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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

CHINA ASTER

UPOV Code: CALSP_CHI

Callistephus chinensis (L.) Nees

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Japan

to be considered by the

Technical Working Party for Ornamental Plants and Forest Trees
at its forty-sixth session, to be held in Melbourne, Australia, from April 22 to 26, 2013

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Callistephus chinensis (L.) Nees	China Aster	Aster, Aster de Chine, Reine-marguerite	Sommeraster	Aster de China

The purpose of these guidelines ("Test Guidelines") is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Callistephus chinensis* (L.) Nees.

2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of seed.

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

a sufficient quantity of seed to produce 40 plants.

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should be stated by the applicant.

2.4 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 Number of Growing Cycles

The minimum duration of tests should normally be a single growing cycle.

3.2 Testing Place

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 Conditions for Conducting the Examination

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The color chart and version used should be specified in the variety description.

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 40 plants.

3.4.2 The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

3.5 Additional Tests

Additional tests, for examining relevant characteristics, may be established.

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the second column of the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”):

MG: single measurement of a group of plants or parts of plants
MS: measurement of a number of individual plants or parts of plants
VG: visual assessment by a single observation of a group of plants or parts of plants
VS: visual assessment by observation of individual plants or parts of plants

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

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

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

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual

plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 For the assessment of uniformity of mainly self-pollinated varieties, a population standard of 1% and acceptance probability of at least 95% should be applied. In the case of a sample size of 40 plants, 2 off-types are allowed.

4.3 Stability

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

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

4.3.3 Where appropriate, or in cases of doubt, the stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines.

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: height (characteristic 1)
(b) Flower head: type (characteristic 15)
(c) Ray floret in outer rows: shape (characteristic 22)
(d) Ray floret in outer rows: main color of inner side (characteristic 26) with the following groups:
Gr. 1: white
Gr. 2: yellow
Gr. 3: orange
Gr. 4: pink
Gr. 5: red
Gr. 6: purple
Gr. 7: violet

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

6. Introduction to the Table of Characteristics

6.1 Categories of Characteristics

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

6.2 States of Expression and Corresponding Notes

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

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

State	Note
small	3
medium	5
large	7

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

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

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

6.3 Types of Expression

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

6.4 Example Varieties

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

6.5 Legend

(*)	Asterisked characteristic	– see Chapter 6.1.2
QL	Qualitative characteristic	– see Chapter 6.3
QN	Quantitative characteristic	– see Chapter 6.3
PQ	Pseudo-qualitative characteristic	– see Chapter 6.3
MG, MS, VG, VS		– see Chapter 4.1.5
(a)-(e)	See Explanations on the Table of Characteristics in Chapter 8.1	
(+)	See Explanations on the Table of Characteristics in Chapter 8.2.	

7. Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. **(*)** **(+)**	**VG/ MS**	**Plant: height**					
QN		short				Gyokurei Rose	3
		medium				Petit White	5
		tall				Sanhana Purple	7
2.	**VG/ MS**	**Plant: width**					
QN		narrow				Sanhana Purple	3
		medium				San Petit Purple	5
		broad				Koma Purple	7
3.	**VG/ MS**	**Plant: number of primary lateral shoots**					
QN		few				Fukuhogyoku	3
		medium				Ariake Murasaki	5
		many				Chikuma Aka	7
4.	**VG/ MS**	**Plant: number of secondary lateral shoots**					
QN		few				Fukuhogyoku	3
		medium				Shigyoku	5
		many				Chikuma Aka	7
5. **(+)**	**VG**	**Plant: distribution of primary lateral shoots**					
PQ		mainly on lower part				Siena Pink	1
		throughout				Stellar Blue	2
		mainly on upper part				Chikuma Light Pink	3
6.	**VG/ MS**	**Primary lateral shoot: length**					
QN	**(b)**	short				Mochizuki Blue	3
		medium				Siena Pink	5
		long				Koma Pink	7
7.	**VG**	**Primary lateral shoot: angle in relation to stem**					
QN	**(b)**	small				Sanhana Purple	1
		medium				Stellar Red	3
		large				San Petit Purple	5
8. **(+)**	**VG/ MS**	**Stem: number of nodes**					
QN		few				Fukunohikari	3
		medium				Petit Scarlet	5
		many				Sanhana Purple	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9. (*)	**VG**	**Stem: anthocyanin coloration**					
QN		absent or very weak				Ariake Shiro	1
		weak				Fukuyo	2
		medium				Shigyoku	3
		strong				Aoitori	4
10. **(+)**	**VG/ MS**	**Petiole: length**					
QN	**(c)**	short				Chikuma Light Blue	3
		medium				Siena Carmine Red	5
		long				Matsumoto Top Rose	7
11. **(*)** **(+)**	**VG/ MS**	**Leaf blade: length**					
QN	**(c)**	short				Fukunohikari	3
		medium				Stellar Red	5
		long				Koma Purple	7
12. **(*)** **(+)**	**VG/ MS**	**Leaf blade: width**					
QN	**(c)**	narrow				Fukunohikari	3
		medium				Stellar Blue	5
		broad				Stellar Red	7
13.	**VG/ MS**	**Leaf blade: ratio length/width**					
QN	**(c)**	small				Siena Light Blue	3
		medium				Fukunokagayaki	5
		large				Stellar Red	7
14.	**VG**	**Leaf blade: intensity of green color of upper side**					
QN	**(c)**	light				Matsumoto Mid Blue	1
		medium				Ariake Shiro, Kurenai	2
		dark				Athena Purple Flash	3
15. **(*)** **(+)**	**VG**	**Flower head: type**					
PQ	**(d)**	without floret				Hulk	1
		single				Siena Pink	2
		semi-double				Stellar Blue	3
		double				Miss Europe	4
		anemone-like				Chikuma Shiro	5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*)	**VG/ MS**	**<u>Excluding varieties with flower head: type: single</u>: Flower head: number of ray florets**					
QN	**(d)**	few				Stellar Carmine	3
		medium				SAKAST045	5
		many				Racy Rose Red	7
17. (*)	**VG/ MS**	**Flower head: diameter**					
QN	**(d)**	small				Stellar Red	3
		medium				Fukunokagayaki	5
		large				Koma Pink	7
18. (*) (+)	**VG/ MS**	**Flower head: height**					
QN	**(d)**	short				Stellar Carmine	3
		medium				SAKAST044	5
		tall				Racy Rose Red	7
19. (*)	**VG/ MS**	**Ray floret in outermost row: length**					
QN	**(d)**	short				Stellar Carmine	3
		medium				Siena Light Blue	5
		long				Racy Rose Red	7
20. (*)	**VG/ MS**	**Ray floret in outermost row: width**					
QN	**(d)**	narrow				SAKAST042	3
		medium				Fukunohikari	5
		broad				Koma Pink	7
21.	**VG/ MS**	**Ray floret in outermost row: ratio length/width**					
QN	**(d)**	small				Fukunokagayaki	3
		medium				Stellar Carmine	5
		large				Racy Rose Red	7
22. (*) (+)	**VG**	**Ray floret in outer rows: shape**					
PQ	**(d)**	ligulate					1
	(e)	spatulate					2
		tubular					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. **(*)** **(+)**	**VG**	**Ray floret in outer rows: curvature of longitudinal axis**					
PQ	**(d)**	incurved					1
		straight					2
		reflexed					3
		twisted					4
24. **(*)** **(+)**	**VG**	**Only varieties with ray floret in outer rows: shape: ligulate: Ray floret in outer rows: profile in cross section**					
PQ	**(d)**	strongly concave with margins overlapping					1
		strongly concave					2
		weakly concave					3
		flat					4
		weakly convex					5
		strongly convex					6
		strongly convex with margins overlapping					7
25. **(*)** **(+)**	**VG**	**Only varieties with ray floret in outer rows: shape: tubular: Ray floret in outer rows: profile in cross section**					
PQ	**(d)**	oblong					1
		circular					2
		rhombic					3
		stellate					4
		irregular					5
26. **(*)**	**VG**	**Ray floret in outer rows: main color of inner side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					
27. **(*)**	**VG**	**Ray floret in outer rows: secondary color of inner side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28. **(+)**	**VG**	**Ray floret in outer rows: distribution of secondary color of inner side**					
PQ	**(d)**	basal part					1
		apical part					2
		on margin					3
		central bar					4
29.		**Ray floret in outer rows: color of outer side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					
30. **(*)** **(+)**	**VG**	**<u>Excluding varieties with flower head: type: single and semi-double</u>: Ray floret in inner rows: shape**					
PQ	**(d)**	ligulate					1
		spatulate					2
		tubular					3
31. **(*)** **(+)**	**VG**	**<u>Excluding varieties with flower head: type: single</u>: Ray floret in inner rows: curvature of longitudinal axis**					
PQ	**(d)**	incurved					1
		straight					2
		reflexed					3
		twisted					4
32. **(*)** **(+)**	**VG**	**<u>Only varieties with ray floret in inner rows: shape: ligulate</u>: Ray floret in inner rows: profile in cross section**					
PQ	**(d)**	strongly concave with margins overlapping					1
		strongly concave					2
		weakly concave					3
		flat					4
		weakly convex					5
		strongly convex					6
		strongly convex with margins overlapping					7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33. **(*)** **(+)**	**VG**	**<u>Only varieties with ray floret in inner rows: shape: tubular</u>: Ray floret in inner rows: profile in cross section**					
PQ	**(d)**	oblong					1
		circular					2
		rhombic					3
		stellate					4
		irregular					5
34. **(*)**	**VG**	**<u>Excluding varieties with flower head: type: single</u>: Ray floret in inner rows: main color of inner side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					
35. **(*)**	**VG**	**<u>Excluding varieties with flower head: type: single</u>: Ray floret in inner rows: secondary color of inner side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					
36. **(+)**	**VG**	**Ray floret in inner rows: distribution of secondary color of inner side**					
PQ	**(d)**	basal part					1
		apical part					2
		on margin					3
		central bar					4
37.		**Ray floret in inner rows: color of outer side**					
PQ	**(d)**	RHS Colour Chart (indicate reference number)					
38. **(*)** **(+)**	**VG/ MS**	**<u>Excluding varieties with flower head: type: double</u>: Disc: diameter**					
QN	**(d)**	very small					1
		small				Stellar Carmine	2
		medium				Umenomai	3
		large				Kairyo Kurenai	4
		very large					5

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
39.	**VG**	**<u>Only varieties with flower head: type: single and semi-double</u>: Disc: color**					
PQ	**(d)**	white					1
	(e)	yellow				Stellar Blue	2
		yellowish green				Petit Fancy Pink	3
		green					4
40. **(*)**	**VG**	**<u>Only varieties with flower head: type anemone-like</u>: Disc floret: color**					
PQ	**(d)** **(e)**	RHS Colour Chart (indicate reference number)					
41. **(*)** **(+)**	**VG/ MS**	**Involucre: diameter**					
QN	**(d)**	small				Sanhana Purple	3
		medium				Stellar Carmine	5
		large				Chikuma Light Pink	7
42. **(+)**	**VG/ MS**	**Involucre: size in relation to flower head diameter**					
QN	**(d)**	small				Taiyo	1
		equal				Fukuhogyoku	2
		large				Chikuma Light Pink	3
43. **(+)**	**VG/ MG**	**Time of beginning of flowering**					
QN		early				Athena Scarlet	3
		medium				Stellar Blue	5
		late				Chikuma Light Pink	7

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

(a) Unless otherwise indicated, all observations should be made at the time of full flowering.

(b) Observations on the primary lateral shoots should be made on the longest primary lateral shoots.

(c) Observations on the petiole and the leaf blade should be made on the fully developed typical leaves of the longest primary lateral shoots.

(d) Observations on the flower head should be made on the typical terminal flower heads.

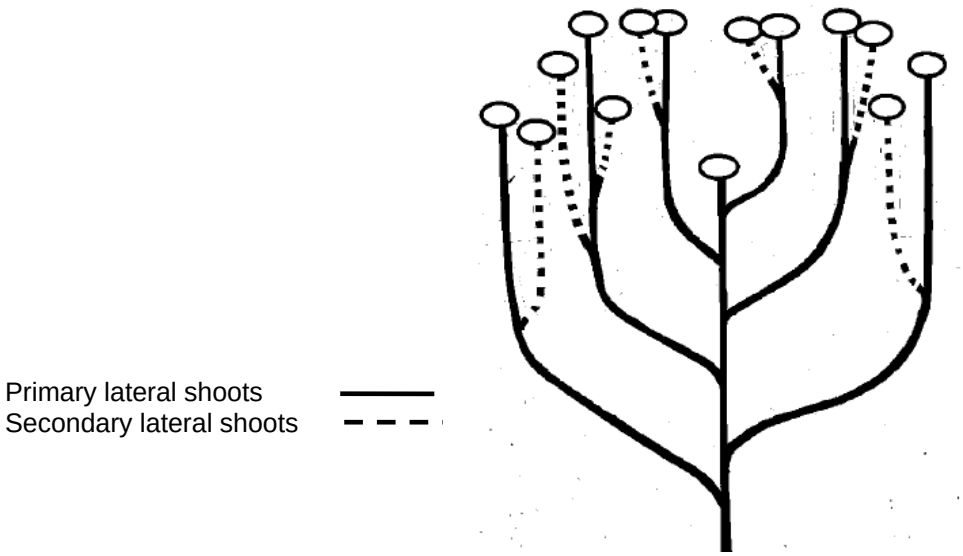
(e) Observations on the disc should be made when the anthers in outer 3-4 rows of the disc floret have dehisced.

8.2 Explanations for individual characteristics

Ad. 1: Plant: height

Plant height should be observed from the ground to the top of the plant, including inflorescence.

Ad. 3: Plant: number of primary lateral shoots
Ad. 4: Plant: number of secondary lateral shoots



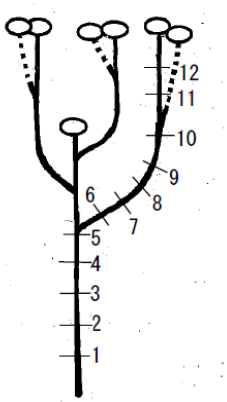
Ad. 5: Plant: distribution of primary lateral shoots

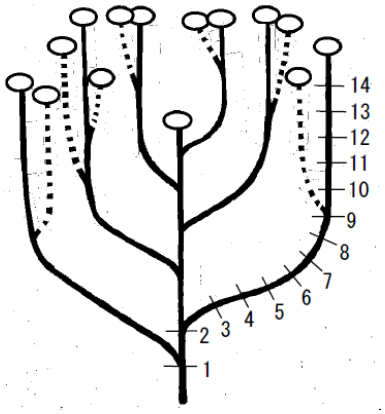
1
mainly on lower part

2
throughout

3
mainly on upper part

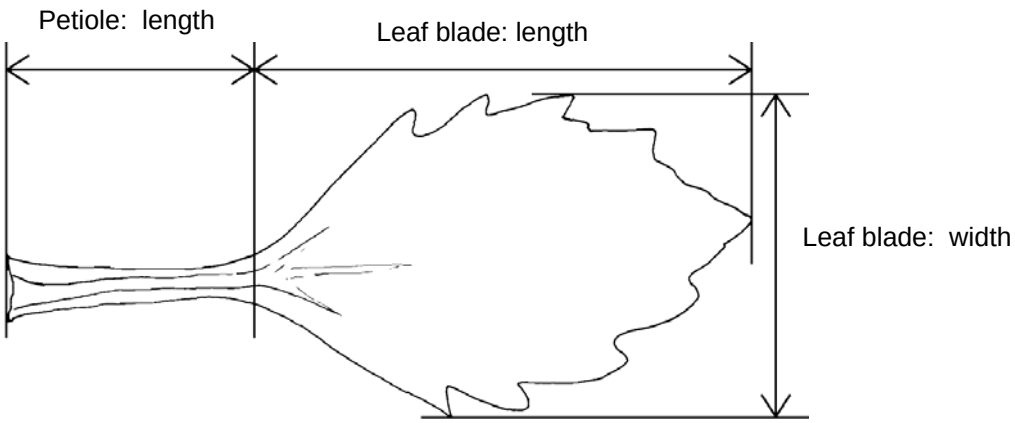
Ad. 8: Stem: number of nodes





Number of nodes should be observed from the ground up to the top of the longest primary lateral shoots.

Ad. 10: Petiole: length
Ad. 11: Leaf blade: length
Ad. 12: Leaf blade: width



Ad. 15: Flower head: type

2
single

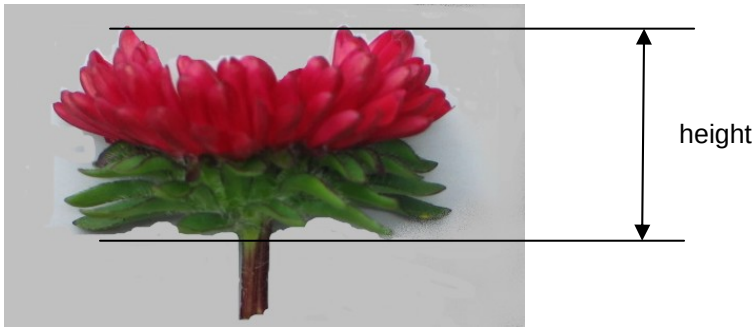
3
semi-double

4
double

5
anemone-like

1: without floret	flower heads with no floret.
2: single	flower heads with one row of ray florets, and a clearly defined central disc.
3: semi-double	flower heads with more than one row of ray florets, and a clearly defined central disc which is always visible.
4: double	double flower heads where a disc is not visible at any stage of flowering.
5: anemone-like	flower heads with one or more than one rows of ray florets with a central disc of petaloid disc florets, which is always visible and clearly defined.

Ad.18: Flower head: height



Ad. 22: Ray floret in outer rows: shape
Ad. 30: Excluding varieties with flower head: type: single and semi-double: Ray floret in inner rows: shape

1
ligulate

2
spatulate

3
tubular

Ad. 23: Ray floret in outer rows: curvature of longitudinal axis
Ad. 31: Excluding varieties with flower head: type: single: Ray floret in inner rows: curvature of longitudinal axis

1
incurved

2
straight

3
reflexed

4
twisted

Ad. 24: Only varieties with ray floret in outer rows: shape: ligulate: Ray floret in outer rows: profile in cross section
Ad. 32: Only varieties with ray floret in inner rows: shape: ligulate: Ray floret in inner rows: profile in cross section

1
strongly concave with margins overlapping

2
strongly concave

3
weakly concave

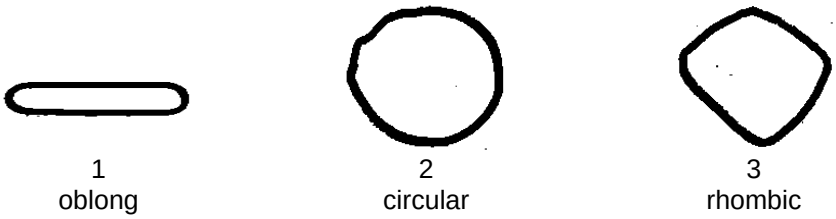
4
flat

5
weakly convex

6
strongly convex

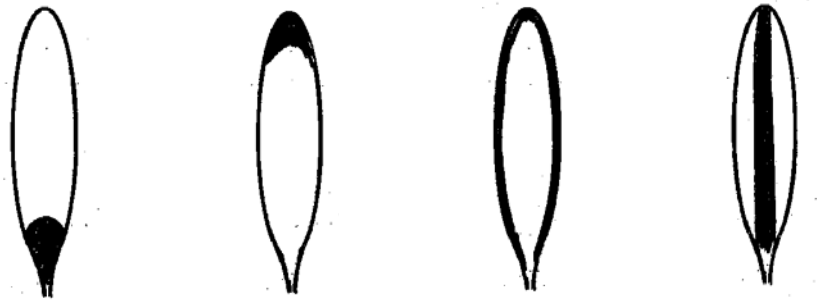
7
strongly convex with margins overlapping

Ad. 25: Only varieties with ray floret in outer rows: shape: tubular: Ray floret in outer rows: profile in cross section
Ad. 33: Only varieties with ray floret in inner rows: shape: tubular: Ray floret in inner rows: profile in cross section



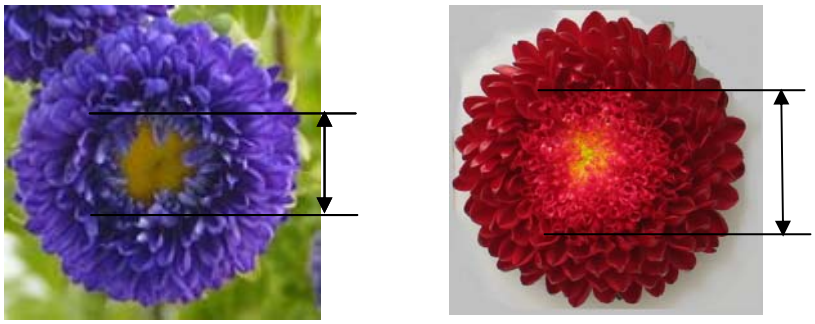
1 oblong | 2 circular | 3 rhombic | 4 stellate | 5 irregular

Ad. 28: Ray floret in outer rows: distribution of secondary color of inner side
Ad. 36: Ray floret in inner rows: distribution of secondary color of inner side

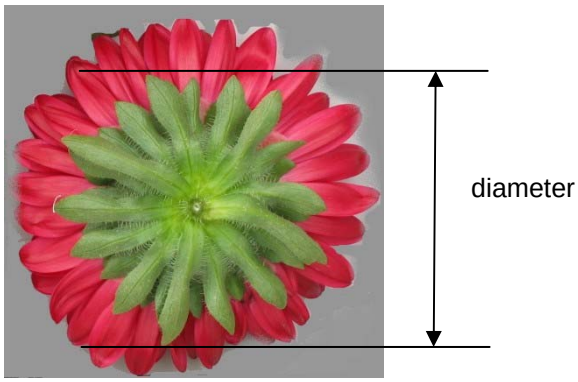


1 basal part | 2 apical part | 3 on margin | 4 central bar

Ad. 38: Excluding varieties with flower head: type: double: Disc: diameter



Ad. 41: Involucre: diameter



Ad. 42: Involucre: size in relation to flower head diameter

1
small

2
equal

3
large

Ad. 43: Time of beginning of flowering

Time of beginning of flowering is when the first flower head has fully opened on 50% of the plants.

9. Literature

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10. Technical Questionnaire

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

	Application date: (not to be filled in by the applicant)

TECHNICAL QUESTIONNAIRE
to be completed in connection with an application for plant breeders' rights

1. Subject of the Technical Questionnaire

1.1	Botanical name	*Callistephus chinensis* (L.) Nees
1.2	Common name	China Aster

2. Applicant

Name	
Address	
Telephone No.	
Fax No.	
E-mail address	
Breeder (if different from applicant)	

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

[#]4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

(a) controlled cross [ ]
(please state parent varieties)

(……..……..) x (……..……..)
female parent male parent

(b) partially known cross [ ]
(please state known parent variety(ies))

(……..……..) x (……..……..)
female parent male parent

(c) unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

4.1.3 Discovery and development [ ]
(please state where and when discovered and how developed)

4.1.4 Other [ ]
(please provide details)

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

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

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

(a) Self-pollination [ ]
(b) Cross-pollination
(i) population [ ]
(ii) synthetic variety [ ]
(c) Hybrid [ ]
(d) Other [ ]
(please provide details)

4.2.2 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.3 Other [ ]
(please provide details)

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

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: height**		
	very short		1[ ]
	very short to short		2[ ]
	short	Gyokurei Rose	3[ ]
	short to medium		4[ ]
	medium	Petit White	5[ ]
	medium to tall		6[ ]
	tall	Suahana Purple	7[ ]
	tall to very tall		8[ ]
	very tall		9[ ]
5.2 (15)	**Flower head: type**		
	without floret	Hulk	1[ ]
	single	Siena Pink	2[ ]
	semi-double	Stellar Blue	3[ ]
	double	Miss Europe	4[ ]
	anemone-like	Chikuma Shiro	5[ ]
5.3 (17)	**Flower head: diameter**		
	very small		1[ ]
	very small to small		2[ ]
	small	Stellar Red	3[ ]
	small to medium		4[ ]
	medium	Fukunokagayaki	5[ ]
	medium to large		6[ ]
	large	Koma Pink	7[ ]
	large to very large		8[ ]
	very large		9[ ]

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

	Characteristics	Example Varieties	Note
5.4 (22)	**Ray floret in outer rows: shape**		
	ligulate		1[ ]
	spatulate		2[ ]
	tubular		3[ ]
5.5i (26)	**Ray floret in outer rows: main color of inner side**		
	RHS colour Chart (indicate reference number)	……	
5.5ii (26)	**Ray floret in outer rows: main color of inner side**		
	white		1[ ]
	yellow		2[ ]
	orange		3[ ]
	pink		4[ ]
	red		5[ ]
	purple		6[ ]
	violet		7[ ]
5.6 (38)	**<u>Excluding varieties with flower head: type: double</u>: Disc: diameter**		
	very small		1[ ]
	small	Stellar Carmine	2[ ]
	medium	Umenomai	3[ ]
	large	Kairyo Kurenai	4[ ]
	very large		5[ ]

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

6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the **similar** variety(ies)	Describe the expression of the characteristic(s) for **your** candidate variety
Example	*Plant: height*	*tall*	*short*

Comments:

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

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

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

Yes [ ] No [ ]

(If yes, please provide details)

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

Yes [ ] No [ ]

(If yes, please provide details)

7.3 Other information

7.3.1 Main use

(a)	garden plant	[ ]
(b)	*pot plant*	[ ]
(c)	cut-flower	[ ]
(c)	other (please provide details)	[ ]

7.3.2 Where an image of the variety is to be provided

A representative color image of the variety should accompany the Technical Questionnaire.

8. Authorization for release

(a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

(b) Has such authorization been obtained?

Yes [ ] No [ ]

If the answer to (b) is yes, please attach a copy of the authorization.

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

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

9. Information on plant material to be examined or submitted for examination.

9.1 The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc.

9.2 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If the plant material has undergone such treatment, full details of the treatment must be given. In this respect, please indicate below, to the best of your knowledge, if the plant material to be examined has been subjected to:

(a)	Microorganisms (e.g. virus, bacteria, phytoplasma)	Yes [ ]	No [ ]
(b)	Chemical treatment (e.g. growth retardant, pesticide)	Yes [ ]	No [ ]
(c)	Tissue culture	Yes [ ]	No [ ]
(d)	Other factors	Yes [ ]	No [ ]

Please provide details for where you have indicated “yes”.

……

9.3 Has the plant material to be examined been tested for the presence of virus or other pathogens?

Yes [ ]
(please provide details as specified by the Authority)

No [ ]

10. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:

Applicant’s name

Signature Date

[End of document]