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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

UNION INTERNATIONALE POUR LA PROTECTION DES OBTENTIONS VÉGÉTALES

INTERNATIONALER VERBAND ZUM SCHUTZ VON PFLANZEN-ZÜCHTUNGEN

UNIÓN INTERNACIONAL PARA LA PROTECCIÓN DE LAS OBTENCIONES VEGETALES

DRAFT

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

ZANTEDESCHIA

(*Zantedeschia* Spreng.)

These Guidelines should be read in conjunction with document TG/1/2, which contains explanatory notes on the general principles on which the Guidelines have been established.

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I. Subject of these Guidelines

These Test Guidelines apply to all vegetatively propagated varieties of *Zantedeschia* Spreng. of the family Araceae.

II. Material Required

1. The competent authorities decide when, where and in what quantity and quality the plant material required for testing the variety is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must make sure that all customs formalities are complied with. As a minimum, the following quantity of plant material is recommended:

20 tubers/rhizomes of flowering size or
20 young plants.

2. The plant material supplied should be visibly healthy, not lacking in vigor or affected by any important pests or diseases.

3. The plant material must not have undergone any treatment, especially not with gibberellic acid. If the competent authorities allow or request some other treatment, full details of the treatment must be given.

III. Conduct of Tests

1. A test should normally be conducted for one growing period. If distinctness and/or uniformity cannot be sufficiently established in one growing period, the test should be extended for a second growing period.

2. The tests should normally be conducted at one place. If any important characteristics of the variety cannot be seen at that place, the variety may be tested at an additional place.

3. The tests should be carried out under the following growing conditions:

Temperature:	Preferably between 15 – 25°C.
Planting time:	March (Northern Hemisphere), August to October (Southern Hemisphere).
Substrate:	Very well-drained substrate rich in humus.
Fertilization:	Not too much nitrogen for deciduous varieties. Spore elements may be added.
Irrigation:	Deciduous varieties: keep moist but not wet. *Zantedeschia aethiopica*: prefers more water.

Air humidity:	Deciduous varieties prefer less humidity than *Zantedeschia aethiopica*.
Shading:	Without shading or with 40 % shade cloth, depending on local conditions.

The size of the plots should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include a total of 20 plants. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

4. Additional tests for special purposes may be established.

IV. Methods and Observations

1. All observations determined by measurement or counting should be made on 10 plants or parts taken from each of 10 plants.

2. For the assessment of uniformity a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, the maximum number of off-types allowed would be 1.

3. All observations should be made on plants that have flowers of maximum size, during the peak flowering time.

4. All observations on the leaf should be made on fully developed leaves from flowering shoots. The width of the leaf blade should be measured at the broadest part, which would sometimes include the lobes.

5. Unless otherwise indicated, all observations on the flower should be made at the beginning of anther dehiscence.

6. All observations on the fading, intensifying and greening of the flower color with age should be made two to three weeks after pollen shed.

7. 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 British Standard 950, Part I. These determinations should be made with the plant part placed against a white background.

V. Grouping of Varieties

1. The collection of varieties to be grown should be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those

which are known from experience not to vary, or to vary only slightly, within a variety. Their various states of expression should be fairly evenly distributed throughout the collection.

2. It is recommended that the competent authorities use the following characteristics for grouping varieties:

(a) Plant: type (characteristic 1)
(b) Leaf blade: spots on upper side (characteristic 15)
(c) Spathe: natural length (viewed from above) (characteristic 23)
(d) Spathe: natural width (viewed from above) (characteristic 24)
(e) Spathe: main color of inner side (excluding throat spot color, if present) (characteristic 27) with the following groups:
Gr. 1: white
Gr. 2: cream
Gr. 3: yellow
Gr. 4: yellow brown
Gr. 5: yellow orange
Gr. 6: orange
Gr. 7: orange red
Gr. 8: red
Gr. 9: purple red
Gr. 10: pink
Gr. 11: red pink
Gr. 12: purple
(f) Spathe: presence of throat spot (characteristic 32)

VI. Characteristics and Symbols

1. To assess distinctness, uniformity and stability, the characteristics and their states as given in the Table of Characteristics should be used.

2. Notes (numbers), for the purposes of electronic data processing, are given opposite the states of expression for each characteristic.

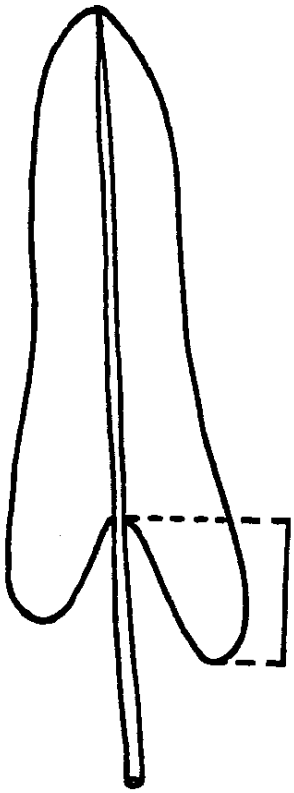
3. Legend:

(*) Characteristics that should be used on all varieties in every growing period over which examinations are made and always be included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

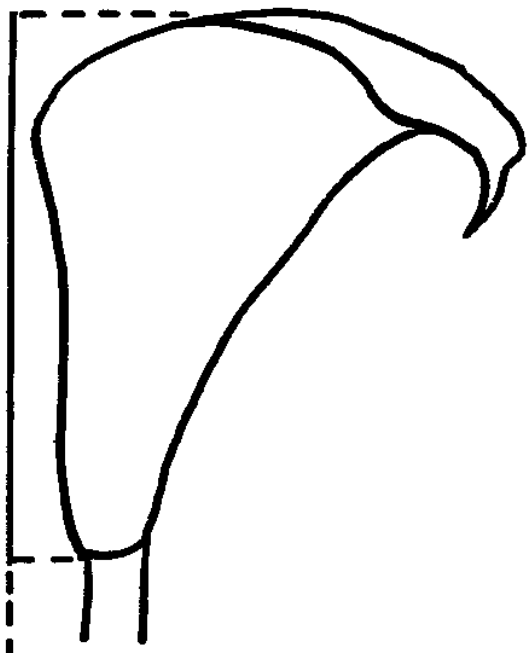
(+) See Explanations on the Table of Characteristics in Chapter VIII.

VIII. Explanations on the Table of Characteristics

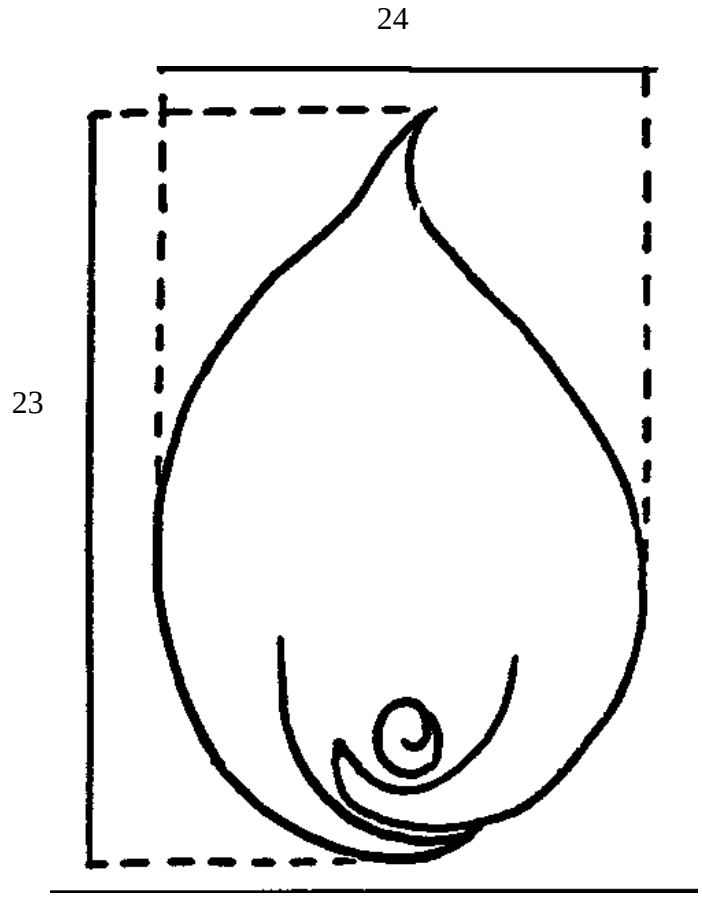
Ad. 12: Leaf blade: length of lobe



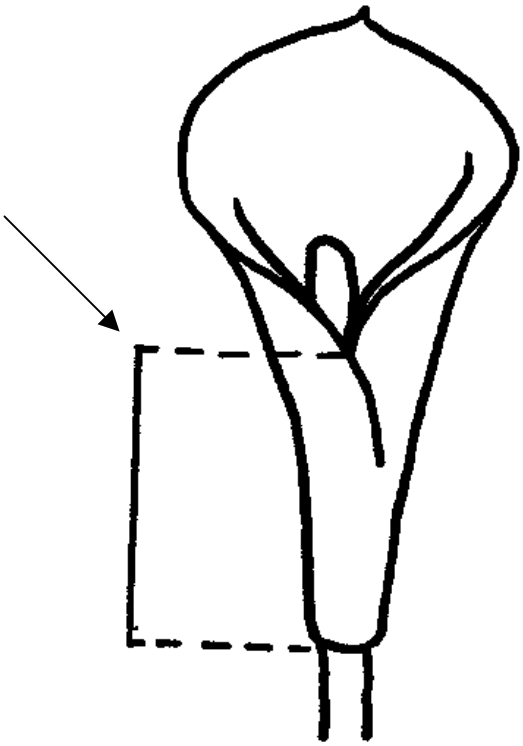
Ad. 22: Spathe: natural height (in line with scape)



Ad. 23 and 24: Spathe: natural length (viewed from above) (23) and natural width (viewed from above) (24)



Ad. 25: Spathe: height of overlapping part



IX. Literature

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Letty, Cythna, 1973: “The Genus *Zantedeschia*”, Bothalia 11, 1 & 2, pp 5 - 26.

Singh, Y.; Van Wyk, A.E.; Baijnath, H., 1996: “Taxonomic notes on the genus *Zantedeschia* Spreng. (Araceae) in Southern Africa”, S. Afr. J. Bot. 62(6), pp 321-324.

Still, S.M., 1980: “Manual of Herbaceous Ornamental Plants”, STIPES Publishing Company, Illinois, pp 716-717.

Tija, B.O., 1989: Zantedeschia in Handbook of Flowering (Halevy, A.H. ed.) Volume VI, CRC Press, Boca Raton, pp 697-702.

X. Technical Questionnaire

	Reference Number (not to be filled in by the applicant)

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

1.1 Genus: *Zantedeschia* Spreng.

ZANTEDESCHIA

1.2 Species: .....
(indicate species)

2. Applicant (Name and address)

3. Proposed denomination or breeder's reference

4. Information on origin, maintenance and reproduction of the variety

4.1 Origin

(a) Seedling (indicate parent varieties)

..... [ ]

(b) Mutation (indicate parent variety)

..... [ ]

(c) Discovery (indicate where and when)

..... [ ]

4.2 Method of reproduction

(a) *in vitro*

[ ]

……...

(b) Tuber

[ ]

……...

(c) Other (specify)

[ ]

……...

4.3 Other information

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

	Characteristics	Example Varieties	Note
5.1 (1)	**Plant: type**		
	deciduous		1[ ]
	semi-deciduous		2[ ]
	evergreen		3[ ]
5.2 (15)	**Leaf blade: spots on upper side**		
	absent	Hope Cross	1[ ]
	present	Majestic Red	9[ ]
5.3 (23)	**Spathe: natural length (viewed from above)**		
	short	Celeste	3[ ]
	short to medium	Pink Persuasion	4[ ]
	medium	Schwarzwalder	5[ ]
	medium to long		6[ ]
	long	Green Tip	7[ ]
5.4 (24)	**Spathe: natural width (viewed from above)**		
	narrow	Schwarzwalder	3[ ]
	narrow to medium	Inspiration	4[ ]
	medium	Pink Persuasion	5[ ]
	medium to broad		6[ ]
	broad		7[ ]

	Characteristics	Example Varieties	Note
5.5i (27)	**Spathe: main color of inner side (excluding throat spot color, if present)**		
	RHS Colour Chart (indicate reference number)		
	……		
5.5ii (27)	**Spathe: main color of inner side (excluding throat spot color, if present)**		
	white		1[ ]
	cream		2[ ]
	yellow		3[ ]
	yellow brown		4[ ]
	yellow orange		5[ ]
	orange		6[ ]
	orange red		7[ ]
	red		8[ ]
	purple red		9[ ]
	pink		10[ ]
	red pink		11[ ]
	purple		12[ ]
5.6 (32)	**Spathe: presence of throat spot**		
	absent	Inspiration	1[ ]
	present	Black Magic	9[ ]

6. Similar varieties and differences from these varieties

Denomination of similar variety	Characteristic in which the similar variety is different[o)]	State of expression of similar variety	State of expression of candidate variety

o) In the case of identical states of expression of both varieties, please indicate the size of the difference.

7. Additional information which may help to distinguish the variety

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

(a) Conditions for planting

- to be covered completely with soil [ ]
- to be partly uncovered [ ]

(b) Other conditions

7.3 Use of the variety

(a) garden [ ]

(b) cut flower [ ]

(c) pot plant [ ]

7.4 Other information

A representative color photo of the variety should be included in 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 that question is yes, please attach a copy of such an authorization.

[End of document]