



CALIBRATION MANUAL

Harmonized with
Naktuinbouw and NCSS(/NARO)

DUS Test for ANTHURIUM

Anthurium Schott.

CALIBRATION MANUAL

DUS Test for ANTHURIUM

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6. Method of observation (example of characterization)

1. Purpose

This Calibration Manual was established by collaborative activities between Naktuinbouw (Netherlands) and NCSS (/NARO) (Japan).

The purpose of this Calibration Manual is to harmonize technique of DUS examination in the two countries and use it also internationally.

2. Use of this Calibration Manual

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

3. Explanations covering several characteristics

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

- (a) Observations should in general be done on full grown plants with fully developed flowers, unless otherwise indicated. Pot plants should be observed at least 6-7 months, cut flower plants should be observed at least 11-12 months (JP) or 14-16 months (NL) after start of trial.
- (b) Leaf: Observations on the leaf should be made on fully developed leaves.
- (c) Peduncle: Observations on the peduncle should be made at the same time with characteristics concerning the spathe. For anthocyanin coloration, as the flower (spathe and spadix) is fully developed and of maximum size.
- (d) Spathe: Observations on the spathe should be made at the time of dehiscence of anthers at basal third of the spadix.
- (e) Spadix: Observations on the spadix should be made at the time of dehiscence of anthers at basal third of the spadix, except for characteristic 38 and 39.

4. Grouping characteristics:

The following have been agreed as useful grouping characteristics:

- (a) Spathe: size (characteristic 7)
- (b) Spathe: main color of upper side (characteristic 24)

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

6. Method of observation (example of characterization)

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. 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.

6. Method of observation (example of characterization)

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/86/5 Corr., Chapter 8.2.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
1 (*)	Plant: size				
QN	small	Hanna		Robino	3
	medium	Eva		Red Champion	5
	large	Gloria		Mia	7

Remarks: This characteristic might be used to group varieties.

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

Method of observation: Visual observation.

The height of plant should be observed on a straight line from soil level to the highest point.

VG : The average plant size is calculated using the following formula:

plant: size = (average plant: height + average plant: width) / 2 and converted into a note (NL).

The height of plant, which represents the variety, is measured as reference of evaluation (JP).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
2	Leaf blade: length				
QN	short	Champion			3
	medium	Eldorado			5
	long	Merengue			7

Remarks: none

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

Method of observation: Measurement or visual observation should be made from the base of the leaf (including lobes if present) to the tip.

MS: The mean is calculated after measurement of one leaf per plant and converted into a note (JP).

VG: The length of a leaf blade, which represents the variety, is measured and converted into a note (NL).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
3	Leaf blade: width				
QN	narrow	Hanna			3
	medium	Eldorado			5
	broad	Merengue			7

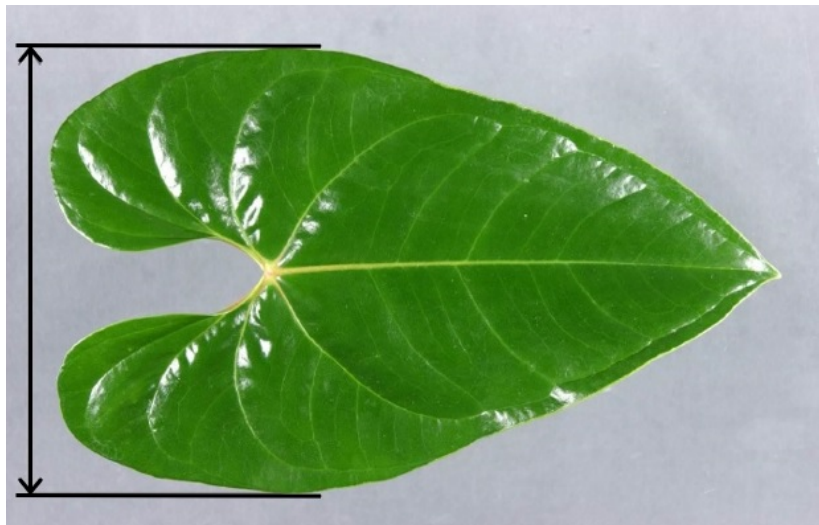
Remarks: none

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

Method of observation: Measurement or visual observation should be made on the broadest width of the leaf blade.

MS: The mean is calculated after measurement of one leaf per plant and converted into a note (JP).

VG: The width of a leaf blade, which represents the variety, is measured and converted into a note (NL).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
4 (*)	Leaf blade: shape				
PQ	narrow ovate	Tessa		Baleno	3
	ovate	Modonna		Arizona	5
	broad ovate	Champion		Anaconda	7

Remarks: none

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

Method of observation: Visual observation.

The shape of leaf blade is observed on a representative leaf which developed sufficiently.

The length / width ratio, which represents the variety, is measured as reference of evaluation.



3 narrow ovate



5 ovate



7 broad ovate

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
5 (*)	Leaf blade: lobes				
QL	absent	Champion		Baleno	1
	present	Tropical		Arizona	9

Remarks: none

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

Method of observation: Visual observation.

The lobes of leaf blade are observed on a representative leaf which developed sufficiently.



1 absent



9 present



6. Method of observation (example of characterization)

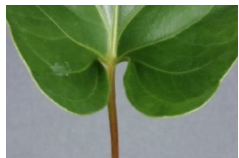
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
6	Leaf blade: relative position of lobes				
QN	incurved but not touching			Florida	1
	free	Lambada		Latino	2
	touching	Linda de Mol		Arizona	3
	overlapping	Mia		Alaska	4
	adpressed	Merengue			5

Remarks: none

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

Method of observation: Visual observation.

The relative position of the lobes is observed on a representative leaf which developed sufficiently.



1

incurved

but not touching

2

free

3

touching

4

overlapping

5

adpressed

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
7	Leaf blade: angle of distal part				
QN	acute	Apollo			1
	approximately right angle	Lambada			2
	obtuse	Mia			3

Remarks: none

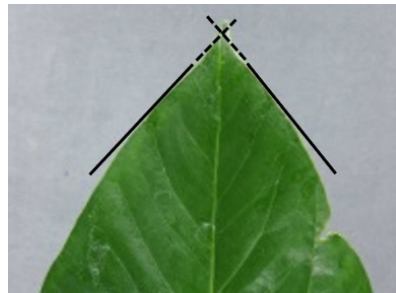
Stage of observation: See Chapter 3, paragraph (a) and (b).

Method of observation: Visual observation.

The angle of distal part of leaf blade is observed on a representative leaf which developed sufficiently.



1 acute



2 approximately right angle



3 obtuse

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
8 (*)	Leaf blade: shape of tip				
PQ	narrow acute			Caribo	1
	acute			Champion	2
	broad acute			Arizona	3
	narrow acuminate			Baleno	4
	acuminate			Pink Champion	5
	broad acuminate			Amigo	6

Remarks: none

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

Method of observation: Visual observation.

The shape of tip of leaf blade is observed on a representative leaf which developed sufficiently.



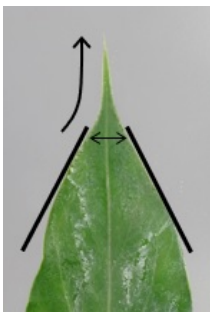
1 narrow acute



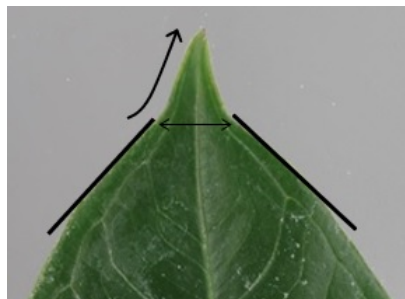
2 acute



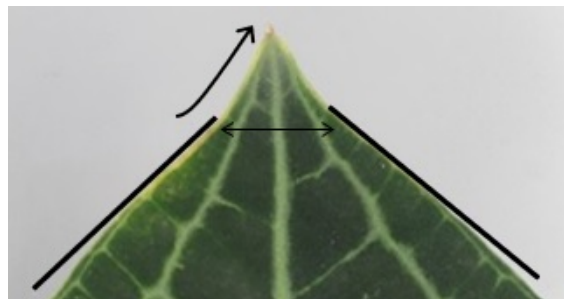
3 broad acute



4 narrow acuminate



5 acuminate



6 broad acuminate

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
9	Leaf blade: intensity of green color of upper side				
QN	light				3
	medium	Mia		Dakota	5
	dark	Rumba			7

Remarks: none

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

Method of observation: Visual observation.

The intensity of green color is observed on the upper side of a representative leaf which developed sufficiently. Compare with the example varieties to decide on the proper notes.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
10	Leaf blade: blistering of upper side				
QN	absent or very weak				1
	weak	Pink Georgusis		Polaris	3
	medium	Samba		Dakota	5
	strong	Patti Ann		florida	7
	very strong				9

Remarks: none

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

Method of observation: Visual observation.

The blistering is observed on the upper side of a representative leaf which developed sufficiently. Compare with the example varieties to decide on the proper notes.



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
11	Petiole: length				
QN	short	Campion			3
	medium	Gloria			5
	long	Rumba			7

Remarks: none

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

Method of observation: Measurement or visual observation should be made from the top of the leaf sheath to the top of the petiole at the base of on the most large leaf which developed sufficiently.

MS: The mean is calculated after measurement of one petiole per plant and converted into a note (JP).

VG: The length of a petiole of a leaf, which represents the variety, is measured and converted into a note (NL).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
12 (*)	Peduncle: length				
QN	very short	Belinda			1
	short	Champion			3
	medium	Linda de Mol			5
	long	Gloria			7
	very long				9

Remarks: none

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

Method of observation: Measurement or visual observation should be made from the base of the peduncle to the top, at the base of a representative spathe which developed sufficiently.

MS: The mean is calculated after measurement of one peduncle per plant and converted into a note (JP).

VG: The length of a peduncle of a flower, which represents the variety, is measured and converted into a note (NL).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
13	Peduncle: thickness				
QN	thin	Patti Ann			3
	medium	Linda de Mol			5
	thick	Salsa			7

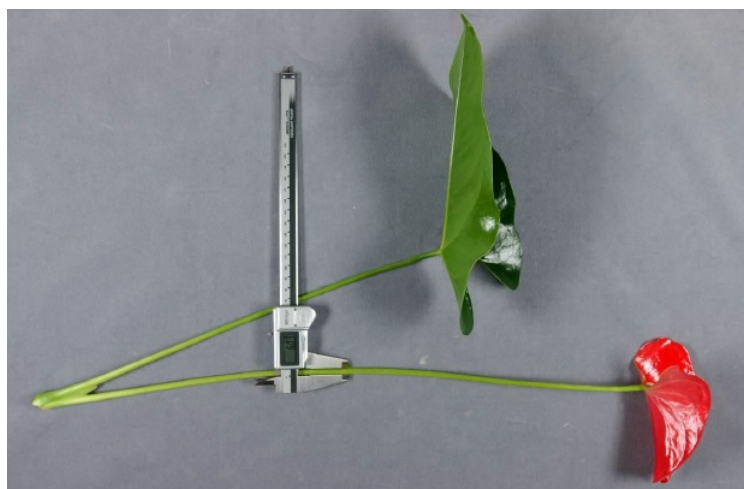
Remarks: none

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

Method of observation: Measurement or visual observation should be made on the largest diameter in the middle third of a representative peduncle of the plants which developed sufficiently.

MS: The mean is calculated after measurement of one peduncle per plant and converted into a note (JP).

VG: The thickness of a peduncle of a flower, which represents the variety, is measured and converted into a note (NL).



6. Method of observation (example of characterization)

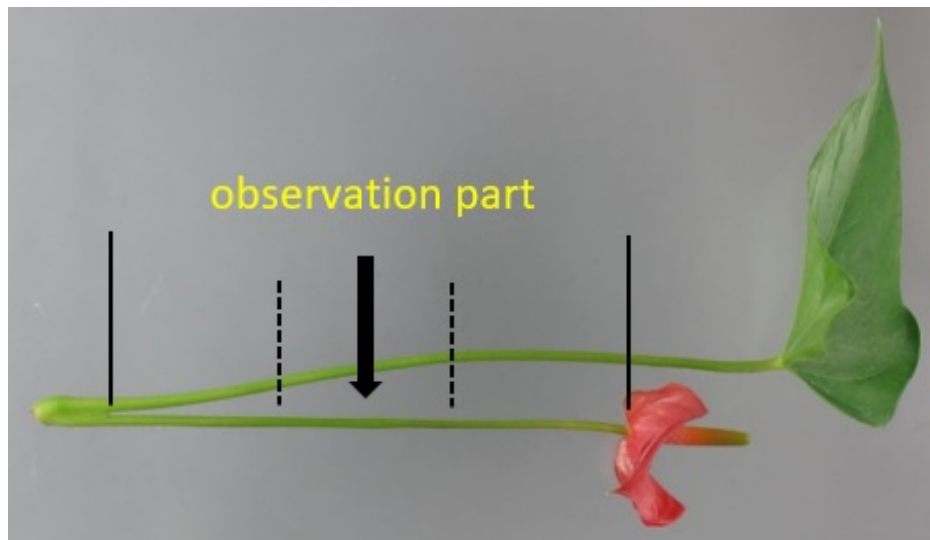
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
14 VG	Peduncle: intensity of green color of middle part				
QN (b)	light	Champion		Polaris	3
	medium	Linda de Mol		Arizona	5
	dark	Avo-Gino		Red Champion	7

Remarks: none

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

Method of observation: Visual observation.

Observations should be made on the middle third of a representative peduncle, excluding the anthocyanin color. Compare with the example varieties to decide on the proper notes.



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
15	Peduncle: anthocyanin coloration				
QN	absent or very weak	Pink Georgusis			1
	weak	Kuipers			3
	medium	Purple Rain		Red Champion	5
	strong	Nathalie		Ambition	7
	very strong	Rachella			9

Remarks: none

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

Method of observation: Visual observation.

Observations should be made on the middle third of a representative peduncle. Compare with the example varieties to decide on the proper notes.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
16 (*)	Spathe: position compared to leaves				
QN	far below				1
	slightly below	Lady Jane		Caribo	2
	same level			Amigo	3
	slightly above	Champion		Arizona	4
	far above	Eldorado		Baleno	5

Remarks: none

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

Method of observation: Visual observation.

Positional relation of the spathe to the foliage is observed.



2 slightly below



3 same level



4 slightly above



5 far above

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
17 (*)	Spathe: size				
QN	very small	Anetta			1
	small	Ellen			3
	medium	Fla-Exotic			5
	large	Merengue			7
	very large				9

Remarks: none

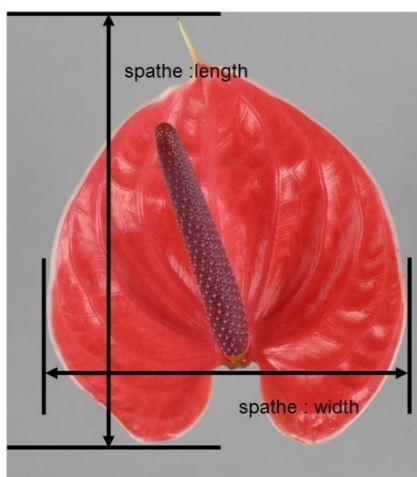
Stage of observation: See Chapter 3, paragraph (a) and (d).

Method of observation: Measurement or visual observation on a representative spathe which developed sufficiently.

MS: The average spathe size is calculated using the following formula:

spathe size = average spathe length × average spathe width and converted into a note based on assessment table (JP).

spathe size = (average spathe: length + average spathe: width) / 2 and converted into a note (NL).



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
18 (*)	Spathe: shape				
PQ	elliptic	Ariane, Apollo		Arizona	1
	broad elliptic	Hanna		Red Champion	2
	almost round			Altus	3
	ovate	Anetta		Caribo	4
	broad ovate	Gloria		Amigo	5

Remarks: none

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

Method of observation: Visual observation.

The shape of the spathe is observed on a representative spathe which developed sufficiently.



1 elliptic



2 broad elliptic

6. Method of observation (example of characterization)



3 almost round



4 ovate



5 broad ovate

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
19 (*)	Spathe: lobes				
QL	absent	Arcs, Lady Jane		Robino	1
	present	Gloria		Arizona	9

Remarks: none

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

Method of observation: Visual observation.

The lobes of the spathe are observed on a representative spathe which developed sufficiently.



1 absent



9 present

6. Method of observation (example of characterization)

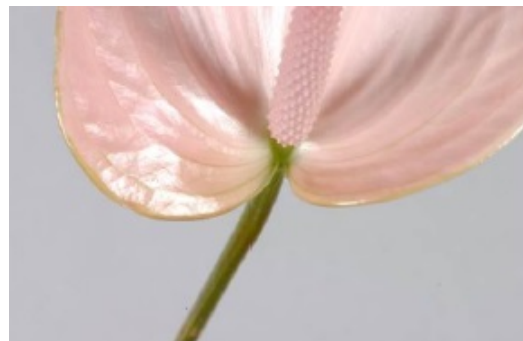
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
20 (*)	Spathe: relative position of lobes				
QN	incurved but not touching	Mia			1
	free	Apollo		Amigo	2
	touching	Merengue		Acropolis	3
	overlapping				4
	adpressed	Gloria			5

Remarks: none

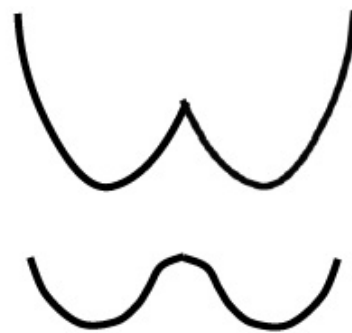
Stage of observation: See Chapter 3, paragraph (a) and (d).

Method of observation: Visual observation.

The lobes of the spathe are observed on a representative spathe which developed sufficiently

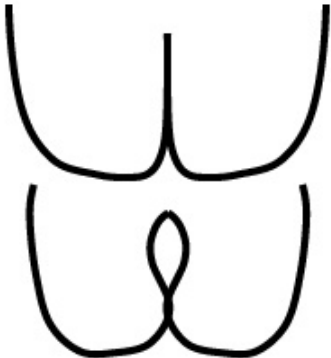


1 incurved but not touching



2 free

6. Method of observation (example of characterization)



3 touching



4 overlapping



5 adpressed

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
21	Varieties with addressed lobes only: Spathe: height of addressed part of lobes				
QN	low	Mia			3
	medium	Royal Orange			5
	high	Riobmba			7

Remarks: none

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

Method of observation: Visual observation.

The lobes of the spathe are observed on a representative spathe which developed sufficiently

The height of the addressed part is to be observed relative to the total height of the lobes.

6. Method of observation (example of characterization)



3 low



5 medium



7 high

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
22	Spathe: shape of distal part				
QN	acute	Linda de Mol			1
	obtuse				2
	rounded	Mia			3

Remarks: none

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

Method of observation: Visual observation.

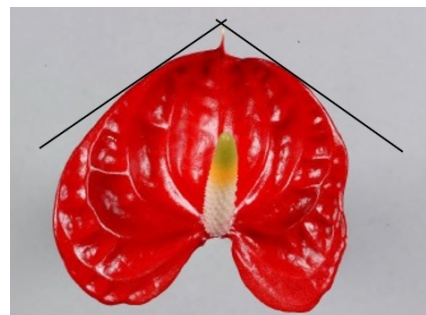
The shape of distal part of spathe is observed on a representative spathe which developed sufficiently.



1 acute



2 obtuse



3 rounded

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
23 (*)	Spathe: shape of tip				
PQ	narrow acute	Gloria		Caribo	1
	acute	Anetta		Fiesta	2
	broad acute	Calypso		Arizona	3
	narrow acuminate	Lambada		Baleno	4
	acuminate	Mia		Robino	5
	broad acuminate	Merengue		Araska	6

Remarks: none

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

Method of observation: Visual observation.

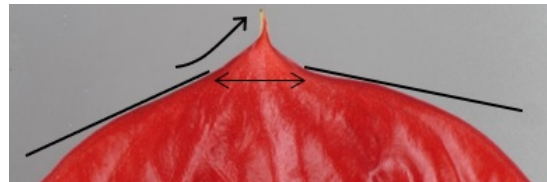
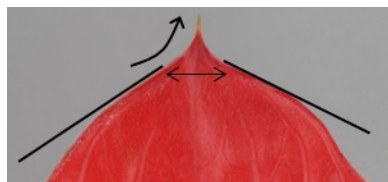
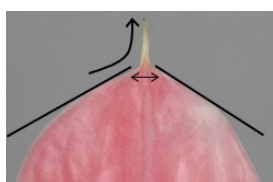
The shape of tip of spathe is observed on a representative spathe which developed sufficiently.



1 narrow acute

2 acute

3 broad acute



4 narrow acuminate

5 acuminate

6 broad acuminate

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
24 (*)	Spathe: main color of upper side				
PQ	RHS Colour Chart (indicate reference number)				

Remarks: none

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

Method of observation: Visual observation.

The main color of upper side is observed on the surface of a representative spathe which developed sufficiently.

The main color is the color with the largest surface area.

In cases where the areas of the main and secondary color are too similar to reliably decide which color has the largest area, the color at the 1/3 of the width and at 1/4 of the length taken from the top of the spathe part is considered to be the main color (NL).

If the colors have the same surface area, then the darker color should be considered as the main color (JP).



ca.RHS 47D

lower part of lobe (ca.RHS 145A) and side (ca.RHS 150D)

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
25	Spathe: main color of lower side				
PQ	RHS Colour Chart (indicate reference number)				

Remarks: none

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

Method of observation: Visual observation.

The main color of upper side is observed on the back surface of a representative spathe which developed sufficiently.

The main color is the color with the largest surface area.

In cases where the areas of the main and secondary color are too similar to reliably decide which color has the largest area, the color at the 1/3 of the width and at 1/4 of the length taken from the top of the spathe part is considered to be the main color (NL).

If the colors have the same surface area, then the darker color should be considered as the main color (JP).

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
26	Spathe: glossiness				
QN	very weak	White Bird			1
	weak	Anetta		Baleno	3
	medium	Gloria,Mia		Robino	5
	strong	Royal Orange		Dakota	7
	very strong	Cancan			9

Remarks: none

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

Method of observation: Visual observation.

The glossiness of spathe is observed on the surface of a representative spathe which developed sufficiently. Compare with the example varieties to decide on the proper notes.



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
27 (*)	Spathe: blistering				
QN	very weak	Rebecca			1
	weak	Champion		Robino	3
	medium	Linda de Mol		Pink Champion	5
	strong	Mia		Dakota	7
	very strong				9

Remarks: none

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

Method of observation: Visual observation.

The blistering of spathe is observed on the surface of a representative spathe which developed sufficiently.



1 very weak



3 weak

6. Method of observation (example of characterization)



5 medium



7 strong

6. Method of observation (example of characterization)

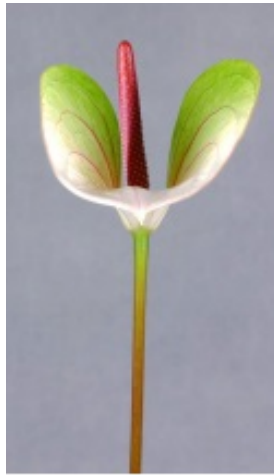
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
28	Spathe: shape in cross section of middle zone				
QN	concave	Campion		Red Champion	1
	straight	Gloria		Dakota	2
	convex	Ellen		Altus	3

Remarks: none

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

Method of observation: Visual observation.

The shape in cross section of middle zone of the spathe is observed on a representative spathe which developed sufficiently.



1 concave

2 straight

3 convex

6. Method of observation (example of characterization)

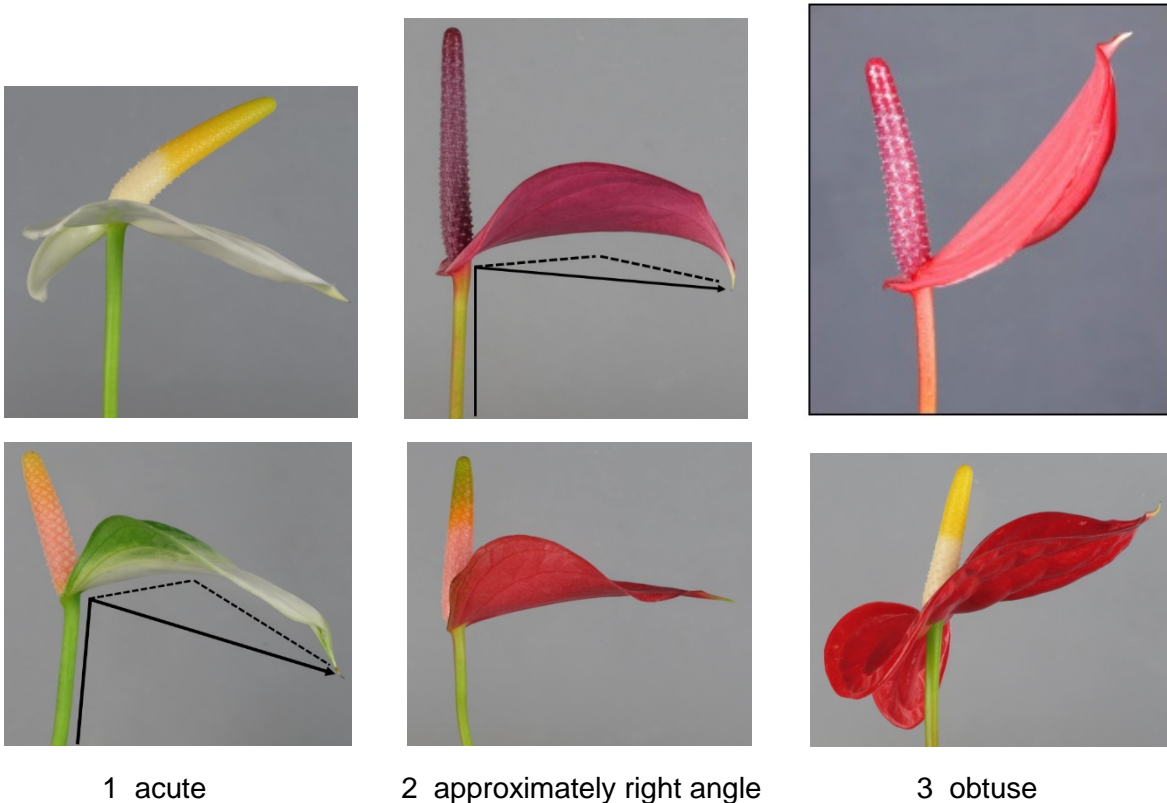
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
29	Spathes: angle of distal part to the peduncle				
QN	acute	Hanna		Altus	1
	approximately right angle	Mia		Dakota	2
	obtuse	Gloria		Baleno	3

Remarks: none

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

Method of observation: Visual observation.

The angle of distal part to the peduncle of the spathe is observed on a representative spathe which developed sufficiently.



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
30 (*) (+)	Spathe: distance between spadix and sinus				
QN	very short	Gloria			1
	short	Salsa			3
	medium	Rebecca			5
	long	Isabella			7
	very long	Rapsodie			9

Remarks: none

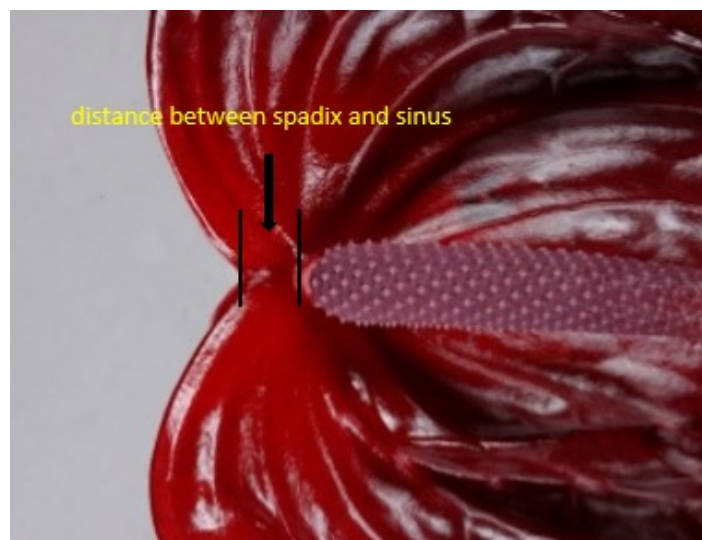
Stage of observation: See Chapter 3, paragraph (a) and (d).

Method of observation: Measurement or visual observation on a representative spathe which developed sufficiently.

VG: The distance between spadix and sinus of spathe is observed on a representative spathe which developed sufficiently.(NL)

MS: The average value is determined by measurement of a number of individual plants or parts of plants and converted into a note based on assessment table.(JP).

Compare with the example varieties to decide on the proper notes. (NL)



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
31 (*)	Spadix : length				
QN	very short	Anetta			1
	short	Purple Rain			3
	medium	Champion			5
	long	Gloria			7
	very long				9

Remarks: none

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

Method of observation: Measurement should be made from the base to the tip of the spadix.

The length of a spadix on a representative spathe which developed sufficiently is measured and converted into a note.



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
32	Spadix : width at the middle				
QN	very narrow	Belinda			1
	narrow	Pink Georgusis			3
	medium	Mia			5
	broad	Gloria			7
	very broad	Antolfa			9

Remarks: none

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

Method of observation: Measurement should be made in the middle of the spadix.

The width of a spadix on a representative spathe which developed sufficiently is measured and converted into a note.



6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
33	Spadix : rolling				
QL	absent				1
	present	Ellen,Hanna			9

Remarks: none

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

Method of observation: Visual observation.

The rolling of a spadix is observed on a representative spathe which developed sufficiently.



1 absent



9 present

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
34 (*)	Spadix : curvature of longitudinal axis				
QN	strongly incurved				1
	weakly incurved			Arizona	3
	straight	Mia		Pink Champion	5
	weakly recurved	Gloria		Baleno	7
	strongly recurved	Merengue			9

Remarks: none

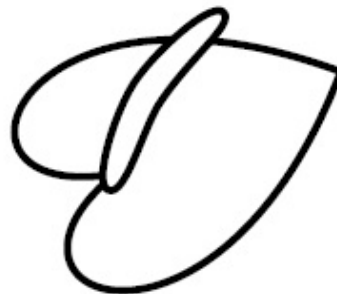
Stage of observation: See Chapter 3, paragraph (a) and (e).

Method of observation: Visual observation.

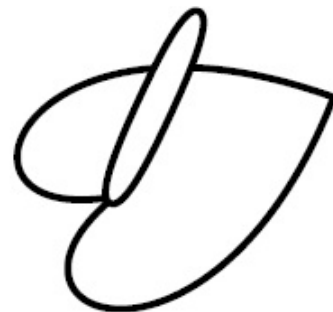
The curvature of longitudinal axis of a spadix is observed on a representative spathe which developed sufficiently.



1 strongly incurved

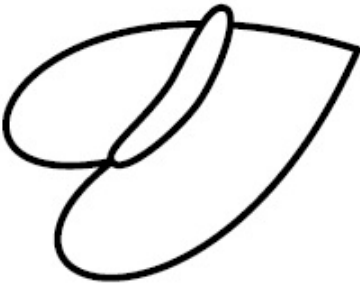


3 weakly incurved

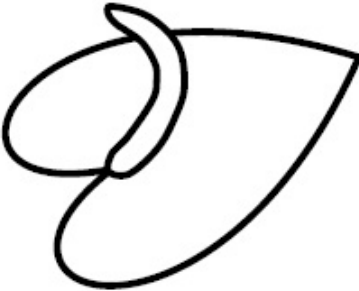


5 straight

6. Method of observation (example of characterization)



7 weakly recurved



9 strongly recurved

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
35	Spadix : tapering towards the top				
QN	very weak	Antco			1
	weak	Linda de Mol		Pink Champion	3
	medium	Mia,Gloria		Arizona	5
	strong	Madonna		Impreza	7
	very strong				9

Remarks: none

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

Method of observation: Visual observation.

The tapering towards the top of a spadix is observed on a representative spathe which developed sufficiently.



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)

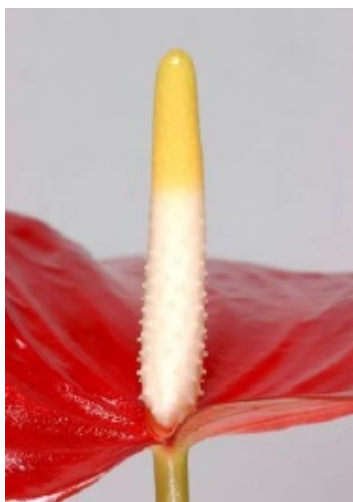
	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
36 (*)	Spadix : main color of basal part shortly before dehiscence of anthers				
PQ	white to cream	Gloria		Arizona	1
	yellow	Arinos		Latino	2
	orange	Hanna		Graffiti	3
	pink	Merengue		Pink Champion	4
	red	Lipstick		Robino	5
	red purple	Patti Ann		Baleno	6
	purple	Purple Rain		Pikobero	7

Remarks: none

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

Method of observation: Visual observation.

The main color of basal part shortly before dehiscence of anthers of the spadix is observed on a representative spathe which developed sufficiently.



1 white to cream

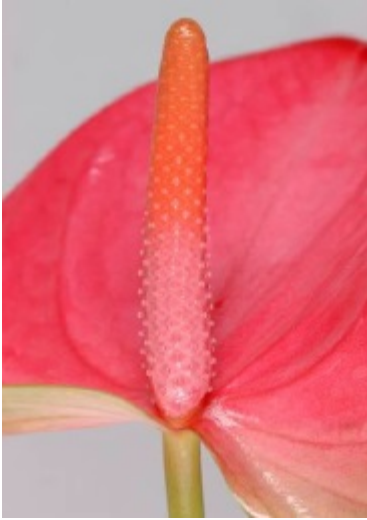


2 yellow



3 orange

6. Method of observation (example of characterization)



4 pink



5 red



6 red purple



7 purple

These images serve only to illustrate the color and its stage is not necessarily shortly before dehiscence of anthers.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
37	Spadix : main color of distal part shortly before dehiscence of anthers				
PQ	white			Florida	1
	yellow			Acropolis	2
	orange			Graffiti	3
	red			Red	4
	red purple			Baleno	5
	purple			Pikobero	6
	green			Arizona	7
	brown			Tivoli	8

Remarks: none

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

Method of observation: Visual observation.

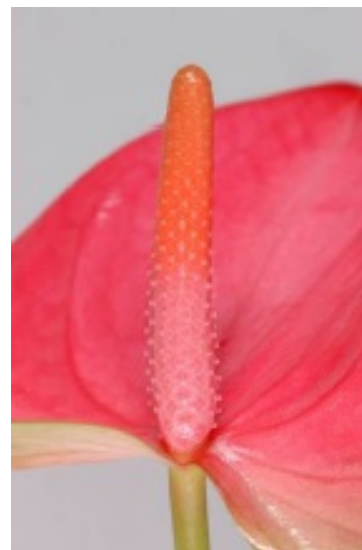
The main color of distal part shortly before dehiscence of anthers of the spadix is observed on a representative spathe which developed sufficiently.



1 white



2 yellow
47



3 orange

6. Method of observation (example of characterization)



4 red



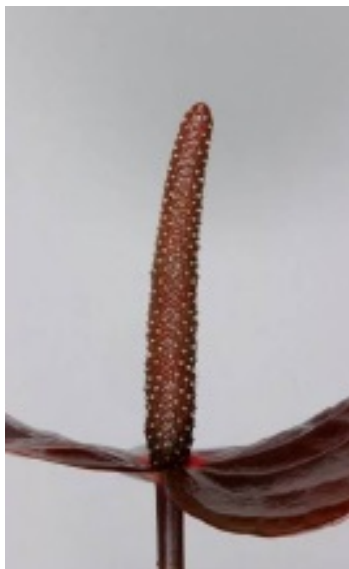
5 red purple



6 purple



7 green



8 brown

These images serve only to illustrate the color and its stage is not necessarily shortly before dehiscence of anthers.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
38	Spadix : main color of basal part shortly after dehiscence of anthers				
PQ	white to cream	Atlanta			1
	yellow	Apollo			2
	orange	Niky			3
	pink	Antamo			4
	red				5
	red purple	Rodeo			6
	purple	Anetta			7

Remarks: none

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

Method of observation: Visual observation.

The main color of basal part shortly after dehiscence of anthers of the spadix is observed on a representative spathe which developed sufficiently.

Reference to photo of characteristic 36 in regard to color of each note.

6. Method of observation (example of characterization)

	English	UPOV Example Varieties	Netherlands Example Varieties	Japan Example Varieties	Note
39	VG Spadix : main color of distal part shortly after dehiscence of anthers				
PQ	white				1
	yellow	Apollo			2
	orange	Niky			3
	red				4
	red purple				5
	purple	Rodeo			6
	green	Anetta			7
	brown				8

Remarks: none

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

Method of observation: Visual observation.

The main color of distal part shortly after dehiscence of anthers of the spadix is observed on a representative spathe which developed sufficiently.

Reference to photo of characteristic 37 in regard to color of each note.