



# CALIBRATION MANUAL

Harmonized with  
Naktuinbouw and  
NCSS(/NARO)

## DUS Test for Verbena

*Verbena L.*

Established in March 18<sup>th</sup>, 2024  
Compliance with UPOV TG/220/1

# CALIBRATION MANUAL

## DUS Test for Verbena

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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 techniques used in DUS examination in the two countries and use it internationally.

2. Use of this Calibration Manual

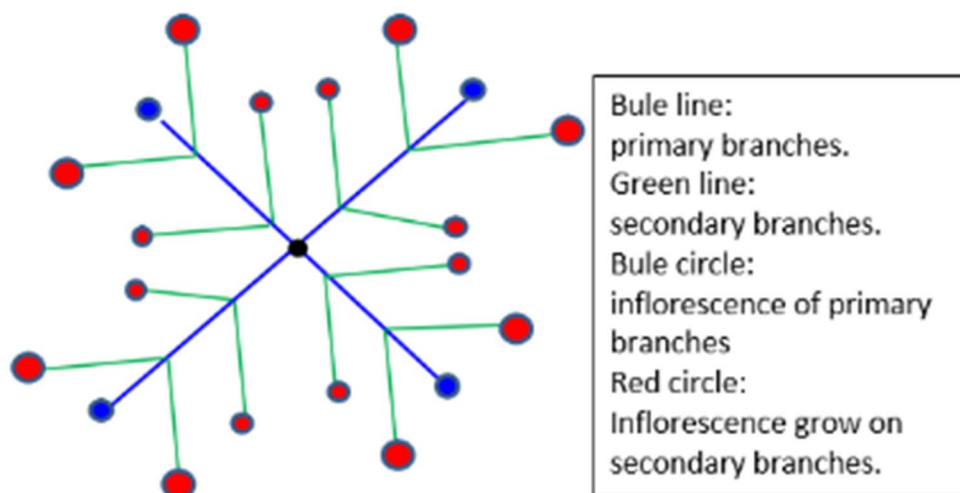
This Calibration Manual indicates methods of observation for characteristics included in UPOV Test Guidelines.

3. Explanations covering several characteristics

(i) Unless otherwise indicated, all observations on single plants should be made on 10 plants or parts taken from 10 plants. Other observations should be made on all plants in the test, disregarding any off-type plants.

(ii) Unless otherwise indicated, all observations should be made on fully grown, typical organs at the time of full flowering.

The full flowering period is reached when secondary branch inflorescences are flowering on multiple primary branches within a plant.



#### 4. Grouping characteristics

4.1 The following have been agreed as useful grouping characteristics:

- (a) Plant : growth habit (characteristic 1)
- (b) Leaf blade : division of blade (characteristic 7)
- (c) Leaf blade : type of division (characteristic 8)
- (d) Corolla : number of colors (characteristic 24)
- (e) Corolla: main color (characteristic 27) with the following groups:

Gr. 1: white

Gr. 2: yellow

Gr. 3: green

Gr. 4: orange

Gr. 5: light pink

Gr. 6: pink

Gr. 7: red

Gr. 8: red purple

Gr. 9: blue purple

Gr. 10: light purple

#### 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 (example of characterization)

##### Legend

Method of Observation

MG: single measurement of a group of plants or parts of plants

MS: measurement of a number of individual plants or parts of plants

VG: visual assessment by a single observation of a group of plants or parts of plants

VS: visual assessment by observation of individual plants or parts of plants

Type of observation: visual (V) or measurement (M)

“Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

### Types of Expression of Characteristics

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

#### QL: Qualitative Characteristics

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

#### QN: Quantitative Characteristics

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

difference needed for distinctness. The states of expression should, however, be meaningful for DUS assessment.

#### PQ: Pseudo-Qualitative Characteristics

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

(\*) Asterisked characteristic

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

(+) Explanations on the Table of Characteristics is indicated by TG/220/1 Rev. Chapter 8.2.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>1</b>	<b>VG Plant: growth habit</b>				
<b>(*)</b>					
<b>PQ</b>	upright	Sunvivapa	Sunvivapa	Sunvivapa	1
	semi-upright	Blancena, Sunmariba, Sunmaririho	Blancena, Sunmariba, Sunmaririho		2
	creeping	Sunvop	Sunvop	Sunvop	3

**Remarks**

**Stage of observation:** Observation should be made throughout the growing season.

**Method of observation:** Visual observation. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

Consider the attitude of stem elongation and overall plant growth.



1 upright



2 semi-upright



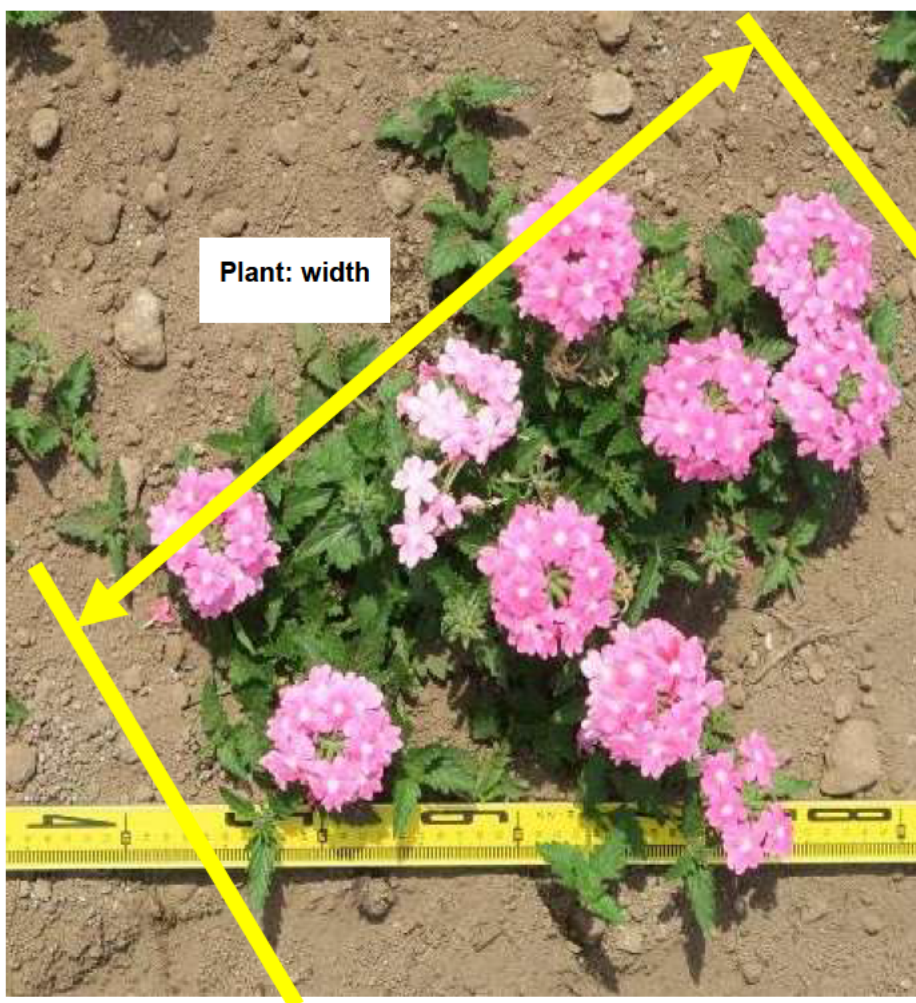
3 creeping

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>2 (*)</b>	<b>VG/ MS</b>	<b>Plant: width</b>			
<b>QN</b>	small	Kieversil		Kieversil	3
	medium	Sunver, Sunvop		Sunver, Sunvop	5
	large	Wynena		Wynena	7

**Remarks**

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

**Method of observation:** Visual observation or measurement. Use example varieties to calibrate. The measurement or visual observation should be taken from the largest width of representative plants including the tips of corolla, leaves and stems.







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

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>3 VG (*)</b>	Stem: anthocyanin coloration (on middle third of an actively growing stem)				
<b>QL</b>	absent	Blancena, Sunmaririho		Sunmaririho	1
	present	Wynena		Wynena	9

**Remarks**

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

**Method of observation:** Visual observation.

Evaluate the middle third of the primary branch. If it has slight coloration, the status should be “9 present”.



Upper : 1 absent

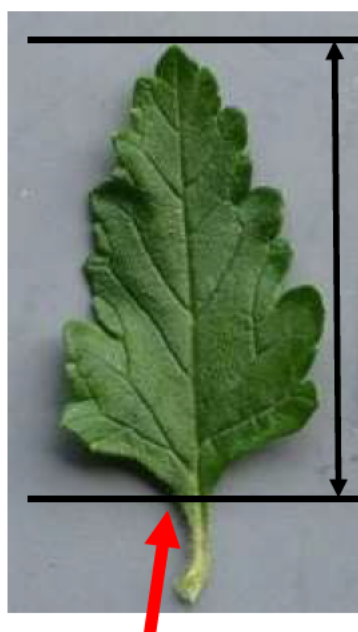
Lower : 9 present

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
4 (* )	<b>VG/ MS</b> Leaf blade: length				
<b>QN</b>	short	Sunvop		Sunvop	3
	medium	Sunmaribisu		Sunmaribisu	5
	long	Scarlana		Scarlana	7

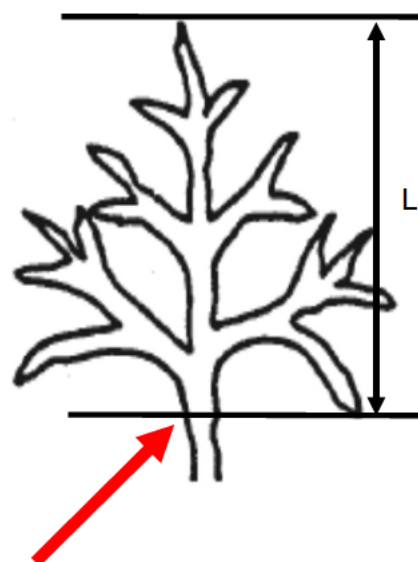
#### Remarks

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

**Method of observation: Visual observation or measurement.** Observe or measure the representative largest leaves of main primary branches. Use example varieties to calibrate. If the boundary between the leaf blade and petiole is not clear, separate them at the inflection point. If the lowest part of the leaf blade is below the inflection point as shown in the figure below right, the measurement or visual observation should be taken from the lowest part of the leaf blade.



Leaf blade: length



Leaf blade: length

The red arrow points to the inflection point.

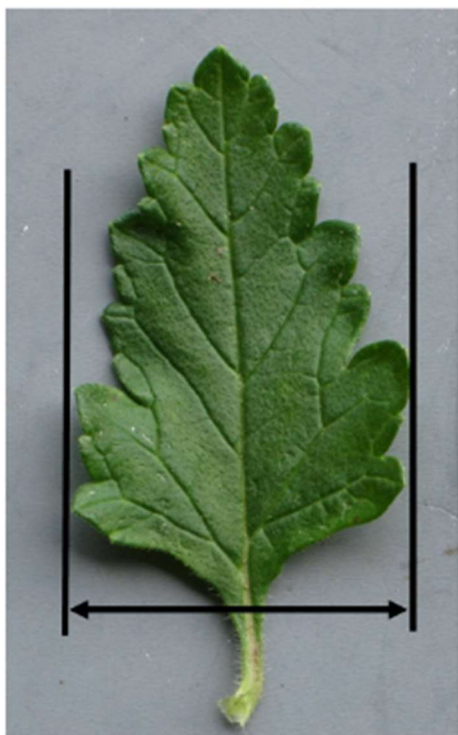
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>5</b>	<b>VG/</b>	<b>Leaf blade: width</b>			
<b>(*)</b>	<b>MS</b>				
<b>QN</b>	narrow	Sunmaribisu		Sunmaribisu	3
	medium	Wynena		Wynena	5
	broad				7

**Remarks**

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

**Method of observation:** Visual observation or measurement. Use example varieties to calibrate.

Measure or observe the maximum width of the representative leaf in main primary branch.



Leaf blade: width

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
6 (*)	<b>VG</b> Leaf blade: shape				
<b>PQ</b>	lanceolate	Wesverdark		Wesverdark	1
	narrow elliptic				2
	elliptic	Kieversil		Kieversil	3
	ovate	Lan Pureye		Lan Pureye	4
	broad ovate				5

Remarks

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

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches. In the absence of example varieties, observations can be done using the following photos.

The broad ovate type is defined as a type in which the width of the leaf blade is equal to or wider than the length of the leaf blade.



1 lanceolate



2 narrow elliptic



3 elliptic



4 ovate



5 broad ovate

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>7</b>	<b>VG</b>	Leaf blade:			
<b>(*)</b>		division			
<b>QL</b>	absent	Sunmaribisu	White parfait	Sunmaribisu	1
	present	Sunvop	Sunvop	Sunvop	9

Remarks

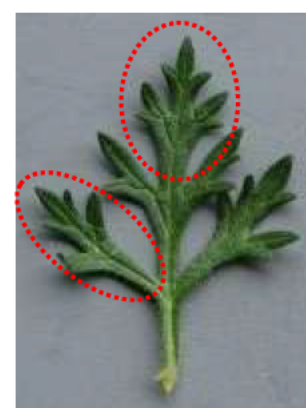
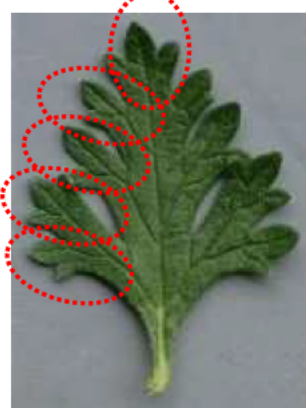
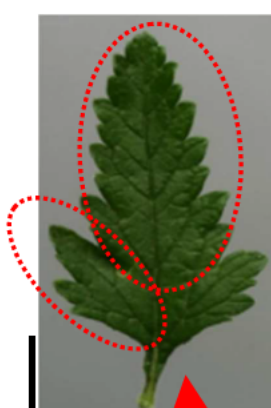
**Stage of observation:** See Chapter 3, paragraph (ii).

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches.

The presence or absence is evaluated based on whether the leaves can be divided into multiple blocks by the incision, which is a deep notch that differs from a regular shallow dentation.



1 absent



9 present

Leaves can be divided into multiple blocks.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>8 VG</b> (*) (+)	Leaf blade: type of division				
<b>PQ</b>	lobed	Balazplum	Balazplum	Balazplum	1
	divided				2
	dissected	Sunvop	Sunvop	Sunvop	3

**Remarks**

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

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches.



1 lobed



2 divided



3 dissected



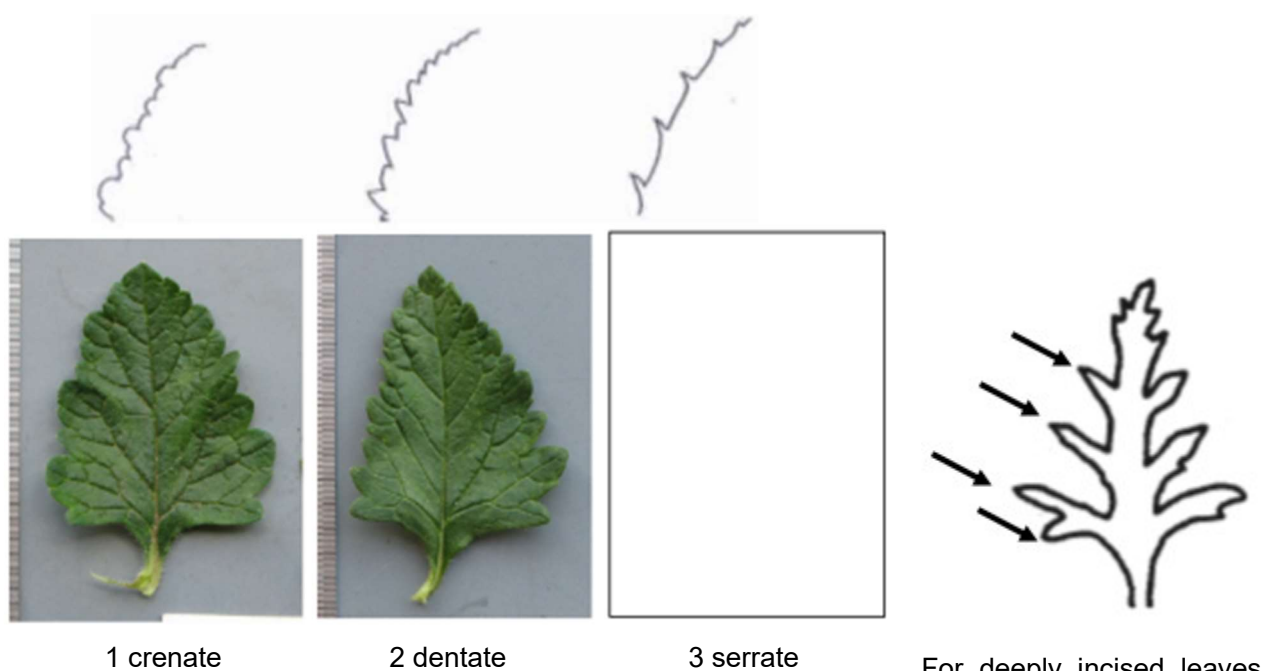
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>9</b>	<b>VG</b>	<b>Leaf blade : type of incisions of margin</b>			
(*)					
(+)					
<b>PQ</b>	crenate	Balazlavi, Sunvivaripi		Sunvivaripi	1
	dentate	Sunmarisu		Sunmarisu	2
	serrate	Sunverb 07		Sunverb 07	3

### Remarks

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

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches.

In the case of "2 divided" and "3 dissected" in the characteristics No.8 "Leaf blade: type of division", observe the angle and shape of the leaf apical part divided by the incision.



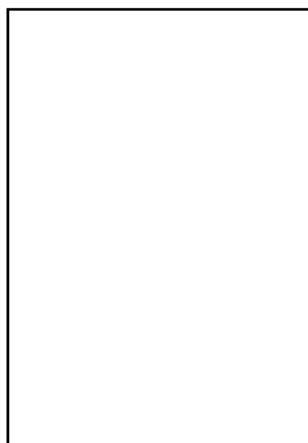
For deeply incised leaves, evaluate the angle and shape of the tip of the arrowed area.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>10 VG (*)</b>	Leaf blade: color of upper side				
<b>PQ</b>	yellow green				1
	light green	Sunmaririho		Sunmaririho	2
	medium green	Sunvop		Sunvop	3
	dark green	Wynena		Wynena	4
	grey green				5

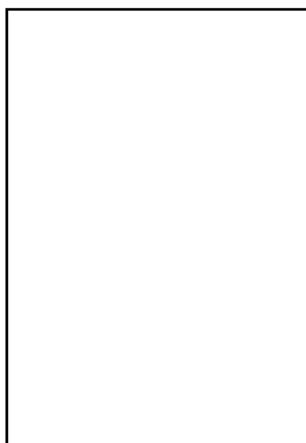
**Remarks**

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

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches. Use example varieties to calibrate.



1 yellow green



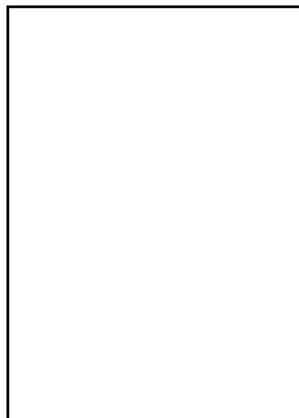
2 light green



3 medium green



4 dark green



5 grey green



1 yellow green

2 light green

3 medium green

4 dark green

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

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>11 VG (*)</b>	Leaf blade: anthocyanin coloration on upper side				
<b>QL</b>	absent	Wynena		Wynena	1
	present	Sunmarisu		Sunmarisu	9

**Remarks**

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

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches. Use example varieties to calibrate.



1 absent



9 present

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>12 VG</b>	Leaf blade: intensity of anthocyanin coloration				
<b>QN</b>	weak				3
	medium				5
	strong				7

**Remarks**

**Stage of observation:** See Chapter 3, paragraph (ii), (c).

**Method of observation:** Visual observation. Observe the representative largest leaves of main primary branches.

Evaluate comprehensively the anthocyanin coloration area and shade of coloration in leaves.



3 week



5 medium



7 strong



9 very strong

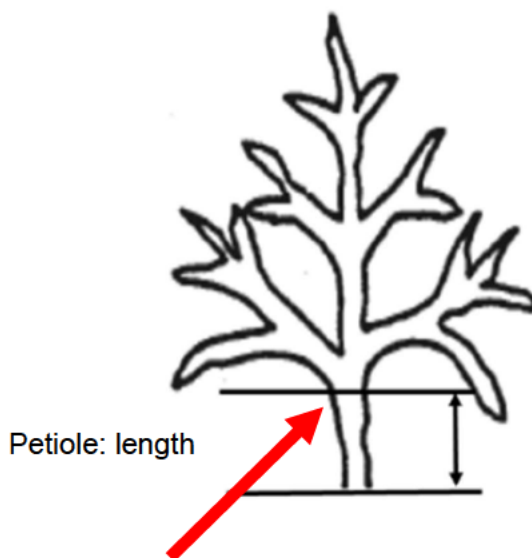
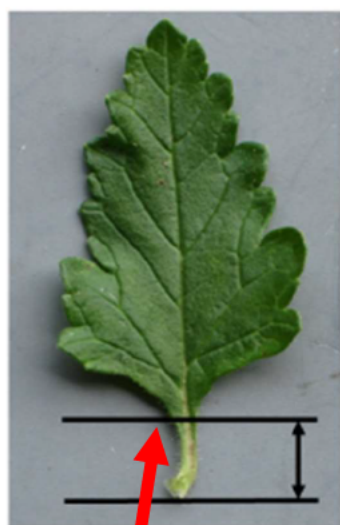
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
13 (*)	<b>VG/MS</b> Petiole: length				
<b>QN</b>	short	Lan Pureye		Lan Pureye	3
	medium	Scarlana		Scarlana	5
	long	Wynena		Wynena	7

**Remarks**

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

**Method of observation:** Visual observation or measurement. Measure or observe the representative largest leaves of main primary branches.

If the boundary between the leaf blade and petiole is not clear, separate them at the inflection point.



Petiole: length

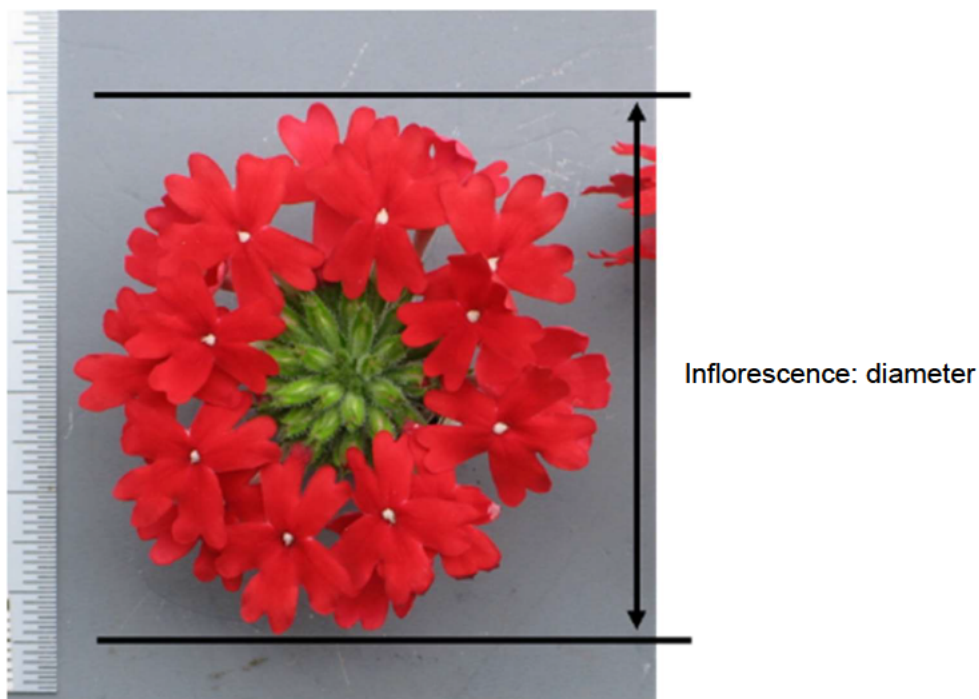
The red arrow points to the inflection point.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>14 MS (*)</b>	Inflorescence: diameter				
<b>QN</b>	small				3
	medium	Blancena		Blancena	5
	large	Scarlana		Scarlana	7

Remarks

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

**Method of observation:** Visual observation or measurement. Measure or Observe the maximum diameter of the inflorescence. Evaluate when the diameter of the inflorescence is at its maximum. This is approximately when the outermost corolla is fully open.



	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>15</b>	<b>VG</b>	Inflorescence: shape in profile			
(*)					
(+)					
<b>PQ</b>	broad ovate				1
	broad obovate	Wynena		Wynena	2
	broad cylindrical	Sunmarisu		Sunmarisu	3
	narrow cylindrical			Verbena hastata	4

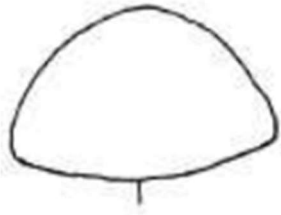
### Remarks

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

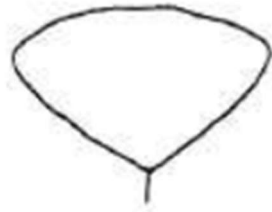
**Method of observation:** Visual observation. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

The shape of the inflorescence should be evaluated based on the overall shape of the inflorescence, including the part of the corolla that has finished blooming. Some types of inflorescences elongate as they continue to bloom, so this point should be taken into consideration when evaluating the shape of the inflorescence (JP) .





1 broad ovate



2 broad obovate



3 broad cylindric



4 narrow cylindric

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
16. VG (* (+)	Flower: arrangement of corolla lobes				
QN	free	Scarlena		Scarlena	1
	touching	Blancena, Sunmarisu		Blancena	2
	overlapping				3

### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

If the corolla lobes are clearly separated from each other, it is evaluated to be "1 free". The borderline between "2 touching" and "3 overlapping" should be evaluated by looking at the entire inflorescence and comparing the frequency of occurrence.



1 free

2 touching

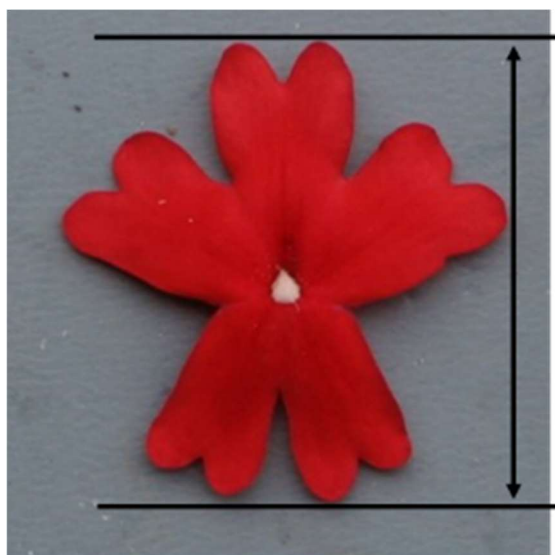
3 overlapping

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>17</b>	<b>VG/MS</b>	Flower: diameter of corolla			
<b>(*)</b>					
<b>QN</b>	small	Sunvop		Sunvop	3
	medium	Blancena, Sunmarisu		Blancena, Sunmarisu	5
	large	Scarlana		Scarlana	7

### Remarks

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

**Method of observation:** Visual observation or measurement. Measure or observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. Measure or observe the maximum diameter of the corolla.



Flower: diameter of corolla



	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>18</b>	<b>VG</b>	Calyx: anthocyanin coloration			
<b>(*)</b>					
<b>QL</b>	absent	Kieversil, Lobena		Kieversil, Lobena	1
	present	Scarlana		Scarlana	9

**Remarks**

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. If there are any part of the anthocyanin coloration in calyx, It is evaluated to be "9 present".



1 absent



9 present

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>19 VG (*)</b>	Calyx: distribution of anthocyanin coloration				
<b>PQ</b>	at the base				1
	upper part	Sunmarisa		Sunmarisa	2
	teeth only	Sunmaribisu		Sunmaribisu	3
	entire calyx				4

### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

Evaluate the site of anthocyanin coloration in the calyx. In the absence of example varieties, observations can be done using the following photos.



1 at the base



2 upper part



3 teeth only



4 entire calyx

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>20</b> <b>(*)</b>	<b>VG/MS</b> Corolla tube: length				
<b>QN</b>	short	Balazpima		Balazpima	3
	medium	Kieversil, Sunvop		Kieversil, Sunvop	5
	long	Sunmariba, Sunmariribu		Sunmariba, Sunmariribu	7

### Remarks

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

**Method of observation:** Visual observation or measurement. Measure or observe the length of the corolla tube, excluding the calyx with the largest inflorescence diameter in a secondary branching inflorescence.

Measure or observe the length of the corolla tube, excluding the calyx.



Corolla tube: length

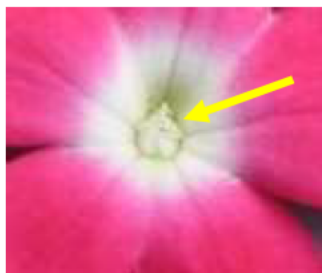
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
21 (*)	<b>VG</b> Corolla tube: color of tip of protruding hairs				
<b>PQ</b>	white	Balazpima		Balazpima	1
	light green yellow	Sunmaribisu		Sunmaribisu	2
	pink				3
	red				4
	purple	Sunvivabupan		Sunvivabupan	5
	grey purple	Balazplum		Balazplum	6
	light grey	Sunmariribu		Sunmariribu	7

#### Remarks

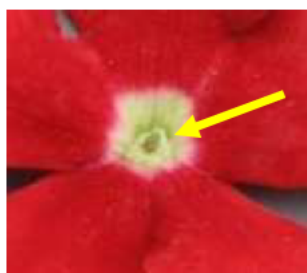
**Stage of observation:** See Chapter 3, paragraph (ii).

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

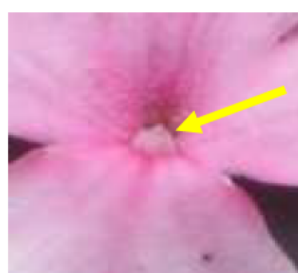
Evaluate the color of the tips of the protruding hairs of the corolla tube. If there are two or more colors, evaluate the color with the largest area.



1 white



2 light green yellow



3 pink



4 red



5 purple



6 grey purple



7 light grey

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>22 VG (*)</b>	Corolla lobe: curvature of longitudinal axis				
<b>QN</b>	incurved	Sunvat		Sunvat	1
	straight	Sunmaririho		Sunmaririho	2
	recurved	Wynena, Blancena		Wynena, Blancena	3

### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

Observe the angle of the corolla lobes when they are viewed from the side.



1 incurved



2 straight



3 recurved



	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>23 VG (*)</b>	Corolla lobe: undulation of margin				
<b>QN</b>	weak	Lan Pureye		Lan Pureye	3
	medium	Balazplum, Balazdapi		Balazplum, Balazdapi	5
	strong				7

### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

Observe the intensity of undulation of margin of the corolla lobes.



3 weak



5 medium



7 strong

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>24</b>	<b>VG</b>	Corolla: number of colors			
	(*)				
<b>QL</b>	one	Sunmaribisu		Sunmaribisu	1
	two	Kieverstar		Kieverstar	2
	more than two				3

**Remarks**

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

The color of shaded and eye part should not be included in the number of colors.



1 one



2 two

(Example)  
Main color: white  
Secondary color: purplish red



3 more than two

(Example)  
Main color: white  
Secondary color: light purple  
Tertiary color: purple

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>25 VG (*)</b>	Corolla: color pattern				
<b>PQ</b>	even	Sunmaribisu	White Parfait	Sunmaribisu	1
	shaded	Kieverstar	Kieverstar	Kieverstar	2
	star-shaped				3
	speckled				4
	speckled and striped	Kieversil	Kieversil	Kieversil	5

### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.



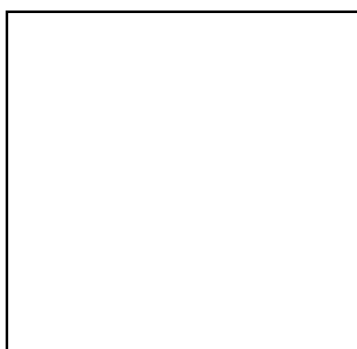
1 even



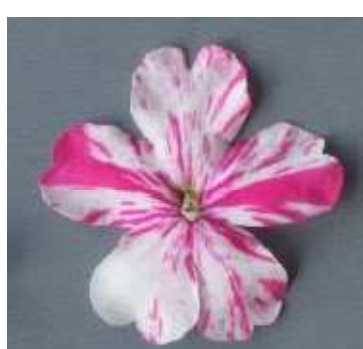
2 shaded



3 star-shaped



4 speckled



5 speckled and striped



In the case of the photo above, the status should be “3 star-shaped” and “4 speckled”, which are listed in parallel. (JP)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>26</b>	<b>VG</b>	Shaded Varieties only: Corolla: distribution of color			
<b>QL</b>		lighter towards base			1
		lighter towards apex			2

#### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. In the absence of example varieties, observations can be done using the following photos.

Evaluate the distribution of corolla color for only shaded varieties.



1 lighter towards base



2 lighter towards apex

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>27</b>	<b>VG</b> Corolla: main color (*)				
<b>PQ</b>	RHS Colour Chart				

**Remarks**

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

**Method of observation:** Visual observation with use of the RHS color chart. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

The main color of the corolla should be the color with the largest area, and if the proportions of the two colors are equal, the darker color should be the main color.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>28</b>	<b>VG</b>	Corolla:			
<b>(*)</b>		secondary color			
<b>PQ</b>		RHS Colour Chart			

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#### Remarks

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

**Method of observation:** Visual observation with use of the RHS color chart. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence.

Evaluate the secondary color of the corolla according to the RHS color chart number. Tertiary colors and beyond, if any, should be recorded as the remark.

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>29 VG</b> (*)	Corolla: eye				
<b>QL</b>	absent	Sunmarisu		Sunmarisu	1
	present	Spikena		Spikena	9

**Remarks**

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

If there is coloration on the outside area of the protruding hairs of the corolla tube, it is considered "9 present".



1 absent



9 present

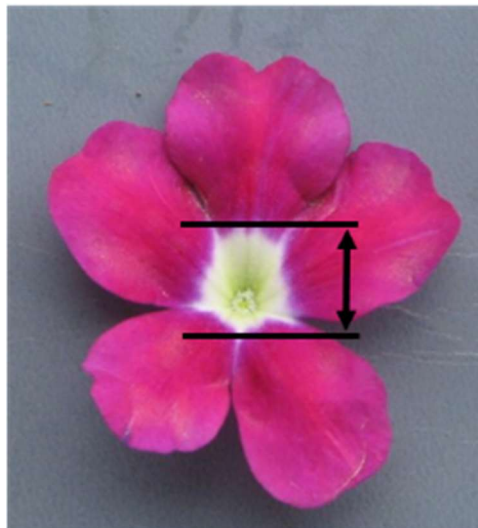
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>30</b>	<b>VG/MS</b>	Corolla: diameter of eye			
<b>(*)</b>					
<b>QN</b>	small	Sunmaririho		Sunmaririho	3
	medium	Spikena		Spikena	5
	large	Sumverb 09		Sumverb 09	7

#### Remarks

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

**Method of observation:** Visual observation or measurement. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate.

Measure or observe the maximum diameter of the corolla eye including the throat part.





	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
<b>31</b>	<b>VG</b>	Corolla: color of eye			
	<b>(*)</b>				
<b>PQ</b>	whitish green	Sunvivaripi		Sunvivaripi	1
	green yellow	Balazlavi, Vertis		Balazlavi, Vertis	2
	pink	Balazpima		Balazpima	3
	red	QuHa 237V		QuHa 237V	4
	purple	Balazdapi		Balazdapi	5

**Remarks**

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate.



1 whitish green



2 green yellow



3 pink



4 red



5 purple

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
32	<b>VG</b> Corolla: change of color with age				
	<b>QN</b> strongly fading				1
	weakly fading				2
	no change	Blancena, Lobena		Blancena, Lobena	3
	weakly intensifying				4
	strongly intensifying				5

#### Remarks

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

**Method of observation:** Visual observation. Observe the fully open representative corolla with the largest inflorescence diameter in a secondary branching inflorescence. Use example varieties to calibrate. In the absence of example varieties, observations can be done using the following photos.

Evaluate changes in corolla color over time after corolla opens.



The freshly bloomed corolla.

The corolla that bloomed earlier.  
Its color has changed from purple to whitish.



1 strongly fading

In the case of color changing from purple to white, the status is considered to be "1 strongly fading".



2 weakly fading

In the case of color changing in the same color line, for example from dark pink to light pink, the status is considered to be "2 weakly fading".



3 no change



4 weakly intensifying



5 strongly intensifying

In the case of color changing in the different color line, for example from cream to pink, the status is considered to be "5 strongly intensifying".