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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

KALANCHOE

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Kalanchoe blossfeldiana Poelln. and its hybrids

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Germany

*to be considered by the Enlarged Editorial Committee at its meeting
to be held in Geneva, Switzerland, on January 8, 2008*

Alternative Names:*

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Kalanchoe blossfeldiana</i> Poelln. and its hybrids	Kalanchoe	Kalanchoe	Flammendes Kätchen	Kalancho

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 *Kalanchoe blossfeldiana* Poelln. as well as to hybrids between that species and other species of *Kalanchoe* Adans. of the family Crassulaceae.

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 unrooted cuttings.

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

20 unrooted cuttings.

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. The plants should receive an appropriate short day treatment after potting. The day length during the short day treatment should be less than 10 hours for at least seven weeks.

3.3.2 The optimum stage of development for the assessment of the characteristics is when three quarters of the flowers per plant are fully open.

3.3.3 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.

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 20 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 *Number of Plants / Parts of Plants to be Examined*

Unless otherwise indicated, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test.

3.6 *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.

4.2 *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 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 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 tested, either by growing a further generation, or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous 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) Flower: type (characteristic 18)
- (b) Corolla lobe: number of colors of upper side (characteristic 29)
- (c) Corolla lobe: main color of upper side (characteristic 30) with the following groups:
 - Gr. 1: white
 - Gr. 2: yellow
 - Gr. 3: orange
 - Gr. 4: red
 - Gr. 5: purple red
 - Gr. 6: purple
 - Gr. 7: blue pink

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

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*

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.

6.3 *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

(a)-(d) 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. (*)	Plant: height (including inflorescence)	Plante : hauteur (y compris l'inflorescence)	Pflanze: Höhe (einschließlich Blütenstand)	Planta: altura (incluida la inflorescencia)		
QN	very short	très basse	sehr niedrig	muy baja	Avalon	1
	short	basse	niedrig	baja	Rarakoe	3
	medium	moyenne	mittel	media	Amy	5
	tall	haute	hoch	alta	Taos	7
	very tall	très haute	sehr hoch	muy alta	Petero	9
2.	Plant: width	Plante : largeur	Pflanze: Breite	Planta: anchura		
QN	narrow	étroite	schmal	estrecha	Sumaco	3
	medium	moyenne	mittel	media	Amy	5
	broad	large	breit	ancha	Pago	7
3. (*)	Leaf: length	Feuille : longueur	Blatt: Länge	Hoja: longitud		
QN (a)	short	courte	kurz	corta	Dark Cora	3
	medium	moyenne	mittel	media	Amy	5
	long	longue	lang	larga	Avalon	7
4. (*)	Leaf: width	Feuille : largeur	Blatt: Breite	Hoja: anchura		
QN (a)	narrow	étroite	schmal	estrecha	Arina	3
	medium	moyenne	mittel	media	Sumaco	5
	broad	large	breit	ancha	Avalon	7

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.	Leaf: shape	Feuille : forme	Blatt: Form	Hoja: forma		
(+)						
PQ	(a) ovate	ovale	eiförmig	oval		1
	elliptic	elliptique	elliptisch	elíptica		2
	rounded	arrondie	rundlich	redondeada		3
	linear	linéaire	linear	lineal		4
	obovate	obovale	verkehrt eiförmig	oboval		5
	tripartite pinnate	pennée tripartite	dreizählig gefiedert	tripartita pinnada		6
6.	Leaf: variegation	Feuille : panachure	Blatt: Panaschierung	Hoja: variegación		
QL	(a) absent	absente	fehlend	ausente	Rarakoe	1
	present	présente	vorhanden	presente	Debora	9
7.	Leaf: intensity of green color of upper side	Feuille : intensité de la couleur verte de la face supérieure	Blatt: Intensität der Grünfärbung der Oberseite	Hoja: intensidad del color verde del haz		
QN	(a) light	claire	hell	clara		3
	medium	moyenne	mittel	media	Taos	5
	dark	foncée	dunkel	oscura	Arina	7
8.	Leaf: anthocyanin coloration of upper side	Feuille : pigmentation anthocyanique de la face supérieure	Blatt: Anthocyanfärbung der Oberseite	Hoja: pigmentación antociánica del haz		
QN	(a) absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	Amy	1
	weak	faible	gering	débil	Banda	3
	medium	moyenne	mittel	media	Misunpink	5
	strong	forte	stark	fuerte	Axrose	7
9.	Leaf: cross section	Feuille : section transversale	Blatt: Querschnitt	Hoja: sección transversal		
(+)						
QN	(a) strongly concave	fortement concave	stark konkav	fuertemente cóncava	Dark Cora	1
	flat	plate	gerade	plana	Fonda	3
	strongly convex	fortement convexe	stark konvex	fuertemente convexa		5

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
10.	Leaf: number of incisions of margin	Feuille : nombre d'incisions du bord	Blatt: Anzahl der Randeinschnitte	Hoja: número de incisiones del margen		
(+)						
QN	(a) absent or very few	absentes ou très peu	fehlend oder sehr gering	ausentes o muy bajo		1
	few	peu nombreuses	gering	bajo		3
	medium	moyen	mittel	medio		5
	many	très nombreuses	groß	alto		7
11.	Leaf: depth of incisions of margin	Feuille : profondeur des incisions du bord	Blatt: Tiefe der Randeinschnitte	Hoja: profundidad de las incisiones del margen		
(+)						
QN	(a) very shallow	très peu profondes	sehr flach	muy poco profunda		1
	shallow	peu profondes	flach	poco profunda	Amy	3
	medium	moyennes	mittel	media	Pago	5
	deep	profondes	tief	profunda	Axrose	7
12.	Leaf: attitude of apex	Feuille : port du sommet	Blatt: Haltung der Spitze	Hoja: porte del ápice		
(+)						
QN	(a) strongly incurving	fortement incurvé	stark aufgebogen	fuertemente curvado hacia arriba	Rachel	1
	straight	droit	gerade	recto	Sumaco	3
	strongly recurving	fortement récurvé	stark zurückgebogen	fuertemente curvado hacia abajo	Hakon	5
13.	Flowering shoot: number of flowers of highest pleiochasium	Pousse florifère : nombre de fleurs du pleiochasium le plus haut	Blühender Trieb: Anzahl Blüten der obersten Trugdolde	Rama floral: número de flores del pleiocasio superior		
(+)						
QN	few	petit	gering	bajo	Amrum	3
	medium	moyen	mittel	medio	Fonda	5
	many	grand	groß	alto	Pago	7

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
14. (+)	Flowering shoot: width of highest pleiochasium	Pousse florifère : largeur du pleiochasium le plus haut	Blühender Trieb: Breite der obersten Trugdolde	Rama floral: anchura del pleiocasio superior		
QN	narrow	étroit	schmal	estrecha	Don Ramon	3
	medium	moyen	mittel	media	Sumaco	5
	broad	large	breit	ancha	Pago	7
15. (+)	Young flower: number of colors of upper side of corolla lobes	Jeune fleur : nombre de couleurs de la face supérieure des lobes de la corolle	Junge Blüte: Anzahl Farben der Ober- seite der Kronzipfel	Flor joven: número de colores de la cara superior de los lóbulos de la corola		
	(b) one	une	eine	uno		1
	two or more	deux ou plus	zwei oder mehr	dos o más		2
16.	Young flower: main color of upper side of corolla lobes	Jeune fleur : couleur principale de la face supérieure des lobes de la corolle	Junge Blüte: Hauptfarbe der Oberseite der Kronzipfel	Flor joven: color principal de la cara superior de los lóbulos de la corola		
PQ	(b) RHS Colour Chart (c) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
17.	Young flower: secondary color of upper side of corolla lobes	Jeune fleur : couleur secondaire de la face supérieure des lobes de la corolle	Junge Blüte: Sekundärfarbe der Oberseite der Kronzipfel	Flor joven: color secundario de la cara superior de los lóbulos de la corola		
PQ	(b) RHS Colour Chart (c) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
18. (* (+)	Flower: type	Fleur : type	Blüte: Typ	Flor: tipo		
QL	single	simple	einfach	simple	Dark Cora	1
	double	double	gefüllt	doble	Pago	2

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
19.	<u>Only varieties with single flowers:</u> Flower: number of corolla lobes	<u>Variétés à fleurs simples seulement :</u> fleur : nombre de lobes de corolle	<u>Nur Sorten mit einfachen Blüten:</u> Blüte: Anzahl Kronzipfel	<u>Únicamente variedades con flores simples:</u> Flor: número de lóbulos de la corola		
QN	only 4	4 seulement	nur 4	sólo 4	Dark Cora	1
	4 or 5	4 ou 5	4 oder 5	4 ó 5	Parina	2
	only 5	5 seulement	nur 5	sólo 5		3
20. (*)	<u>Only varieties with double flowers:</u> Flower: number of corolla lobes	<u>Variétés à fleurs doubles seulement :</u> fleur : nombre de lobes de corolle	<u>Nur Sorten mit gefüllten Blüten:</u> Blüte: Anzahl Kronzipfel	<u>Únicamente variedades con flores dobles:</u> Flor: número de lóbulos de la corola		
QN	few	petit	gering	bajo	RB 56141	3
	medium	moyen	mittel	medio	Naomi	5
	many	élevé	hoch	alto	Yazmin	7
21. (*)	Flower: diameter	Fleur : diamètre	Blüte: Durchmesser	Flor: diámetro		
QN	small	petit	klein	pequeño	Arina	3
	medium	moyen	mittel	medio	Amy	5
	large	grand	groß	grande	Jodie	7
22. (+)	<u>Only varieties with single flowers:</u> Corolla lobe: attitude	<u>Variétés à fleurs simples seulement :</u> lobe de la corolle : port	<u>Nur Sorten mit einfachen Blüten:</u> Kronzipfel: Haltung	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: porte		
QN	(d) upwards	dressé	nach oben	hacia arriba	Runa	1
	horizontal	horizontal	waagerecht	horizontal	Goldie	2
	downwards	retombant	nach unten	hacia abajo	Ingrid	3
23. (+)	Corolla lobe: rolling of margin	Lobe de la corolle : enroulement du bord	Kronzipfel: Umbiegung des Randes	Lóbulo de la corola: curvatura del margen		
QL	(d) absent	absent	fehlend	ausente	Irmin	1
	present	présent	vorhanden	presente	Jackie	9

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
24. (+)	Corolla lobe: incisions of margin	Lobe de la corolle : incisions du bord	Kronzipfel: Randeinschnitte	Lóbulo de la corola: incisiones del margen		
QL	(d) absent present	absentes présentes	fehlend vorhanden	ausentes presentes	Irmin Krystle	1 9
25. (+)	Corolla lobe: shape of apex	Lobe de la corolle : forme du sommet	Kronzipfel: Form der Spitze	Lóbulo de la corola: forma del ápice		
PQ	(d) acute apiculate acuminate	aigüe apiculée acuminée	spitz zugespitzt mit aufgesetzter Spitze	acuda apiculada acuminada	Jackie Impromeru White Cora	1 2 3
26. (*)	<u>Only varieties with single flowers:</u> Corolla lobe: length	<u>Variétés à fleurs simples seulement:</u> lobe de la corolle : longueur	<u>Nur Sorten mit einfachen Blüten:</u> Kronzipfel: Länge	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: longitud		
QN	(d) short medium long	courte moyenne longue	kurz mittel lang	corta media larga	Debora Amy Jackie	3 5 7
27. (*)	<u>Only varieties with single flowers:</u> Corolla lobe: width	<u>Variétés à fleurs simples seulement:</u> lobe de la corolle : largeur	<u>Nur Sorten mit einfachen Blüten:</u> Kronzipfel: Breite	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: anchura		
QN	(d) narrow medium broad	étroite moyenne large	schmal mittel breit	estrecha media ancha	Debora Parina Dark Cora	3 5 7
28.	<u>Only varieties with single flowers:</u> Corolla lobe: ratio length/width	<u>Variétés à fleurs simples seulement :</u> lobe de la corolle : rapport longueur/largeur	<u>Nur Sorten mit einfachen Blüten:</u> Kronzipfel: Verhältnis Länge/Breite	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: relación longitud/anchura		
QN	(d) small medium large	petit moyen grand	klein mittel groß	pequeña media grande		3 5 7

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
29. (* (+)	Corolla lobe: number of colors of upper side	Lobe de la corolle : nombre de couleurs de la face supérieure	Kronzipfel: Anzahl Farben der Oberseite	Lóbulo de la corola: número de colores de la cara superior		
QL	(d) one	une	eine	uno	Amy	1
	two	deux	zwei	dos	Graciosa	2
	more than two	plus de deux	mehr als zwei	más de dos	Oberon	3
30. (*	Corolla lobe: main color of upper side	Lobe de la corolle : couleur principale de la face supérieure	Kronzipfel: Hauptfarbe der Oberseite	Lóbulo de la corola: color principal de la cara superior		
PQ	(c) RHS Colour Chart (d) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
31. (*	Corolla lobe: secondary color of upper side	Lobe de la corolle : couleur secondaire de la face supérieure	Kronzipfel: Sekundärfarbe der Oberseite	Lóbulo de la corola: color secundario de la cara superior		
PQ	(c) RHS Colour Chart (d) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
32. (* (+)	Corolla lobe: distribution of secondary color	Lobe de la corolle : distribution de la couleur secondaire	Kronzipfel: Verteilung der Sekundärfarbe	Lóbulo de la corola: distribución del color secundario		
PQ	(d) at margin only	en bordure seulement	nur am Rand	únicamente en el margen	Alcedo	1
	at margin and at base	en bordure et à la base	am Rand und an der Basis	en el margen y en la base	Mipinkstar	2
	at base only	à la base seulement	an der Basis	únicamente en la base	Impromero	3
	at base and as median stripe	à la base et comme raie médiane	an der Basis und als Mittelstreifen	en la base y como estría central	Milos	4
	median stripe only	raie médiane seulement	nur als Mittelstreifen	únicamente como estría central		5
	mainly on one half	principalement sur une moitié	hauptsächlich auf einer Hälfte	principalmente en una mitad	Rewiros	6
	dotted	pointillé	gepunktet	salpicado	Greco	7
	brindled	mouchetée	gescheckt	pinto		8

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
33.	<u>Only varieties with single flowers:</u> Corolla lobe: color of lighter part of lower side	<u>Variétés à fleurs simples seulement :</u> lobe de la corolle : partie plus claire de la face inférieure	<u>Nur Sorten mit einfachen Blüten:</u> Kronzipfel: Farbe des helleren Teils der Unterseite	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: color de la parte más clara de la cara inferior		
PQ	(d) RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
34.	<u>Only varieties with single flowers:</u> Corolla lobe: color of darker part of lower side	<u>Variétés à fleurs simples seulement :</u> lobe de la corolle : partie plus foncée de la face inférieure	<u>Nur Sorten mit einfachen Blüten</u> Kronzipfel: Farbe des dunkleren Teils der Unterseite	<u>Únicamente variedades con flores simples:</u> Lóbulo de la corola: color de la parte más oscura de la cara inferior		
PQ	(d) RHS Colour Chart (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
35. (*).	<u>Only varieties with double flowers:</u> Outer corolla lobe: number of colors of upper side	<u>Variétés à double fleur seulement :</u> lobe extérieure de la corolle : nombre de couleurs de la face supérieure	<u>Nur Sorten mit gefüllten Blüten:</u> <u>Äußerer Kronzipfel:</u> Anzahl Farben der Oberseite	<u>Únicamente variedades con flores dobles:</u> Lóbulo exterior de la corola: número de colores de la cara superior		
QL	(d) one two more than two	une deux plus de deux	eine zwei mehr als zwei	uno dos más de dos		1 2 3
36. (*).	<u>Only varieties with double flowers:</u> Outer corolla lobe: main color of upper side	<u>Variétés à fleurs doubles seulement :</u> lobe extérieur de la corolle : couleur principale de la face supérieure	<u>Nur Sorten mit gefüllten Blüten:</u> <u>Äußerer Kronzipfel:</u> Hauptfarbe der Oberseite	<u>Únicamente variedades con flores dobles:</u> Lóbulo exterior de la corola: color principal de la cara superior		
PQ	(c) RHS Colour Chart (d) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		

	English	français	Deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
37.	<u>Only varieties with double flowers:</u> Outer corolla lobe: secondary color of upper side	<u>Variétés à fleurs doubles seulement :</u> lobe extérieur de la corolle : couleur secondaire de la face supérieure	<u>Nur Sorten mit gefüllten Blüten:</u> Äußerer Kronzipfel: Sekundärfarbe der Oberseite	<u>Únicamente variedades con flores dobles:</u> Lóbulo exterior de la corola: color secundario de la cara superior		
PQ	(c) RHS Colour Chart (d) (indicate reference number)	Code RHS des couleurs (indiquer le numéro de référence)	RHS-Farbkarte (Nummer angeben)	Carta de colores RHS (indicar el número de referencia)		
38.	<u>Only varieties with double flowers:</u> (+) Outer corolla lobe: distribution of secondary color	<u>Variétés à fleurs doubles :</u> lobe extérieur de la corolle : distribution de la couleur secondaire	<u>Nur Sorten mit gefüllten Blüten:</u> Äußerer Kronzipfel: Verteilung der Sekundärfarbe	<u>Únicamente variedades con flores dobles:</u> Lóbulo exterior de la corola: distribución del color secundario		
PQ	(c) at margin only	en bordure seulement	nur am Rand	únicamente en el margen		1
	at margin and at base	en bordure et à la base	am Rand und an der Basis	en el margen y en la base		2
	at base only	à la base seulement	nur an der Basis	únicamente en la base		3
	at base and as median stripe	à la base et comme raie médiane	an der Basis und als Mittelstreifen	en la base y como estría central		4
	median stripe only	raie médiane seulement	nur als Mittelstreifen	únicamente como estría central		5
	mainly on one half	principalement sur une moitié	hauptsächlich auf einer Hälfte	principalmente en una mitad		6
	dotted	pointillé	gepunktet	salpicado		7
	brindled	mouchetée	gescheckt	pinto		8
39.	Time of beginning of flowering	Époque de début de floraison	Zeitpunkt des Blühbeginns	Época de inicio de la floración		
QN	early	précoce	früh	temprana		3
	medium	moyenne	mittel	media		5
	late	tardive	spät	tardía		7

8. Explanations on the Table of Characteristics

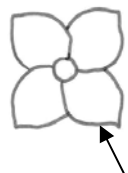
8.1 *Explanations covering several characteristics*

The optimum stage of development for the assessment of the characteristics is when three quarters of the flowers per plant are fully open.

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

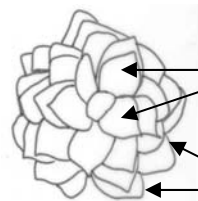
- (a) Observations on the leaf should be made on a fully developed leaf from the middle part of the plant.
- (b) Observations on the young flower of varieties with single flowers should be made when the corolla lobes have just opened. Observations on the young flower of varieties with double flowers should be made on the inner corolla lobes when these have just opened.
- (c) The main color is the color with the largest area and the secondary color is the color with the second largest area: in cases where the area of the main and secondary colors are nearly equal, the darker color should be considered to be the main color.
- (d) Observations on the corolla lobes should be made on a fully developed flower. Unless otherwise indicated observations on the corolla lobes of double flowers should be made on the inner whirl of the corolla lobes.

single flower



corolla lobe

double flower



inner whirl of corolla lobes

outer whirl of corolla lobes

8.2 *Explanations for individual characteristics*

Ad. 5: Leaf: shape



1
ovate



2
elliptic



3
rounded



4
linear

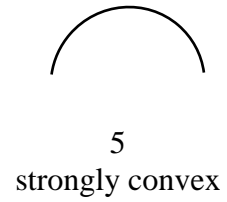
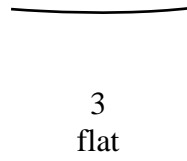
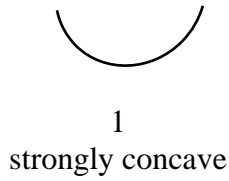


5
obovate

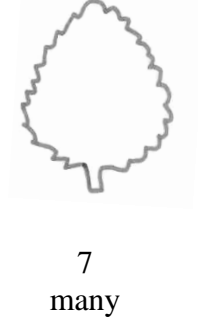
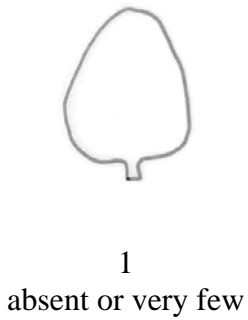


6
tripartite pinnate

Ad. 9: Leaf: cross section



Ad. 10: Leaf: number of incisions of margin



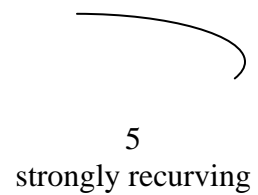
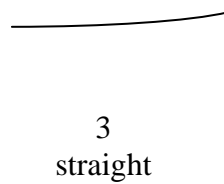
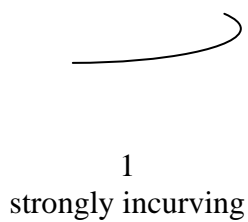
In the case of pinnate leaves, the top lobe should be observed.

Ad. 11: Leaf: depth of incisions of margin



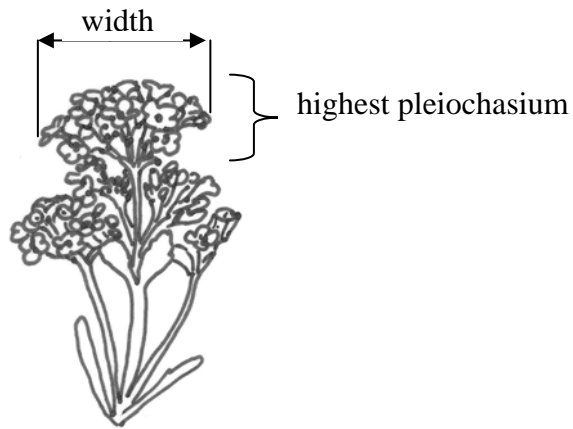
In the case of pinnate leaves, the top lobe should be observed.

Ad. 12: Leaf: attitude of apex



Ad. 13: Flowering shoot: number of flowers of highest pleiochasium

Ad. 14: Flowering shoot: width of highest pleiochasium



Ad. 15: Young flower: number of colors of upper side of corolla lobes



one
1



two
2

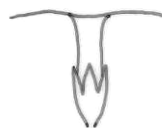
Ad. 18: Flower: type

A single flower has four or five corolla lobes only. A double flower has more than five corolla lobes.

Ad. 22: Only varieties with single flowers: Corolla lobe: attitude



1
upwards



2
horizontal



3
downwards

Ad. 23: Corolla lobe: rolling of margin

On corolla lobes with a rolled margin present, the color of the lower side of the corolla lobes can be seen when viewing the flower from the upper side.

Ad. 24: Corolla lobe: incisions of margin



absent
1



present
9

Ad. 25: Corolla lobe: shape of apex



acute
1



apiculate
2



acuminate
3

Ad. 29: Corolla lobe: number of colors of upper side



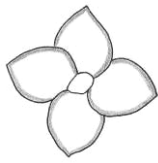
one
1



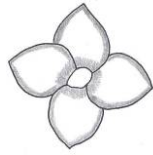
two
2

Ad. 32: Corolla lobe: distribution of secondary color

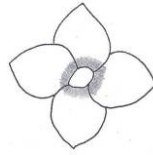
Ad. 38: Only varieties with double flowers: outer corolla lobe: distribution of secondary color



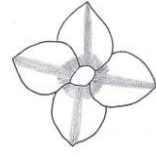
1
at margin only



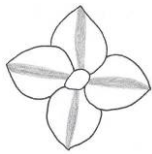
2
at margin and base



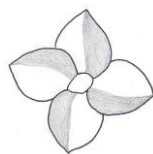
3
at base only



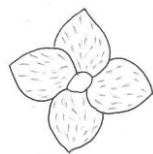
4
at base and as median
stripe



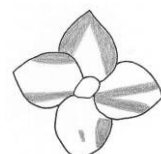
5
median stripe only



6
mainly on one half



7
dotted



8
brindled

9. Literature

Sajeva, M., Costanzo, M., 1997: Succulents, The Illustrated Dictionary. Timber Press

Urs, E., 1994: Sukkulanten. Ulmer, Stuttgart

Urs, E., 2003: Illustrated Handbook of Succulent Plants. Springer

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		
1.1.1 Botanical name	<input type="text" value="Kalanchoe blossfeldiana Poelln."/>	[]
1.1.2 Common name	<input type="text" value="Kalanchoe"/>	
Hybrid: please indicate name(s) of species used in the crossing		
1.2.1 Botanical name	<input type="text"/>	[]
1.2.2 Common name	<input type="text"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
Telephone No.	<input type="text"/>	
Fax No.	<input type="text"/>	
E-mail address	<input type="text"/>	
Breeder (if different from applicant)	<input type="text"/>	
3. Proposed denomination and breeder's reference		
Proposed denomination (if available)	<input type="text"/>	
Breeder's reference	<input type="text"/>	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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)
- (b) partially known cross []
(please state known parent variety(ies))
- (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) []

4.2.2 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:
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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 Plant: height (including inflorescence) (1)		
very short	Avalon	1[]
short	Rarakoe	3[]
medium	Amy	5[]
tall	Taos	7[]
very tall	Petero	9[]
5.2 Leaf: anthocyanin coloration of upper side (8)		
absent or very weak	Amy	1[]
weak	Banda	3[]
medium	Misunpink	5[]
strong	Axrose	7[]
5.3 Flower: type (18)		
single	Dark Cora	1[]
double	Pago	2[]
5.4 <u>Only varieties with double flowers:</u> (20) Flower: number of corolla lobes		
few	RB 56141	3[]
medium	Naomi	5[]
many	Yazmin	7[]
5.5 Corolla lobe: number of colors of upper side (29) (For double flowers describe inner corolla lobes)		
one	Amy	1[]
two	Graciosa	2[]
more than two	Oberon	3[]

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.6i Corolla lobe: main color of upper side (30)		
RHS Colour Chart (indicate reference number)	
5.6ii Corolla lobe: main color of upper side (30)		
white	Yazmin	1[]
yellow	Ingrid	2[]
orange	Naomi	3[]
red	Bola	4[]
purple red	Dorry	5[]
purple	Kuni	6[]
blue pink	Aniak	7[]
other (indicate color)	
5.7i Corolla lobe: secondary color of upper side (31)		
RHS Colour Chart (indicate reference number)	
5.7ii Corolla lobe: secondary color of upper side (31)		
white	Alcedo	1[]
yellow		2[]
orange	Taos	3[]
red		4[]
purple red	Impromeru	5[]
blue pink		6[]
other (indicate color)	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.8 Corolla lobe: distribution of secondary color (32)		
at margin only	Alcedo	1[]
at margin and at base	Mipinkstar	2[]
at base only	Impromeru	3[]
at base and as median stripe	Milos	4[]
median stripe		5[]
mainly on one half	Rewiros	6[]
dotted	Greco	7[]
brindled		8[]
other distribution (indicate)	

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 the 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
<i>Example</i>	<i>Flower: number of colors</i>	<i>one</i>	<i>two</i>

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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#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 photograph 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]