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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

DRAFT

ALOE

UPOV Code: ALOEE

Aloe L.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from South Africa

to be considered by the

Enlarged Editorial Committee at its meeting
to be held in Geneva, on January 7 and 8, 2015

Disclaimer: this document does not represent UPOV policies or guidance

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Aloe L.	Aloe	Aloès	Aloe	Aloe, Sabila

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.]

TABLE OF CONTENTS PAGE

1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Aloe* L..

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 13)
(c) Leaf: marginal teeth (characteristic 14)
(d) Inflorescence: branching (characteristic 18)
(e) Terminal raceme: shape (characteristic 25)
(f) Outer perianth segment: main color of outer side (characteristic 41) with the following groups:
Gr. 1: white
Gr. 2: green
Gr. 3: yellow
Gr. 4: orange
Gr. 5: pink
Gr. 6: red

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**	**Plante : hauteur**	**Pflanze: Höhe**	**Planta: altura**		
QN		very short	très basse	sehr niedrig	muy baja	Lemon Drops	1
		short	basse	niedrig	baja	Bushwhacker	3
		medium	moyenne	mittel	media	Bloody Mary	5
		tall	haute	hoch	alta	Charles	7
		very tall	très haute	sehr hoch	muy alta	Majesty	9
2. **(+)**	**VG/ MS**	**Plant: width**	**Plante : largeur**	**Pflanze: Breite**	**Planta: anchura**		
QN		very narrow	très étroite	sehr schmal	muy estrecha	Bountiful Bronny	1
		narrow	étroite	schmal	estrecha	Orange Express	3
		medium	moyenne	mittel	media	Bloody Mary	5
		broad	large	breit	ancha	Charles	7
		very broad	très large	sehr breit	muy ancha	Etam, Majesty	9
3.	**VG/ MS**	**Plant: number of inflorescences**	**Plante : nombre d'inflorescences**	**Pflanze: Anzahl der Blütenstände**	**Planta: número de inflorescencias**		
QN		very few	très peu nombreuses	sehr wenige	muy bajo	Ice Cap	1
		few	peu nombreuses	wenige	bajo	Tangerine Tree	3
		medium	moyennes	mittel	medio	Erik the Red	5
		many	nombreuses	viele	alto	Havenga's Pride	7
		very many	très nombreuses	sehr viele	muy alto	Porcupine	9
4. **(*)**	**VG/ MS**	**Leaf: length**	**Feuille : longueur**	**Blatt: Länge**	**Hoja: longitud**		
QN	**(a)**	very short	très courte	sehr kurz	muy corta	Mountain Gem	1
		short	courte	kurz	corta	Egoli	3
		medium	moyenne	mittel	media	Turkish Delight	5
		long	longue	lang	larga	Charles	7
		very long	très longue	sehr lang	muy larga	Majesty	9
5. **(*)**	**VG/ MS**	**Leaf: width**	**Feuille : largeur**	**Blatt: Breite**	**Hoja: anchura**		
QN	**(a)**	very narrow	très étroite	sehr schmal	muy estrecha	Peri-Peri	1
		narrow	étroite	schmal	estrecha	Ice Cap	3
		medium	moyenne	mittel	media	Turkish Delight	5
		broad	large	breit	ancha	Majestic	7
		very broad	très large	sehr breit	muy ancha	Lake Kyle	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6. **(*)** **(+)**	**VG**	**Leaf: ratio length/width**	**Feuille : rapport longueur/largeur**	**Blatt: Verhältnis Länge/Breite**	**Hoja: relación longitud/anchura**		
QN	**(a)**	low	bas	klein	baja	Freckles, Koeleman's Red	1
		medium	moyen	mittel	media	Pink Lady	3
		high	élevé	groß	alta	Ice Cap	5
7. **(+)**	**VG**	**Leaf: thickness**	**Feuille : épaisseur**	**Blatt: Dicke**	**Hoja: grosor**		
QN	**(a)**	thin	mince	dünn	delgada	Electra	1
		medium	moyenne	mittel	media	Ice Cap	2
		thick	épaisse	dick	gruesa	Lake Kyle	3
8. **(+)**	**VG**	**Leaf: curvature**	**Feuille : courbure**	**Blatt: Biegung**	**Hoja: curvatura**		
QN	**(a)**	strongly incurved	fortement incurvée	stark aufgebogen	muy curvada hacia arriba	Mountain Gem	1
		moderately incurved	modérément incurvée	mäßig aufgebogen	moderadamente curvada hacia arriba	Ice Cap	3
		straight	plate	gerade	recta	Twice as Nice	5
		moderately recurved	modérément retombante	mäßig zurückgebogen	moderadamente curvada hacia abajo	Lemon Drops	7
		strongly recurved	fortement retombante	stark zurückgebogen	muy curvada hacia abajo	Curvacious	9
9. **(+)**	**VG**	**Leaf: width of apex**	**Feuille : largeur du sommet**	**Blatt: Breite der Spitze**	**Hoja: anchura del ápice**		
QN	**(a)**	narrow	étroite	schmal	estrecho	Ice Cap	1
		medium	moyenne	mittel	medio	Pink Lady	2
		broad	large	breit	ancho	Koeleman's Orange	3
10. **(*)**	**VG**	**Leaf: main color of upper side**	**Feuille : couleur principale de la face supérieure**	**Blatt: Hauptfarbe der Oberseite**	**Hoja: color principal del haz**		
PQ	**(a)**	yellow green	vert-jaune	gelbgrün	verde amarillento	Tammy	1
	(b)	light green	vert clair	hellgrün	verde claro	Charles	2
		medium green	vert moyen	mittelgrün	verde medio	Ice Cap	3
		dark green	vert foncé	dunkelgrün	verde oscuro	Twice as Nice	4
		red green	vert-rouge	rotgrün	verde rojizo	Popcorn	5
		brown green	vert-brun	braungrün	verde amarronado	Eiffel	6
		blue green	vert-bleu	blaugrün	verde azulado	High Rise	7
		blue grey	gris-bleu	blaugrau	gris azulado	Southern Cross	8

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. (*) (+)	**VG**	**Leaf: spots on upper side**	**Feuille : taches sur la face supérieure**	**Blatt: Flecken auf der Oberseite**	**Hoja: lunares en el haz**		
PQ	**(a)**	absent	aucune	fehlend	ausentes	Twice as Nice	1
		whitish	blanchâtres	weißlich	blanquecinos	Lemon Drops	2
		greenish	verdâtres	grünlich	verdosos	Ice Cap	3
		yellowish	jaunâtres	gelblich	amarillentos	Guineafowl	4
12. (*)	**VG**	**Leaf: stripes on upper side**	**Feuille : stries sur la face supérieure**	**Blatt: Streifen auf der Oberseite**	**Hoja: rayas en el haz**		
QL	**(a)**	absent	absentes	fehlend	ausentes	Egoli	1
		present	présentes	vorhanden	presentes	Baby Cloud	9
13. (*)	**VG**	**Leaf: color of marginal zone of upper side**	**Feuille : couleur du bord de la feuille sur la face supérieure**	**Blatt: Farbe der Randzone der Oberseite**	**Hoja: color de la zona del borde del haz**		
PQ	**(a)**	green	vert	grün	verde	Tricolor	1
		yellow	jaune	gelb	amarillo	Eden Award	2
		pinkish orange	orange rosâtre	blaßrosaorange	naranja rosado	Electra	3
		red	rouge	rot	rojo	Colourburst	4
		brown	brun	braun	marrón	Eiffel	5
14. (*)	**VG**	**Leaf: marginal teeth**	**Feuille : dents sur le bord**	**Blatt: Randzähne**	**Hoja: dientes del borde**		
QN	**(a)**	absent or very small	aucunes ou très petites	fehlend or sehr klein	ausentes o muy pequeños	Yellow Gem	1
		small	petites	klein	pequeños	Sensation	3
		medium	moyennes	mittel	medios	High Rise	5
		large	grandes	groß	grandes	Octopus	7
		very large	très grandes	sehr groß	muy grandes	Cerise Pink	9
15. (*)	**VG**	**Leaf: color of marginal teeth**	**Feuille : couleur des dents sur le bord**	**Blatt: Farbe der Randzähne**	**Hoja: color de los dientes del borde**		
PQ	**(a)**	whitish	blanchâtre	weißlich	blanquecino	Rooiklip	1
		greenish	verdâtre	grünlich	verdoso	Bright Spark, Gemini	2
		yellowish	jaunâtre	gelblich	amarillento	Reitz Rocket	3
		orange	orange	orange	naranja	Starfish, Winter White	4
		pinkish	rosâtre	blaßrosa	rosado	Ice Cap	5
		reddish	rougeâtre	rötlich	rojizo	Southern Cross	6
		brownish	brunâtre	bräunlich	amarronado	Sabre 2	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. (*)	**VG**	**Leaf: spines or white tubercles**	**Feuille : épines ou tubercules blancs**	**Blatt: Stacheln oder weiße Knötchen**	**Hoja: protuberancias blancas o espinas**		
PQ	**(a)**	absent	aucun	fehlend	ausentes	Ice Cap	1
		upper side only	face supérieure seulement	nur Oberseite	solo en el haz	Orange Express	2
		upper and lower sides	face supérieure et face inférieure	Ober- und Unterseite	en haz y envés	Mountain Gem	3
		lower side only	face inférieure seulement	nur Unterseite	solo en el envés		4
17. (*)	**VG**	**Leaf: distribution of spines or white tubercles on lower side**	**Feuille : répartition des épines et des tubercules blancs sur la face inférieure**	**Blatt: Verteilung von Stacheln oder weißen Knötchen auf der Unterseite**	**Hoja: distribución de las protuberancias blancas o espinas en el envés**		
QL	**(a)**	only along midrib	le long de la nervure médiane seulement	nur entlang der Mittelrippe	solo a lo largo del nervio central	Geisha	1
		over entire leaf	sur toute la feuille	über gesamtes Blatt	en toda la hoja	Rooiklip	2
18. (*) (+)	**VG**	**Inflorescence: branching**	**Inflorescence : ramification**	**Blütenstand: Verzweigung**	**Inflorescencia: ramificación**		
QL		absent	aucune	fehlend	ausente	Ice Cap	1
		primary	primaire	primär	primaria	Twice as Nice	2
		secondary	secondaire	sekundär	secundaria	Koeleman's Orange	3
		tertiary	tertiaire	tertiär	terciaria	Coral Red	4
19. (*)	**MG/ MS**	**Inflorescence: number of racemes**	**Inflorescence : nombre de grappes**	**Blütenstand: Anzahl der Blütentrauben**	**Inflorescencia: número de racimos**		
QN		one	une	eine	uno	Rooiklip	1
		two	deux	zwei	dos	Bountiful Bronny	2
		three to five	trois à cinq	drei oder fünf	de tres a cinco	Goldibells	3
		six to ten	cinq à dix	sechs bis zehn	de seis a diez	Etam	4
		more than ten	plus de dix	über zehn	más de diez	Lake Kyle	5
20. (*) (+)	**VG/ MS**	**Inflorescence: length**	**Inflorescence : longueur**	**Blütenstand: Länge**	**Inflorescencia: longitud**		
QN		very short	très courte	sehr kurz	muy corta		1
		short	courte	kurz	corta	Twice as Nice	3
		medium	moyenne	mittel	media	Royal Claret	5
		long	longue	lang	larga	Firechief	7
		very long	très longue	sehr lang	muy larga	Erik the Red	9
21. (+)	**VG/ MS**	**Peduncle: length of main axis**	**Pédoncule : longueur de l'axe central**	**Blütenstiel: Länge der Hauptachse**	**Pedúnculo: longitud del eje principal**		
QN		very short	très court	sehr kurz	muy corto	Porcupine	1
		short	court	kurz	corto	Twice as Nice	3
		medium	moyen	mittel	medio	High Rise	5
		long	long	lang	largo	Fire Chief	7
		very long	très long	sehr lang	muy largo	Erik the Red	9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
22. (*)	**VG**	**Peduncle: color**	**Pédoncule : couleur**	**Blütenstiel: Farbe**	**Pedúnculo: color**		
PQ		greenish only	verdâtre seulement	nur grünlich	solo verdoso	Twice as Nice	1
		greenish and reddish	verdâtre et rougeâtre	grünlich und rötlich	verdoso y rojizo	Ice Cap	2
		reddish only	rougeâtre seulement	nur rötlich	solo rojizo	Orange Jade	3
		brownish	brunâtre	bräunlich	amarronado	Lemon Drops	4
23. (*) (+)	**VG**	**Lateral raceme: attitude**	**Grappe latérale : port**	**Seitliche Blütentraube: Haltung**	**Racimo lateral: porte**		
QN		upright	dressée	aufrecht	erecto	Ruby Blaze	1
		semi-upright	semi-dressée	halbaufrecht	semierecto	Red Parade	2
		horizontal	horizontale	horizontal	horizontal	Red Horizon	3
24. (+)	**VG**	**Terminal raceme: length of flowering part**	**Étage terminal : longueur de la partie florifère**	**Terminale Blütentraube: Länge des blühenden Teils**	**Racimo terminal: longitud de la parte en floración**		
QN		very short	très courte	sehr kurz	muy corta	Little Joker	1
		short	courte	kurz	corta	Goldibells	3
		medium	moyenne	mittel	media	Twice as Nice	5
		long	longue	lang	larga	Eiffel	7
		very long	très longue	sehr lang	muy larga	Tusker	9
25. (*) (+)	**VG**	**Terminal raceme: shape**	**Étage terminal : forme**	**Terminale Blütentraube: Form**	**Racimo terminal: forma**		
PQ		capitate	capité	kopfförmig	capitada	Baby Cloud	1
		corymbose-capitate	corymbe-capité	korymbos-kopfförmig	corimboso-capitada	Lemon Drops	2
		capitate to conical	capité à conique	kopfförmig bis kegelförmig	capitada a cónica	Little Joker	3
		conical	conique	kegelförmig	cónica	Orange Jade	4
		conico-cylindrical	cylindro-conique	kegelförmig-zylindrisch	cónico-cilíndrica	Hilko	5
		cylindrical	cylindrique	zylindrisch	cilíndrica	Southern Cross	6
26. (*)	**VG**	**Terminal raceme: ratio length/width**	**Étage terminal : rapport longueur/largeur**	**Terminale Blütentraube: Verhältnis Länge/Breite**	**Racimo terminal: relación longitud/anchura**		
QN		low	bas	klein	baja		1
		medium	moyen	mittel	media	Goldibells	3
		high	élevé	groß	alta	Havenga's Pride	5
		very high	très élevé	sehr groß	muy alta	Eiffel	7
		extremely high	extrêmement élevé	äußerst groß	extremadamente alta		9
27. (*) (+)	**VG**	**Terminal raceme: density of flowers**	**Étage terminal : densité des fleurs**	**Terminale Blütentraube: Dichte der Blüten**	**Racimo terminal: densidad de flores**		
QN		sparse	lâche	locker	laxa	Ice Cap	3
		medium	moyenne	mittel	media	Twice as Nice	5
		dense	dense	dicht	densa	Lake Kyle, Winter Festival	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
28.	**VG**	**Terminal raceme: size of flower bracts**	**Étage terminal : taille des bractées**	**Terminale Blütentraube: Größe der Blütendeckblätter**	**Racimo terminal: tamaño de las brácteas florales**		
QN	**(e)**	very small	très petites	sehr klein	muy pequeñas	Ice Cap	1
		small	petites	klein	pequeñas	Little Joker	3
		medium	moyennes	mittel	medias	Bushwhacker	5
		large	grandes	groß	grandes	Mountain Gem	7
29.	**VG**	**Immature flower bud: main color of pedicel**	**Bouton floral immature : couleur principale du pédicelle**	**Unreife Blütenknospe: Hauptfarbe des Blütenstiels**	**Botón floral inmaduro: color principal del pedicelo**		
PQ	**(b)**	greenish	verdâtre	grünlich	verdoso	Turkish Delight	1
	(c)	yellowish	jaunâtre	gelblich	amarillento	Andsaff	2
		orange	orange	orange	naranja	Lemon Drops	3
		reddish	rougeâtre	rötlich	rojizo	Little Joker	4
		brownish	brunâtre	bräunlich	amarronado	Ice Cap	5
30. **(*)**	**VG**	**Immature flower bud: main color**	**Bouton floral immature : couleur principale**	**Unreife Blütenknospe: Hauptfarbe**	**Botón floral inmaduro: color principal**		
PQ	**(b)** **(c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
31.	**VG**	**Immature flower bud: secondary color**	**Bouton floral immature : couleur secondaire**	**Unreife Blütenknospe: Sekundärfarbe**	**Botón floral inmaduro: color secundario**		
PQ	**(b)** **(c)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
32.	**VG**	**Mature flower bud: main color of pedicel**	**Bouton floral mature : couleur principale du pédicelle**	**Reife Blütenknospe: Hauptfarbe des Blütenstiels**	**Botón floral maduro: color principal del pedicelo**		
PQ	**(b)**	greenish	verdâtre	grünlich	verdoso	Ice Cap	1
	(d)	yellowish	jaunâtre	gelblich	amarillento	Lemon Drops	2
		orange	orange	orange	naranja	Bushwhacker	3
		reddish	rougeâtre	rötlich	rojizo	Little Joker	4
		brownish	brunâtre	bräunlich	amarronado	Andgol	5
33. **(*)**	**VG**	**Mature flower bud: main color**	**Bouton floral mature : couleur principale**	**Reife Blütenknospe: Hauptfarbe**	**Botón floral maduro: color principal**		
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
34.	**VG**	**Mature flower bud: secondary color**	**Bouton floral mature : couleur secondaire**	**Reife Blütenknospe: Sekundärfarbe**	**Botón floral maduro: color secundario**		
PQ	**(b)** **(d)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
35. **(+)**	**VG/ MS**	**Pedicel: length**	**Pédicelle : longueur**	**Blütenstiel: Länge**	**Pedicelo: longitud**		
QN	**(e)**	short	courte	kurz	corto	Ice Cap	1
		medium	moyenne	mittel	medio	Emerald	2
		long	longue	lang	largo	Porcupine	3
36. **(*)**	**VG**	**Pedicel: main color**	**Pédicelle : couleur principale**	**Blütenstiel: Hauptfarbe**	**Pedicelo: color principal**		
PQ	**(b)**	greenish	verdâtre	grünlich	verdoso	Ice Cap	1
	(e)	yellowish	jaunâtre	gelblich	amarillento	Lemon Drops	2
		orange	orange	orange	naranja	Bushwhacker	3
		reddish	rougeâtre	rötlich	rojizo	Little Joker	4
		brownish	brunâtre	bräunlich	amarronado	Andgol	5
37. **(*)** **(+)**	**VG**	**Flower: basal swelling**	**Fleur : gonflement de la base**	**Blüte: basale Schwellung**	**Flor: hinchazón basal**		
QN	**(e)**	weak	faible	schwach	débil	Bi-color	1
		medium	moyen	mittel	media	Pink Lady	3
		strong	fort	stark	fuerte	Yellow maculata	5
38. **(+)**	**VG/ MS**	**Perianth: length**	**Périanthe : longueur**	**Blütenhülle: Länge**	**Perianto: longitud**		
QN	**(e)**	very short	très courte	sehr kurz	muy corto	Albiflora	1
		short	courte	kurz	corto	Ice Cap	3
		medium	moyenne	mittel	medio	Porcupine	5
		long	longue	lang	largo	Bushwhacker	7
39. **(+)**	**VG/ MS**	**Perianth: diameter**	**Périanthe : diamètre**	**Blütenhülle: Durchmesser**	**Perianto: diámetro**		
QN	**(e)**	small	petit	klein	pequeño	Geisha	1
		medium	moyen	mittel	medio	Ice Cap	2
		large	grand	groß	grande	Bushwhacker	3
40.	**VG**	**Outer perianth segment: recurving of apex**	**Enveloppe extérieure du périanthe : incurvation au sommet**	**Äußeres Blütenhüllensegment: Rückbiegung der Spitze**	**Segmento externo del perianto: recurvado del ápice**		
QN	**(e)**	absent or weak	nulle ou faible	fehlend oder schwach	ausente o débil	Orange Express	1
		medium	moyenne	mittel	medio	Ice Cap	2
		strong	forte	stark	fuerte	Winter Bells	3
41. **(*)**	**VG**	**Outer perianth segment: main color of outer side**	**Enveloppe extérieure du périanthe : couleur principale de la face extérieure**	**Äußeres Blütenhüllensegment: Hauptfarbe der Außenseite**	**Segmento externo del perianto: color principal de la cara externa**		
PQ	**(b)** **(e)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
42.	**VG**	**Outer perianth segment: secondary color of outer side**	**Enveloppe extérieure du périanthe : couleur secondaire de la face extérieure**	**Äußeres Blütenhüllensegment: Sekundärfarbe der Außenseite**	**Segmento externo del perianto: color secundario de la cara externa**		
PQ	**(b)** **(e)**	RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indíquese el número de referencia)		
43. **(*)**	**VG**	**Inner perianth segment: main color of apex of inner side**	**Enveloppe intérieure du périanthe : principale couleur du sommet de la face intérieure**	**Inneres Blütenhüllensegment: Hauptfarbe der Spitze der Innenseite**	**Segmento interno del perianto: color principal del ápice de la cara interna**		
PQ	**(b)**	white	blanc	weiß	blanco		1
	(e)	green	vert	grün	verde	Ice Cap	2
		yellow	jaune	gelb	amarillo	Twice as Nice	3
		red	rouge	rot	rojo		4
		purple	violet	purpurn	púrpura	Koeleman's Red	5
		brown	brun	braun	marrón	Koeleman's Orange	6
44. **(+)**	**VG**	**Stamen: protrusion in relation to apex of perianth segments**	**Étamines : protubérance par rapport au sommet des enveloppes du périanthe**	**Staubgefäß: Überstand bezüglich der Spitze des Blütenhüllen-segments**	**Estambre: protuberancia con respecto al ápice de los segmentos del perianto**		
QN	**(f)**	absent or weak	nulle ou faible	fehlend oder schwach	ausente o débil	Emerald	1
		medium	moyenne	mittel	media	Ice Cap	2
		strong	forte	stark	fuerte	Bi-color	3
45. **(*)**	**VG**	**Filament: anthocyanin coloration**	**Filament : pigmentation anthocyanique**	**Staubfaden: Anthocyanfärbung**	**Filamento: pigmentación antociánica**		
QN	**(f)**	absent or weak	nulle ou faible	fehlend oder schwach	ausente o débil	Bekkies, Ice Cap	1
		medium	moyenne	mittel	media	Majesty	2
		strong	forte	stark	fuerte	Red Parade	3
46. **(+)**	**VG/ MG**	**Time of beginning of flowering**	**Époque de début de floraison**	**Zeitpunkt des Blühbeginns**	**Época de inicio de la floración**		
QN		early	précoce	früh	temprana	Lemon Drops	3
		medium	moyenne	mittel	media	Geisha	5
		late	tardive	spät	tardía	Lake Kyle	7

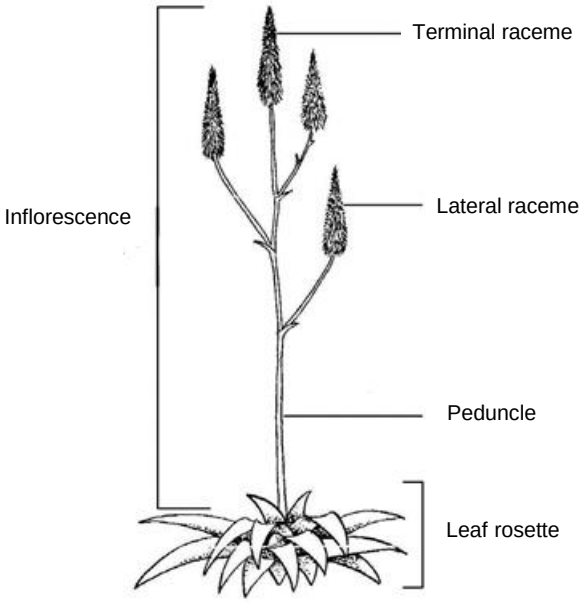
8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

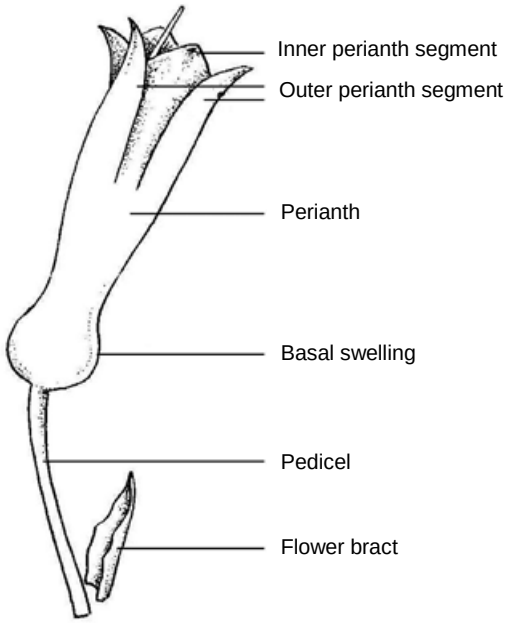
Unless otherwise indicated, observations should be made at the time of full flowering.

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. The secondary color is the color with the second 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.
(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 outer perianth segments. Color observations should disregard the green apex.
(e) Observations on the flower, flower parts and bracts should be made on fresh fully open flowers.
(f) Observations on the stamens should be made shortly after dehiscence of the anthers.



Plant parts

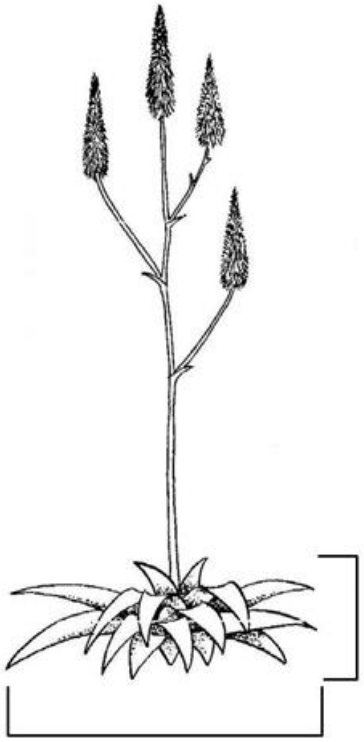


Flower parts

8.2 Explanations for individual characteristics

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

Observations should exclude the inflorescence.



Ad. 6: Leaf: ratio length/width


1
low

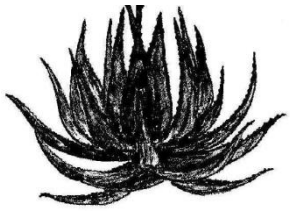

3
medium


5
high

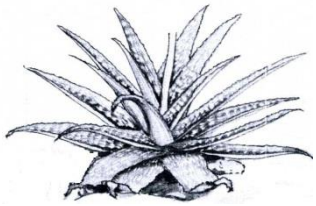
Ad. 7: Leaf: thickness

To be observed at the base of the leaf.

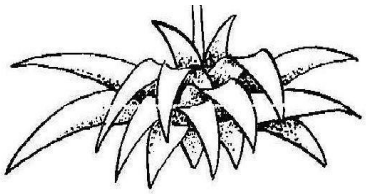
Ad. 8: Leaf: curvature



3
moderately incurved



5
straight



7
moderately recurved

Ad. 9: Leaf: width of apex

1
narrow

2
medium

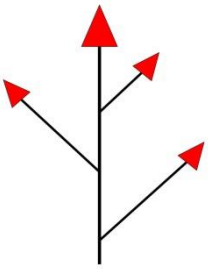
3
broad

Ad. 11: Leaf: spots on upper side

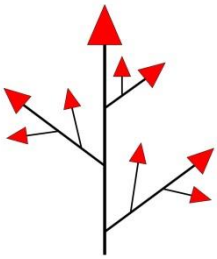
For this characteristic, the term spots include speckles, spots, and blotches, but exclude spines and white tubercles

Ad. 18: Inflorescence: branching

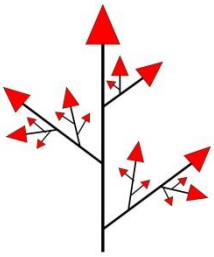
1
absent



2
primary

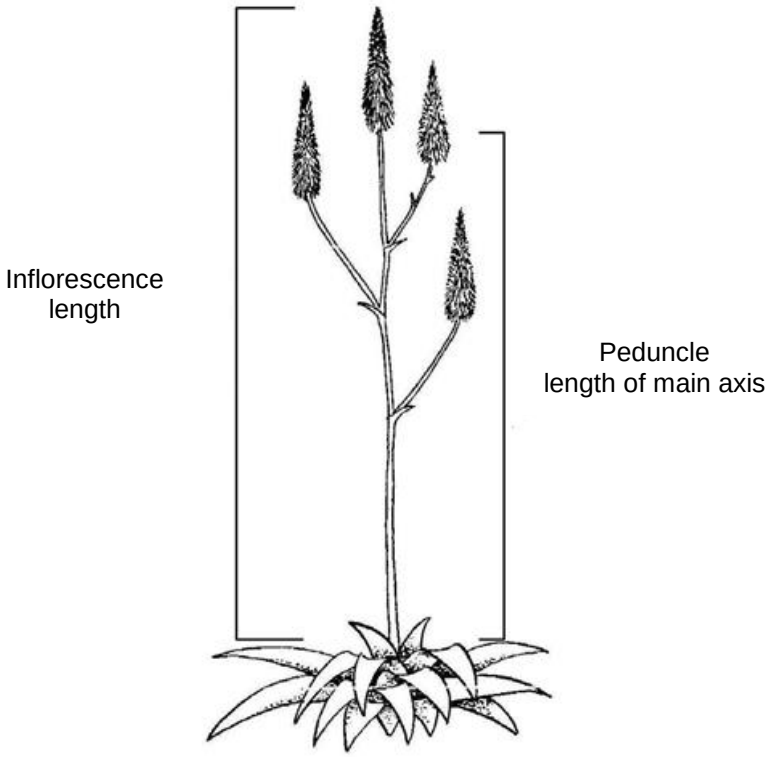


3
secondary

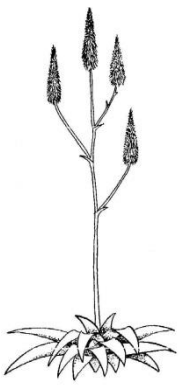


4
tertiary

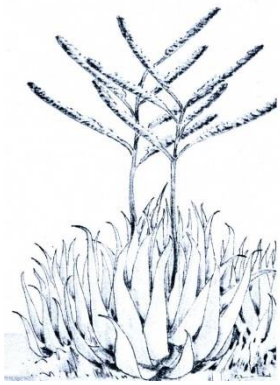
Ad. 20: Inflorescence: length
Ad. 21: Peduncle: length of main axis



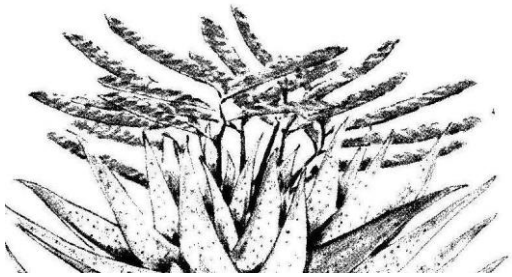
Ad. 23: Lateral raceme: attitude



1
upright



2
semi-upright



3
horizontal

Ad. 24: Terminal raceme: length of flowering part

The flowering part includes open flowers and buds.

Length of flowering part

Ad. 25: Terminal raceme: shape

To be observed when 20% of the flowers have opened.

Capitate – a head-like inflorescence shape; usually broader than long.

Corymbose – a racemose (indeterminate) inflorescence shape, in which the branches or the pedicels start from different points but all reach to about the same level.

1
capitate

2
corymbose-capitate

3
capitate to conical

4
conical

5
conico-cylindrical

6
cylindrical

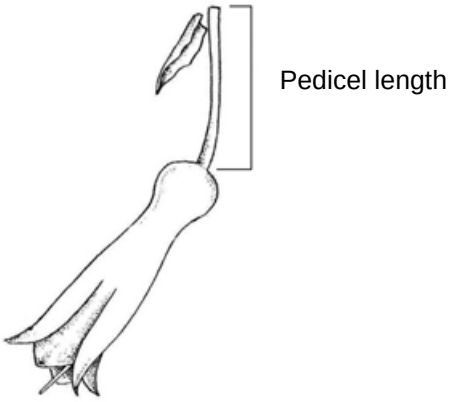
Ad. 27: Terminal raceme: density of flowers

3
sparse

5
medium

7
dense

Ad. 35: Pedicel: length



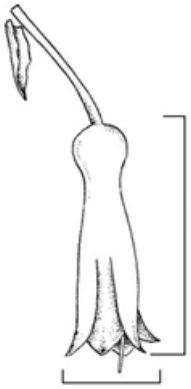
Ad. 37: Flower: basal swelling

1
weak

3
medium

5
strong

Ad. 38: Perianth: length
Ad. 39: Perianth: diameter



Perianth length

Perianth diameter

Ad. 44: Stamen: protrusion in relation to apex of perianth segments

1
absent or weak

2
medium

3
strong

Ad. 46: 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, 304 pp.

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	*Aloe* L.	
1.2 Species (please complete)		[ ]
1.2.1 Common 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)

[#] 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 Vegetative propagation

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.2 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 (11)	**Leaf: spots on upper side**		
	absent	Twice as Nice	1[ ]
	whitish	Lemon Drops	2[ ]
	greenish	Ice Cap	3[ ]
	yellowish	Guineafowl	4[ ]
5.2 (13)	**Leaf: color of marginal zone of upper side**		
	green	Tricolor	1[ ]
	yellow	Eden Award	2[ ]
	pinkish orange	Electra	3[ ]
	red	Colourburst	4[ ]
	brown	Eiffel	5[ ]
5.3 (14)	**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	Cerise Pink	9[ ]

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

	Characteristics	Example Varieties	Note
5.4 (18)	**Inflorescence: branching**		
	absent	Ice Cap	1[ ]
	primary	Twice as Nice	2[ ]
	secondary	Koeleman's Orange	3[ ]
	tertiary	Coral Red	4[ ]
5.5 (25)	**Terminal raceme: shape**		
	capitate	Baby Cloud	1[ ]
	corymbose-capitate	Lemon Drops	2[ ]
	capitate to conical	Little Joker	3[ ]
	conical	Orange Jade	4[ ]
	conico-cylindrical	Hilko	5[ ]
	cylindrical	Southern Cross	6[ ]
5.6 (41)	**Outer perianth segment: main color of outer side**		
	white	Ivory Tower	1[ ]
	green		2[ ]
	yellow	Porcupine, Sunbird	3[ ]
	orange	Orange Express	4[ ]
	pink		5[ ]
	red	Erik the Red	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*	*medium*	*large*

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

7.4 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]