nak tuinbouw

NARO 農研機構
National Agriculture and Food Research Organization

CALIBRATION MANUAL

Harmonized with

Naktuinbouw and NCSS(/NARO)

DUS Test for CHRYSANTHEMUM

Chrysanthemum ×morifolium Ramat.
(*Chrysanthemum ×grandiflorum* Ramat.),
Chrysanthemum pacificum Nakai
(*Ajania pacifica* Bremer and Humphries)
and hybrids between them

Established in December 21,2020

Comply with UPOV TG/26/5 Corr. 2

CALIBRATION MANUAL
DUS Test for CHRYSANTHEMUM

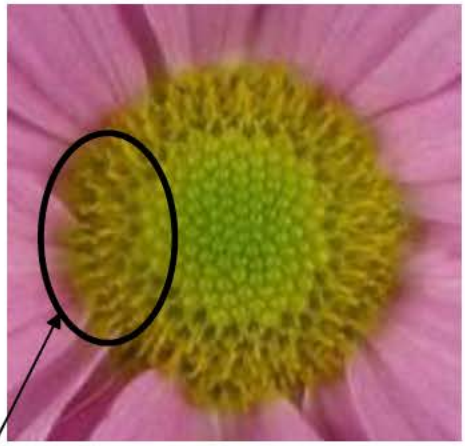
Contents

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 TG/026/5 Corr.2.

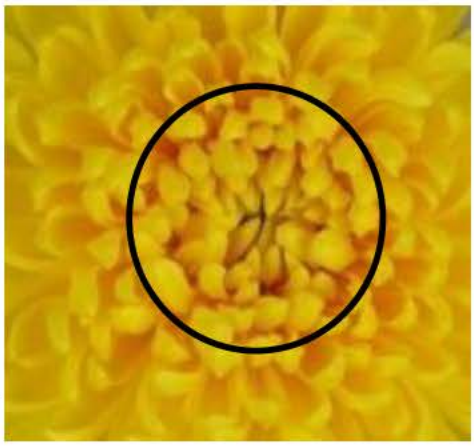
3. Explanations covering several characteristics
   Unless otherwise indicated, all characteristics should be recorded at the time of full flowering. In single and semi double varieties this is when the outer two to three rows of disc florets in the terminal flower head have dehisced; in double flowered varieties it is when the terminal flower head is fully open before aging of outer ray floret. For the varieties without top flower head or for flowering from beneath, a representative flower head that blooms first shall be used for observations.

outer two to three rows disc florets dehiscence



Single and semi double varieties

flower head is fully open (before center of ray florets is fully open) before aging of outer ray floret.



Double varieties

Varieties without terminal flower

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

(a) Plant, stem, stipule, petiole, leaf and bud characteristics should be observed when the terminal buds are showing full color, just before they begin to open.

(b) Stem and stipule characteristics should be observed on the middle third of the stem.

(c) Leaf characteristics should be observed on representative leaves taken from the middle third of the stem.

(d) In varieties bred to be grown as spray chrysanthemums, the lateral flower heads or lateral shoots are not removed. In varieties bred to be grown as disbud chrysanthemums, the lateral flower heads or lateral shoots (if existing) are removed at an early stage to leave just the terminal flower head. Some varieties are suitable for both types of culture.
- Characteristics 23 to 27, 32 and 34 should only be observed on varieties which are grown as sprays without disbudding. In the case of dual-purpose varieties, these characteristics should be observed on the non-disbudded part of the trial.
- Characteristics 33 and 35 should only be observed on varieties which are grown as disbuds. In the case of dual-purpose varieties, these characteristics should be observed on the disbudded part of the trial.

(e) Flower head characteristics should be observed on the terminal flower head.

(f) Ray floret characteristics should be observed on the outermost rows of florets, unless otherwise indicated. If there are no ray florets, these characteristics are not observed.

(g) The main color is the color with the largest total surface area, the second color (if present) is the color with the second largest total surface area, and the third color (if present) is that with the third largest total surface area.

(h) These characteristics should be observed after the flower bud has opened, but before the disc florets begin to dehisce.

4. Grouping characteristics:

The following have been agreed as useful grouping characteristics:

(a) Plant: type (characteristic 2)

(b) Flower head: type (characteristic 30)

(c) Excluding double and daisy-eyed double varieties: Disc: type (characteristic 31)

(d) Ray floret: number of colors of inner side (characteristic 62)

(e) Ray floret: main color of inner side (characteristic 63) with the following groups:

Gr. 1: white

Gr. 2: off-white

Gr. 3: yellow

Gr. 4: bronze

Gr. 5: orange

Gr. 6: orange pink

Gr. 7: pink

Gr. 8: red

Gr. 9: red purple

Gr. 10: purple

Gr. 11: green

(f) Ray floret: second color of inner side (characteristic 64) with the following groups:

Gr. 1: white

Gr. 2: off-white

Gr. 3: yellow

Gr. 4: bronze

Gr. 5: orange

Gr. 6: orange pink

Gr. 7: pink

Gr. 8: red

Gr. 9: red purple

Gr. 10: purple

Gr. 11: green

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.

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. illustrations, 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

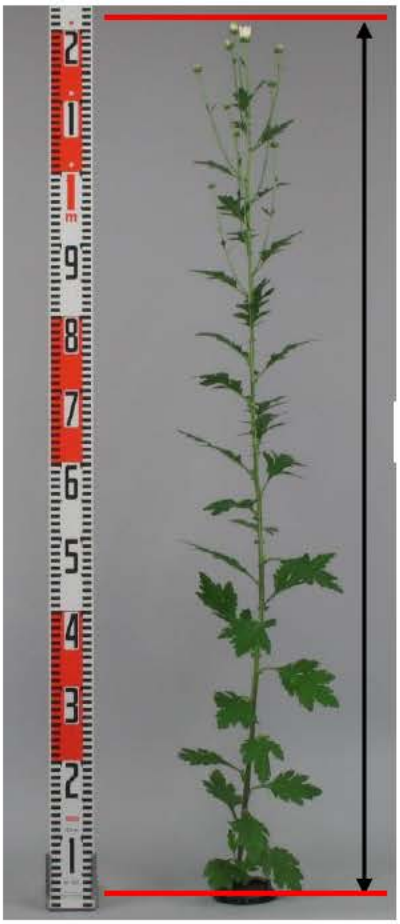
Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression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

(+) Explanations on the Table of Characteristics is indicated by TG/025/5 Corr.2,Chapter 8.2.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
1. (*)	**MS**	**Plant: height**				
QN	**(a)**	short	Machismo Time	Machismo Time		3
		medium	Dekyen	Dekyen	Dekyen, Jinba	5
		tall	Figrand	Figrand	Figrand Pink(=Figrand)	7

Remarks: None.
Stage of observation: See Chapter 3, paragraph (a).
Method of observation: Measurement. Measure length from the ground level to top of the plant.



Plant: height

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
2. (*) (+)	**VG**	**Plant: type**				
QL	**(a)**	non bushy	Anastasia, Boulou, Casmo, Reagan	Anastasia, Boulou, Casmo, Reagan	Figrand Pink(=Figrand)	1
		bushy	Elda White, Golden Mariyo, Guitpolin, Tripoli	Elda White, Golden Mariyo, Guitpolin, Tripoli	Yodatora	2

Remarks: None.
Stage of observation: See Chapter 3, paragraph (a).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following definition and photo's.
Assessment:
1 non bushy: varieties with strong apical dominance which naturally produce a single stem, with or without lateral flower heads or lateral shoots, unless pinched.
2 bushy: varieties with weak apical dominance which naturally produce bushy growth with no main single stem.

1 non bushy

2 bushy

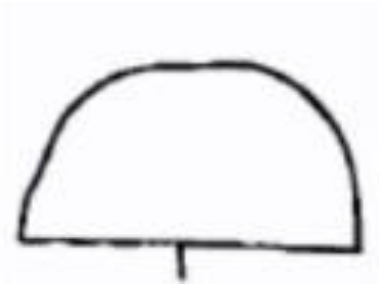
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
3. (*) (+)	**VG**	**<u>Only bushy varieties</u>: Plant: growth habit**				
PQ	**(a)**	upright	Golden Mariyo			1
		semi upright	Veria Dark			2
		hemispherical	Elda White			3
		spreading				4
		trailing	Fancy That			5

Remarks: Only bushy varieties.
Stage of observation: See Chapter 3, paragraph (a).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

1 upright

2 semi upright



3 hemispherical

4 spreading

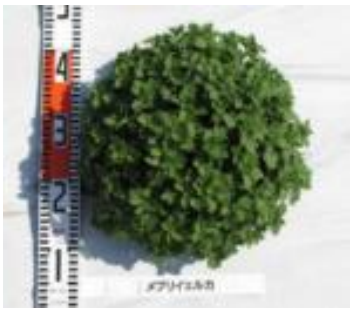
5 trailing

* On these photographs the terminal flower head is fully open. The photographs are meant for reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
4.	**VG**	**<u>Only bushy varieties</u>: Plant: density of branching**				
QN	**(a)**	sparse	Golden Mariyo			3
		medium	Veria Dark		Yodatora	5
		dense	Elda White			7

Remarks: Only bushy varieties.
Stage of observation: See Chapter 3, paragraph (a).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.



3 sparse | 5 medium | 7 dense

* Photograph to be changed to just before flower begin to open. Three photos of bottom side are not appropriate because the terminal flower head is fully open.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
5.	**VG**	**Stem: color**				
PQ	**(a)**	green	Yoko Ono	Yoko Ono	Figrand Pink(=Figrand)	1
	(b)	green tinged with purple or brown	Fancy That	Fancy That		2
		brown				3
		purple	Vymini	Vymini		4

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (b).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following definition and photo's.
Assessment:
1 green: no anthocyanin coloration.
2 green tinged with purple or brown: anthocyanin coloration is present on the part of stem.
3 brown: anthocyanin coloration is present, but not tinged.
4 purple: anthocyanin coloration is present, but not tinged.

1 green

2 green tinged with purple or brown

3 brown

4 purple

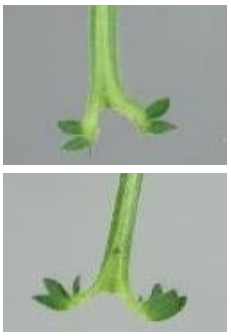
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
6.	**VG**	**Stipule: size**				
QN	**(a)**	absent or very small	Zeemimosa	Zeemimosa		1
	(b)	small	Vymini	Vymini	Vymini, Jinba	3
		medium	Yoko Ono	Yoko Ono		5
		large	Orinocco	Orinocco		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (b).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

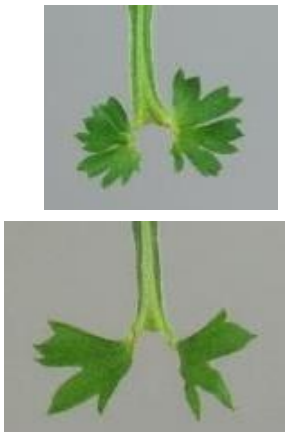
1 absent or very small

2 very small to small



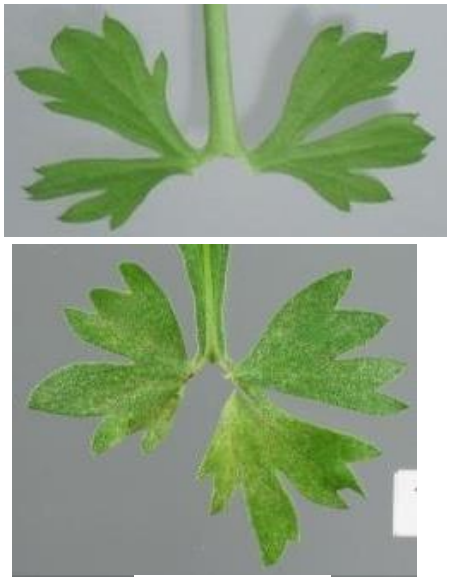
3 small

4 small to medium



5 medium

6 medium to large



7 large

* These images serve only to illustrate the variation present in the crop and should not be used as absolute reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
7. (+)	**VG**	**Petiole: attitude**				
QN	**(a)**	very strongly upwards	Rex	Rex		1
	(c)	moderately upwards	Dekyen	Dekyen		3
		horizontal	Boris Becker	Boris Becker		5
		moderately downwards	Breeze	Breeze		7
		drooping				9

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

3 moderately upwards

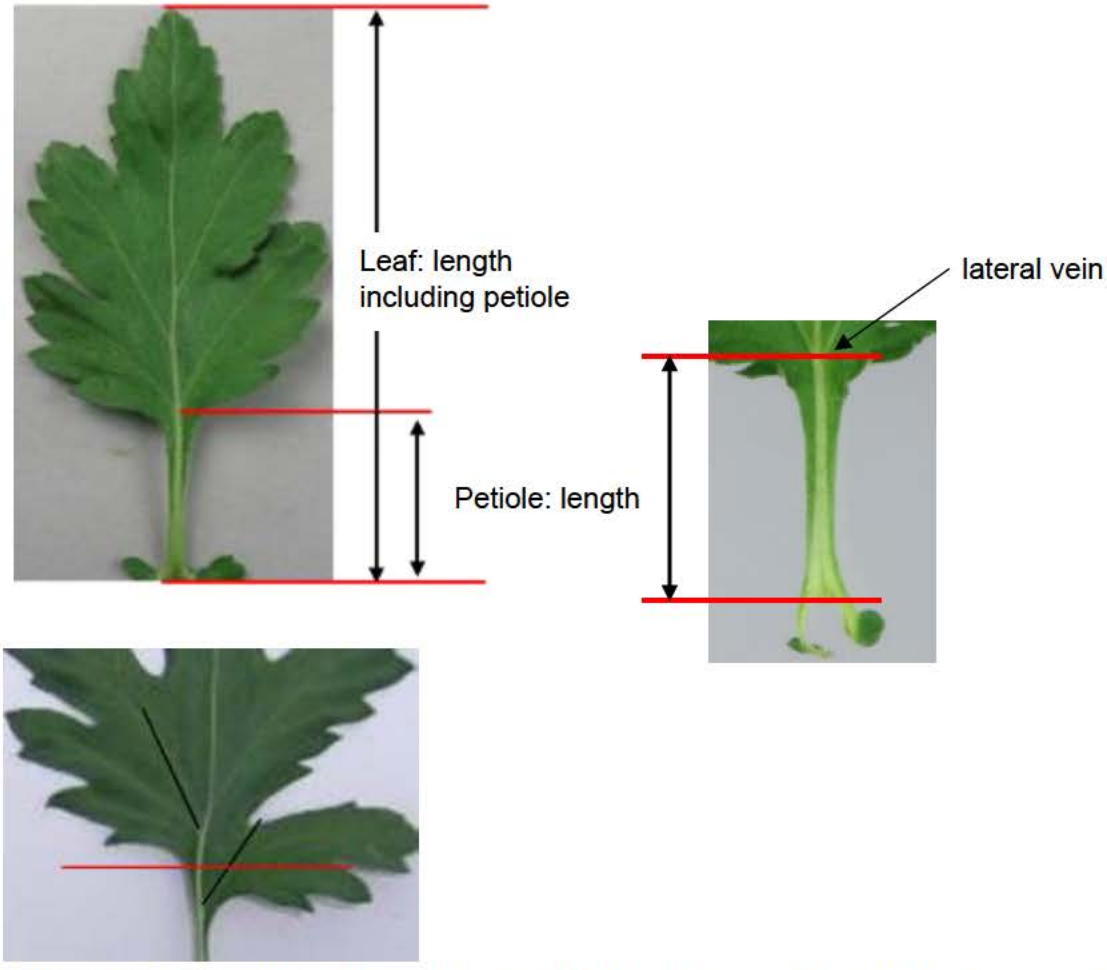
5 horizontal

7 moderately downwards

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
8.	**MS**	**Petiole: length relative to leaf length**				
QN	**(a)**	short	Vymini	Vymini		3
	(c)	medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		long				7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Measurement. The value of each ratio is used for calculation of the mean value of petiole length/leaf length.

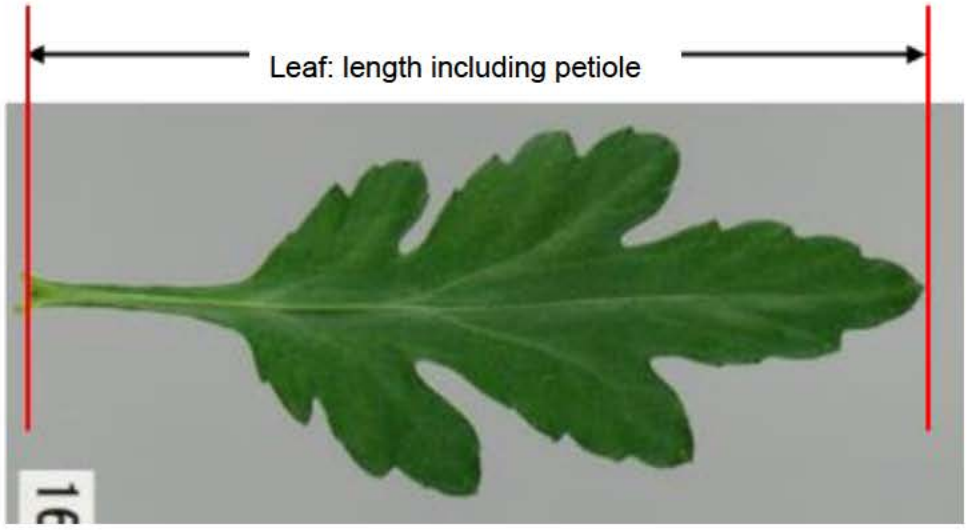


* In this case, the positions of the left and right lateral vein are different. Measurement from the middle part.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
9. (*)	**MS**	**Leaf: length including petiole**				
QN	**(a)**	short	Molfetta Pink	Molfetta Pink		3
	(c)	medium	Figrand	Figrand	FigrandPink(=Figrand) Jinba	5
		long	Yellow Wonder	Yellow Wonder		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Measurement. Measure the leaf length including petiole. If the leaf is curved or uneven, leaf should be measured by the length of the slightly pressed leaf.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
10. (*)	**MS**	**Leaf: width**				
QN	**(a)**	narrow	Molfetta Pink	Molfetta Pink	Yodatora	3
	(c)	medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		broad	Buttermere Anne	Buttermere Anne	Seirosa(=Reagan)	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Measurement. measure the leaf width. If the leaf is curved or uneven, leaf should be measured by the width of the slightly pressed leaf.

6. Method of observation (example of characterization)

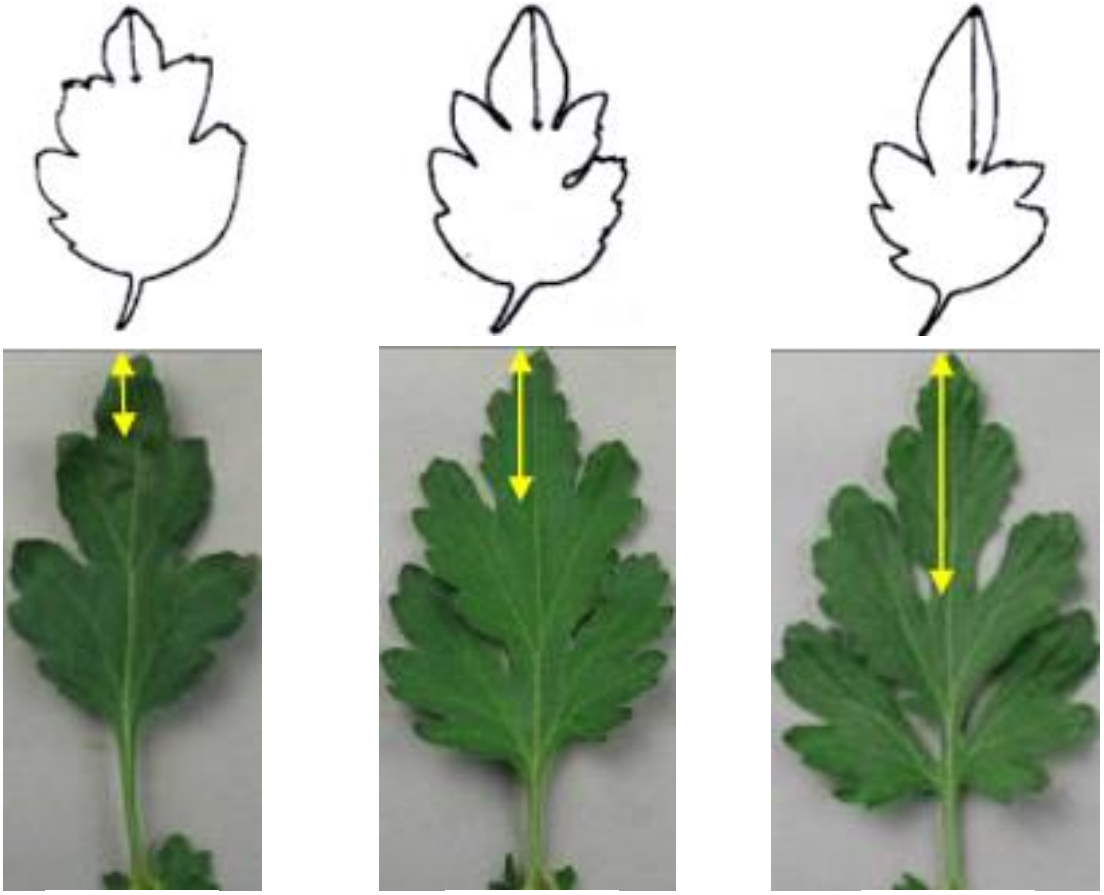
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
11. (*)	**MS**	**Leaf: ratio length/width**				
QN	**(a)**	low	Buttermere Anne	Buttermere Anne		3
	(c)	medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		high	Dekyen	Dekyen		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Measurement. The value of each ratio is used for calculation of the mean value of leaf length/leaf width.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
12. (*) (+)	**MS**	**Leaf: length of terminal lobe relative to leaf length**				
QN	**(a)**	short	Le Mans	Le Mans		3
	(c)	medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		long	Vymini	Vymini		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Measurement. The value of each ratio is used for calculation of the mean value of length of terminal lobe/leaf length.

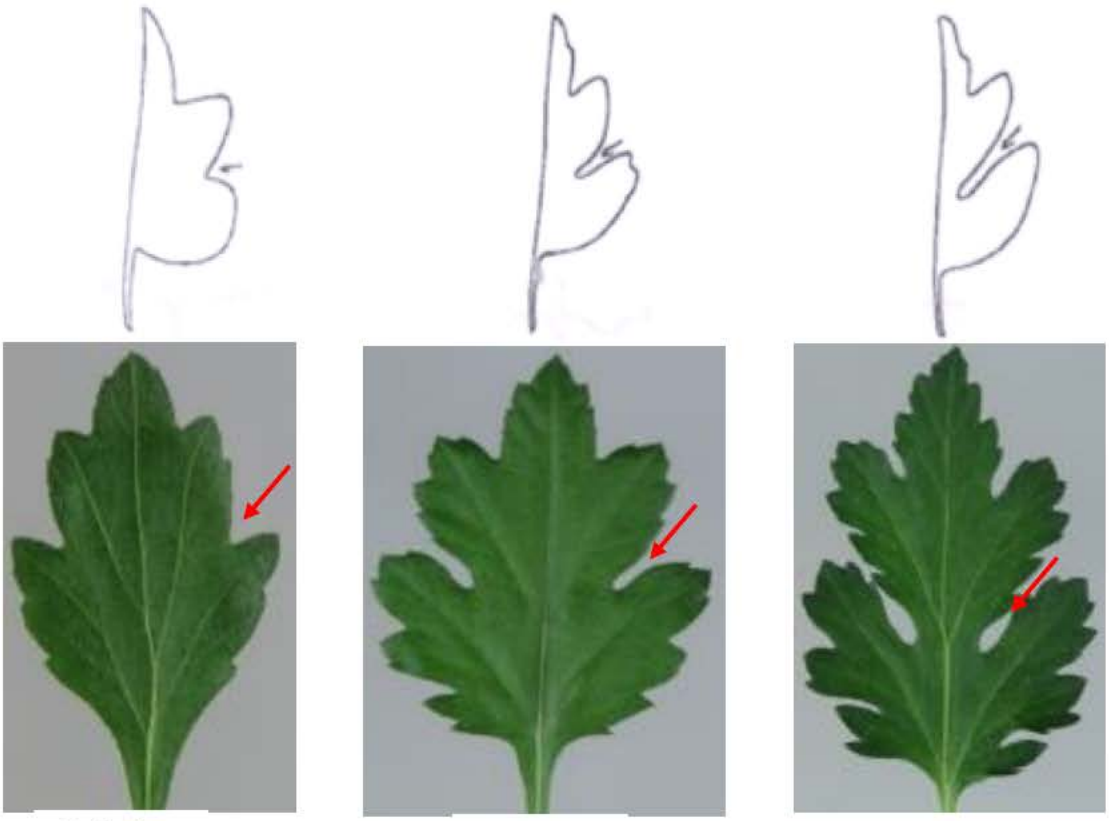


3 short 5 medium 7 long

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
13. (*) (+)	**VG**	**Leaf: depth of lowest lateral sinus**				
QN	**(a)**	shallow	Bea	Bea		3
	(c)	medium	Scott	Scott		5
		deep	Figrand	Figrand	Figrand Pink(=Figrand)	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



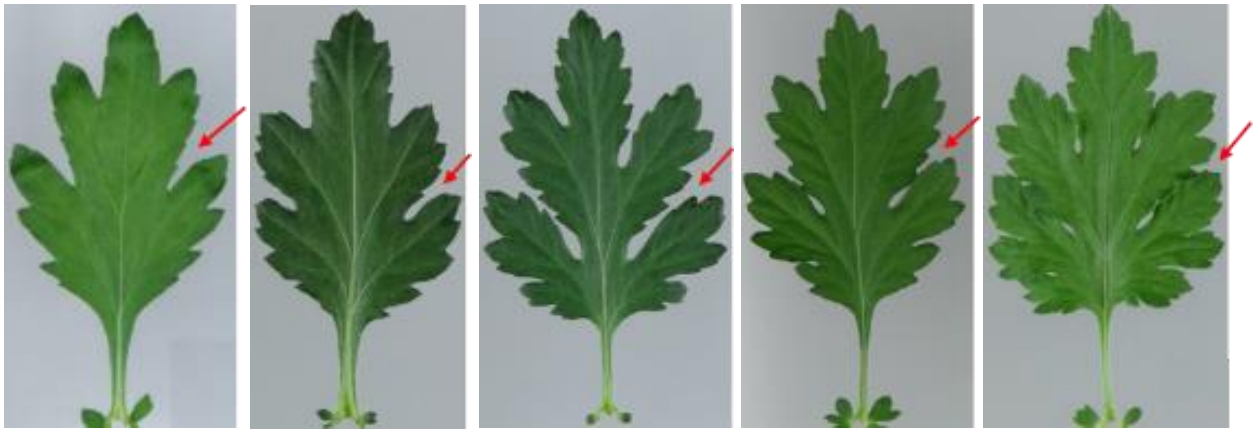
3 shallow 5 medium 7 deep

* These images serve only to illustrate the variation present in the crop and should not be used as absolute reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
14.	**VG**	**Leaf: margins of lowest lateral sinus**				
PQ	**(a)**	diverging	Zeemimosa	Zeemimosa		1
	(c)	parallel	Alma-Ata	Alma-Ata	Jinba	2
		converging	Arusha Dark Pink	Arusha Dark Pink		3
		touching	Vymini	Vymini	Vymini	4
		overlapping	Figrand	Figrand	Dekyen	5

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.



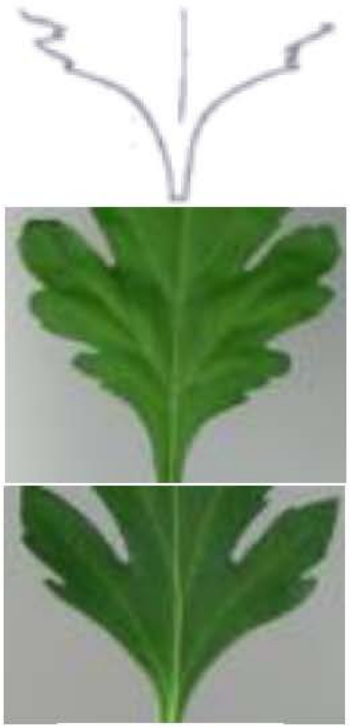
1 diverging 2 parallel 3 converging 4 touching 5 overlapping

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
15. (*) (+)	**VG**	**Leaf: predominant shape of base**				
PQ	**(a)**	acute	Zeemimosa	Zeemimosa		1
	(c)	obtuse	Machismo Time	Machismo Time		2
		rounded	Repulse	Repulse	Nishikikazaguruma(=Repulse)	3
		truncate	Alma-Ata	Alma-Ata	Seirosa(=Reagan)	4
		cordate	Scott	Scott		5
		asymmetric				6

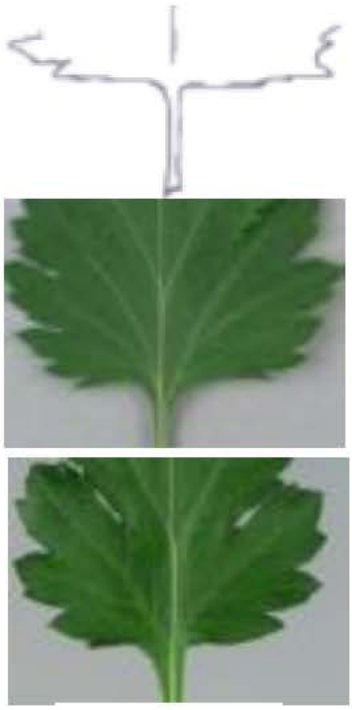
Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's. The base of the leaf tends to fold; in such case, slightly press to unfold the leaf base before observation.

1 acute

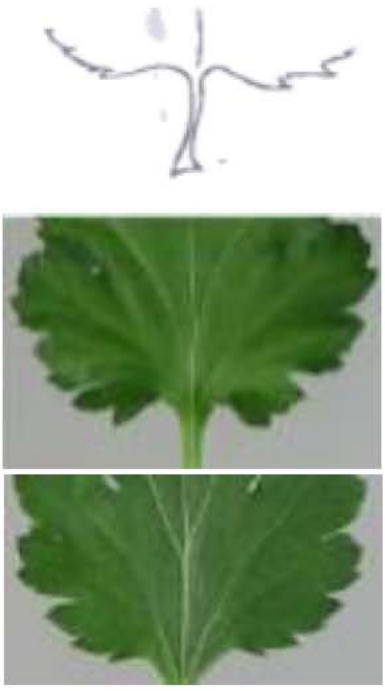


2 obtuse

3 rounded



4 truncate



5 cordate

6 asymmetric

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
16.	**VG**	**Leaf: glossiness of upper side**				
QN	**(a)**	absent or very weak	Veria Dark	Veria Dark		1
	(c)	weak	Breeze	Breeze	Seirosa(=Reagan)	2
		strong	Repulse	Repulse		3

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

These images serve only to illustrate the variation present in the crop and should not be used as absolute reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
17. (*)	**VG**	**Leaf: green color of upper side**				
QN	**(a)**	light				3
	(c)	medium	Ruby Red Reagan	Ruby Red Reagan		5
		dark	Dekyen	Dekyen	Dekyen	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

These images serve only to illustrate the variation present in the crop and should not be used as an absolute reference.

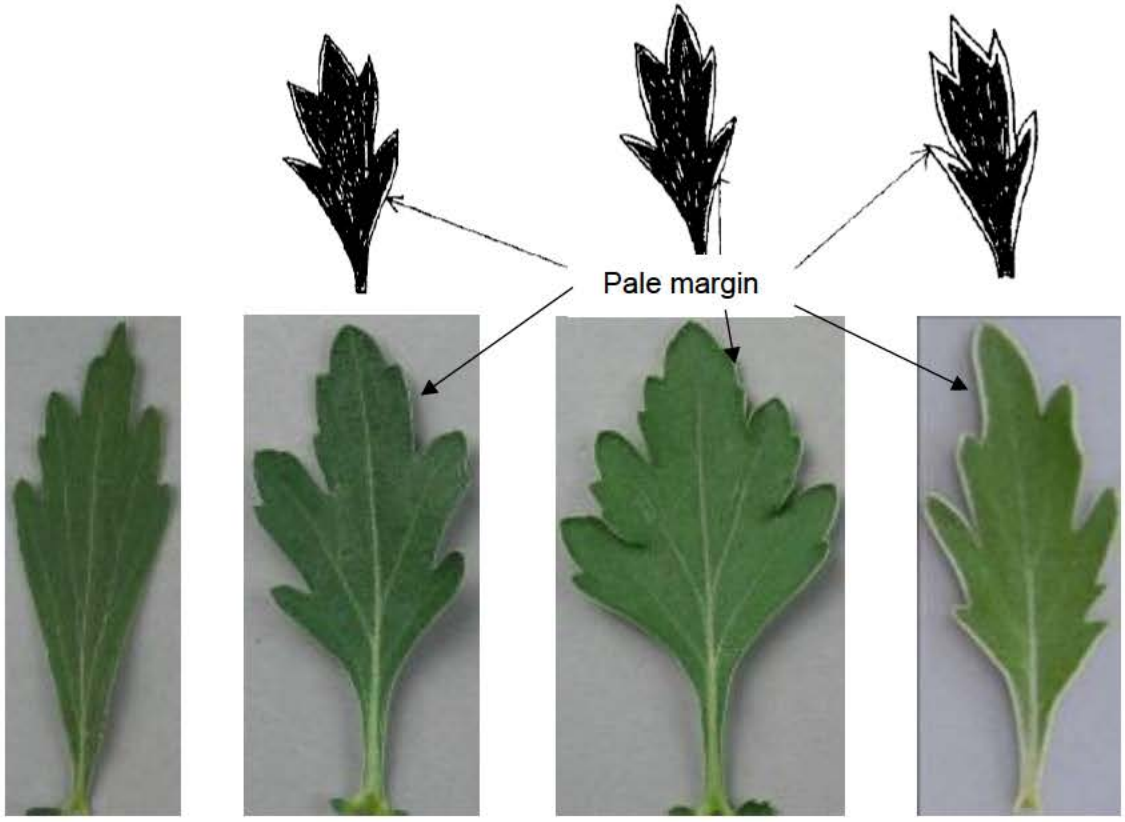
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
18. (*) (+)	**VG**	**Excluding varieties of *Chrysanthemum × morifolium*: Leaf: upper side: prominence of pale margin**				
QN	**(a)**	absent or very weak	Branjania Lotta			1
	(c)	weak				3
		medium	Mont Blanc			5
		strong	Zeemimosa			7

Remarks: Excluding varieties of *Chrysanthemum×morifolium*.

Stage of observation: See Chapter 3, paragraph (a) and (c).

Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
19. (*) (+)	**VG**	**Excluding varieties of *Chrysanthemum ×morifolium*: Leaf: pubescence of lower side**				
QN	**(c)**	weak				3
		medium	Benny			5
		strong	Zeemimosa			7

Remarks: Excluding varieties of *Chrysanthemum×morifolium*.

Stage of observation: See Chapter 3, paragraph (a) and (c).

Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

3 weak | 5 medium | 7 strong | 9 very strong

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
20. (*) (+)	**VG**	**Excluding varieties of *Chrysanthemum ×morifolium*: Leaf: color of lower side**				
PQ	**(a)** **(c)**	RHS Colour Chart (indicate reference number)				

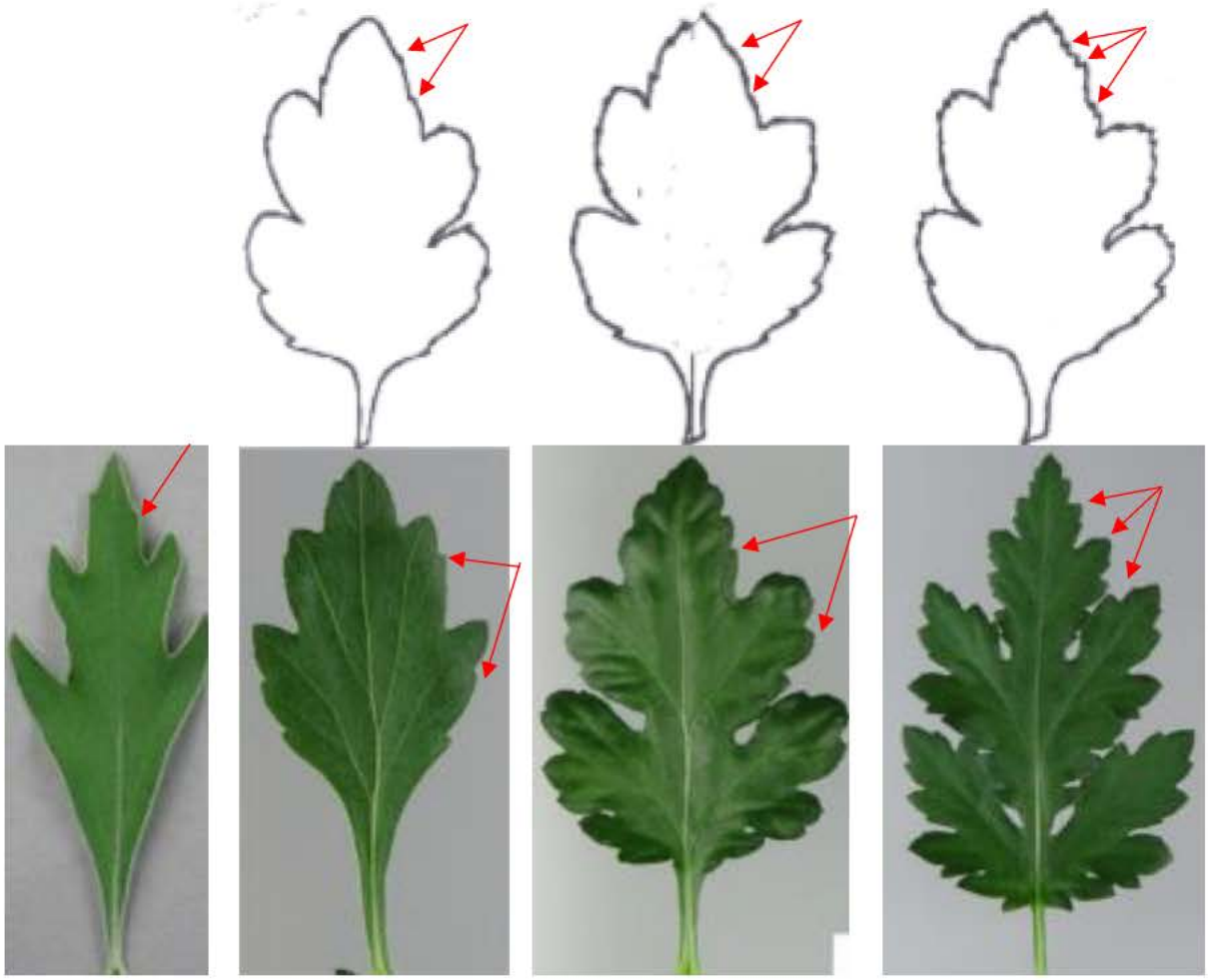
Remarks: Excluding varieties of *Chrysanthemum*×*morifolium*.

Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
21. (+)	**VG**	**Leaf margin: number of indentations**				
QN	**(c)**	few	Bea	Bea	Yodatora	3
		medium	Le Mans	Le Mans		5
		many	Vymini	Vymini	Vymini	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

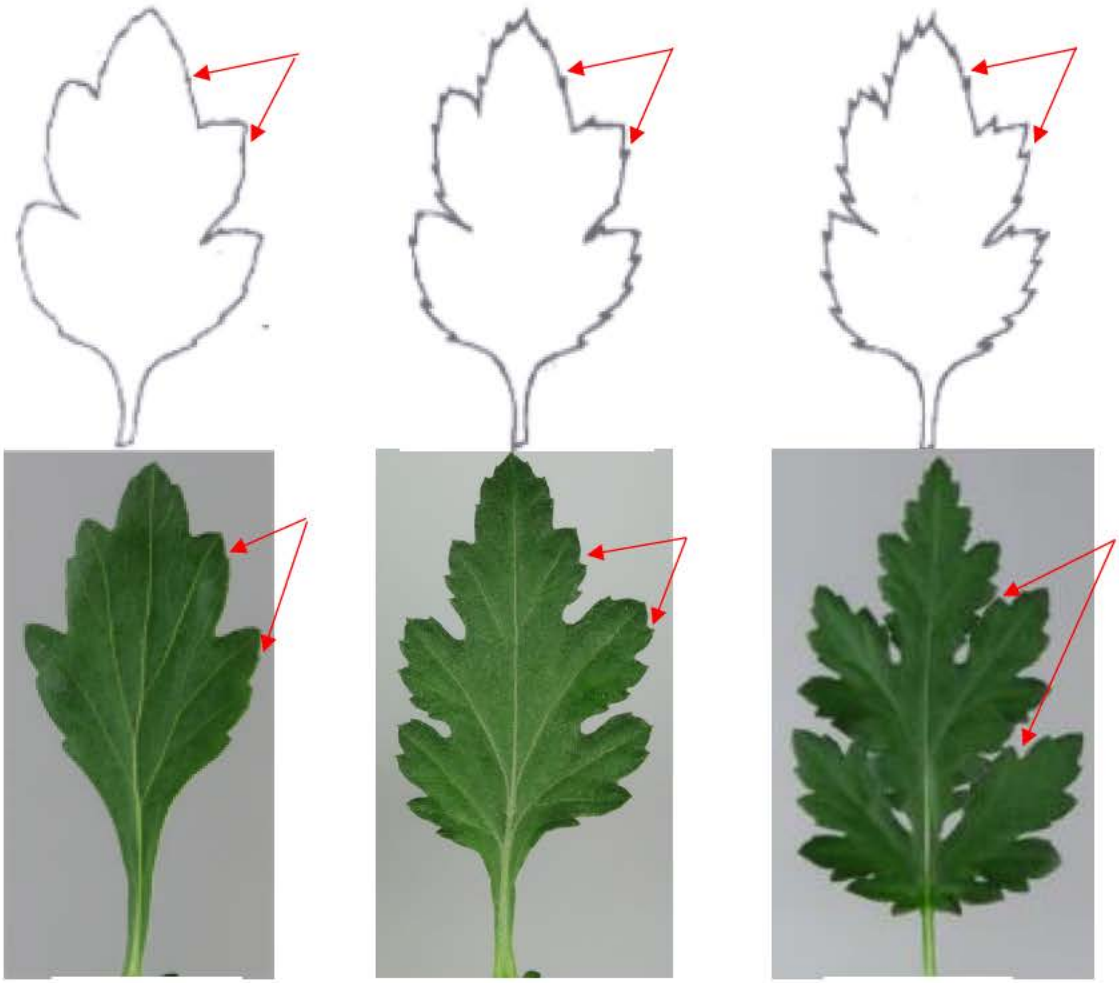


1 very few 3 few 5 medium 7 many

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
22. (+)	**VG**	**Leaf margin: depth of indentations**				
QN	**(a)**	shallow	Anastasia	Anastasia	Yodatora	3
	(c)	medium	Le Mans	Le Mans		5
		deep	Machismo Time	Machismo Time	Vymini	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (a) and (c).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



3 shallow 5 medium 7 deep

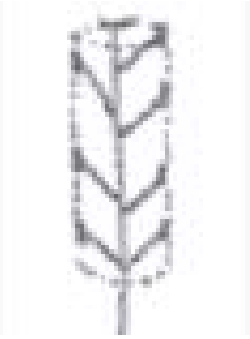
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
23. (+)	**VG**	**<u>Only non-bushy varieties (see char. 2)</u>: Inflorescence: form**				
PQ	**(d)**	conical	Breeze	Breeze		1
		deeply domed	Yoko Ono	Yoko Ono	Dekyen	2
		cylindrical	Premium Time	Premium Time		3
		corymbiform	Machismo Time	Machismo Time		4
		flat-corymbiform				5

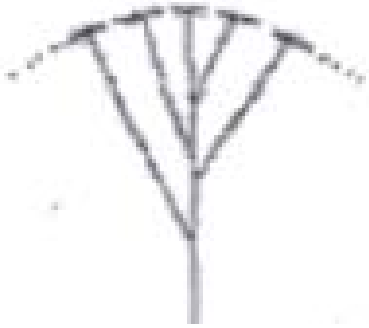
Remarks: Only non-bushy varieties.
Stage of observation: See Chapter 3, paragraph (d).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

1 conical

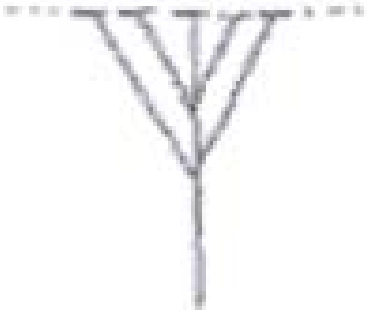
2 deeply domed



3 cylindrical



4 corymbiform



5 flat-corymbiform

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
24.	**MS/ VG**	**Only non-bushy varieties (see char. 2): Inflorescence: width at widest point**				
QN	**(d)**	narrow	Premium Time	Premium Time		3
		medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		broad				7

Remarks: Only non-bushy varieties.
Stage of observation: See Chapter 3, paragraph (d).
Method of observation: Visual observation or measurement. Calibrate using example varieties. The value of each plant is used for calculation of the mean value of width at widest point, which should be considered same way as described MS.

Inflorescence: width at widest point

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
25. (*) (+)	**VG**	**Only non-bushy varieties (see char. 2): Inflorescence: angle between primary lateral shoot and stem**				
QN	**(d)**	small	Delianne	Delianne		3
		medium	Dekyen	Dekyen	Dekyen	5
		large	Repulse	Repulse		7

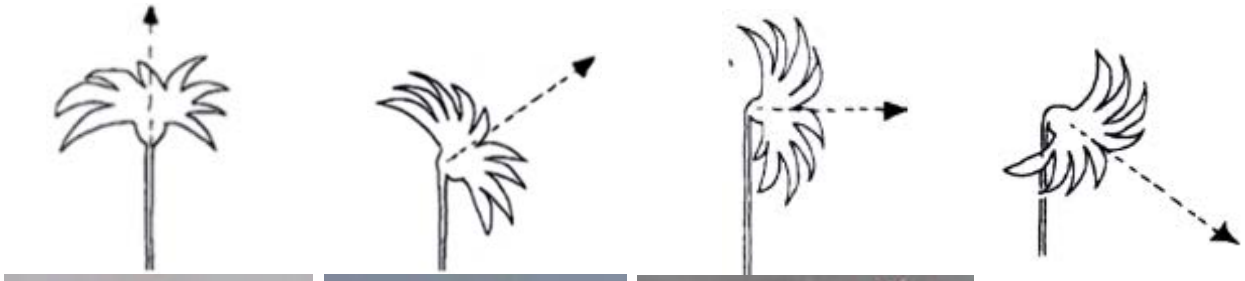
Remarks: Only non-bushy varieties.
Stage of observation: See Chapter 3, paragraph (d).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

1 very small | 3 small | 5 medium | 7 large

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
26. **(+)**	**VG**	**Only non-bushy varieties (see char. 2): Inflorescence: attitude of lateral flower heads**				
QN	**(d)**	upright	Scott	Scott	Figrand Pink(=Figrand)	1
		semi upright	Ruby Red Reagan	Ruby Red Reagan		3
		horizontal	Premium Time	Premium Time		5
		moderately downwards				7

Remarks: Only non-bushy varieties.
Stage of observation: See Chapter 3, paragraph (d).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

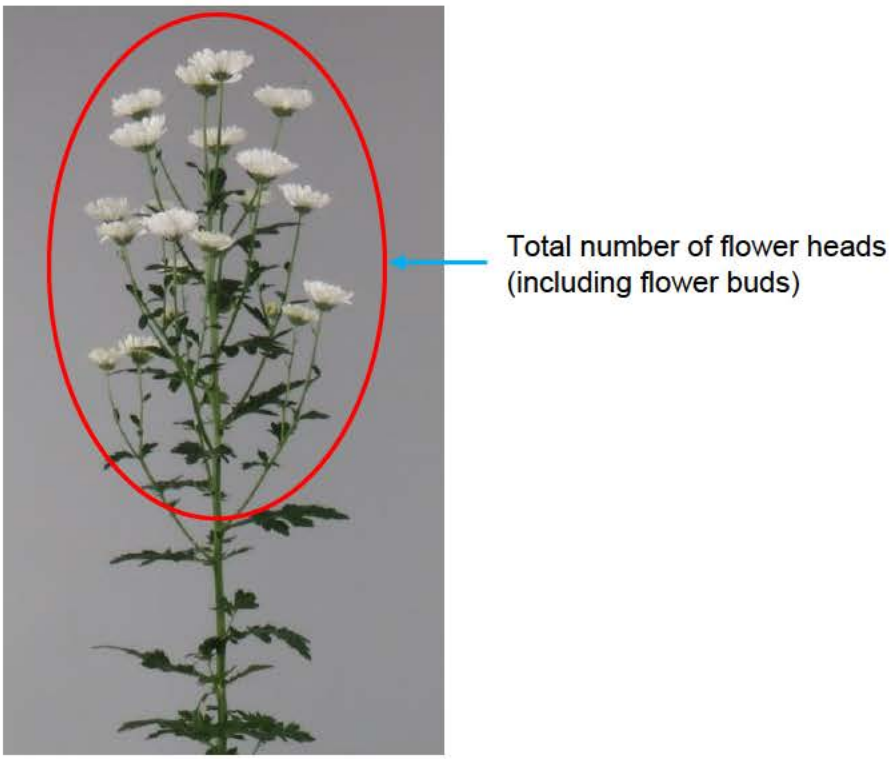


1 upright | 3 semi upright | 5 horizontal | 7 moderately downwards

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
27. (+)	**MS**	**Only non-bushy varieties: (see char. 2): Total number of flower heads per stem**				
QN	**(d)**	few	Delianne	Delianne	Figrand Pink(=Figrand)	3
		medium	Vymini	Vymini	Vymini	5
		many	Breeze	Breeze		7

Remarks: Only non-bushy varieties.
Stage of observation: See Chapter 3, paragraph (d).
Method of observation: Measurement. Count the total number of flower heads (including flower buds). The overall floriferousness of the variety is assessed.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
28. **(+)**	**VG**	**Only bushy varieties (see char. 2): Total number of flower heads per plant**				
QN		few	Golden Mariyo			3
		medium	Balios			5
		many	Elda White			7

Remarks: Only bushy varieties.
Stage of observation: See Chapter 3.
Method of observation: Visual observation. The overall floriferousness of the variety is observed.

1 very few

3 few

5 medium

7 many

9 very many

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
29.	**VG**	**Flower bud: color of outer side just before opening**				
PQ	**(d)** **(e)**	RHS Colour Chart (indicate reference number)				

Remarks: None
Stage of observation: See Chapter 3, paragraph (d) and (e).
Method of observation: Visual observation. Observe the color of outer side of ray florets just before opening (excluding color of involucre). In the case of types without ray florets, this characteristic is not applicable.

RHS: 70C(dark blue pink)

RHS: 176D(medium brown),7A (medium yellow)(tip)

RHS: 183A(dark brown purple)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
30. (*) (+)	**VG**	**Flower head: type**				
PQ	**(e)**	without ray florets	Zeemimosa	Zeemimosa		1
		single	Repulse	Repulse		2
		semi double	Figrand	Figrand	Figrand Pink(=Figrand)	3
		daisy-eyed double	Veria Dark	Veria Dark		4
		double	Delianne	Delianne	Yodatora	5

Remarks: None

Stage of observation: See Chapter 3, paragraph (e).

Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following definition and photo's.

Assessment:

1. without ray florets: flower heads consist of disc florets only.
2. single: flower heads with one row of ray florets, and a clearly defined central disc which is always visible.
3. semi double: flower heads with more than one row of ray florets, and a clearly defined central disc which is always visible.
4. daisy-eyed double: double flower heads where a disc is not visible in the early stages of flowering, but can be seen as the flower head opens fully. The disc is not always clearly defined.
5. double: double flower heads where a disc is not visible at any stage of flowering.

1 without ray florets

2 single

3 semi double

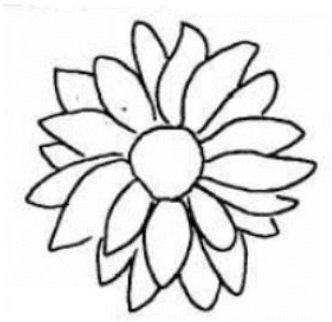
4 daisy-eyed double

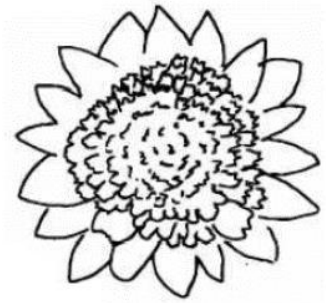
5 double

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
31. (*) (+)	**VG**	**<u>Excluding double and daisy-eyed double varieties</u>: Disc: type**				
QL	**(e)**	daisy	Figrand	Figrand	Figrand Pink(=Figrand)	1
		anemone	Le Mans	Le Mans		2

Remarks: Excluding double and daisy-eyed double varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.





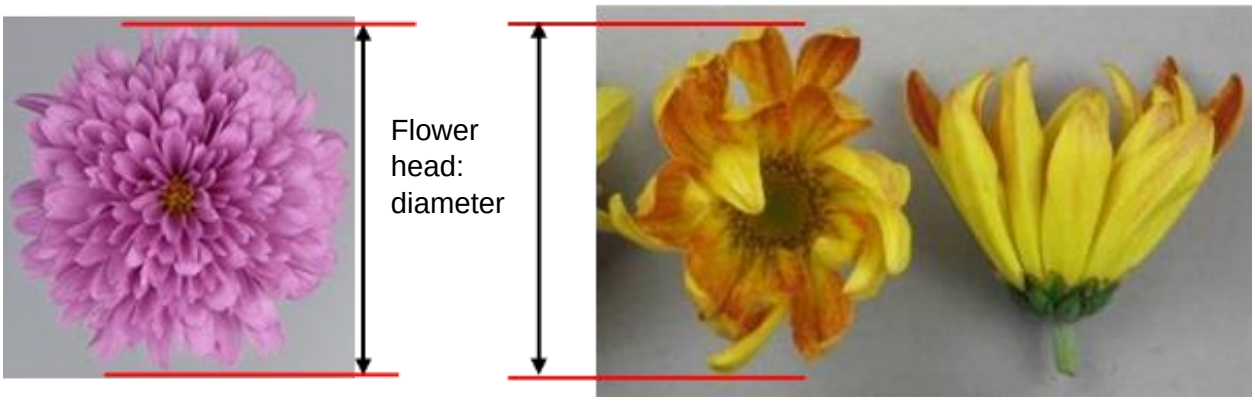
1 daisy

2 anemone

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
32. (*)	**MS**	**Flower head: diameter (non-disbudded plants)**				
QN	**(d)**	small	Yoko Ono	Yoko Ono		3
	(e)	medium	Ruby Red Reagan	Ruby Red Reagan	Figrand Pink(=Figrand)	5
		large	Delianne	Delianne		7

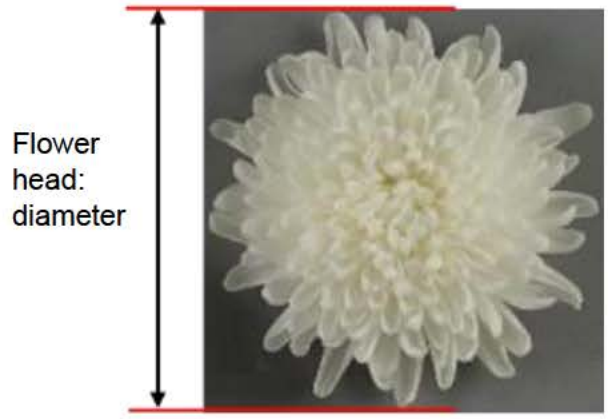
Remarks: Only non-disbudded plants.
Stage of observation: See Chapter 3, paragraph (d) and (e).
Method of observation: Measure the maximum diameter of the flower head in a natural shape.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
33. (*)	**MS**	**Flower head: diameter (disbudded plants)**				
QN	**(d)**	small	Boris Becker	Boris Becker		3
	(e)	medium			Jinba	5
		large	Anastasia	Anastasia		7

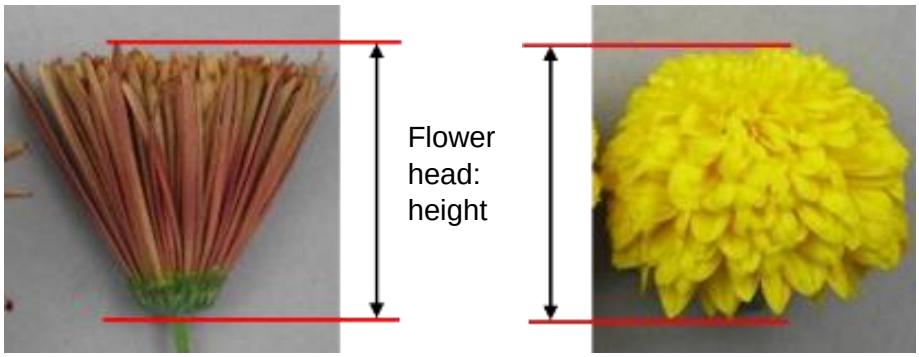
Remarks: Only disbudded plants.
Stage of observation: See Chapter 3, paragraph (d) and (e).
Method of observation: Measure the maximum diameter of the flower head in a natural shape.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
34.	**MS**	**Flower head: height (non-disbudded plants)**				
QN	**(d)**	low	Dekyen	Dekyen		3
	(e)	medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		high				7

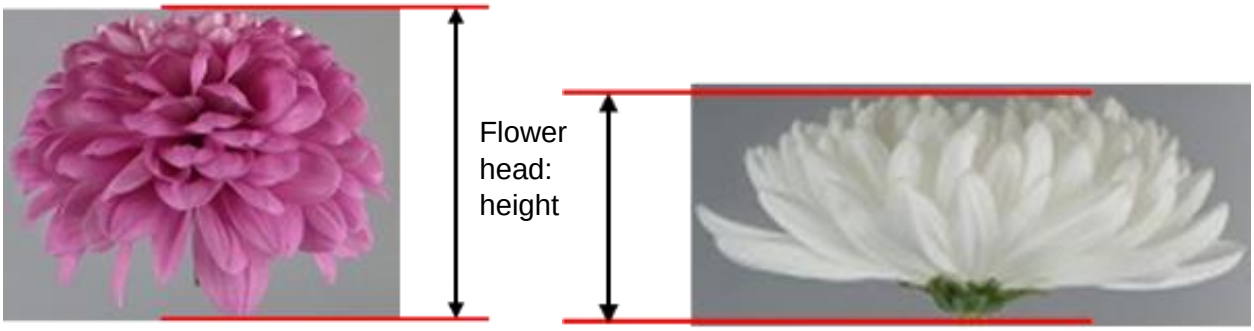
Remarks: Only non-disbudded plants.
Stage of observation: See Chapter 3, paragraph (d) and (e).
Method of observation: Measure the height of the flower head in a natural shape.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
35.	**MS**	**Flower head: height (disbudded plants)**				
QN	**(d)**	low	Anastasia	Anastasia		3
	(e)	medium	Anlymp	Anlymp	Jinba	5
		high				7

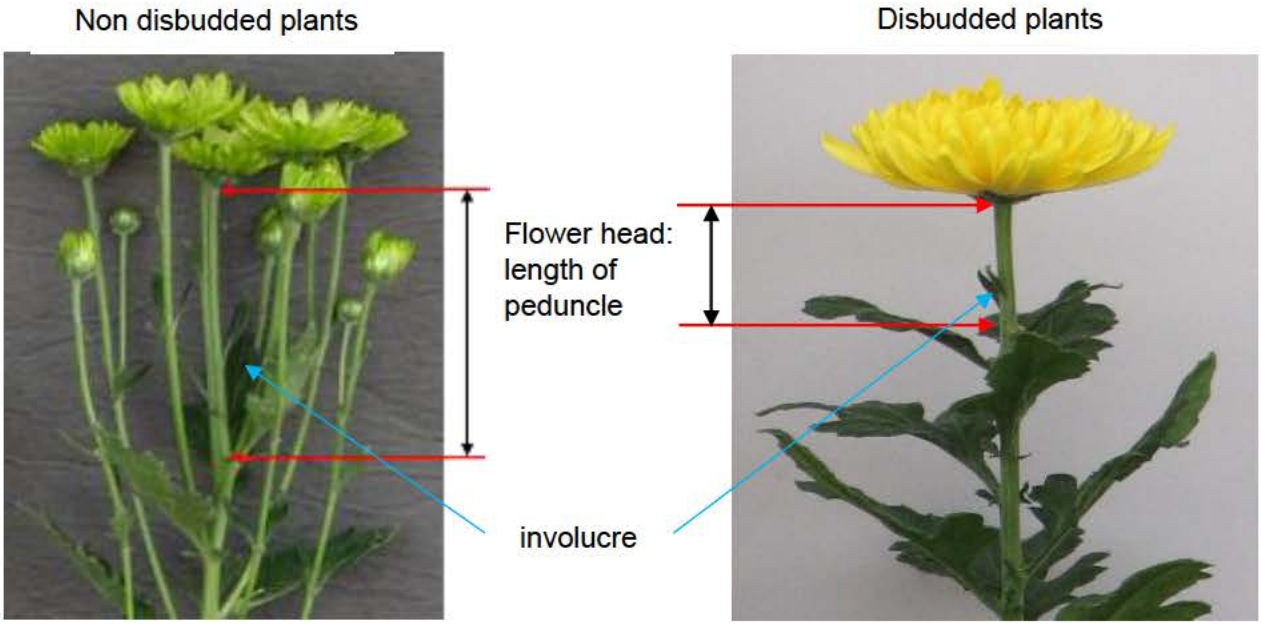
Remarks: Only disbudded plants.
Stage of observation: See Chapter 3, paragraph (d) and (e).
Method of observation: Measure the height of the flower head in a natural shape.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
36.	**MS/ VG**	**Flower head: length of peduncle**				
QN	**(e)**	short	Vymini	Vymini	Vymini, Yodatora	3
		medium	Delianne	Delianne		5
		long	Ruby Red Reagan	Ruby Red Reagan	Seirosa(=Reagan)	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation or Measure the length of peduncle. Non disbudded plants ; measurement should be done from beneath the terminal flower head (excluding the involucre) to the node of the first lateral shoot. Disbudded plants ;measurement should be done from beneath the terminal flower head (excluding the involucre) to the node of the first fully developed leaf.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
37.	**VG**	**<u>Only semi double and daisy-eyed double varieties (see char. 30)</u>: Flower head: number of rows of ray florets**				
QN	**(e)**	few	Vymini	Vymini	Vymini	3
		medium	Fancy That	Fancy That		5
		many	Veria Dark	Veria Dark		7

Remarks: Only double and daisy-eyed double varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

1 very few

3 few

5 medium

7 many

These photographs are meant to illustrate the variation in number of row of ray florets in the varieties and should not be used as an absolute reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
38. (*)	**MS/ VG**	**Only single and semi double varieties (see char. 30): Flower head: number of ray florets**				
QN	**(e)**	few	Repulse	Repulse	Seirosa(=Reagan)	3
		medium	Figrand	Figrand		5
		many	Vymini	Vymini	Vymini	7

Remarks: Only single and semi double varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: (NL) Visual observation.Observe the density of ray florets,The density depends on the number of rows and the number of ray florets per row.
(JP) Measurement;Count the number of the ray florets.

These images serve only to illustrate the variation present in the crop and should not be used as an absolute reference.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
39. **(+)**	**VG**	**<u>Only daisy-eyed double and double varieties (see char. 30):</u> Flower head: density of ray florets**				
QN	**(e)**	sparse	Balios	Balios		3
		medium	Delianne	Delianne	Jinba	5
		dense	Anlymp	Anlymp		7

Remarks: Only double and daisy-eyed double varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. Observe the density of ray florets. The density depends on the number of rows and the number of ray florets per row. In the absence of example varieties, observations can be done using the following photo's.

6. Method of observation (example of characterization)

*Type of ray floret is quilled or spatulate (see char.41).

3 sparse 5 medium 7 dense

*Type of ray floret is ligulate or incurved, funnel shaped (see char.41).

3 sparse 5 medium

7 dense

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
40. (*) (+)	**VG**	**Flower head: number of types of ray florets**				
PQ	**(e)**	one	Figrand	Figrand	Figrand Pink(=Figrand)	1
		two	Banjax	Banjax		2
		more than two	Arusha Dark Pink	Arusha Dark Pink		3

Remarks: None
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

1 one (ligulate)

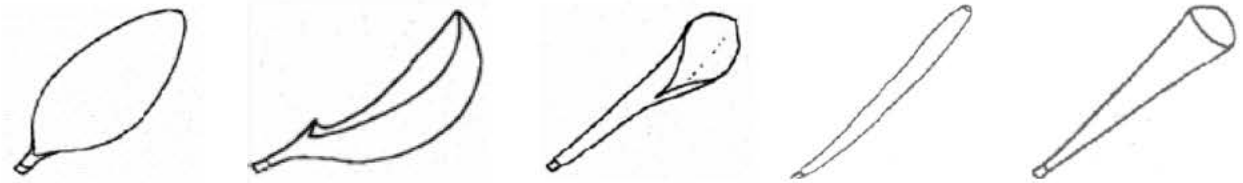
2 two (ligulate, spatulate)

3 more than two (ligulate, spatulate, quilled)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
41. (*) (+)	**VG**	**Flower head: predominant type of ray floret**				
PQ	**(e)**	ligulate	Figrand	Figrand	Figrand Pink(=Figrand)	1
		incurved	Anlymp, Boulou	Anlymp, Boulou		2
		spatulate	Banjax	Banjax		3
		quilled	Anastasia	Anastasia	Anastasia	4
		funnel shaped	Repulse	Repulse		5

Remarks: None
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.
Assessment:



1 ligulate 2 incurved 3 spatulate 4 quilled 5 funnel shaped

1 ligulate: Ray floret is straight, distal part or edge or lateral side can be slightly incurved.
2 incurved: Regardless of the length of corolla tube, both of distal part and lateral side of the ray floret are incurved.
3 spatulate: The length of corolla tube is longer than 1/3 of the ray floret length.
4 quilled: The length of corolla tube is longer than 90% of the ray floret length or the length of corolla tube is about from 70% to 80% of the ray floret length and aperture of ray floret do not spread.
5 funnel shaped: The length of corolla tube is longer than 90% of the ray floret length and ray floret is thicker toward the tip.

6. Method of observation (example of characterization)

1 ligulate

2 incurved

3 spatulate

4 quilled

5 funnel shaped

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
42. (*) (+)	**VG**	**Flower head: secondary type of ray floret**				
PQ	**(e)**	ligulate				1
		incurved				2
		spatulate	Arusha Dark Pink	Arusha Dark Pink		3
		quilled	Banjax	Banjax		4
		funnel shaped				5

Remarks: None
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. See for explanation characteristic 41.

6. Method of observation (example of characterization)

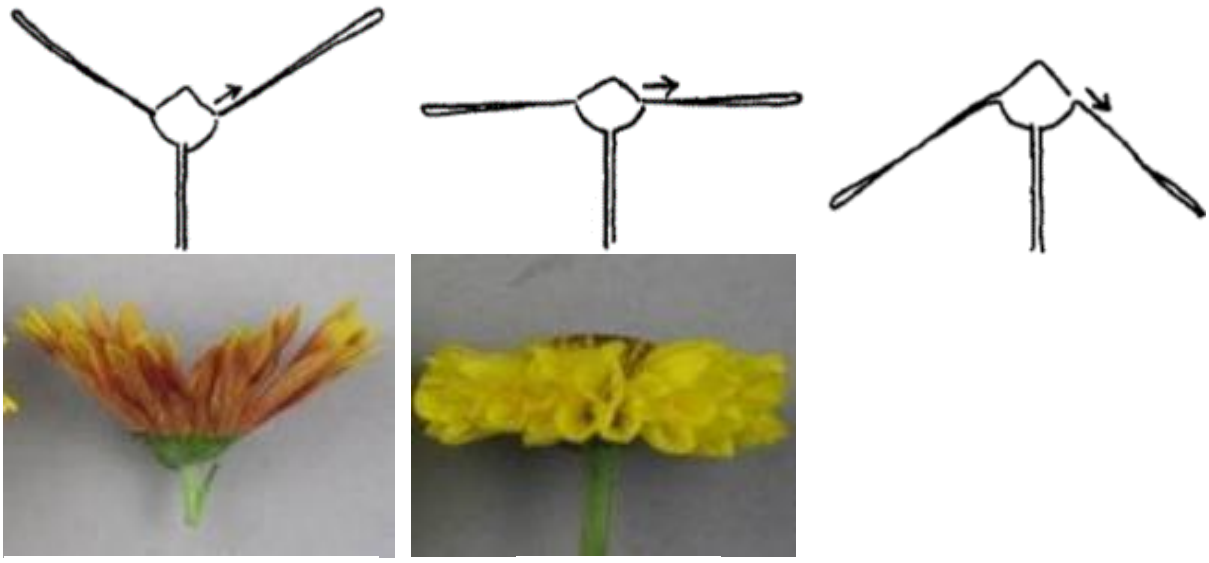
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
43. **(+)**	**VG**	**Flower head: tertiary type of ray floret**				
PQ	**(e)**	ligulate				1
		incurved				2
		spatulate				3
		quilled	Arusha Dark Pink	Arusha Dark Pink		4
		funnel shaped				5

Remarks: None
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. See for explanation characteristic 41.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
44. (*) (+)	**VG**	**<u>Only single and semi double varieties (see char. 30)</u>: Ray floret: attitude of basal part**				
QN	**(e)**	moderately ascending	Dekyen	Dekyen		3
	(f)	horizontal	Vymini	Vymini	Vymini	5
		moderately descending	Tango	Tango		7

Remarks: Only single and semi double varieties.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



3 moderately ascending | 5 horizontal | 7 moderately descending

* In Japan, we are also evaluating Characteristics for daisy-eyed double and double varieties as well

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
45. (+)	**VG**	**Ray floret: upper surface**				
PQ	**(e)**	smooth	Elda White	Elda White		1
	(f)	ribbed	Ruby Red Reagan	Ruby Red Reagan	Figrand Pink(=Figrand)	2
		keeled	Vymini	Vymini	Vymini	3

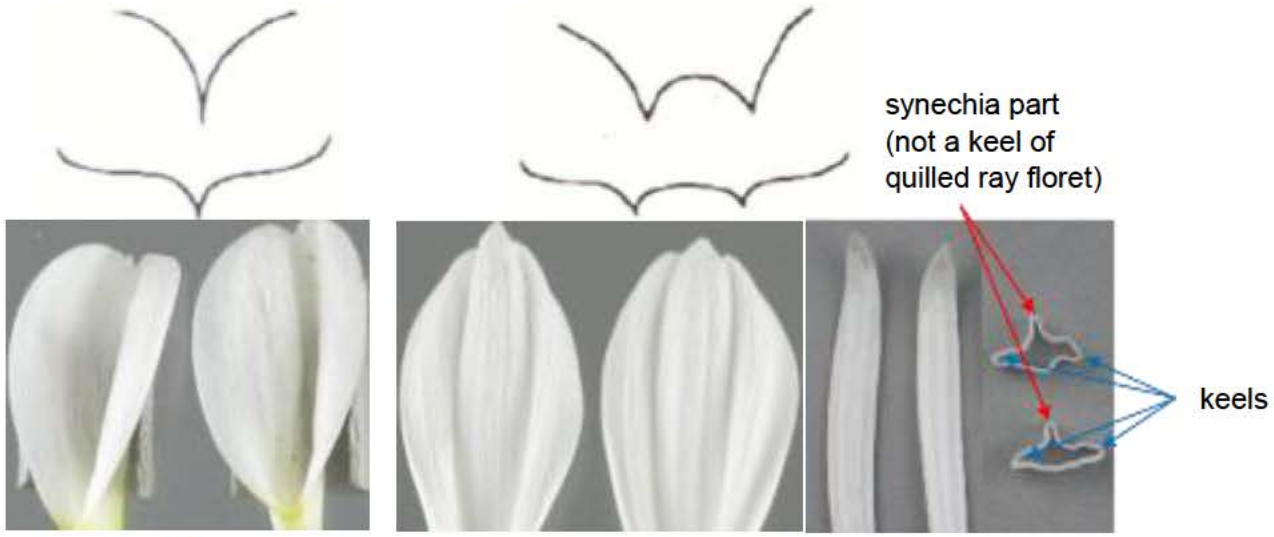
Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations, photos and definitions.
Assessment:
1 smooth: ribs near the surface are absent or very weak.
2 ribbed: clear ribs are present.
3 keeled: Clear deep folds are present.

1 smooth 2 ribbed 3 keeled

6. Method of observation (example of characterization)

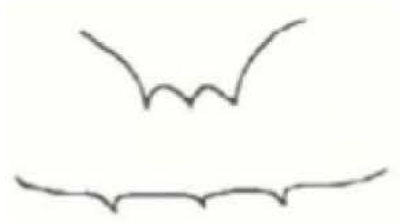
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
46.	**VG**	**Ray floret: number of keels**				
(+)						
PQ	**(e)**	one				1
	(f)	two	Vymini	Vymini	Vymini	2
		more than two				3

Remarks: Only keeled florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



1 one

2 two



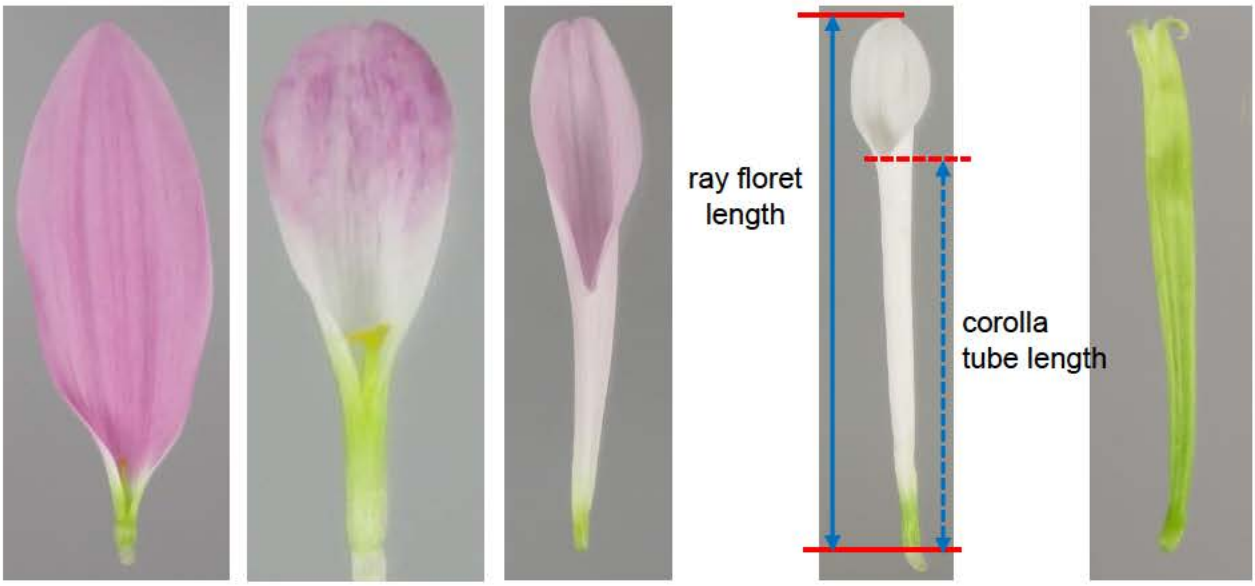
3 more than two

In the case of quilled (see char.41) ray floret, which has synechia part on edges of the ray florets this synechia part should not be observed for number of keels.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
47. (*)	**VG**	**Ray floret: length of corolla tube**				
QN	**(e)**	short	Yoko Ono	Yoko Ono		3
	(f)	medium				5
		long	Repulse	Repulse	Nishikikazaguruma(=Repulse)	7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. Observe the ratio of ray floret length / corolla tube length, the ovary excluded. In the absence of example varieties, observations can be done using the following photo's.



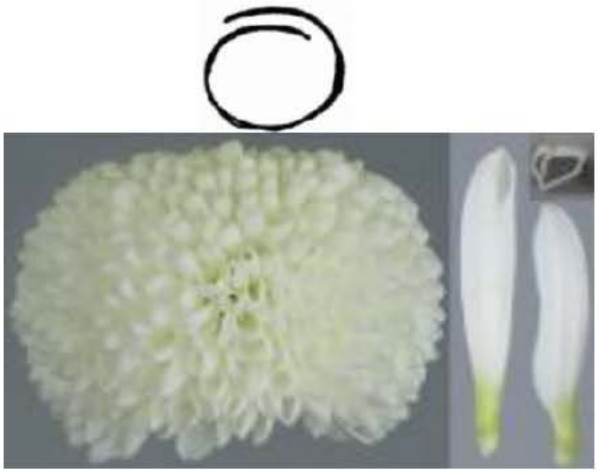
1 very short | 3 short | 5 medium | 7 long | 9 very long

6. Method of observation (example of characterization)

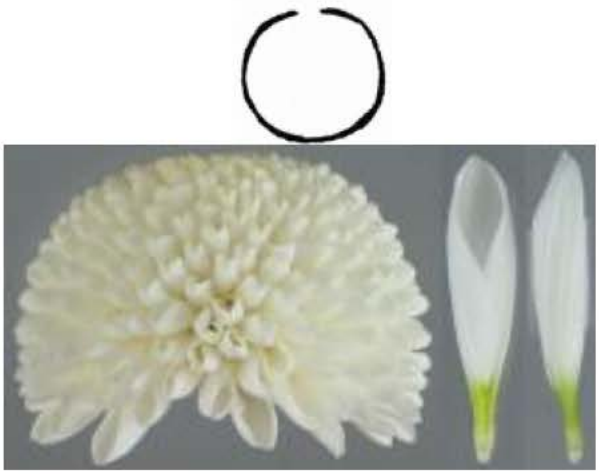
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
48. (*) (+)	**VG**	**Ray floret: profile in cross section at widest point (non-quilled florets)**				
QN	**(e)**	strongly concave with margins overlapping				1
	(f)	strongly concave with margins touching				2
		strongly concave	Anlymp	Anlymp		3
		moderately concave	Yoko Ono	Yoko Ono		4
		weakly concave	Golden Mariyo	Golden Mariyo		5
		flat				6
		weakly convex	Le Mans	Le Mans		7
		moderately convex	Machismo Time	Machismo Time		8
		strongly convex				9
		strongly convex with margins touching				10
		strongly convex with margins overlapping				11

Remarks: Excluding quilled and funnel-shaped florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

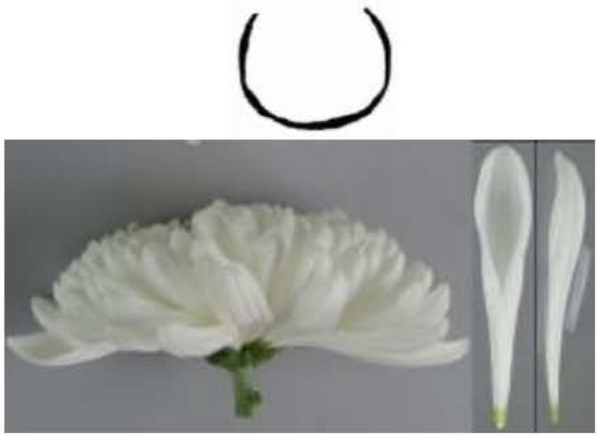
6. Method of observation (example of characterization)



1 strongly concave with margins overlapping

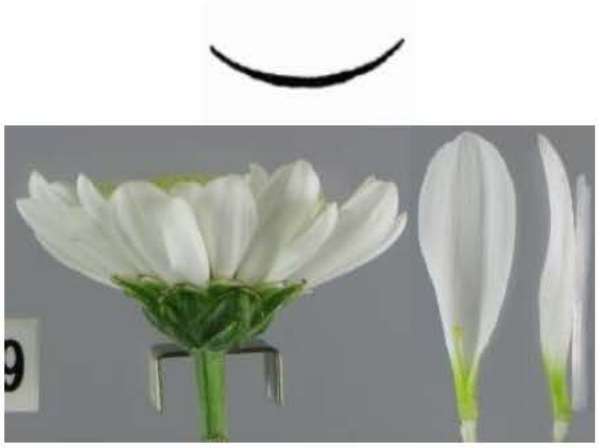


2 strongly concave with margins touching

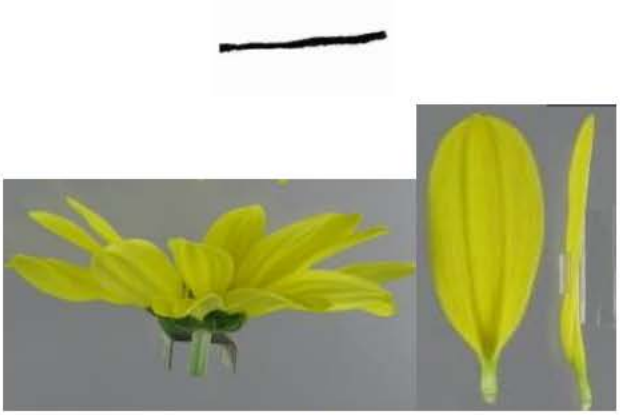


3 strongly concave

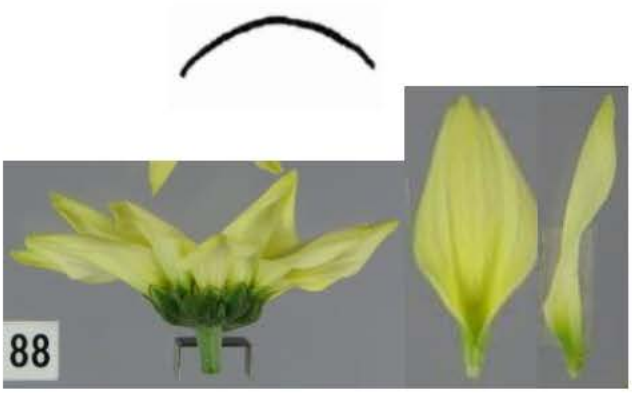
4 moderately concave



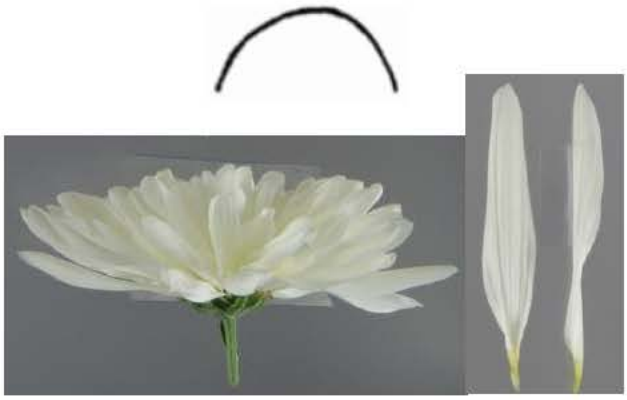
5 weakly concave



6 flat



7 weakly convex



8 moderately convex

9 strongly convex

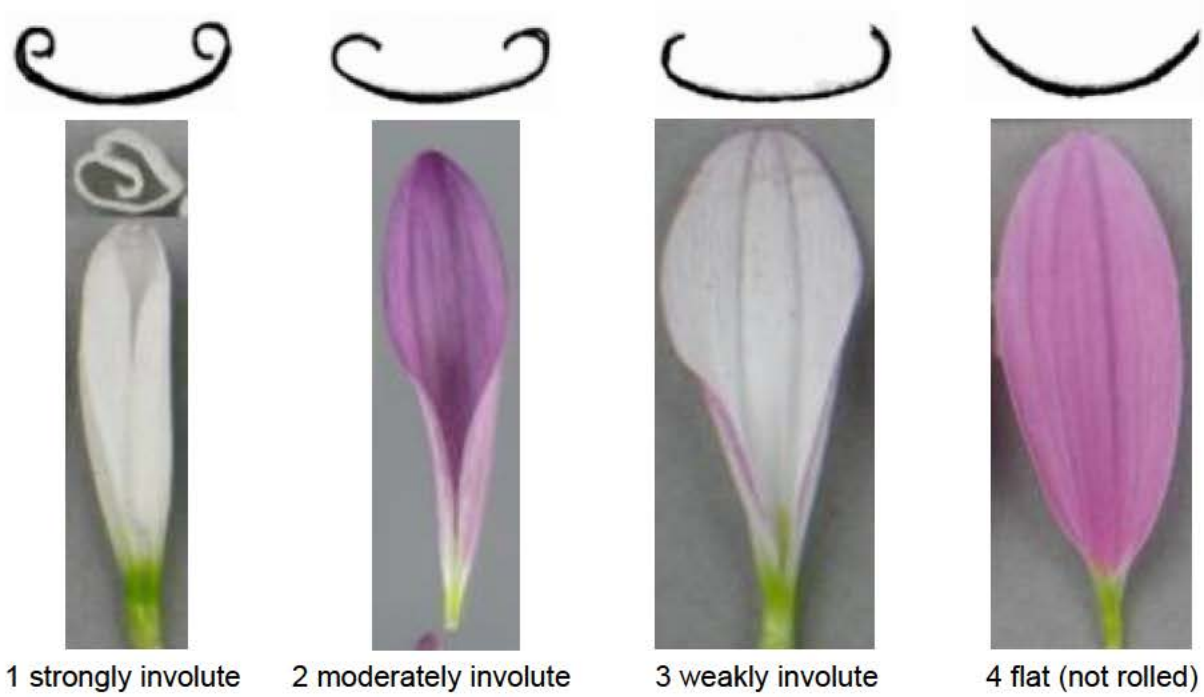
10 strongly convex with margins touching

11 strongly convex with margins overlapping

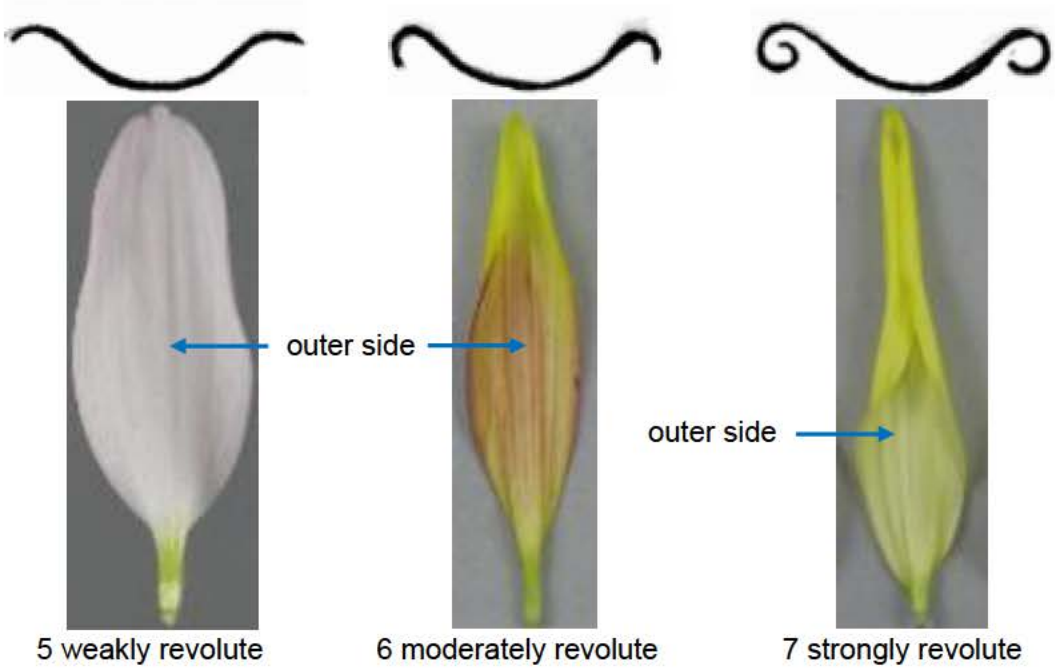
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
49. **(+)**	**VG**	**Ray floret: rolling of margin (non-quilled florets)**				
QN	**(e)**	strongly involute				1
	(f)	moderately involute	Boris Becker	Boris Becker		2
		weakly involute				3
		flat (not rolled)	Figrand	Figrand	Figrand Pink(=Figrand)	4
		weakly revolute	Tango	Tango		5
		moderately revolute	Machismo Time	Machismo Time		6
		strongly revolute				7

Remarks: Excluding quilled florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



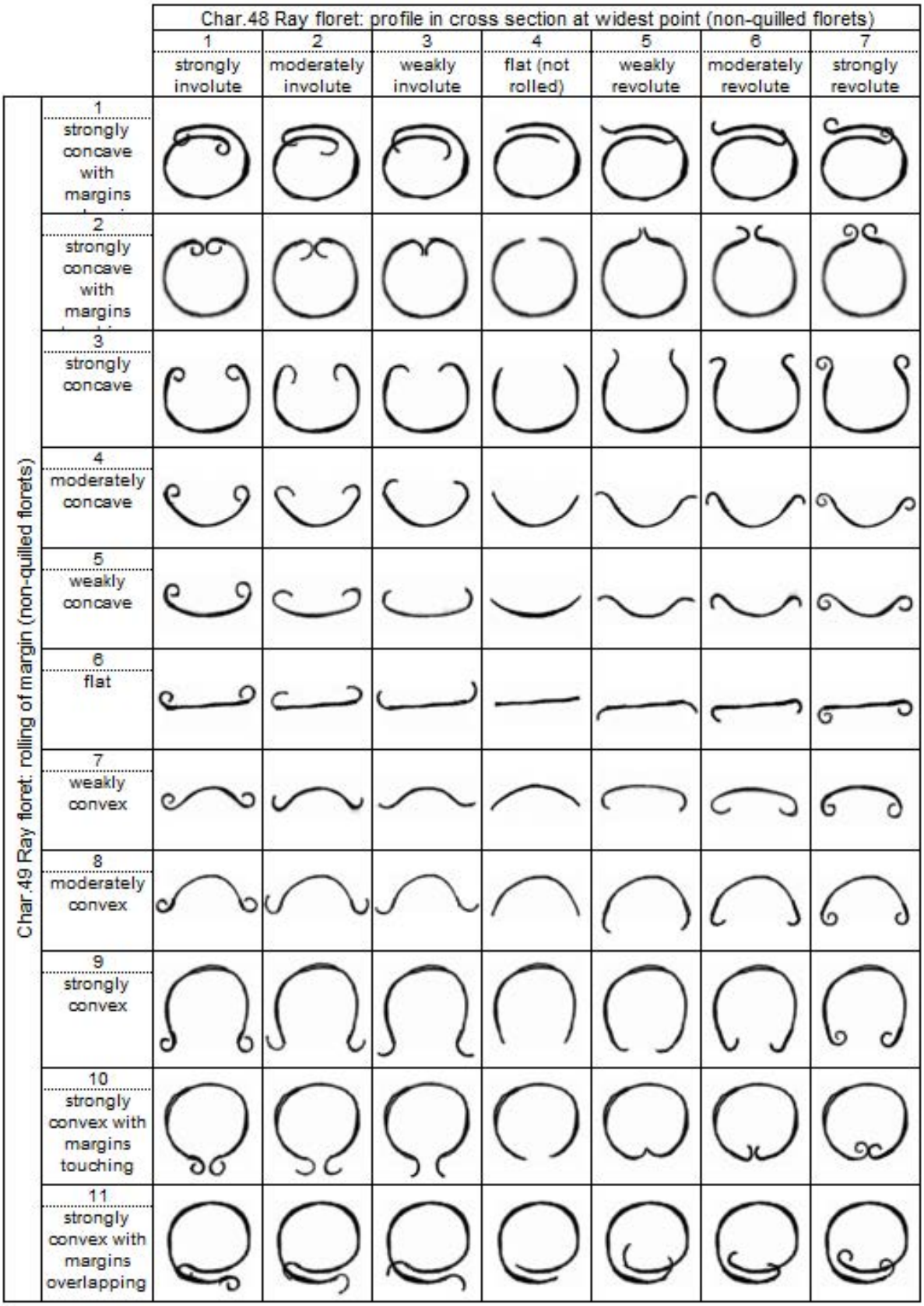
1 strongly involute 2 moderately involute 3 weakly involute 4 flat (not rolled)



5 weakly revolute 6 moderately revolute 7 strongly revolute

.In case of different types of rolling of margin between the distal half and basal half the characteristic should be assessed on the distal half.

6. Method of observation (example of characterization)



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
50.	**VG**	**Ray floret: position of part with rolled margin (non-quilled florets)**				
PQ	**(e)**	basal quarter				1
	(f)	basal half	Boris Becker	Boris Becker		2
		basal three quarters				3
		middle half				4
		distal three quarters				5
		distal half	Machismo Time	Machismo Time		6
		distal quarter				7
		throughout				8

Remarks: Excluding quilled florets.(Excluding funnel-shaped florets.)
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo’s.

1 basal quarter
(involute)

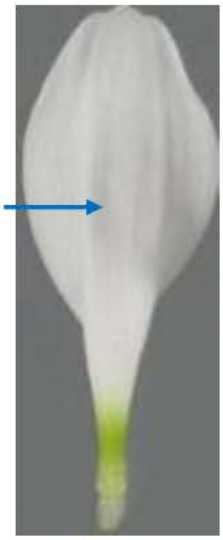
2 basal half
(involute)

3 basal three quarters
(involute)

4 middle half
(involute)

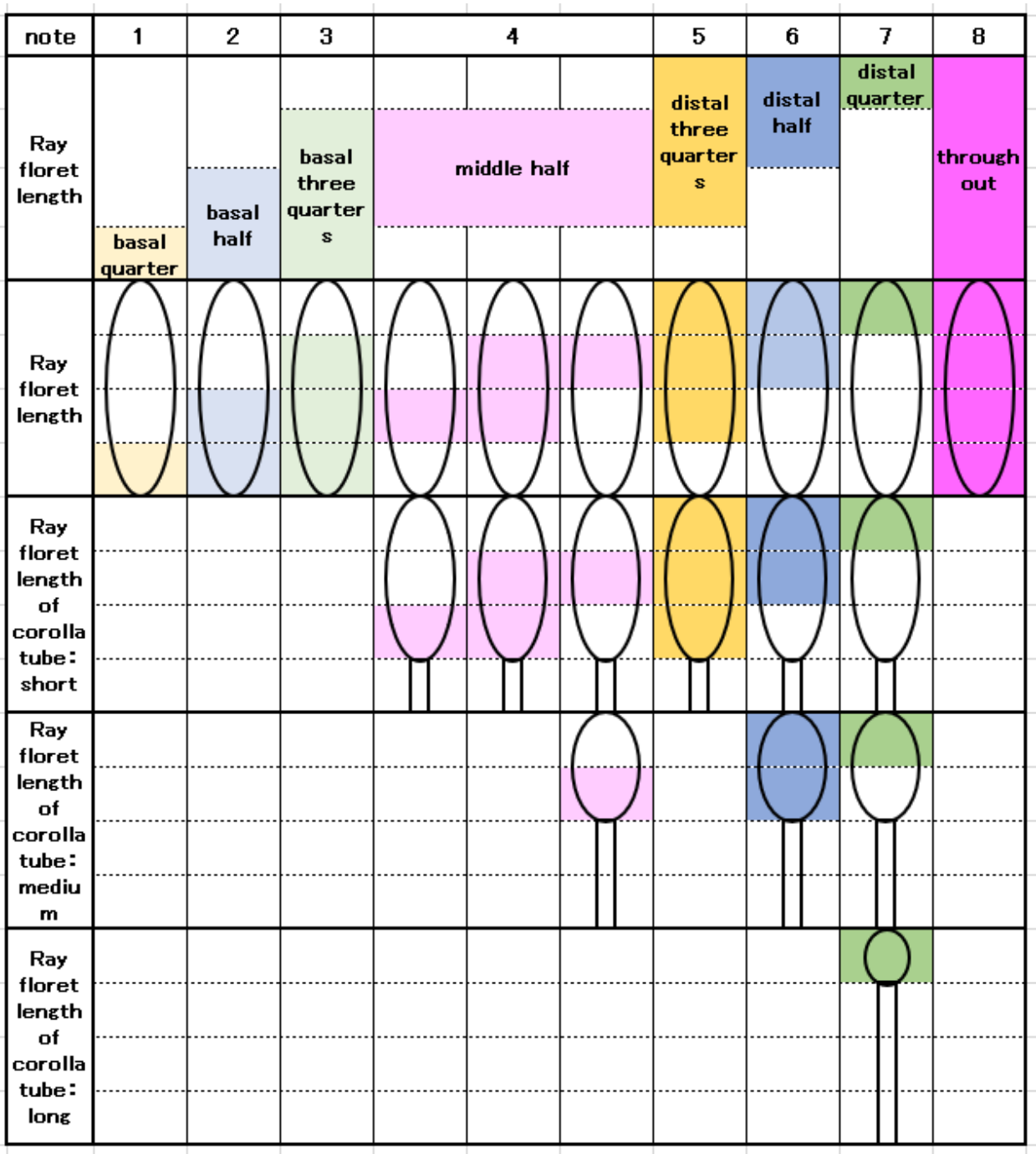
5 distal three quarters
(revolute)

6 distal half
(revolute)



7 distal quarter
(revolute)

8 throughout
(involute)


note
1
2
3
4
5
6
7
8
Ray floret length
basal quarter
basal half
basal three quarters
middle half
distal three quarters
distal half
distal quarter
throughout
Ray floret length
Ray floret length of corolla tube: short
Ray floret length of corolla tube: medium
Ray floret length of corolla tube: long

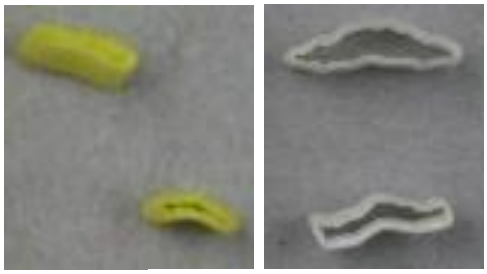
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
51.	**VG**	**Ray floret: profile of tube (funnel-shaped, spatulate and quilled florets)**				
PQ	**(e)**	circular	Repulse	Repulse	Biarritz	1
	(f)	oblate				2
		flattened	Anastasia	Anastasia		3
		triangular	Chatora	Chatora	Anastasia	4

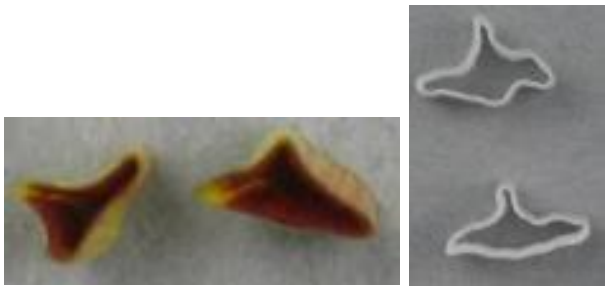
Remarks: Olny funnel-shaped, spatulate and quilled florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. Observe the shape of profile of central part of tube. In the absence of example varieties, observations can be done using the following photo's.

1 circular

2 oblate



3 flattened

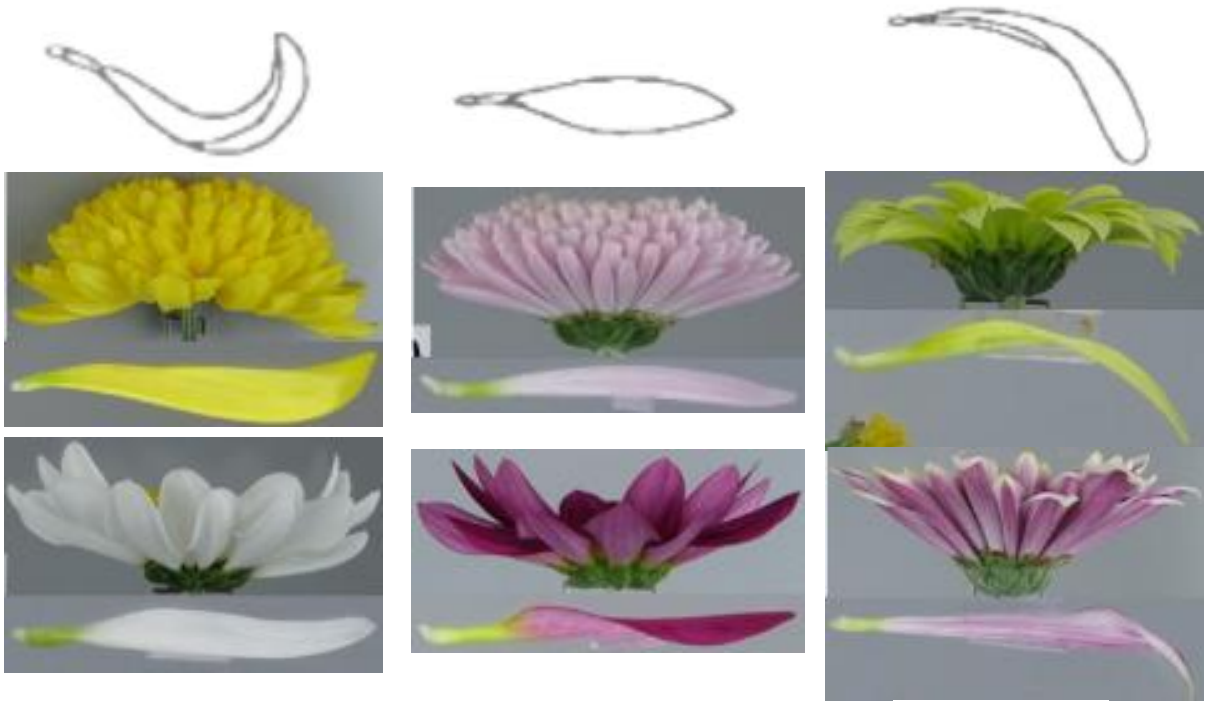


4 triangular

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
52. (*) (+)	**VG**	**Ray floret: longitudinal axis**				
PQ	**(e)**	incurving	Anlymp	Anlymp	Jinba	1
	(f)	straight	Alma-Ata	Alma-Ata	Vymini	2
		reflexing	Ruby Red Reagan	Ruby Red Reagan		3
		sinusoidal				4
		twisted	Lunar Time	Lunar Time		5
		broken	Edokihachijo	Edokihachijo		6

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



1 incurving 2 straight 3 reflexing

6. Method of observation (example of characterization)

4 sinusoidal

5 twisted

6 broken
(inner row)

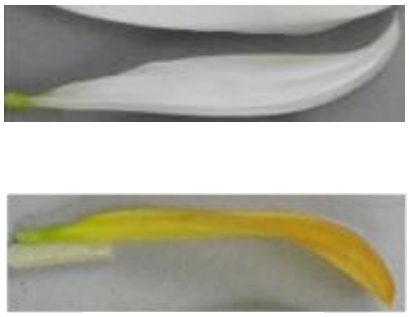
2 straight

*The part in the red circle should be excluded of the observation of this characteristic.

6. Method of observation (example of characterization)

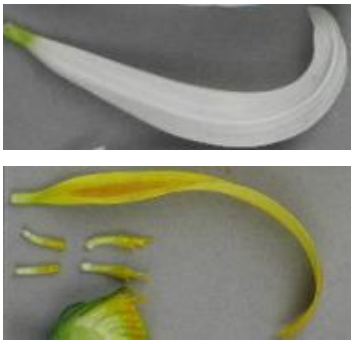
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
53.	**VG**	**Ray floret: longitudinal axis: part not straight (non-straight florets)**				
QN	**(e)**	distal quarter	Ruby Red Reagan	Ruby Red Reagan		3
	(f)	distal half	Anlymp	Anlymp		5
		distal three quarters				7

Remarks: Excluding straight florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.



3 distal quarter

5 distal half



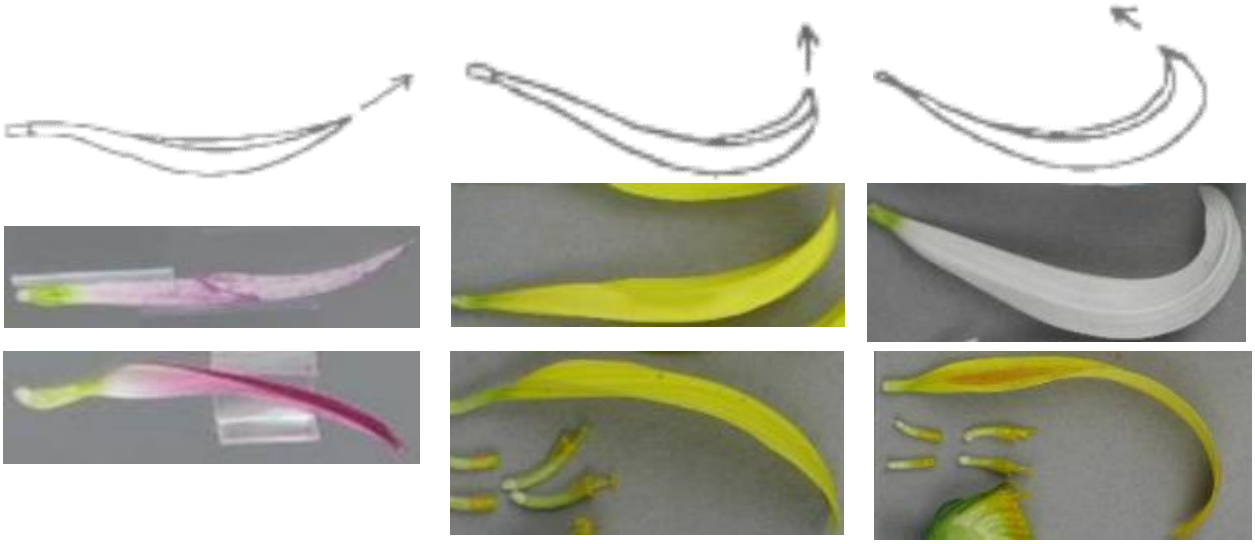
7 distal three quarters

No illustrations and photo's, but it should be assessed on sinusoidal florets and twisted florets and broken florets too.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
54. **(+)**	**VG**	**Ray floret: longitudinal axis:strength of curvature (non-straight florets)**				
QN	**(e)**	weak	Ruby Red Reagan	Ruby Red Reagan		3
	(f)	medium	Anlymp	Anlymp		5
		strong				7

Remarks: Excluding straight florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



3 weak 5 medium 7 strong

No illustrations and photo's, but it should be assessed on sinusoidal florets and twisted florets and broken florets too.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
55. **(+)**	**VG**	**Only semi double, daisy-eyed double and double varieties: Ray floret: longitudinal axis of inner row(s) (if different from outer row)**				
PQ	**(e)**	incurving				1
	(f)	straight				2
		reflexing				3
		sinusoidal				4
		twisted				5
		broken				6

Remarks: Only semi double, daisy-eyed double and double varieties. Only if different from outer row.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. See for explanation characteristic 52.

* A case "different from outer row" means that characteristic 55 are not same characteristics as characteristic 52. This means that in case there is no difference, this characteristic is not applicable.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
56.	**VG**	**<u>Only semi double, daisy-eyed double and double varieties</u>: Ray floret: longitudinal axis of inner row(s) (if different from outer row): part not straight (non-straight florets)**				
QN	**(e)**	distal quarter				3
	(f)	distal half				5
		distal three quarters				7

Remarks: Only semi double, daisy-eyed double and double varieties. Only if different from outer row. Excluding straight florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. See for explanation characteristic 53.

* A case "different from outer row" means that all three characteristic 56 are not same characteristics as characteristic 53. This means that in case there is no difference, this characteristic is not applicable.

No illustrations and photo’s, but it should be assessed on sinusoidal florets and twisted florets and broken florets too.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
57. **(+)**	**VG**	**<u>Only semi double, daisy-eyed double and double varieties</u>: Ray floret: longitudinal axis of inner row(s) (if different from outer row): strength of curvature (non-straight florets)**				
QN	**(e)**	weak				3
	(f)	medium				5
		strong				7

Remarks: Only semi double, daisy-eyed double and double varieties. Only if different from outer row. Excluding straight florets.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. See for explanation characteristic 54.

* A case "different from outer row" means that characteristic 57 are not same characteristics as characteristic 54. This means that in case there is no difference, this characteristic is not applicable.

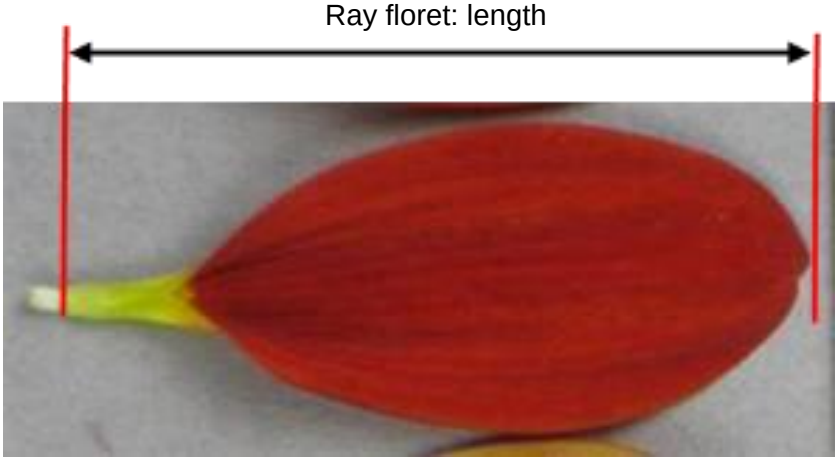
No illustrations and photo’s, but it should be assessed on sinusoidal florets and twisted florets and broken florets too.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
58. (*)	**MS/ VG**	**Ray floret: length**				
QN	**(e)**	short	Dekyen	Dekyen	Yodatora	3
	(f)	medium	Figrand	Figrand	Figrand Pink(=Figrand) Seirosa(=Reagan)	5
		long	Delianne	Delianne		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: (NL) Visual observation.
(JP) Measurement excluding ovary. If the ray floret is curved or uneven, slightly press to straighten before observation.

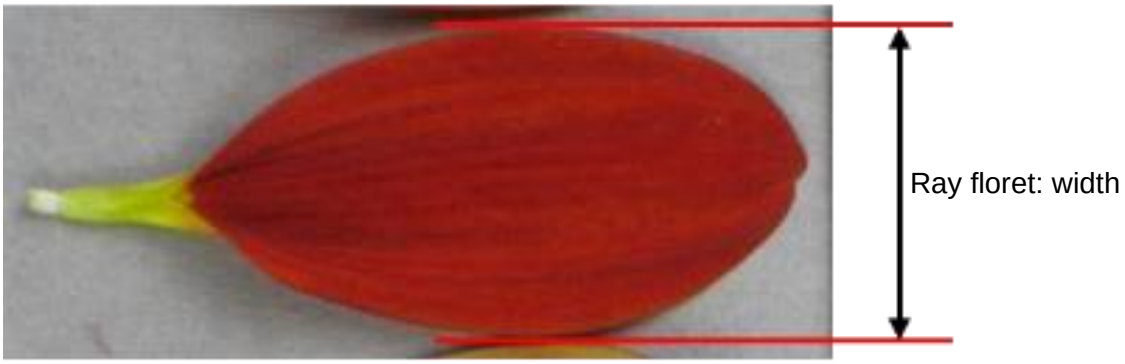
Ray floret: length



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
59. (*)	**MS/ VG**	**Ray floret: width**				
QN	**(e)**	narrow	Dekyen	Dekyen	Yodatora, Vymini	3
	(f)	medium	Figrand	Figrand	Figrand Pink(=Figrand) Seirosa(=Reagan)	5
		broad	Boulou	Boulou		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: (NL) Visual observation.
(JP) Measurement. Measure the ray floret width. If the ray floret is curved or uneven, slightly press to straighten before observation.



6. Method of observation (example of characterization)

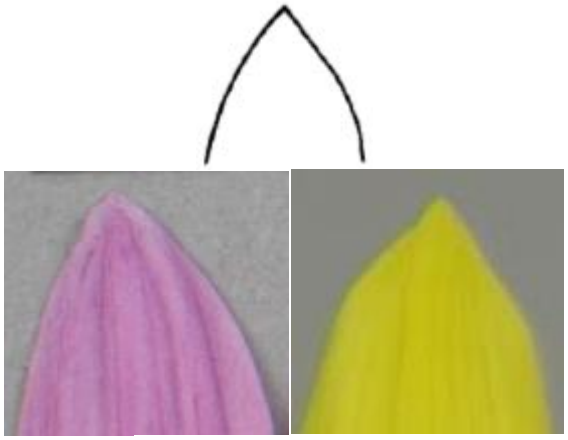
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
60. (*)	**MS/ VG**	**Ray floret: ratio length/width**				
QN	**(e)**	low	Vymini	Vymini	Vymini	3
	(f)	medium	Figrand	Figrand	Jinba	5
		high	Delianne	Delianne		7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: (NL) Visual observation.
(JP) Measurement. The value of each ratio is used for calculation of the mean value of ray floret length/width, which should be considered same way as described MS.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
61. (+)	**VG**	**Ray floret: shape of tip**				
PQ	**(e)**	pointed	Figrand	Figrand	Figrand Pink(=Figrand)	1
	(f)	rounded	Machismo Time	Machismo Time		2
		truncate				3
		emarginate				4
		dentate	Dekyen	Dekyen	Dekyen	5
		mamillate	North Bay	North Bay	Seirosa(=Reagan)	6
		fringed	Molfetta	Molfetta		7
		laciniate				8

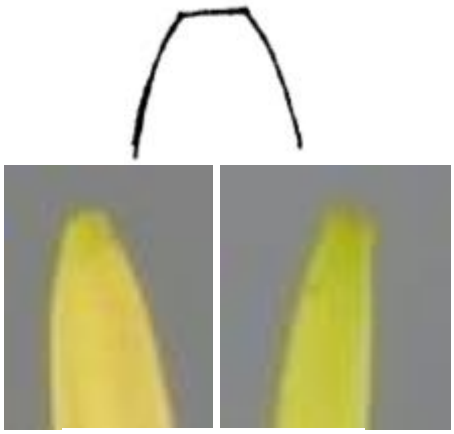
Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



1 pointed

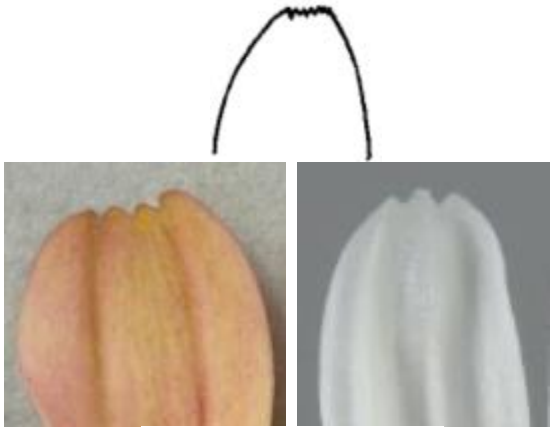
2 rounded

6. Method of observation (example of characterization)

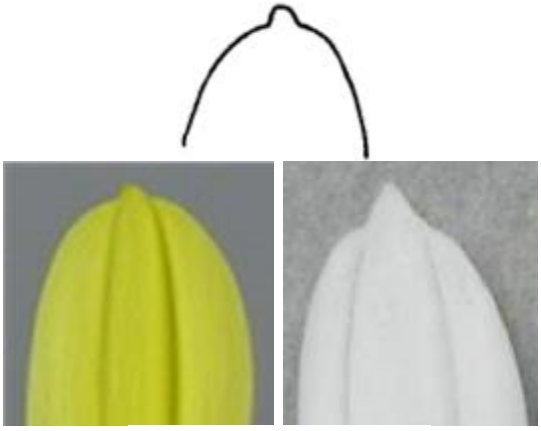


3 truncate

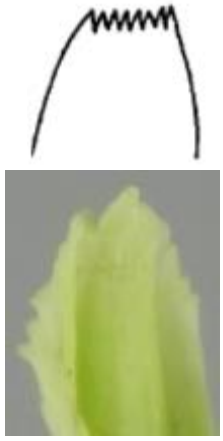
4 emarginate



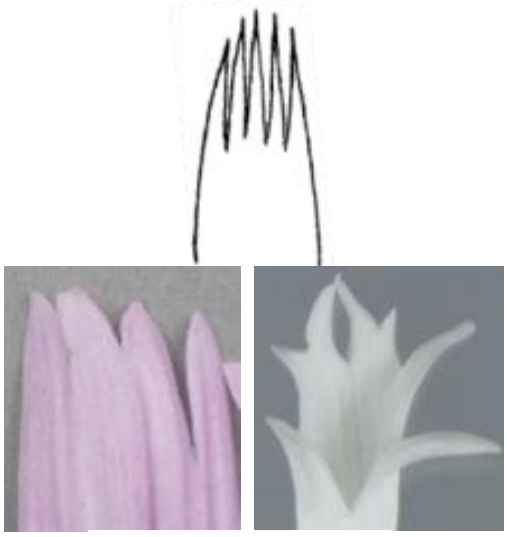
5 dentate



6 mamillate



7 fringed



8 laciniate

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
62. (*)	**VG**	**Ray floret: number of colors of inner side**				
PQ	**(e)**	one	Figrand	Figrand	Figrand Pink(=Figrand)	1
	(f)	two	Machismo Time	Machismo Time		2
		more than two				3

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following photo's.

6. Method of observation (example of characterization)

1 one

2 two

*middle photo: In the case of spatulate florets(see characterristic 41), corolla tube is regard as the outer side.

3 more than two (three)

*right photo: In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
63. (*)	**VG**	**Ray floret: <u>main</u> color of inner side**				
PQ	**(e)** **(f)** **(g)**	RHS Colour Chart (indicate reference number)				

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. The main color is the color with the largest area on the ray floret

RHS: 46B(dark red)

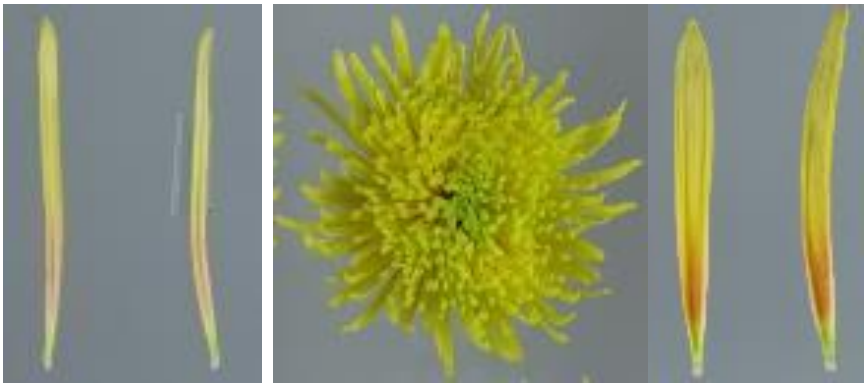
RHS: 26B(medium orange)

RHS: 7C(medium yellow)

RHS: 3B(medium yellow)

RHS: 179A(brown red)

*In the case of spatulate florets (see characteristic 41) the color of aperture surface should be observed .



Left photo outer side of ray floret.

The right photograph shows opened corolla tubes.

RHS: 4B(medium yellow)

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
64. (*)	**VG**	**Ray floret: <u>second</u> color of inner side**				
PQ	**(e) (f) (g)**	RHS Colour Chart (indicate reference number)				

Remarks: None

Stage of observation: See Chapter 3, paragraph (e), (f) and (g).

Method of observation: Visual observation. The second color is the color with the second largest area on the ray floret

RHS: 9A(medium yellow)

RHS: 7A(medium yellow)

RHS: 45C(medium red)

RHS: 53B(dark red)

RHS: 163B(medium yellow brown)

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
65. (*) (+)	**VG**	**Ray floret: distribution of <u>second</u> color of inner side**				
PQ	**(e)**	at tip				1
	(f)	distal quarter				2
	(g)	distal half				3
		distal three quarters	Breeze	Breeze		4
		basal three quarters	Machismo Time	Machismo Time		5
		basal half	Culata	Culata		6
		basal quarter	Lunar Time	Lunar Time		7
		at base				8
		on margin				9
		on marginal zone				10
		central bar	North Bay	North Bay		11
		transverse zone [band]				12
		throughout	Ceartist Pink	Ceartist Pink		13

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

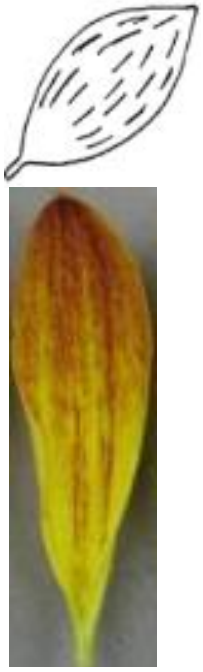
*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

1 at tip

2 distal quarter

3 distal half



4 distal three quarters

5 basal three quarters

6 basal half

7 basal quarter

8 at base

9 on margin

10 on marginal zone

11 central bar

12 transverse zone [band]

13 throughout

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
66. (*) (+)	**VG**	**Ray floret: pattern of <u>second</u> color of inner side**				
PQ	**(e)**	solid or nearly solid	Machismo Time	Machismo Time		1
	(f)	flushed	Culata	Culata		2
	(g)	diffuse stripes				3
		clearly defined stripes				4
		flecked				5
		flecked and striped	Ceartist Pink	Ceartist Pink	Ceartist Pink	6
		mottled				7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.

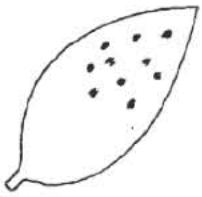
1 solid or nearly solid

2 flushed

6. Method of observation (example of characterization)

3 diffuse stripes

4 clearly defined stripes



5 flecked

6 flecked and striped

7 mottled

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
67.	**VG**	**Ray floret: <u>third</u> color of inner side**				
PQ	**(e)** **(f)** **(g)**	RHS Colour Chart (indicate reference number)				

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. Third color should be considered at occupying color of third largest area on the ray floret.

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
68. **(+)**	**VG**	**Ray floret: distribution of third color of inner side**				
PQ	**(e)**	at tip				1
	(f)	distal quarter				2
	(g)	distal half				3
		distal three quarters				4
		basal three quarters				5
		basal half				6
		basal quarter				7
		at base				8
		on margin				9
		on marginal zone				10
		central bar				11
		transverse zone [band]				12
		throughout				13

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. See for explanation characteristic 65.

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
69. (+)	**VG**	**Ray floret: pattern of <u>third</u> color of inner side**				
PQ	**(e)**	solid or nearly solid				1
	(f)	flushed				2
	(g)	diffuse stripes				3
		clearly defined stripes				4
		flecked				5
		flecked and striped				6
		mottled				7

Remarks: None
Stage of observation: See Chapter 3, paragraph (e), (f) and (g).
Method of observation: Visual observation. See for explanation characteristic 66.

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
70. (*)	**VG**	**Ray floret: color of outer side compared to inner side (including tube for funnel-shaped, quilled, and spatulate florets)**				
QL	**(e)**	similar	Figrand	Figrand	Figrand Pink(=Figrand)	1
	(f)	markedly different	Repulse	Repulse	Nishikikazaguruma(=Repulse)	2

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation.

*In the case of quilled and funnel shaped florets (see characteristic 41) the ray floret should be opened and the inside color of the tube should be observed.

1 similar

2 markedly different

6. Method of observation (example of characterization)

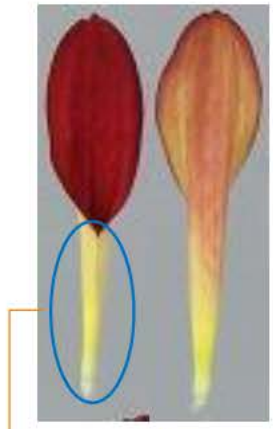
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
71. **(*)**	**VG**	**Ray floret: color of the outer side, where markedly different to inner side**				
PQ	**(e)** **(f)**	RHS Colour Chart (indicate reference number)				

Remarks: None
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation.
In the wording of "markedly", color or hue has to be clearly different from inner side.
To avoid said situation, this characteristic should be observed outer color regardless of "markedly different to inner side". Remark for yourself. This observation for description.

RHS: 73C(medium blue pink), N155B(white) (base)

RHS: 75D(light blue pink), 150A(medium yellow green) (distal quarter)

RHS: 173D(medium orange pink), 180B(brown red) (central bar)



RHS: 181C(brown red), 11B(light yellow) (outer side)

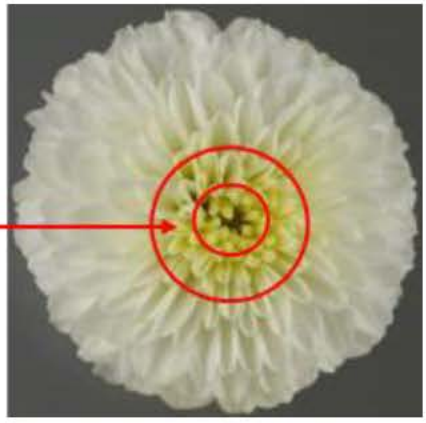
*In the case of "spatulate", "quilled" or "funnel shaped" (see characteristic 41), The color of the corolla tube should be observed on the outer side.

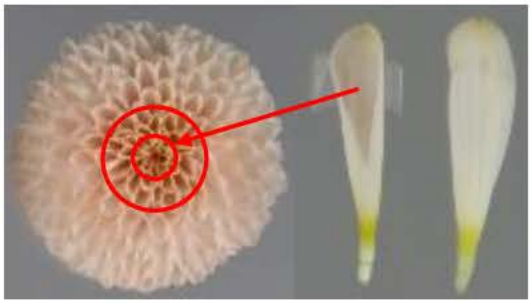
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
72. **(+)**	**VG**	**Only semi double, daisy-eyed double and double varieties (see char. 30): Ray floret: color of inner side of inner row(s) (if different from outer row)**				
PQ	**(e)** **(f)**	RHS Colour Chart (indicate reference number)				

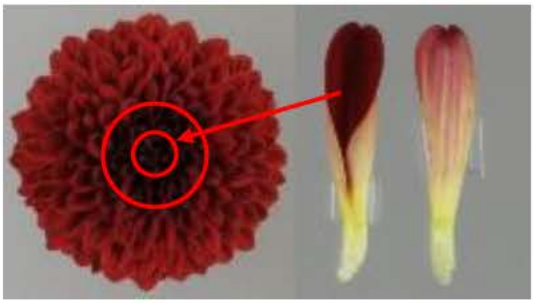
Remarks: Only semi double, daisy-eyed double and double varieties. Only if different from outer row.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. Ray floret of central part may never be full open, which part should be excluded for observation.

Observe interspace between double circle for daisy-eyed double and double types.





RHS: N155C(white)



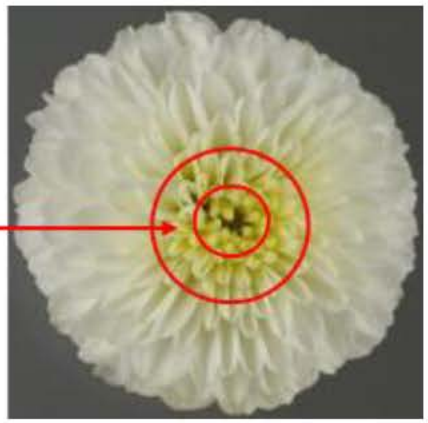
RHS: 185A(dark purple red)

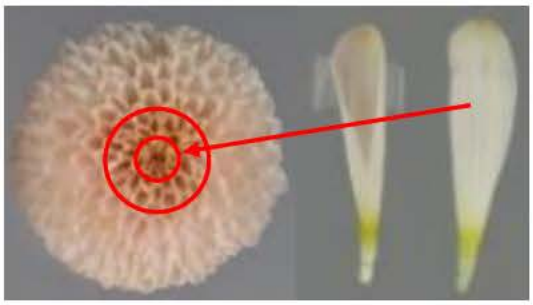
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
73.	**VG**	**Only semi double, daisy-eyed double and double varieties: (see char. 30): Ray floret: color of outer side of inner row(s) (if different from outer row)**				
QN	**(e)** **(f)**	RHS Colour Chart (indicate reference number)				

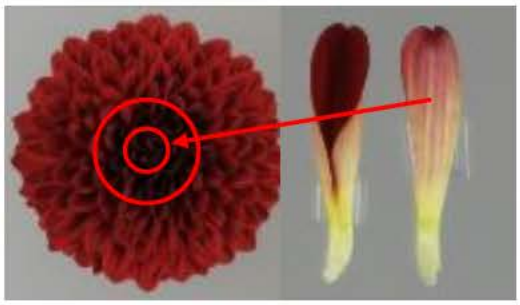
Remarks: Only semi double, daisy-eyed double and double varieties. Only if different from outer row.
Stage of observation: See Chapter 3, paragraph (e) and (f).
Method of observation: Visual observation. Ray floret of central part may never be full open, which part should be excluded for observation.

Observe interspace between double circle for daisy-eyed double and double types.





RHS: N155D(white)

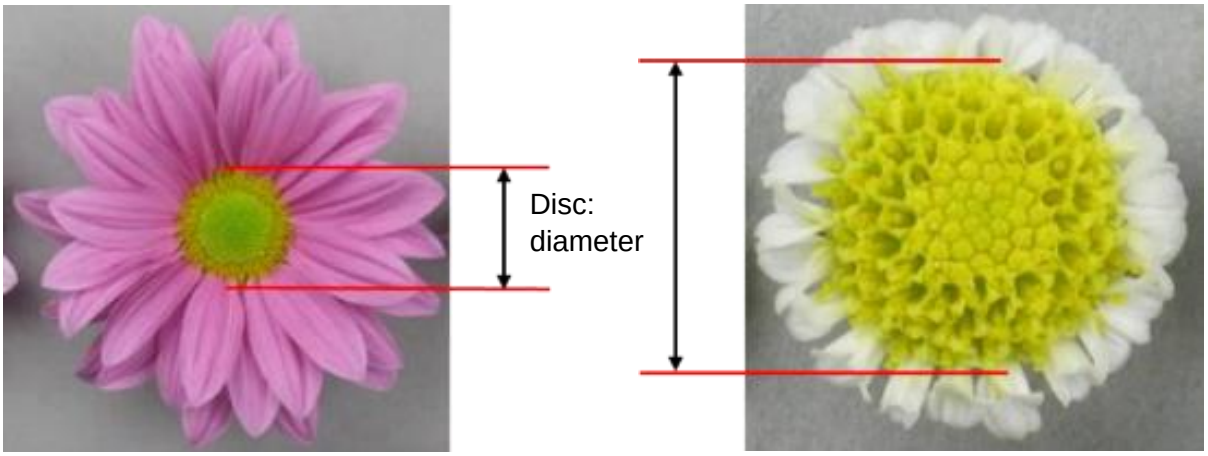


RHS: 2D(light yellow), 184C(medium brown purple)(distal quarter)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
74.	**MS/ VG**	**Only single and semi double varieties (see char. 30) which are daisy type (see char. 31): Disc: diameter**				
QN	**(e)**	small	Breeze	Breeze		3
		medium	Machismo Time	Machismo Time		5
		large	Figrand	Figrand	Figrand Pink(=Figrand) Seirosa(=Reagan)	7

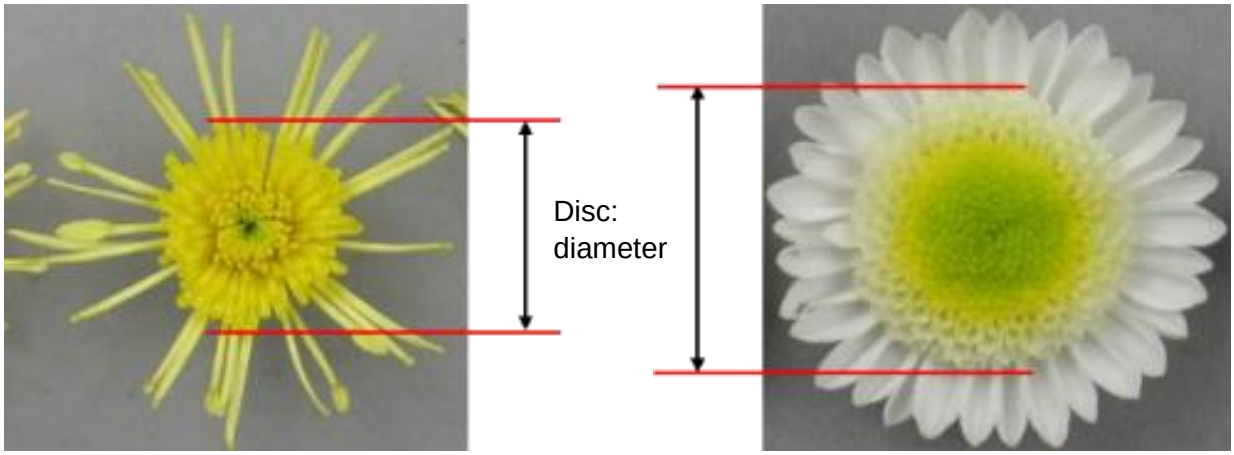
Remarks: Only single and semi double varieties. Only daisy type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: (NL) Visual observation.
(JP) Measurement. Measure the disc diameter.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
75.	**MS/ VG**	**Only single and semi double varieties (see char. 30) which are anemone type (see char. 31):Disc: diameter**				
QN	**(e)**	small	Billion Pink	Billion Pink		3
		medium	Le Mans	Le Mans		5
		large	Banjax	Banjax		7

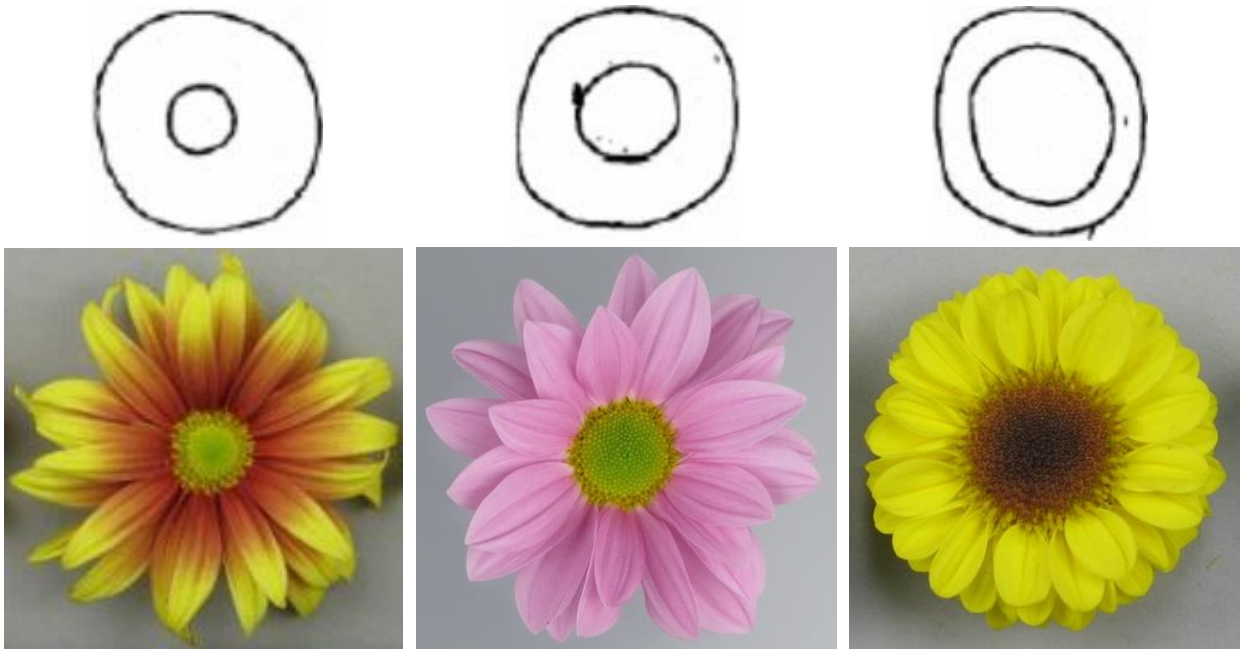
Remarks: Only single and semi double varieties. Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: (NL) Visual observation.
(JP) Measurement. Measure the disc diameter.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
76. (*) (+)	**MS/ VG**	**<u>Only single and semi double varieties (see char. 30)</u>: Disc: diameter relative to head diameter**				
QN	**(e)**	small	Scott	Scott		3
		medium	Figrand	Figrand	Figrand Pink(=Figrand)	5
		large	Vymini	Vymini	Vymini	7

Remarks: Only single and semi double varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Measurement or visual observation. The value of each ratio is used for calculation of the mean value of disc diameter/head diameter, which should be considered same way as described MS. In the absence of example varieties, observations can be done using the following illustrations and photo's.



3 small 5 medium 7 large

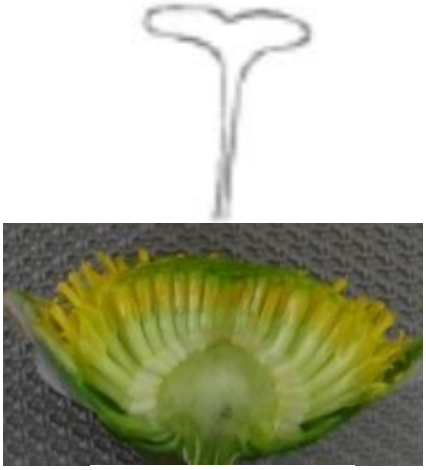
* As illustrations of UPOV TG does not match Note of Example varieties, We evaluate relative to the data of the example variety using the following Fundamental Assessment Table(FAT) . “5 medium” of photograph is “Figrand Pink(=Figrand), “7 large” of photograph is “Vymini”.

No.	Characteristic	Note	1	2	3	4	5	6	7	8	9
76	Only single and semi double varieties (see char. 30): Disc: diameter relative to head diameter	Range (%)		10.0 ~ 14.5	14.6 ~ 19.6	19.7 ~ 25.2	25.3 ~ 31.4	31.5 ~ 38.2	38.3 ~ 45.7	45.8 ~ 54.0	54.1 ~
			9.9								
		Distance		4.6	5.1	5.6	6.2	6.8	7.5	8.3	
		Median		12.3	17.1	22.5	28.4	34.9	42.0	49.9	
		Example variety					Figrand Pink (=Figrand)		Vymini		
		Historical Data					Fig:25.5		Vy:42.1		

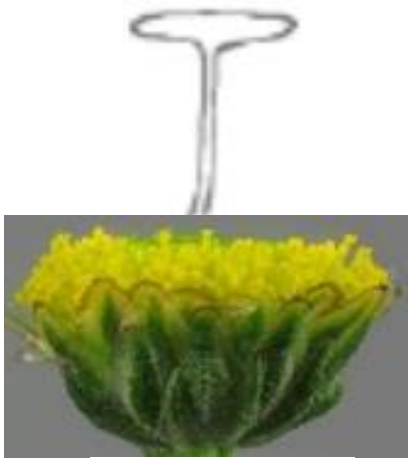
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
77. **(+)**	**VG**	**Only daisy type varieties (see char. 31): Disc: profile in cross section**				
PQ	**(e)**	indented				1
		flat	Dekyen	Dekyen		2
		slightly domed	Vymini	Vymini		3
		slightly conical				4
		strongly domed	Tango	Tango		5
		strongly conical	Figrand	Figrand		6

Remarks: Only daisy type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In the absence of example varieties, observations can be done using the following illustrations and photo's.



1 indented



2 flat

3 slightly domed

4 slightly conical

5 strongly domed

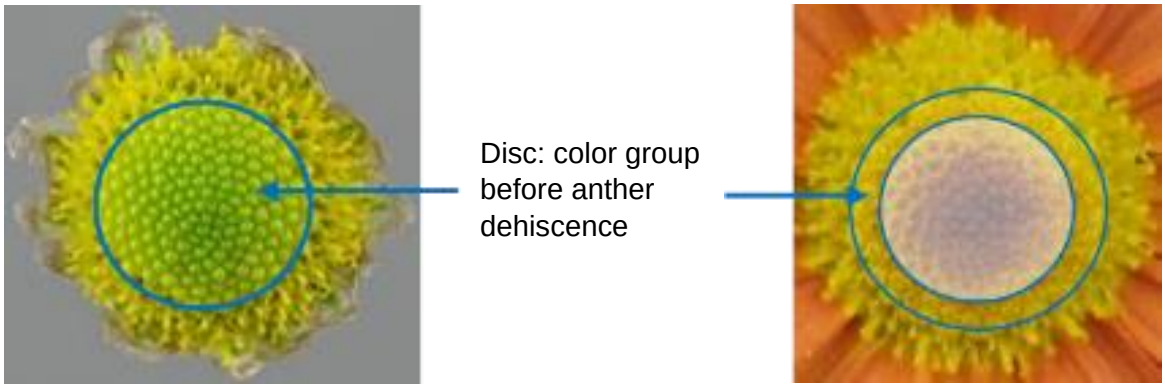
6 strongly conical

6 strongly conical

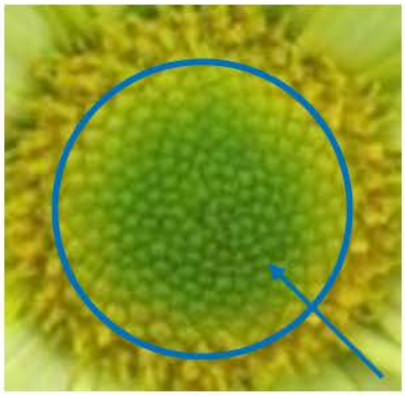
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
78. (*)	**VG**	**Only daisy type varieties (see char. 31): Disc: color group before anther dehiscence**				
PQ	**(e)**	whitish				1
	(h)	green	Figrand	Figrand	Figrand Pink(=Figrand)	2
		yellowish green	Machismo Time	Machismo Time		3
		light yellow				4
		medium yellow				5
		yellow orange				6
		orange				7
		reddish brown				8
		brown	Vymini	Vymini		9
		brownish black	Acapulco	Acapulco		10
		purplish black				11

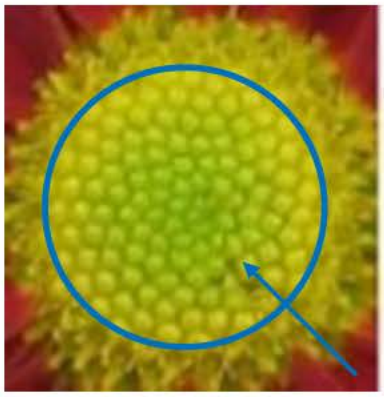
Remarks: Only daisy type varieties.
Stage of observation: See Chapter 3, paragraph (e) and (h).
Method of observation: Visual observation. Observe the disc color group before anther dehiscence (excluding dark spot).



6. Method of observation (example of characterization)

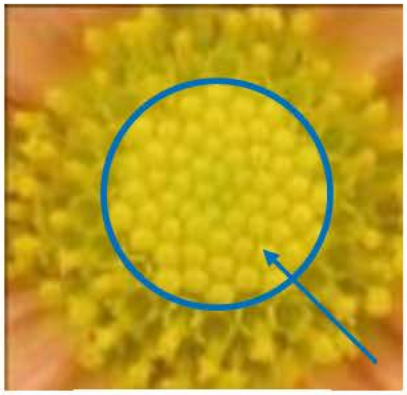


2 green

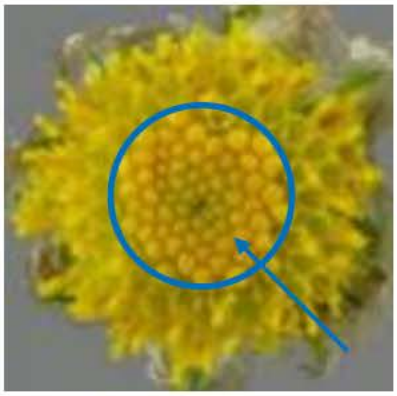


3 yellow green

4 light yellow

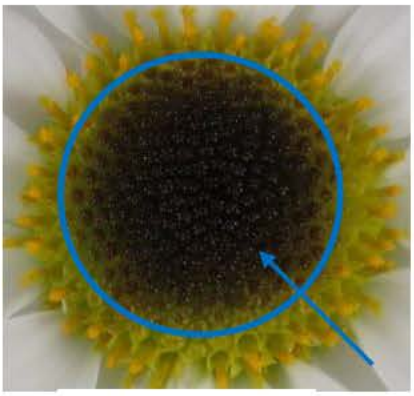


5 medium yellow



6 yellow orange

8 reddish brown



10 brownish black

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
79. **(*)**	**VG**	**Only daisy type varieties (see char. 31): Disc: presence of dark spot at centre before anther dehiscence**				
QL	**(e)**	absent	Reagan	Reagan		1
	(h)	present	High Way	High Way	Vyking	9

Remarks: Only daisy type varieties.
Stage of observation: See Chapter 3, paragraph (e) and (h).
Method of observation: Visual observation. In case of characteristic 78 “Disc: color group before anther dehiscence " is "8 reddish brown", "9 brown", "10 brownish black" or "11 purplish black", the dark spot should be considered absent.

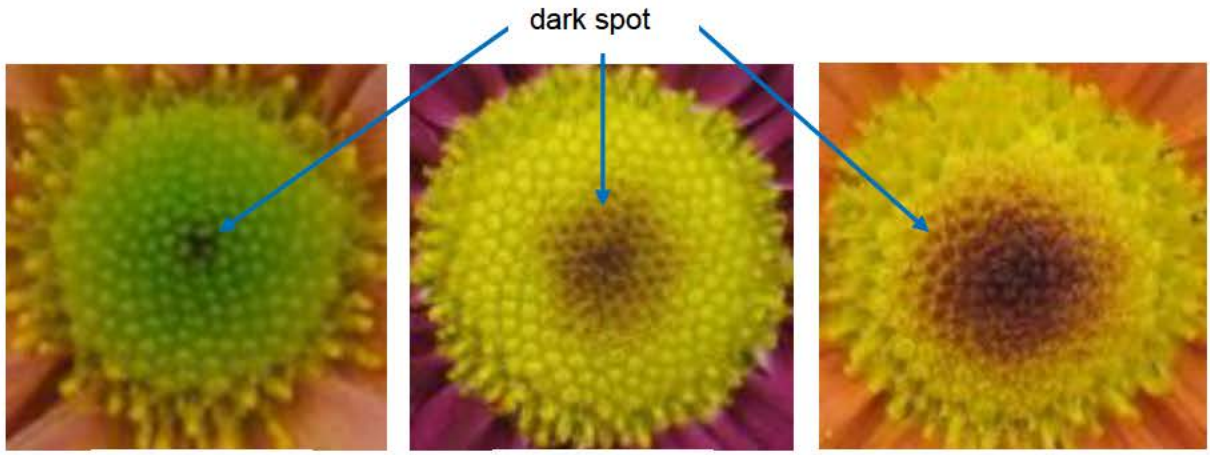
1 absent

9 present

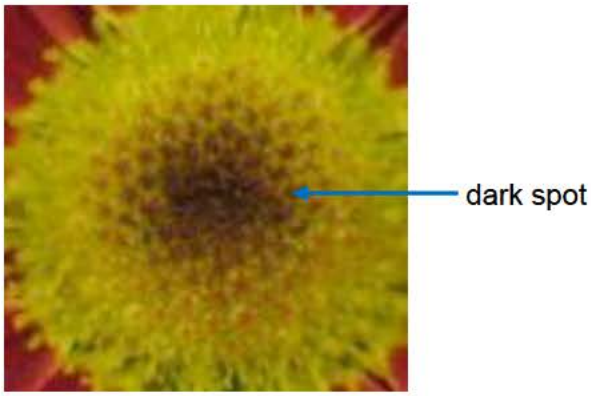
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
80.	**VG**	**Only daisy type varieties (see char. 31): Disc: size of dark spot at centre before anther dehiscence, relative to disc size**				
QN	**(e)**	small	Retaco	Retaco	AAMMIL	3
	(h)	medium	High Way	High Way		5
		large	Vyking Orange	Vyking Orange		7

Remarks: Only daisy type varieties. Only dark spot varieties.
Stage of observation: See Chapter 3, paragraph (e) and (h).
Method of observation: Visual observation.



1 very small 3 small 5 medium



7 large

6. Method of observation (example of characterization)

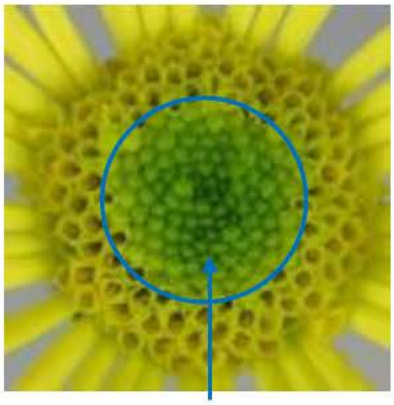
		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
81.	**VG**	**<u>Only daisy type varieties (see char. 31)</u>: Disc: color of dark central spot before anther dehiscence**				
PQ	**(e)** **(h)**	RHS Colour Chart (indicate reference number)				

Remarks: Only daisy type varieties. Only dark spot varieties.
Stage of observation: See Chapter 3, paragraph (e) and (h).
Method of observation: Visual observation.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
82. **(*)**	**VG**	**<u>Only anemone type varieties (see char. 31)</u>: Disc: color before anther dehiscence**				
PQ	**(e)** **(h)**	RHS Colour Chart (indicate reference number)				

Remarks: Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e) and (h).
Method of observation: Visual observation. This characteristic should be observed the color on apical part of disc florets before anther dehiscence.



RHS: 143B(medium green)

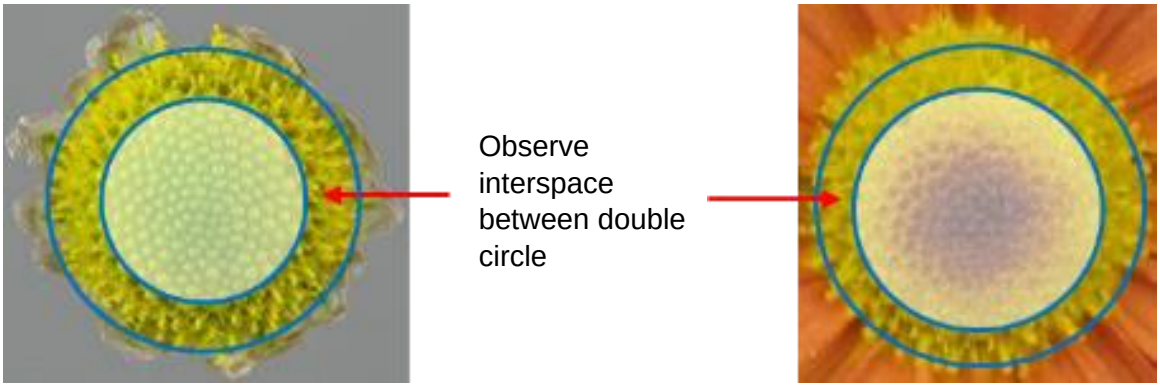
RHS: 151A(light green)

RHS: 160B(light green brown)

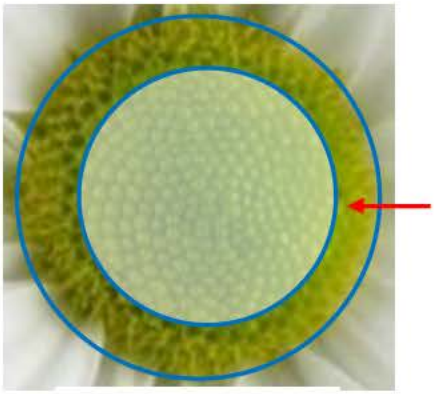
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
83.	**VG**	**Only daisy type varieties (see char. 31): Disc: color group at anther dehiscence**				
PQ	**(e)**	whitish				1
		green				2
		yellowish green	Figrand	Figrand		3
		light yellow			Figrand Pink(=Figrand)	4
		medium yellow				5
		yellow orange	Machismo Time	Machismo Time		6
		orange				7
		reddish brown	Vymini	Vymini		8
		brown				9
		brownish black				10
		purplish black				11

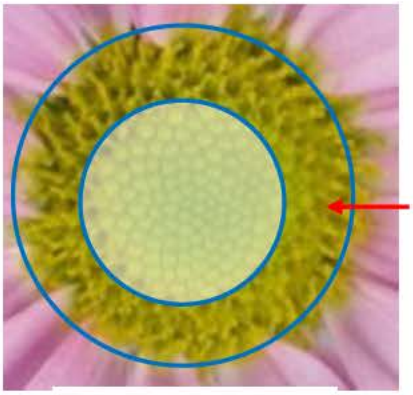
Remarks: Only daisy type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. Observe the disc color group after anther dehiscence (excluding dark spot).



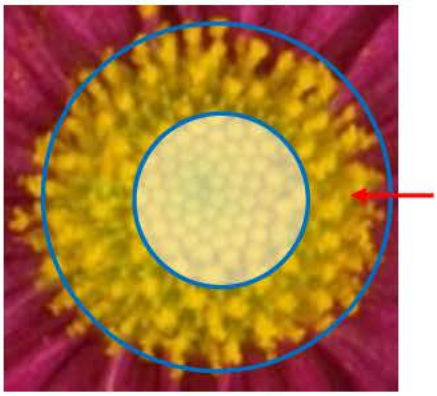
6. Method of observation (example of characterization)



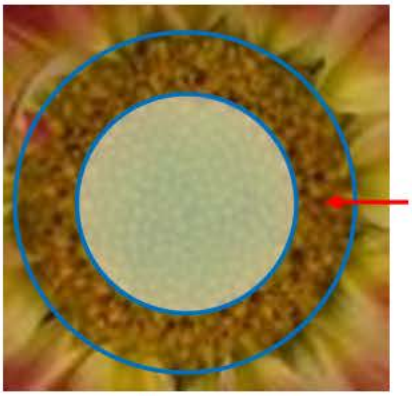
3 yellowish green



4 light yellow



5 medium yellow

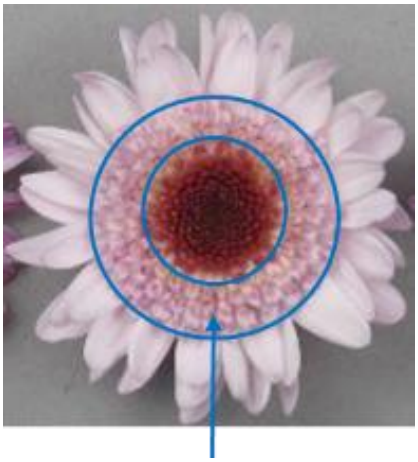


6 yellow orange

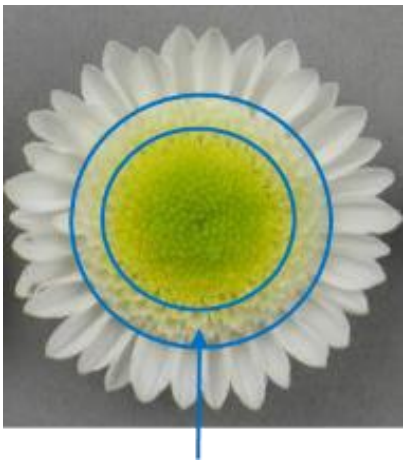
6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
84. **(*)**	**VG**	**<u>Only anemone type varieties (see char. 31)</u>: Disc: color at anther dehiscence**				
PQ	**(e)**	RHS Colour Chart (indicate reference number)				

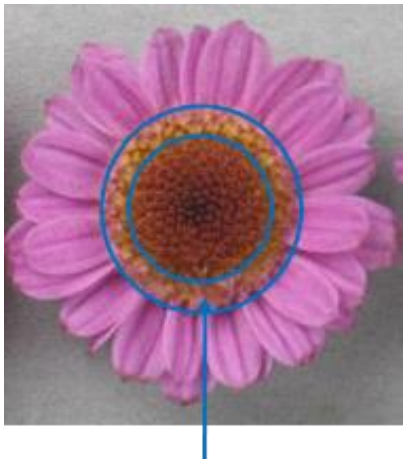
Remarks: Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. Observe interspace between double circle for anemone type varieties.



RHS: 65D(light blue pink)



RHS: 155B(white)

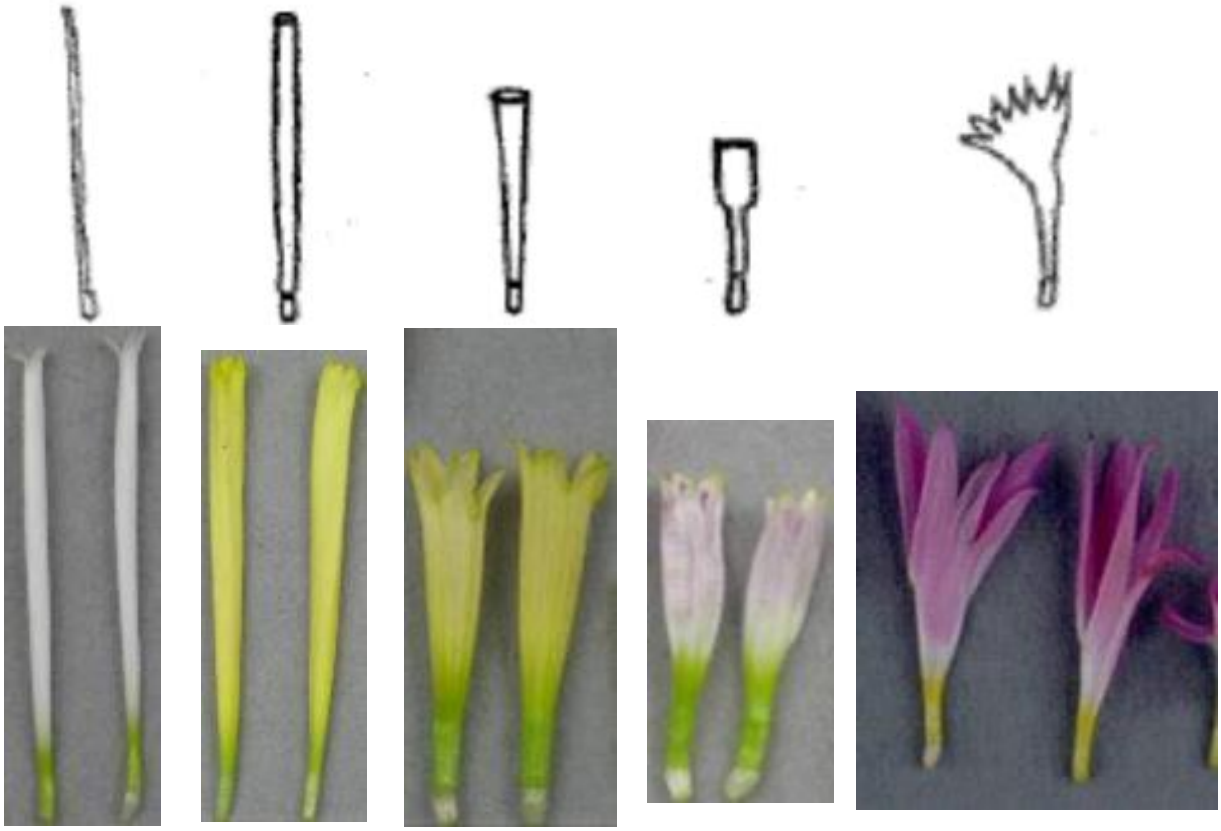


RHS: 183A(dark brown purple)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
85. **(+)**	**VG**	**<u>Only anemone type varieties (see char. 31)</u>: Disc floret: type**				
PQ	**(e)**	needle shaped	Billion Pink	Billion Pink		1
		quilled	Banjax	Banjax		2
		funnel shaped				3
		enlarged tubular	Yovisalia	Yovisalia		4
		petaloid	Yograceland	Yograceland		5

Remarks: Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation.

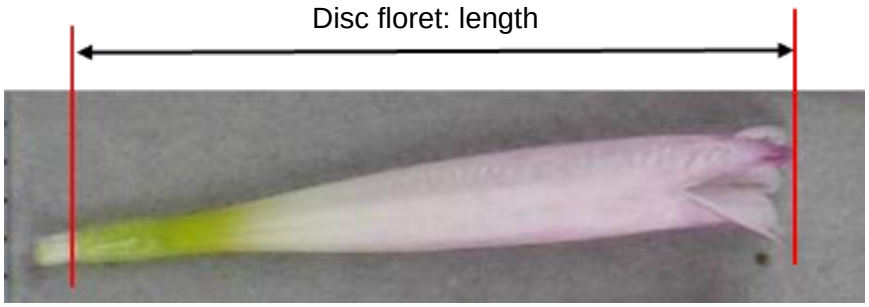


1 needle shaped | 2 quilled | 3 funnel shaped | 4 enlarged tubular | 5 petaloid

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
86.	**MS/ VG**	**Only anemone type varieties (see char. 31): Disc floret: length**				
QN	**(e)**	short	Yovisalia	Yovisalia		3
		medium				5
		long	Banjax	Banjax		7

Remarks: Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: (NL) Visual observation.
(JP) Measurement excluding ovary.



6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
87.	**VG**	**Only anemone type varieties (see char. 31): Disc floret: color**				
PQ	**(e)**	RHS Colour Chart (indicate reference number)				

Remarks: Only anemone type varieties.
Stage of observation: See Chapter 3, paragraph (e).
Method of observation: Visual observation. In case of different colors in same surface or between outer surface and inner surface, all different colors should be observed for description.

Case of different colors on outer side

RHS: 7B(medium yellow)(middle and basal area), 181A(medium brown purple)(apical area)

Case of different colors on outer side

RHS: NN155D(white)(whole area), 154D(light yellow green)(tip area)

RHS: 162A(light yellow brown)(apical and middle area), 3C(medium yellow)(basal area), 184A(dark brown purple)(inner side)

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
88. **(+)**	**VG**	**Response group (grown with precise daylength control)**				
PQ		less than 6 weeks				1
		6 weeks	Dekyen	Dekyen		2
		6.5 weeks				3
		7 weeks	Figrand	Figrand		4
		7.5 weeks				5
		8 weeks	Scott	Scott		6
		8.5 weeks				7
		9 weeks	Zeemimosa	Zeemimosa		8
		10 weeks				9
		11 weeks				10
		12 weeks				11
		more than 12 weeks				12

Remarks: Only where grown with precise daylength contro**l**.
Stage of observation: See Chapter 3.
Method of observation: Visual observation.
Chrysanthemums can be grown under a very wide range of cultural regimes depending on climate and region. Varieties may be specifically adapted to one form of culture or another, or they may be multi-purpose, and this should be taken into consideration when designing the trial and selecting comparison varieties.
When varieties are grown and flowered by means of precise artificial daylength control, under an All Year Round (AYR) type system, the Response Group (char.88) can be observed. The Response Group is defined as the time from the start of the short day treatment to the production of an inflorescence with at least four fully developed heads in 50% of the plants.

6. Method of observation (example of characterization)

		English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
89. **(+)**	**VG**	**Only where grown without precise daylength control: Natural flowering period**				
QN		early				3
		medium				5
		late				7

Remarks: Only where grown without precise daylength contro**l**.
Stage of observation: See Chapter 3.
Method of observation: For varieties grown under natural environmental control, the Natural Flowering Period (characteristic 89) should be observed.
Exact comparisons between varieties for these characteristics are only meaningful when the varieties are grown under the same conditions and at the same location.