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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

ALOE

UPOV Code: ALOEE

Aloe L. and hybrids with *Gasteria* H. Duval.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from South Africa

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*
Aloe L.	Aloe	Aloès	Aloe	Aloe

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 *Aloe* L. and hybrids with *Gasteria* H. Duval.

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 plants capable of expressing all relevant characteristics of the variety during the first growing cycle.

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

10 plants.

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 10 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 5 plants or parts taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 1.

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, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 10 plants, 1 off-type is 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 plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

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) Leaf: spots on upper side (characteristic 11)
(b) Leaf: color of marginal zone of upper side (characteristic 12)
(c) Leaf: marginal teeth (characteristic 13)
(d) Inflorescence: branching (characteristic 17)
(e) Terminal raceme: shape (characteristic 24)
(f) Outer perianth segment: main color of outer side (characteristic 39) with the following groups:
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: orange
Gr. 5: red
Gr. 6: pink

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)-(f)	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		very short					1
		short				Bushwhacker	3
		medium				Charles	5
		tall					7
		very tall					9
2. **(+)**	**VG/ MS**	**Plant: width**					
QN		very narrow					1
		narrow				Orange Express	3
		medium				Charles	5
		broad					7
		very broad					9
3.	**VG/ MS**	**Plant: number of inflorescences**					
QN		very few				Ice Cap	1
		few					3
		medium				Porcupine	5
		many					7
		very many					9
4. **(*)**	**VG/ MS**	**Leaf: length**					
QN	**(a)**	very short					1
		short				Egoli	3
		medium				Charles	5
		long					7
		very long					9
5. **(*)**	**VG/ MS**	**Leaf: width (at broadest part)**					
QN	**(a)**	very narrow					1
		narrow				Ice Cap	3
		medium				Charles	5
		broad					7
		very broad					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. **(*)** **(+)**	**VG**	**Leaf: shape**					
QN	**(a)**	narrow linear					1
		medium linear					2
		broad linear					3
		narrow triangular				Ice Cap	4
		medium triangular				Pink Lady	5
		broad triangular					6
7.	**VG**	**Leaf: thickness**					
QN	**(a)**	thin					1
		medium				Ice Cap	2
		thick					3
8.	**VG**	**Leaf: curvature**					
(+)							
QN	**(a)**	incurved				Ice Cap	3
		straight				Twice as Nice	5
		recurved				Lemon Drops	7
9.	**VG**	**Leaf: shape of apex**					
(+)							
QN	**(a)**	strongly pointed				Ice Cap	1
		moderately pointed				Pink Lady	2
		slightly pointed					3
		rounded					4
10. **(*)**	**VG**	**Leaf: main color of upper side**					
PQ	**(a)**	yellow green					1
	(b)	light green				Charles	2
		medium green				Ice Cap	3
		dark green				Twice as Nice	4
		red green					5
		brown green					6
		blue green				High Rise	7
		blue grey				Southern Cross	8
		purple green					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. (*)	**VG**	**Leaf: spots on upper side**					
PQ	**(a)**	absent				Twice as Nice	1
		whitish				Lemon Drops	2
		greenish				Ice Cap	3
		yellowish				Guineafowl	4
12. (*)	**VG**	**Leaf: color of marginal zone of upper side**					
PQ	**(a)**	green					1
		yellow					2
		orange					3
		brown					4
		red					5
13. (*)	**VG**	**Leaf: marginal teeth**					
QN	**(a)**	absent or very small				Yellow Gem	1
		small				Sensation	3
		medium				High Rise	5
		large				Octopus	7
		very large					9
14. (*)	**VG**	**Leaf: color of marginal teeth**					
PQ	**(a)**	whitish				Rooiklip	1
		greenish				Bright Spark, Gemini	2
		yellowish				Reitz Rocket	3
		orange				Starfish, Winter White	4
		brown				Sabre 2	5
		red				Southern Cross	6
15. (*)	**VG**	**Leaf: non-marginal spines or white tubercles**					
PQ	**(a)**	absent				Ice Cap	1
		upper side only				Orange Express	2
		upper and lower sides				Mountain Gem	3
		lower side only					4
16. (*)	**VG**	**Leaf: distribution of non-marginal spines or white tubercles on lower side**					
QL	**(a)**	only along midrib				Geisha	1
		over entire leaf				Rooiklip	2

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
17. **(*)** **(+)**	**VG**	**Inflorescence: branching**					
QL		absent				Ice Cap	1
		primary				Twice as Nice	2
		secondary				Koeleman's Orange	3
		tertiary					4
18. **(*)**	**VG/ MS**	**Inflorescence: number of racemes**					
QN		one				Rooiklip	1
		two				Bountiful Bronny	2
		three to five				Goldibells	3
		six to ten					4
		more than ten					5
19. **(*)** **(+)**	**VG/ MS**	**Inflorescence: length**					
QN		very short					1
		short				Twice as Nice	3
		medium					5
		long				Firechief	7
		very long					9
20. **(+)**	**VG/ MS**	**Peduncle: length of main axis**					
QN		very short					1
		short				Twice as Nice	3
		medium					5
		long					7
		very long					9
21. **(*)**	**VG**	**Peduncle: color**					
PQ		greenish only				Twice as Nice	1
		greenish and reddish				Ice Cap	2
		reddish only					3
		brownish				Lemon Drops	4
		greyish					5
22. **(*)** **(+)**	**VG**	**Lateral raceme: attitude**					
QN		upright				Ruby Blaze	1
		semi-upright				Red Parade	2
		horizontal				Red Horizon	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
23. **(+)**	**VG**	**Terminal raceme: length of flowering part**					
QN		very short					1
		short				Little Joker	3
		medium				Twice as Nice	5
		long					7
		very long				Tusker	9
24. **(*)** **(+)**	**VG**	**Terminal raceme: shape**					
PQ		corymbose-capitate					1
		capitate				Lemon Drops	2
		capitate to conical				Little Joker	3
		narrow conical					4
		medium conical				Ice Cap	5
		broad conical				Charles	6
		narrow cylindrical					7
		medium cylindrical					8
		broad cylindrical					9
25. **(*)**	**VG/** **MS**	**Terminal raceme: density of flowers**					
QN		sparse				Ice Cap	3
		medium				Twice as Nice	5
		dense					7
26.	**VG**	**Terminal raceme: size of flower bracts**					
QN		very small				Ice Cap	1
		small				Little Joker	3
		medium				Bushwhacker	5
		large				Mountain Gem	7
27.	**VG**	**Immature flower bud: main color of pedicel**					
PQ	**(b)**	greenish					1
	(c)	brownish				Ice Cap	2
		orange				Lemon Drops	3
		reddish				Little Joker	4
28. **(*)**	**VG**	**Immature flower bud: main color**					
PQ	**(b)**	RHS Colour Chart					
	(c)	(indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
29.	**VG**	**Immature flower bud: secondary color**					
PQ	**(b)**	RHS Colour Chart					
	(c)	(indicate reference number)					
30.	**VG**	**Mature flower bud: main color of pedicel**					
PQ	**(b)**	greenish				Ice Cap	1
	(d)	yellowish				Lemon Drops	2
		orange				Bushwhacker	3
		reddish				Little Joker	4
31. **(*)**	**VG**	**Mature flower bud: main color**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
32.	**VG**	**Mature flower bud: secondary color**					
PQ	**(b)**	RHS Colour Chart					
	(d)	(indicate reference number)					
33. **(+)**	**VG/ MS**	**Pedicel: length**					
QN	**(e)**	short				Ice Cap	1
		medium				Emerald	2
		long				Porcupine	3
34. **(*)**	**VG**	**Pedicel: main color**					
PQ	**(b)**	greenish				Ice Cap	1
	(e)	yellowish				Lemon Drops	2
		orange				Bushwhacker	3
		reddish				Little Joker	4
35. **(*)** **(+)**	**VG**	**Flower: basal swelling**					
QN	**(e)**	weak				Bi-color	1
		medium				Pink Lady	2
		strong				Maculata Yellow	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
36. **(+)**	**VG/ MS**	**Perianth: length**					
QN	**(e)**	very short				Albiflora	1
		short				Ice Cap	3
		medium				Porcupine	5
		long				Bushwhacker	7
37. **(+)**	**VG/ MS**	**Perianth: diameter**					
QN	**(e)**	small				Geisha	1
		medium				Ice Cap	2
		large				Bushwhacker	3
38.	**VG**	**Perianth: recurving of apex**					
QN	**(e)**	absent or weak				Orange Express	1
		medium				Ice Cap	2
		strong				Winter Bells	3
39. **(*)**	**VG**	**Outer perianth segment: main color of <u>outer</u> side**					
PQ	**(b)**	RHS Colour Chart					
	(e)	(indicate reference number)					
40.	**VG**	**Outer perianth segment: secondary color of <u>outer</u> side**					
PQ	**(b)**	RHS Colour Chart					
	(e)	(indicate reference number)					
41. **(*)**	**VG**	**Inner perianth segment: main color of apex of <u>inner</u> side**					
PQ	**(b)**	white					1
	(e)	green				Ice Cap	2
		yellow				Twice as Nice	3
		brown					4
		red					5
42. **(+)**	**VG**	**Stamen: protrusion in relation to apex of perianth segments**					
QN	**(f)**	absent or weak				Emerald	1
		medium				Ice Cap	2
		strong				Bi-color	3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
43. (*)	**VG**	**Filament: anthocyanin coloration**					
QN	**(f)**	absent or weak				Bekkies, Ice Cap	1
		medium					2
		strong				Red Parade	3
44. (+)	**VG**	**Time of beginning of flowering**					
QN		very early					1
		early				Lemon Drops	3
		medium				Geisha	5
		late					7
		very late					9

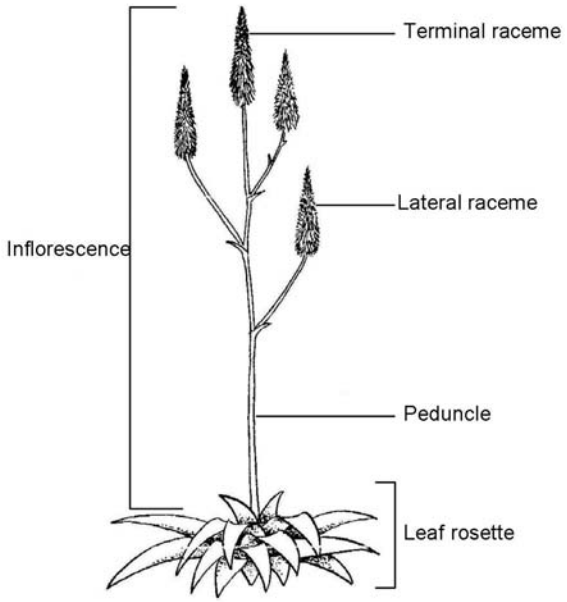
8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

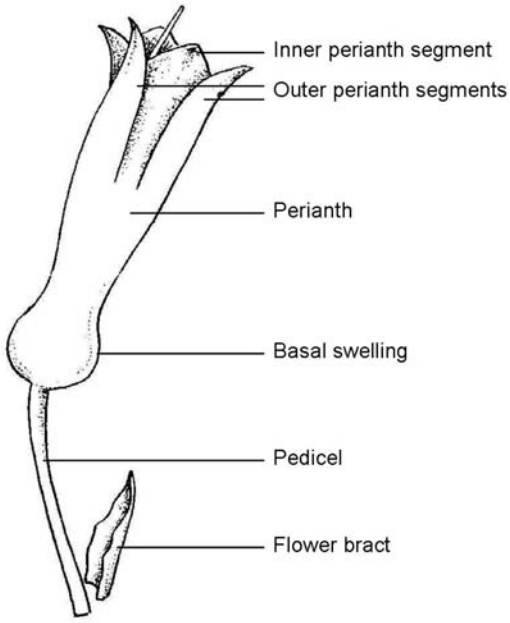
Observations should be made at the time of full flowering.

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

(a) Observations on the leaf should be made on fully developed leaves from the middle part of the leaf rosette.
(b) The main color is the color with the largest surface area. In cases where the area of the main and secondary color are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color. The secondary color is the color with the second largest surface area.
(c) Observations on the immature flower bud should be made on buds in the upper third of the raceme. Color observations should disregard the green apex.
(d) Observations on the mature flower bud should be made when the flower bud is fully expanded, prior to reflexing of the tepals.
(e) Observations on the flower and flower parts should be made on fresh fully open flowers.
(f) Observations on the stamens should be made shortly after dehiscence of the anthers.



Plant parts

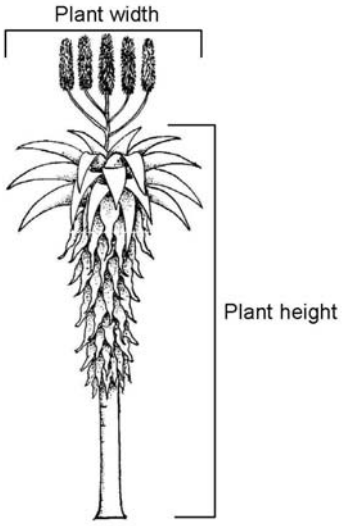


Flower parts

8.2 Explanations for individual characteristics

Ad. 1: Plant: height
Ad. 2: Plant: width

Observations should exclude the inflorescence.



Ad. 6: Leaf: shape

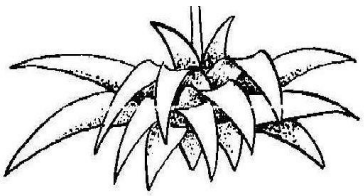
← broadest part →	
towards base	at middle

width (ratio length/width) →		
narrow (strongly elongated)	 4 narrow triangular	 1 narrow linear
↓	 5 medium triangular	2 medium linear
broad (slightly elongated)	6 broad triangular	 3 broad linear

Ad. 8: Leaf: curvature

3
incurved

5
straight



7
recurved

Ad. 9: Leaf: shape of apex

1
strongly pointed

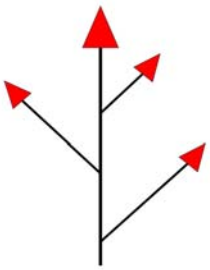
2
moderately pointed

3
slightly pointed

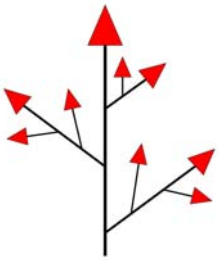
4
rounded

Ad. 17: Inflorescence: branching

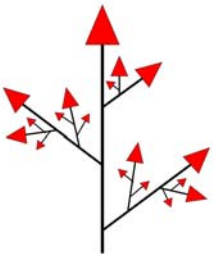
1
absent



2
primary

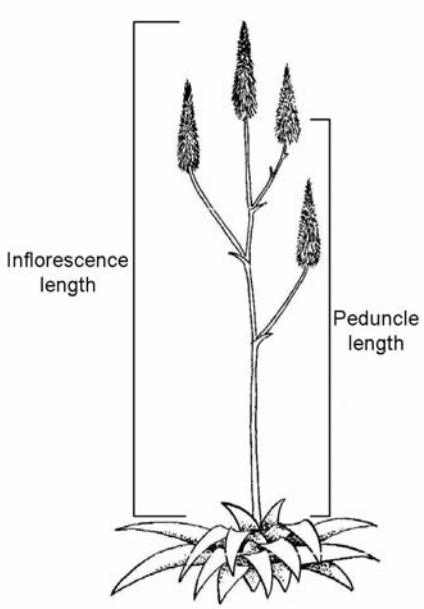


3
secondary

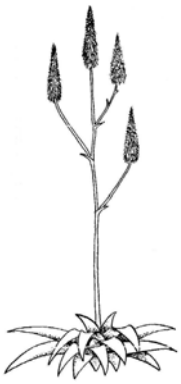


4
tertiary

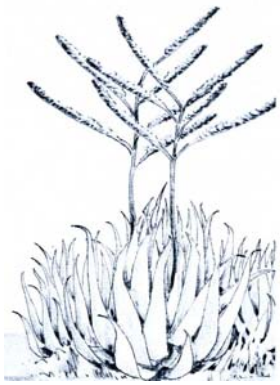
Ad. 19: Inflorescence: length
Ad. 20: Peduncle: length of main axis



Ad. 22: Lateral raceme: attitude



1
upright



2
semi-upright

3
horizontal

Ad. 23: Terminal raceme: length of flowering part

The flowering part includes open flowers and buds.

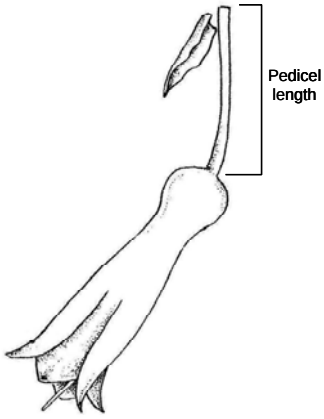
Ad. 24: Terminal raceme: shape

← ratio length/diameter →		
strongly elongated		slightly compressed

towards base ← broadest part → towards middle

 7 narrow cylindrical	 8 medium cylindrical	 9 broad cylindrical		 1 corymbose-capitate	 2 capitate
 4 narrow conical	 5 medium conical	 6 broad conical	 3 capitate to conical		

Ad. 33: Pedicel: length



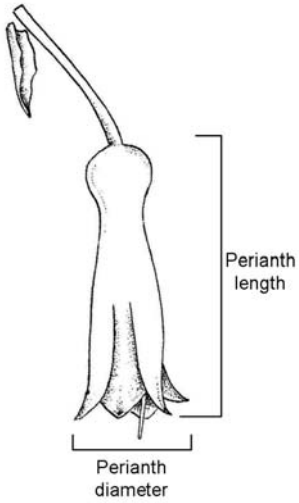
Ad. 35: Flower: basal swelling

1
weak

2
medium

3
strong

Ad. 36: Perianth: length
Ad. 37: Perianth: diameter



Ad. 42: Stamen: protrusion in relation to apex of perianth segments

1
absent or weak

2
medium

3
strong

Ad. 44: Time of beginning of flowering

The time of beginning of flowering is when 50% of the plants have at least one open flower.

9. Literature

Van Wyk, B., Smith, G., 2003: Guide to the Aloes of South Africa. Briza Publications. Pretoria, ZA, 304pp.

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 Genus

1.1.1 Botanical name	*Aloe* L.	[ ]
1.1.2 Botanical name	*Aloe* L. x *Gasteria* H. Duval.	[ ]

1.2 Species (please complete) [ ]

1.2.1 Botanical name	

1.3 Hybrid		[ ]
Species (please complete)		

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)

4.2 Method of propagating the variety

4.2.1 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

[#] 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:

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 (11)	**Leaf: spots on upper side**		
	absent	Twice as Nice	1[ ]
	whitish	Lemon Drops	2[ ]
	greenish	Ice Cap	3[ ]
	yellowish	Guineafowl	4[ ]
5.2 (12)	**Leaf: color of marginal zone of upper side**		
	green		1[ ]
	yellow		2[ ]
	orange		3[ ]
	brown		4[ ]
	red		5[ ]
5.3 (13)	**Leaf: marginal teeth**		
	absent or very small	Yellow Gem	1[ ]
	very small to small		2[ ]
	small	Sensation	3[ ]
	small to medium		4[ ]
	medium	High Rise	5[ ]
	medium to large		6[ ]
	large	Octopus	7[ ]
	large to very large		8[ ]
	very large		9[ ]

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

	Characteristics	Example Varieties	Note
5.4 (17)	**Inflorescence: branching**		
	absent	Ice Cap	1[ ]
	primary	Twice as Nice	2[ ]
	secondary	Koeleman's Orange	3[ ]
	tertiary		4[ ]
5.5 (24)	**Terminal raceme: shape**		
	corymbose-capitate		1[ ]
	capitate	Lemon Drops	2[ ]
	capitate to conical	Little Joker	3[ ]
	narrow conical		4[ ]
	medium conical	Ice Cap	5[ ]
	broad conical	Charles	6[ ]
	narrow cylindrical		7[ ]
	medium cylindrical		8[ ]
	broad cylindrical		9[ ]
5.6 (39)	**Outer perianth segment: main color of <u>outer</u> side**		
	white	Ivory Tower	1[ ]
	green		2[ ]
	yellow	Porcupine, Sunbird	3[ ]
	orange	Orange Express	4[ ]
	red	Erik the Red	5[ ]
	pink		6[ ]

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	*Leaf: marginal teeth*	*absent*	*present*

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

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”.

.....

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]