina (Co)	6
		type 7	Hilstertes (Cs), Minitiara Pink (Cs)	Hilstertes (Cs), Minitiara Pink (Cs)	Minitiara Pink (Cs)	7

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



type 1 type 2 type 3 type 4 type 5 type 6 type 7

type 1 type 2 type 3 type 4 type 5 type 6 type 7

6. Method of observation (example of characterization)

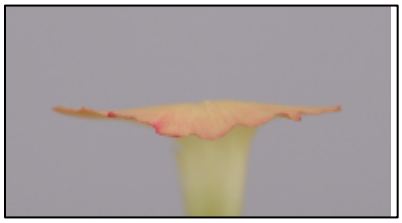
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
44 (+)	**VG**	**Petal: undulation**				
QN	**(c)**	absent or weak	Hilbrequeen (Cu), Hilstertes (Cs)	Hilbrequeen (Cu), Hilstertes (Cs)	Hilbrequeen (Cu), Hilstertes (Cs)	1
		medium	Calypso Star (G), Komari (Co)	Calypso Star (G), Komari (Co)	Calypso Star (G), Bario (Co), Cfpc Cheerful (P)	2
		strong				3

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

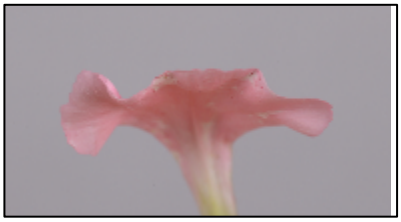
Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1.

absent or weak



2.

medium

3.

strong

6. Method of observation (example of characterization)

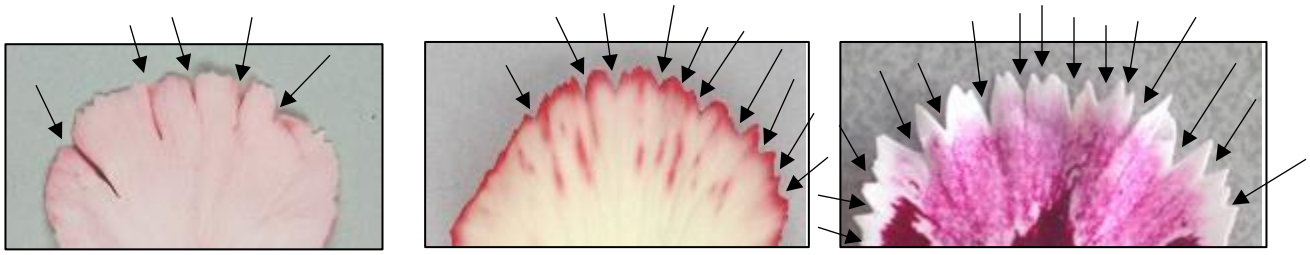
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
45 (*) (+)	**VG**	**Petal: number of incisions of margin**				
QN	**(c)**	absent or few	Barmalyn (Cs), Koyevi (Co)	Barmalyn (Cs), Koyevi (Co)		1
		medium	Barlitar (Co)	Barlitar (Co)	Barlitar (Co)	2
		many	Komari (Co), Martina (Cs), Wesroman (Cs)	Komari (Co), Martina (Cs), Wesroman (Cs)	Komari (Co), Martina (Cs)	3

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



1.

absent or few

2.

medium

3.

many

6. Method of observation (example of characterization)

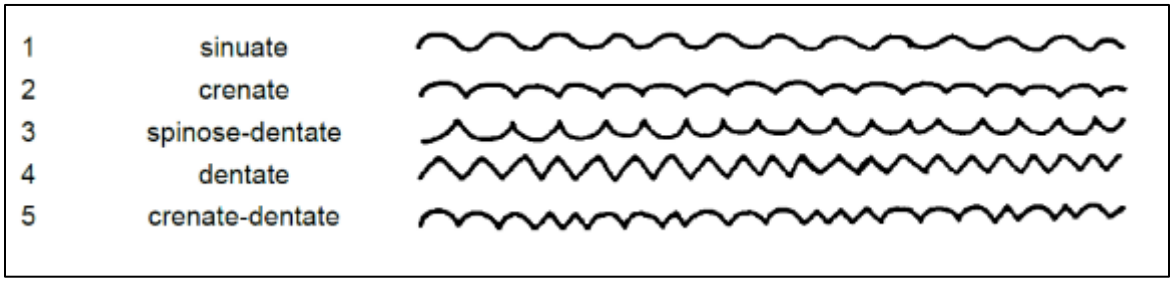
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
46 (+)	**VG**	**Petal: type of incisions of margin**				
PQ	**(c)**	sinuate	Farida (Co)	Farida (Co)	Farida (Co)	1
		crenate	Hyslam (Co)	Hyslam (Co)	Hyslam (Co)	2
		spinose-dentate	Leila (Co)	Leila (Co)	Leila (Co)	3
		dentate	Hilbrebar (Cu), SUNRWB135 (P)	Hilbrebar (Cu), SUNRWB135 (P)		4
		crenate-dentate	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)	Bario (Co), Martina (Cs),	5

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
47 (*) (+)	**VG**	**Petal: depth of incisions of margin**				
QN	**(c)**	very shallow	Fleurette (Cs), Leila (Co)	Fleurette (Cs), Leila (Co)	Leila (Co)	1
		shallow	Intermezzo (Cs)	Intermezzo (Cs)		3
		medium	Hilbrebar (Cu)	Hilbrebar (Cu)	Hilbrebar (Cu)	5
		deep	Pop Star (G)	Pop Star (G)		7
		very deep	CFPC Unforgettable (P)	CFPC Unforgettable (P)	CFPC Unforgettable (P)	9

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1. very shallow | 3. shallow | 5. medium | 7. deep | 9. very deep

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
48 (*)	**VG/ MS**	**Petal: length**				
QN	**(c)**	short	Whatfield Can Can (G)	Whatfield Can Can (G)	Whatfield Can Can (G)	3
		medium	Barcandela (Cs)	Barcandela (Cs)	Hibacer(Cs), Barcandela (Cs)	5
		long	Gaudina (Co), Komari (Co)	Gaudina (Co), Komari (Co)	Gaudina (Co),	7

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement.

Assessment: VG: The length of a petal of a flower, which represents the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
49 (*)	**VG/ MS**	**Petal: width**				
QN	**(c)**	narrow	Hilbrebar (Cu), Whatfield Can Can (G)	Hilbrebar (Cu), Whatfield Can Can (G)	Whatfield Can Can (G)	3
		medium	Leila (Co), Lonkiro (Co), Tico Tico (Co)	Leila (Co), Lonkiro (Co), Tico Tico (Co)	Hibacer(Cs), Leila (Co), Lonkiro (Co),	5
		broad	Bartorbel (Co), KLEDS10625 (Co)	Bartorbel (Co), KLEDS10625 (Co)		7

Remarks

Stage of observation: At the time of full flowering.

Method of observation: Visual observation or Measurement.

Assessment: VG: The width of a petal of a flower, which represent the variety, is measured and converted into a note. (NL) MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
50 (*)	**VG**	**Petal: main color**				
PQ	**(c) (d)**	RHS Colour Chart (indicate reference number)				

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation. The main color is the color with the largest surface area. The secondary color is the color with the second largest area. In cases where the areas of the main and secondary color are too similar to reliable decide which color has the largest area, the darkest color is considered to be the main color. In cases where the areas of the secondary and tertiary color are approximately the same, the darkest color will be the secondary color.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
51 (*)	**VG**	**Petal: secondary color**				
PQ	**(c) (d)**	RHS Colour Chart (indicate reference number)				

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation. The main color is the color with the largest surface area. The secondary color is the color with the second largest area. In cases where the areas of the main and secondary color are too similar to reliable decide which color has the largest area, the darkest color is considered to be the main color. In cases where the areas of the secondary and tertiary color are approximately the same, the darkest color will be the secondary color.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
52 (*) (+)	**VG**	**Petal: width of differently colored margin**				
QN	**(c)**	absent	Fleurette (Cs), Pop Star (G)	Fleurette (Cs), Pop Star (G)		1
		narrow	Komari (Co), Rodin (P)	Komari (Co), Rodin (P)		2
		medium	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	3
		broad	Barlaxiaga (Cs), Hilqueen (Cs)	Barlaxiaga (Cs), Hilqueen (Cs)	Hilqueen (Cs)	4

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

absent

2.

narrow

3.

medium

4.

broad

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
53 (*) (+)	**VG**	**Petal: number of stripes**				
QN	**(c)**	none	SUNRE130 (P)	SUNRE130 (P)		1
		few	Konali (Co), Martina (Cs)	Konali (Co), Martina (Cs)	Martina (Cs)	2
		medium	Barmarie (Co), Bartaina (Cs)	Barmarie (Co), Bartaina (Cs)		3
		many	Komonte (Co), Navidad (Co)	Komonte (Co), Navidad (Co)		4

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

none

2.

few

3.

medium

4.

many

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
54 (*) (+)	**VG**	**Petal: number of speckles**				
QN	**(c)**	none	Westcrystal (Cs)	Westcrystal (Cs)	Westcrystal (Cs)	1
		few	Barlitar (Co), CFPC Aztec (P)	Barlitar (Co), CFPC Aztec (P)		2
		medium	Devon Winnie (G), KLEN03037 (P), WS05-402 (Cu)	Devon Winnie (G), KLEN03037 (P), WS05-402 (Cu)		3
		many	Whatfield Gem (G)	Whatfield Gem (G)		4

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

none

2.

few

3.

medium

4.

many

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
55 (*) (+)	**VG**	**Petal: area of flush**				
QN	**(c)**	absent	KLEDS06013 (Co)	KLEDS06013 (Co)		1
		small	WP07 OPR04 (G)	WP07 OPR04 (G)		2
		medium	Hilnotre (Co), Sidra (Co)	Hilnotre (Co), Sidra (Co)		3
		large	Antigua (Co), KLEDS06513 (Co)	Antigua (Co), KLEDS06513 (Co)		4

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

absent

2.

small

3.

medium

4.

large

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
56 (*) (+)	**VG**	**Petal: size of macule**				
QN	**(c)**	absent	Lonaveiro (Cs)	Lonaveiro (Cs)	Lonaveiro (Cs)	1
		small	DICZ0003 (G), KLEDP11109 (P)	DICZ0003 (G), KLEDP11109 (P)		2
		medium	Hilbreye (P), WP10 HEL01 (G)	Hilbreye (P), WP10 HEL01 (G)		3
		large	Hilmetal (P), WP08 UNI02 (G)	Hilmetal (P), WP08 UNI02 (G)		4

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

1.

absent

2.

small

3.

medium

4.

large

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
57 (*) (+)	**VG**	**Petal: color pattern of tertiary color**				
PQ	**(c)**	absent				1
	(d)	marginated	Margarita (P), SUNRWB135 (P)	Margarita (P), SUNRWB135 (P)		2
		striped				3
		speckled	DICZ0001 (G)	DICZ0001 (G)		4
		flushed	Starlette (G)	Starlette (G)		5
		maculated	Rodin (P)	Rodin (P)		6

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation The main color is the color with the largest surface area. The secondary color is the color with the second largest area. In cases where the areas of the main and secondary color are too similar to reliable decide which color has the largest area, the darkest color is considered to be the main color. In cases where the areas of the secondary and tertiary color are approximately the same, the darkest color will be the secondary color.

2.

marginated

3.

striped

4.

speckled

5.

flushed

6.

maculated

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
58 (*)	**VG**	**Petal: tertiary color**				
PQ	**(c)**	RHS Colour Chart (indicate reference number)				

Remarks

For double flowers the observations should be made on a petal of the 3rd outer whorl.

Stage of observation: At the time of full flowering.

Method of observation: Visual observation.

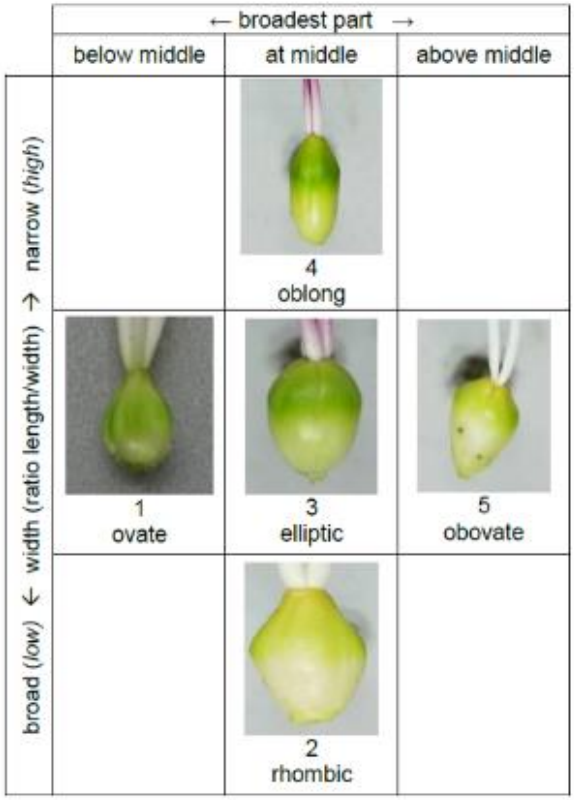
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
59 (*) (+)	**VG**	**Ovary: shape**				
PQ		ovate	Lekprewi (Cs)	Lekprewi (Cs)	Bario (Co)	1
		rhombic	Martina (Cs)	Martina (Cs)	Hibacer(Cs)	2
		elliptic	Hilbreking (Cu)	Hilbreking (Cu)	Hilbreking (Cu)	3
		oblong	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	4
		obovate	Komari (Co), Leila (Co), SUNRWB135 (P)	Komari (Co), Leila (Co), SUNRWB135 (P)		5

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation.



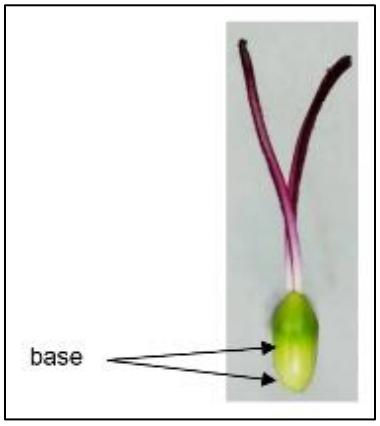
6. Method of observation (example of characterization)

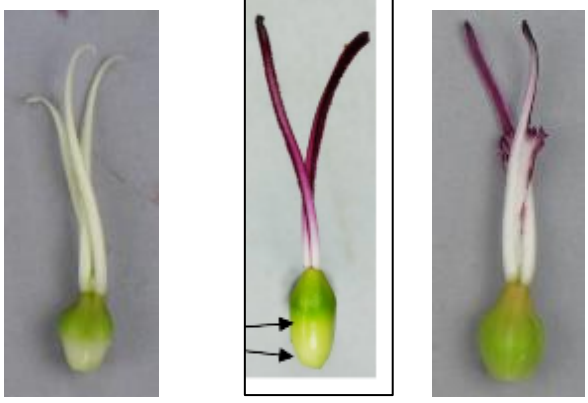
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
60 (+)	**VG**	**Ovary: color of base**				
PQ		whitish	Komari (Co), Lekprewi (Cs)	Komari (Co), Lekprewi (Cs)		1
		yellowish	KLEDG10119 (G), Koviol (P)	KLEDG10119 (G), Koviol (P)		2
		green	Leila (Co), Shooting Star (G)	Leila (Co), Shooting Star (G)	Shooting Star (G)	3

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation.





1 whitish

2 yellowish

3 green

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
61 (*)	**VG**	**Ovary: surface**				
QN		smooth	Leila (Co), Lekclaudia (Cs)	Leila (Co), Lekclaudia (Cs)	Leila (Co), Lekclaudia (Cs)	1
		slightly ribbed	SUNRRB126 (P)	SUNRRB126 (P)		2
		strongly ribbed	Komari (Co), Martina (Cs)	Komari (Co), Martina (Cs)	Martina (Cs)	3

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation

1. smooth

2.slightly ribbed

3. strongly ribbed

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
62 (*)	**VG/ MG**	**Style: number**				
PQ		only two	Hilbreking (Cu), SUNRWB135 (P), Tico Tico (Co)	Hilbreking (Cu), SUNRWB135 (P), Tico Tico (Co)	Hilbreking (Cu), Tico Tico (Co)	1
		two and three	Komari (Co), Lonaveiro (Cs)	Komari (Co), Lonaveiro (Cs)		2
		only three	Barjine (Co), Wesroman (Cs)	Barjine (Co), Wesroman (Cs)	MINIPARASORU ROZUPINKU (P)	3
		three and four	KLEDS07504 (Co)	KLEDS07504 (Co)		4
		only four	Baruqedu (Co), KLEDS10624 (Co)	Baruqedu (Co), KLEDS10624 (Co)	Lonaveiro (Cs), KLEDS10624 (Co)	5
		two, three, four and five	Gaudina (Co)	Gaudina (Co)		6

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
63 (*)	**VG/ MS**	**Style: length**				
QN		short	Hilbreking (Cu), Shooting Star (G)	Hilbreking (Cu), Shooting Star (G)	Hilbreking (Cu), Shooting Star (G)	1
		medium	Lonaveiro (Cs), SUNRWB135 (P), Tico Tico (Co)	Lonaveiro (Cs), SUNRWB135 (P), Tico Tico (Co)	Lonaveiro (Cs), Tico Tico (Co)	2
		long	Liberty (Co)	Liberty (Co)	Liberty (Co)	3

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: The length of a style of a flower, which represents the variety, is measured and converted into a note. The longest style of the flower should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
64 (*) (+)	**VG**	**Style: shoulder**				
QL		absent	Martina (Cs), SUNRWB135 (P)	Martina (Cs), SUNRWB135 (P)	Martina (Cs), Fransesco (Co), MINIPARASORU ROZUPINKU (P),	1
		present	Komari (Co), Lonaveiro (Cs), Tico Tico (Co)	Komari (Co), Lonaveiro (Cs), Tico Tico (Co)	Lonaveiro (Cs), Tico Tico (Co)	9

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation.

1. absent 9. present

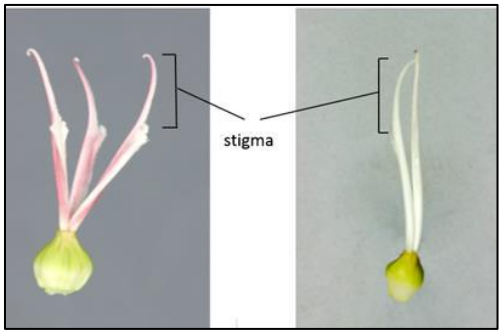
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
65 (*) (+)	**VG**	**Stigma: color**				
PQ		white	Komari (Co), Martina (Cs), Tico Tico (Co)	Komari (Co), Martina (Cs),	Martina (Cs),	1
		white with red flush	Lonaveiro (Cs)	Lonaveiro (Cs)	Lonaveiro (Cs)	2
		white with purple flush	Shooting Star (G)	Shooting Star (G)	Shooting Star (G)	3
		yellow	Leila (Co)	Leila (Co)	Leila (Co)	4
		pink	Barhugo (Co)	Barhugo (Co)	Barhugo (Co), Bario (Co)	5
		red	Hilbrebar (Cu), Hyslam (Co)	Hilbrebar (Cu), Hyslam (Co)	FRANCESCO (Co), Hilbrebar (Cu), Hyslam (Co)	6
		purple	Burnob (Co), SUNRRB126 (P)	Burnob (Co), SUNRRB126 (P)	Burnob (Co),	7

Remarks

Stage of observation: At the time of full flowering. For this characteristics overripe flowers are observed.

Method of observation: Visual observation.



1 white

2 white with red flush

3 white with purple flush

4 yellow

5 pink

6 red

7 purple