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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

*

COSMOS

UPOV Code: COSMO

Cosmos Cav.

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

prepared by an expert from Japan

to be considered by the

Technical Working Party for Ornamental Plants and Forest Trees
at its forty-fourth session, to be held in Fukuyama City, Hiroshima prefecture, Japan,
from November 7 to 11, 2011

Alternative Names:*

Botanical name	*English*	*French*	*German*	*Spanish*
Cosmos Cav.	Cosmos	Cosmos	Kosmee, Schmuckkörbchen	Mirasol, Cosmos

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 *Cosmos* Cav..

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 seeds or young plants.

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

seed propagagted varieties: sufficient seeds to produce 50 plants;
vegetatively propagated varieties: 20 young plants

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

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

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

3. Method of Examination

3.1 Number of Growing Cycles

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

3.2 Testing Place

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

3.3 Conditions for Conducting the Examination

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

3.3.2 Stage of development for the assessment

The optimum stage of development for the assessment of each characteristic is indicated by a number in the second column of the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8 [8.1(a),(b),(c),(d)].

3.3.3 Observation of color by eye

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 50 plants for seed propagated varieties or 20 plants for vegetatively propagated varieties."

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

3.5 Additional Tests

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

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

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

4.1.2 Consistent Differences

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

4.1.3 Clear Differences

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

4.1.4 Number of Plants / Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness all observations on single plants should be made on 20 plants or parts taken from each of 20 plants for seed propagated varieties or 10 plants or parts taken from each of 10 plants for vegetatively propagated varieties, and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

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

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

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

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

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

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, "G" provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness."

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

4.2 Uniformity

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

4.2.2 The assessment of uniformity for seed-propagated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.2.3 For the assessment of uniformity of vegetatively propagated varieties, 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 seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.

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

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

(a) Flower head: disc type (characteristic 14)
(b) Flower head: collerette segments (characteristic 15)
(c) Ray floret: type (characteristic 21)
(d) Ray floret: main color of inner side (characteristic 29) with the following color groups :
Gr. 1: white
Gr. 2: yellow
Gr. 3: orange
Gr. 4: pink
Gr. 5: red
Gr. 6: purple red
Gr. 7: brown red
(e) Ray floret: distribution of secondary color of inner side (characteristic 31)

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)-(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. **(*)**	**VG/ MS**	**Plant: height**					
QN		short					3
		medium				Sensation Radiance	5
		tall					7
2. **(+)**	**VG**	**Plant: growth habit**					
PQ		erect					1
		semi-erect					2
		spreading					3
3.	**VG/ MS**	**Stem: number of primary branches**					
QN		absent or very few					1
		few					3
		medium				Sensation Radiance	5
		many					7
4.	**VG**	**Stem: anthocyanin coloration**					
QL		absent					1
		present					9
5. **(*)**	**VG**	**Only varieties with anthocyanin:** **Stem: intensity of anthocyanin coloration**					
QN		weak					3
		medium					5
		strong				Sensation Radiance	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
6.	**VG**	**Stem: pubescence**					
QN		absent or sparse				Sunrise	1
		medium				Bright Light	2
		dense				Sunset	3
7. **(+)**	**VG**	**Leaf: number of lobes**					
QN	**(a)**	absent or very few					1
		few					2
		medium					3
		many					4
8. **(*)** **(+)**	**VG/ MS**	**Leaf: length including petiole**					
QN	**(a)**	short					3
		medium				Sensation Radiance	5
		long					7
9. **(*)** **(+)**	**VG/ MS**	**Leaf: width**					
QN	**(a)**	narrow					3
		medium				Sensation Radiance	5
		broad					7
10.	**VG**	**Leaf: intensity of green color**					
QN	**(a)**	light					1
		medium				Sensation Radiance, Sunset	2
		dark					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
11. **(+)**	**VG/ MS**	**<u>Excluding varieties with note1(absent or very few)for number of lobes:</u> Leaf: width of the terminal lobe on the terminal leaflet**					
QN	**(a)**	narrow					3
		medium				Sunset	5
		broad					7
12. **(+)**	**VG**	**Flower head: attitude**					
QN		upward					1
		outward					2
		downward					3
13. **(*)**	**VG**	**Flower head: number of ray florets**					
QN		few					3
		medium					5
		many					7
14. **(*)** **(+)**	**VG**	**Flower head: disc type**					
QL		daisy					1
		anemone					2
15. **(*)** **(+)**	**VG**	**Flower head: collerette segments**					
QL		absent					1
		present					9

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
16. **(*)** **(+)**	**VG / MS**	**Flower head: diameter**					
QN		small					3
		medium					5
		large				Sensation Radiance	7
17. **(+)**	**VG / MS**	**Flower head: disc diameter**					
QN		small					3
		medium				Sensation Radiance	5
		large					7
18. **(*)** **(+)**	**VG/ MS**	**Flower head: disc diameter relative to head diameter**					
QN		small					3
		medium					5
		large					7
19.	**QN**	**Flower head: length of peduncle**	Suggested from GB				
		short	But we don't have example varieties.				3
		medium					5
		long					7
20.	**VG**	**Flower head: fragrance**					
QN		absent or weak					1
		medium					2
		strong					3

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
21. **(*)** **(+)**	**VG**	**Ray floret: type**					
PQ		ligulate					1
		ligulate and tubular					2
		tubular					3
22. **(+)**	**VG**	**Ray floret: longitudinal axis**					
PQ	**(b)**	incurved					1
		straight					2
		reflex					3
23.	**VG**	**Ray floret: degree of curvature**					
QN	**(b)**	weak					1
		medium					2
		strong					3
24.	**VG**	**Ray floret: curved part of axis**					
QN	**(b)**	tip					1
		distal quarter					2
		distal half					3
		distal three quarter					4
		entire axis					5
25. **(*)** **(+)**	**VG / MS**	**Ray floret: length**					
QN	**(b)**	short					3
		medium					5
		long				Sensation Radiance	7

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
26. **(*)** **(+)**	**VG / MS**	**Ray floret: width**					
QN	**(b)**	narrow					3
		medium					5
		broad				Sensation Radiance	7
27. **(*)** **(+)**	**VG / MS**	**Ray floret: ratio length/ width**					
QN	**(b)**	moderately compressed				Sensation Radiance	3
		medium					5
		moderately elongated					7
28. **(*)** **(+)**	**VG**	**Ray floret: depth of incisions of apex**					
QN	**(b)**	absent or very shallow					1
		shallow					3
		medium				Sensation Radiance, Sunset	5
		deep					7
29. **(*)**	**VG**	**Ray floret: main color of inner side**					
PQ	**(b)**	RHS Colour Chart					
	(c)	(indicate reference number)					
30. **(*)**	**VG**	**Ray floret: secondary color of inner side**					
PQ	**(b)**	RHS Colour Chart					
	(c)	(indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
31. **(*)** **(+)**	**VG**	**Ray floret: distribution of secondary color of inner side**					
PQ	**(b)**	basal zone					1
	(c)	basal quarter					2
		basal half					3
		distal half					4
		distal quarter					5
		tip					6
		band					7
		marginal zone					8
		central zone					9
		throught					10
32.	**VG**	**Ray floret: pattern of secondary color of inner side**					
	(b)	solid or nearly solid					1
	(c)	flushed					2
		stripes					3
33.	**VG**	**Ray floret: third color of inner side**					
PQ	**(b)**	RHS Colour Chart					
	(c)	(indicate reference number)					

		English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
34. **(+)**	**VG**	**Ray floret: distribution of third color of inner side**					
PQ	**(b)**	basal zone					1
	(c)	basal quarter					2
		basal half					3
		distal half					4
		distal quarter					5
		tip					6
		band					7
		marginal zone					8
		central zone					9
		throught					10
35.	**VG**	**Ray floret: pattern of third color of inner side**					
	(b)	solid or nearly solid					1
	(c)	flushed					2
		stripes					3
36. **(*)**	**VG**	**Ray floret: main color of outer side**					
PQ	**(b)** **(c)**	RHS Colour Chart (indicate reference number)					
37. **(*)** **(+)**	**VG**	**Disc: main color**					
PQ		RHS Colour Chart (indicate reference number)					

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

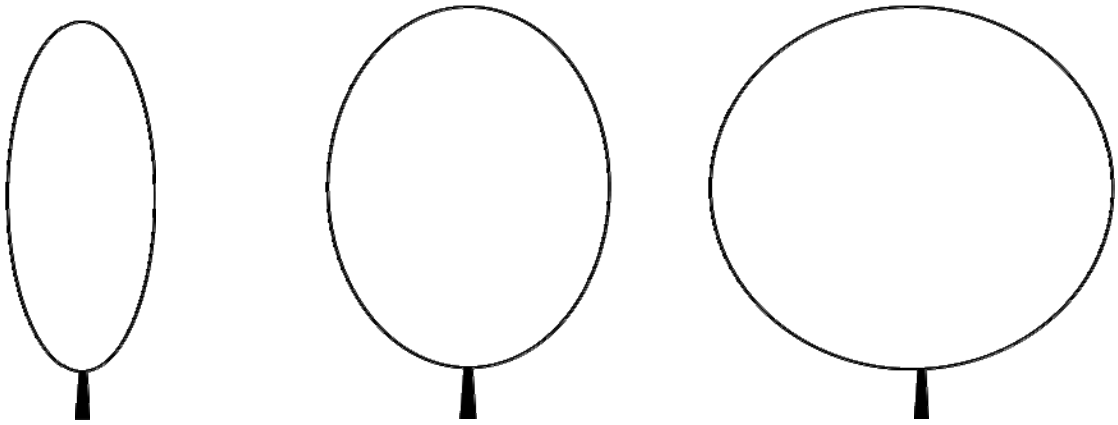
Unless otherwise indicated, all observations should be made at the time of full flowering.

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

(a) Leaf characteristics should be observed on the leaf of the third node of main stem from inflorescence.
(b) Ray floret should be observed on the outermost row of ray florets.
(c) The main color is the color with the largest total surface area, the secondary color (if present) is the color with the second largest total surface area, the third color (if present) is the color with the third largest total surface area

8.2 Explanations for individual characteristics

Ad.2: Plant: growth habit



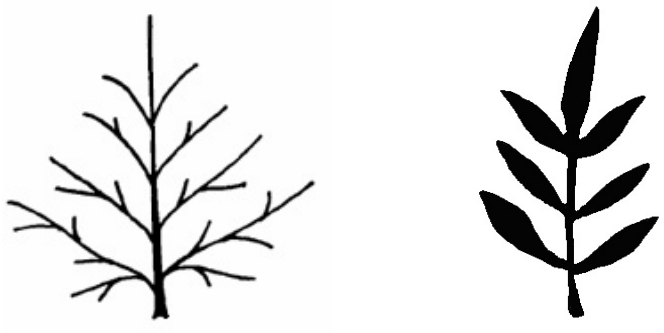
1
erect

2
semi-erect

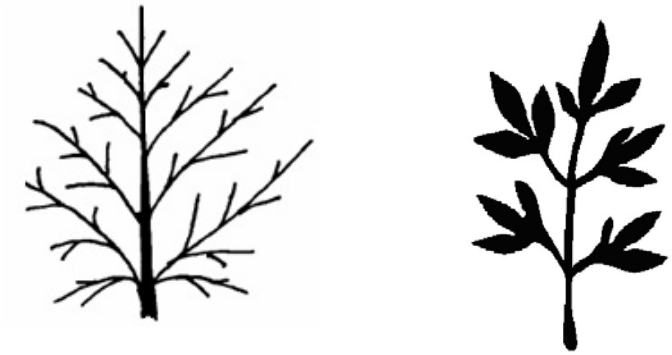
3
spreading

Ad. 7: Leaf: number of lobes

1
absent or very few



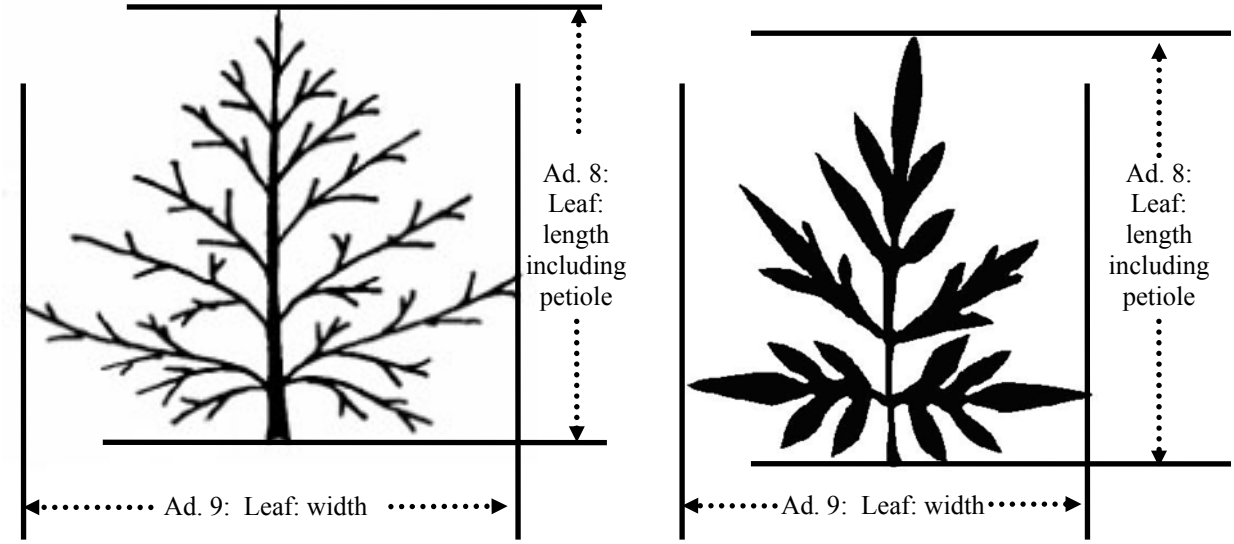
2
few



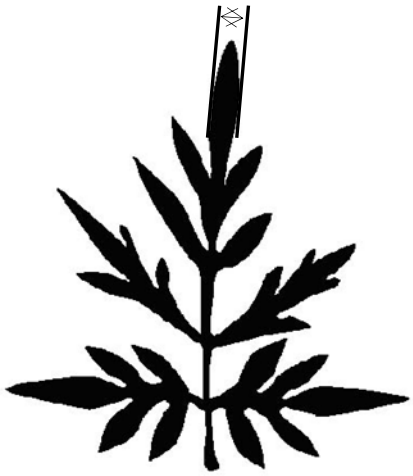
3
medium

4
many

Ad.8: Leaf: length including petiole
Ad. 9: Leaf: width



Ad.11: Excluding varieties with note1(absent or very few)for number of lobes: Leaf: width of the terminal lobe on the terminal leaflet



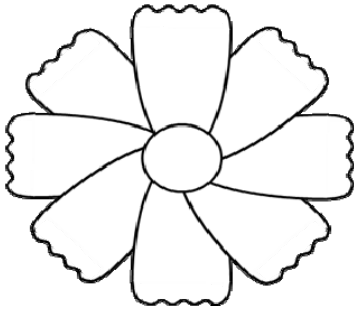
Ad.12: Flower head: attitude

1 upward

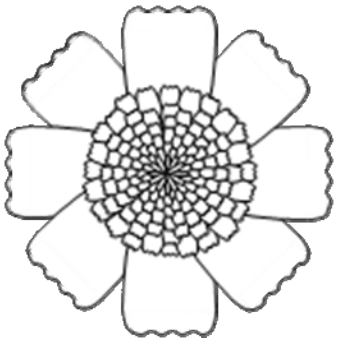
2 outward

3 downward

Ad.14: Flower head:disc type

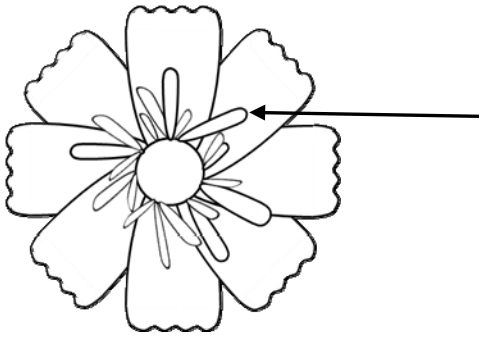


1
daisy



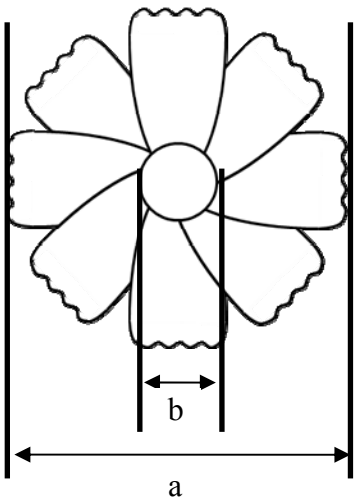
2
anemone

Ad. 15: Flower head: collerette segments

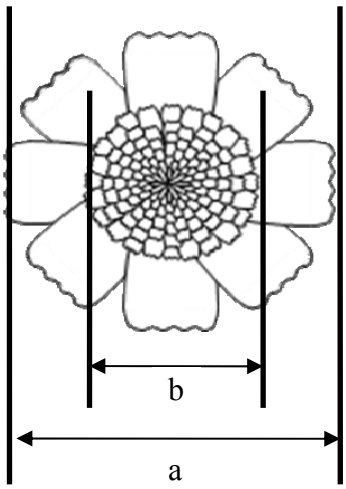


Ad.16: Flower head: diameter
Ad.17: Flower head: disc diameter
Ad.18: Flower head: disc diameter relative to head diameter

a: head diameter
b: disc diameter



3
small

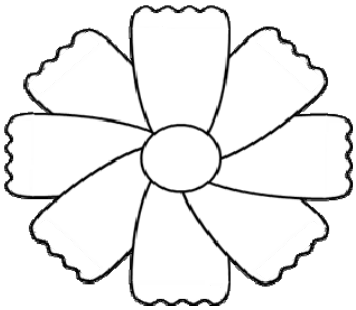


7
large

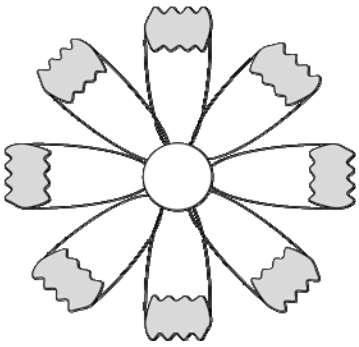
Ad.17: Flower head: disc diameter

The varieties with collerette segments should be observed the disc excluded collerette segments.

Ad. 21: Ray floret: type



1
ligulate



3
tubular

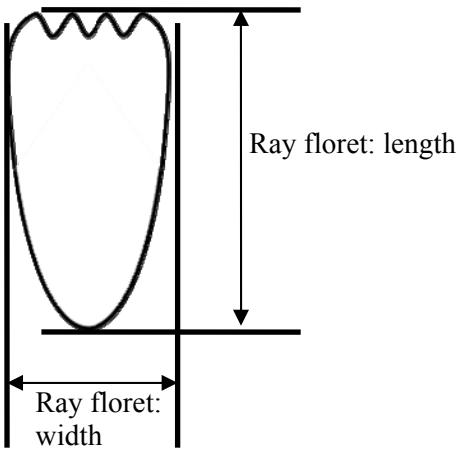
Ad.22: Ray floret: longitudinal axis

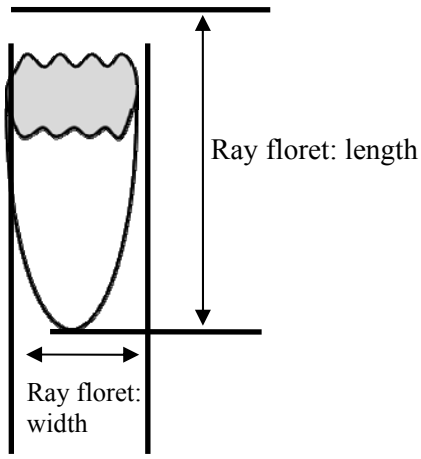
1
incurved

2
straight

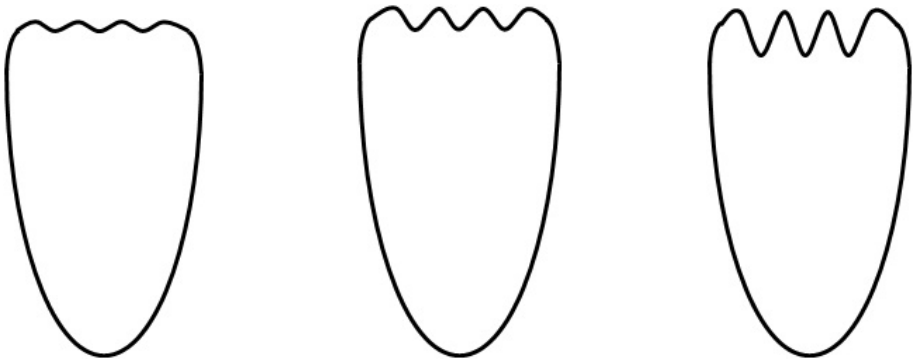
3
reflex

Ad.25: Ray floret: length
Ad.26: Ray floret: width
Ad.27: Ray floret: ratio length/width





Ad.28: Ray floret: depth of incision of apex

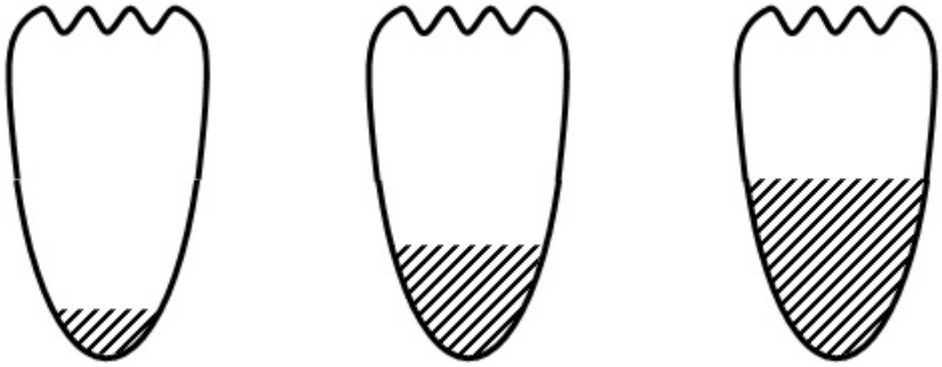


3
shallow

5
medium

7
deep

Ad.31: Ray floret: distribution of secondary color of inner side
Ad.34: Ray floret: distribution of third color of inner side



1
basal zone

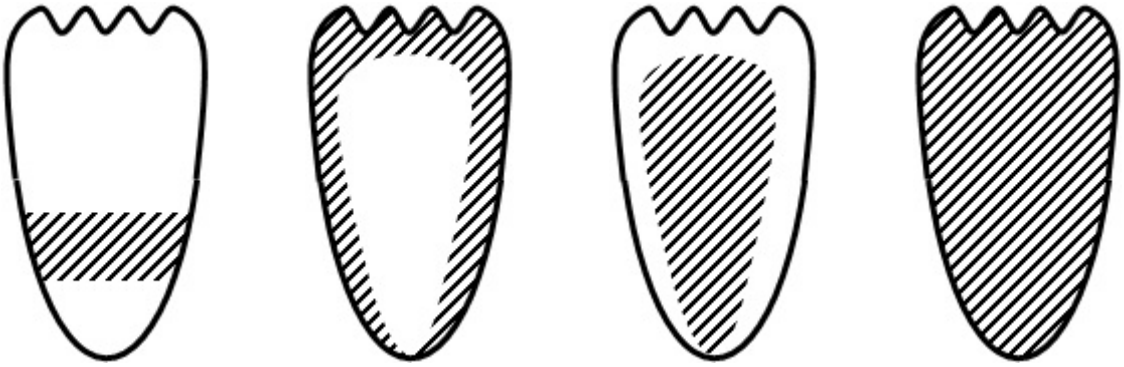
2
basal quarter

3
basal half

4
distal half

5
distal quarter

6
tip



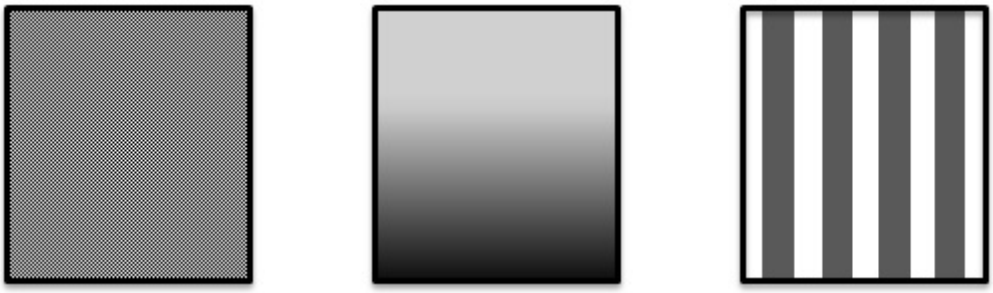
7
band

8
marginal zone

9
central zone

10
throughout

Ad.32: Ray floret: pattern of secondary color of inner side
Ad.35: Ray floret: pattern of third color of inner side



1
solid or nearly solid

2
flushed

3
stripes

Ad.37: Disc: main color

The color of disc should be observed at just before anther dehiscence in daisy type, at full flower in anemone type.

9. Literature

Tsukamoto, Y., 1994: The Grand Dictionary of Horticulture Volume 1. The Shogakukan Ltd., Tokyo, JP, pp. 860 to 862.

L. H. Bailey Hortorium, Cornell University,1976: Hortus Third,A Concise Dictionary of Plants Cultivated in the U.S. and Canada the staff of the L. H. Bailey Hortorium, Cormell University.Macmillan Publishing Co., NewYork, US, P321.

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	*Cosmos* Cav.
1.2 Species(please complete)	
1.2.1 Botanical name	
1.2.2 Common name	

2. Applicant

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

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

3. Proposed denomination and breeder's reference

Proposed denomination (if available)	
Breeder's reference	

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

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

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

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

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

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

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

(c) unknown cross [ ]

4.1.2 Mutation [ ]
(please state parent variety)

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

4.1.4 Other [ ]
(please provide details)

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

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

4.2 Method of propagating the variety

4.2.1 Seed-propagated varieties

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

(d) Other [ ]
(please provide details)

4.2.2 Vegetatively propagated varieties

(a) cuttings [ ]

(b) *in vitro* propagation [ ]

(c) other (state method) [ ]

4.2.3 Other [ ]
(please provide details)

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

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

	Characteristics	Example Varieties	Note
5.1 (14)	**Flower head: disc type**		
	daisy		1[ ]
	anemone		2[ ]
5.2 (15)	**Flower head: collarette segments**		
	absent		1[ ]
	present		9[ ]
5.3 (21)	**Ray floret:Type**		
	ligulate		1[ ]
	ligulate and tubular		2[ ]
	tubular		3[ ]
5.4(i) (29)	**Ray floret: main color of inner side**		
	RHS Color Chart (indicate reference number)		

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

	Characteristics	Example Varieties	Note
5.4(ii) (29)	**Ray floret: main color of inner side**		
	white		1[ ]
	yellow		2[ ]
	orange		3[ ]
	pink		4[ ]
	red		5[ ]
	red purple		6[ ]
	brown red		7[ ]
	other color (indicate)		8[ ]
5.5 (31)	**Ray floret: distribution of secondary color of inner side**		
	basal zone		1[ ]
	basal quarter		2[ ]
	basal half		3[ ]
	distal half		4[ ]
	distal quarter		5[ ]
	tip		6[ ]
	band		7[ ]
	marginal zone		8[ ]
	central zone		9[ ]
	throught		10[ ]

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	*Ray floret: main color of inner side*	*yellow*	*orange*

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

[Annex follows]

ANNEX

Comments from experts

№	Contents	country	Comments from Interested Experts	Answer for comments
2.3	(quantity of plant material supplied by applicants)	GB	shouldn't this be 10 to match 3.4.1	As it was pointed out, each number of plants wasn't appropriate.Therefore we adjusted as it was indicated below. For seed propagated varieties the minimum quantity of plant material supplied by applicants:seeds to produce 50 plants Number of plants supplied for Test Design:50 plants Number of plants examined:20 plants For vegetatively propagated varieties the minimum quantity of plant material supplied by applicants:20 plants Number of plants supplied for Test Design:20 plants Number of plants examined:10 plants
3.4.1	（Number of plants supplied for Test Design）	NZ	For vegetatively propagated plants you use ten. What do you do with the additional ten supplied? For seed propagated you use all the plants supplied/grown.	
4.1.4	Number of plants examined）	NZ	You again refer to 10 for vegetative and only 20 plants for seed. What do you use all the spare plants for? If you use 10 then look at 9 to allow for the possibility of off types	
		GB	This should 9 for vegetatively propagated varieties. For seed propagated varieties this needs to be reviewed as it is difficult to define as the uniformity standards are not defined	

	4.2.2(Uniformity)	NZ	deleted	We deleted duplicated 4.2.2,and changed to next sentence. The assessment of uniformity for seed-propagated varieties should be according to the recommendations for cross pollinated varieties in the General Introduction.」
	4.2.3(Uniformity)	NZ	There is no need to refer to hybrids as a specific type. Hybrids are either seed or vegetatively propagated.	As it is as pointed out, deleted `and F1 hybrid'.
		GB	remove reference to F1 hybrid, as this is covered by 4.2.2	
1	Plant:height	NZ	Is this observed before or during flowering?	It defined that this observation is at the time of full flowering, and added next sentence Unless otherwise indicated, all observations should be made at the time of full flowering.」 in 8.1 Explanations covering several characteristics
3	Stem: number of primary branches	NZ	suggest for state 1 absent or very few	As it was suggested, we added absent or very few in state 1.
		GB	need diagram to be sure recorded correctly	We are thinking that reference number of primary branches is [few is about 5], [medium is about 10],[many is about 20]. As it was difficult for us to indicate the diagram for these things, this characteristics remained draft.

4	Stem: color	NZ	We have stem color. Suggest this should be main color as a stem can have two colors. For C. astrosanguineus varieties the amount or distribution of stem anthocyanin is useful Stem: amount of anthocyanin coloration 1 absent to very weak 9 very strong	It is as suggested. Therefore we set two characteristics as following:[Stem: anthocyanin coloration],[Only varieties with anthocyanin: Stem: intensity of anthocyanin coloration]
6	Leaf: number of lobes	GB	see photo of a variety with mainly simple leaves. We need to be able to describe leaves that are not lobed. Could state 1 be ‘absent or very few’ and then keep the other states as they are but re-number as 2,3,4	Thank you for this imformation from UK. We added `absent or very few' and re-number as 1-4.
7.8	Leaf: length including petiole Leaf: width	GB	mark as VG/MS	We marked as VG/MS.
		NZ	Could also be VG As MS is stated, suggest the sample size be specified, number of leaves per plant. Cosmos leaves are highly polymorphic and variable. Would agree that the leaves closest to the inflorescence are the most typical and consistent.	We disagreed that the leaves closest to the inflorescence are the most typical and consistent. Because the leaves of this part is variable.We observe the leaf of the third node from inflorescence. Therefore it indicated in 8.1 a that leaf characteristics should be observed on the leaf of the third node from inflorescence.
8.1b		GB	It is more standard to use leaves from the mid third of the stem. Is there a reason why it is upper third in the document?	

10	Leaf: width of terminal leaflet	GB	Need to re-name as:Only varieties with lobed leaves: Leaf: width of terminal lobebecause character is not applicable for none lobed leaves	Though we know to need to re-name, in case of `Only varieties with lobed leaves', it may include mainly simple leaves. Because mainly simple leaves also may have lobe.Though we don't know wheather it is correct expression, it indicated as following about name of characteristics.[Excluding varieties with note 1(absent or very few)for number of lobes: Leaf: the terminal lobe on the terminal leaflet]
Ad.10	Leaf: width of terminal leaflet	NZ	From the diagram, the terminal lobe on the terminal leaflet is marked. Is this intended? The width if the terminal leaflet is different.	As it is marked in the diagram, corrected `terminal leaflet' to `the terminal lobe on the terminal leaflet'.
11	Flower head: attitude with the states	NZ	Delete with the sates	deleted 'with the states'.
		GB	delete 'with the states' from character name	
Ad.11	Flower head: attitude with the states	GB	remove the words 'with the states'	
16,17	Flower head: disc diameter Flower head: disc diameter relative to head diameter	NZ	Asking the disc diameter twice, two different ways. Both necessary?	We couldn't get conclusion which is better to delete or to remain `Flower head: disc diameter'. As it thought as both possible, remained draft.
20	Ray floret: longitudinal axis	NZ	PQ	corrected to PQ.
		GB	state as PQ not QL.	

27	Ray floret: number of colors of inner side	NZ	Is this necessary when we have several other characters describing color, distribution.	deleted this characteristics.
		GB	is this character needed – can be seen from the following characters how many colours there are	
30,32	Ray floret: distribution of second/third colour of inner side	NZ	Both characters look at distribution (1,2,3,4,5) and pattern (states 6,7,8,9) combined. How would you describe a variety that has a colour stripe on the basal quarter? Suggest to split.	We divided two characteristics of distribution and pattern. Then we adjusted appropriate note and order.
		GB	re-order states to be more standard - start with the basal areas then have the distal areas （Char.32） base should read ‘basal zone’ as in character 30.	
New	Peduncle: length	GB	We still feel we should add this character, we have seen some varieties where the peduncle length is 250-300mm and some where it is approximately 500mm. This gives the varieties a very different appearance.	Though we know that there is difference of varieties, we are thinking that variation is very large between individual plant. And we also don't have experience and data for this characteristics. Therefore there is problem we can't give example varieties.

Ad.34 Disc: main color	NZ	the color of the disc will always be yellow at dehiscence as it will be the color of the pollen. Suggest to look just before dehiscence.	It is as pointed out. We corrected `at anther dehiscence' to `just before dehiscence'.
	GB	We feel the colour of the disc in daisy varieties should be recorded before anther dehiscence. This is the important information, as most varieties seem to have yellow/orange pollen once they dehisce	
Technical Questionnaire			
1.2	GB	The presentation last year under 1.1 botanical name was correct and should read Cosmos Cav. However there should be an empty box underneath to allow the applicant to indicate which species the variety is.(see standard TQ template)	According to suggestion, adjusted.
4.2.1	GB	Under point c it should say ‘please provide details’ and then there should be an empty box for the applicant to do so. (the same as what is at point d) The box on page 30 of the document relating to the hybrid scheme should be deleted. The applicant should write the details in 4.2.1	According to suggestion, adjusted.

[End of Annex and of document]