



European Union
Community Plant Variety Office

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

Gerbera Cass.

GERBERA

UPOV Species Code: GERBE

Adopted on 31st October 2002

I - SUBJECT OF THE PROTOCOL

The protocol describes the technical procedures to be followed in order to meet the Council Regulation 2100/94 on Community Plant Variety Rights. The technical procedures have been agreed by the Administrative Council and are based on general UPOV Document TG/1/3 and UPOV Guideline TG/77/9 dated 25th April 2000 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all vegetatively propagated varieties of *Gerbera Cass.*

II - SUBMISSION OF PLANT MATERIAL

1. The Community Plant Variety Office (CPVO) is responsible for informing the applicant of

- the closing date for the receipt of plant material;
- the minimum amount and quality of plant material required;
- the examination office to which material is to be sent.

The applicant is responsible for ensuring compliance with any customs and plant health requirements.

2. Final dates for receipt of documentation and material by the Examination Office

The final dates for receipt of requests, technical questionnaires and the final date or submission period for plant material will be decided by the CPVO and each Examination Office chosen.

The Examination Office is responsible for immediately acknowledging the receipt of requests for testing, and technical questionnaires. If no or unsatisfactory plant material is submitted the CPVO should be informed as soon as possible.

3. Plant material requirements

Survey of final dates for request for technical examination and sending of Technical Questionnaire by the CPVO as well as submission date of plant material by the applicant, and quantity of plant material to be supplied by the applicant in one sample.

	Request of examination	Plant material	
The Netherlands	31/03	between 01/05 and 09/05	12 young plants of commercial standard

Quality: Young plants of commercial standard, not grown on rockwool.

The plant material must not have undergone any treatment unless the CPVO and the examination office allow or request such treatment. If it has been treated, full details of the treatment must be given.

Labelling of sample: - Species
- File number of the application allocated by the CPVO
- Breeder's reference
- Examination reference (if known)
- Name of applicant
- The phrase "On request of the CPVO".

III - CONDUCT OF TESTS

1. Variety collection

A variety collection will be maintained for the purpose of establishing distinctness of the candidate varieties in test. A variety collection may contain both living material and descriptive information. A variety will be included in a reference collection only if plant material is available to make a technical examination.

Pursuant to Article 7 of Council Regulation No. 2100/94, the basis for a collection should be the following:

- varieties listed or protected at the EU level;
- varieties protected in other UPOV Member States;
- any other variety in common knowledge.

It is the responsibility of Examination Office to keep the variety collection up to date.

2. Material to be examined

Candidate varieties will be directly compared with other candidates for Community plant variety rights tested at the same Examination Office, and with appropriate varieties in the variety collection. When necessary an Examination Office may also include other candidates and varieties.

3. Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in Annex 1. All the characteristics shall be used, providing that observation of a characteristic is not rendered impossible by the expression of any other characteristic, or the expression of a characteristic is prevented by the environmental conditions under which the test is conducted. In the latter case, the CPVO should be informed. In addition the existence of some other regulation e.g. plant health, may make the observation of the characteristic impossible.

The Administrative Council empowers the President, in accordance with Article 23 of Commission Regulation N° 1239/95, to insert additional characteristics and their expressions in respect of a variety.

4. Grouping of varieties

The varieties and candidates to be compared will be divided into groups to facilitate the assessment of distinctness. Characteristics which are suitable for grouping purposes are those which are known from experience not to vary, or to vary only slightly, within a variety and which in their various states of expression are fairly evenly distributed throughout the collection. In the case of continuous grouping characteristics overlapping states of expression between adjacent groups is required to reduce the risks of incorrect allocation of candidates to groups. The characters used for grouping are the following:

- a) Flower head: type (characteristic 12)
- b) Outer ray floret: colour of inner side (characteristic 31)
- c) Single or semi-double varieties only: Dark disk (before opening of disc florets) (characteristic 42)

5. Trial designs and growing conditions

The minimum duration of tests will normally be one growing cycle if the results on distinctness and uniformity are conclusive. Tests will be carried out under conditions ensuring normal growth. The size of the plots will be such that plants or parts of plants may be removed for measuring and counting without prejudice to the observations which must be made up to the end of the growing period.

The test design is as follows:

As a minimum, each test should include a total of 10 plants. Separate plots for observation and for measuring can only be used if they have been subject to similar environmental conditions.

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

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

The test should be carried out in the glasshouse, in pots with well aired substrate with good water drainage under the following growing conditions:

Planting of plants for the test:..... At the beginning of May.

Soil:..... Well-drained fertile soil, with a high content of organic matter. For good water drainage the pots must be first partly filled with clay granules.

Size of pot:..... ca. 19 cm

Number of plants per pot:..... 1

Temperature:..... Minima of 20°C (day) and 18°C (night) are recommended.

Light: During periods of high light intensity shading is necessary.

6. Special tests

In accordance with Article 83(3) of Council Regulation No. 2100/94 an applicant may claim either in the Technical Questionnaire or during the test that a candidate has a characteristic which would be helpful in establishing distinctness. If such a claim is made and is supported by reliable technical data, a special test may be undertaken providing that a technically acceptable test procedure can be devised.

Special tests will be undertaken, with the agreement of the President of CPVO, where distinctness is unlikely to be shown using the characters listed in the protocol.

7. Standards for decisions

a) **Distinctness**

A candidate variety will be considered to be distinct if it meets the requirements of Article 7 of Council Regulation No. 2100/94.

b) **Uniformity**

For the assessment of uniformity a population standard of 1% with an acceptance probability of at least 95% should be applied.

For vegetatively propagated varieties, the candidate will be considered to be sufficiently uniform if the number of off-types does not exceed 1 in 10 plants examined.

c) **Stability**

A candidate will be considered to be sufficiently stable when there is no evidence to indicate that it lacks uniformity.

IV - REPORTING OF RESULTS

After each growing cycle the results will be summarised and reported to the CPVO in the form of a UPOV model interim report in which any problems will be indicated under the headings distinctness, uniformity and stability. Candidates may meet the DUS standards after one growing cycle but in some cases two or more growing cycles may be required. When tests are completed the results will be sent by the Examination Office to the CPVO in the form of a UPOV model final report.

If it is considered that the candidate complies with the DUS standards, the final report will be accompanied by a variety description in the format recommended by UPOV. If not the reasons for failure and a summary of the test results will be included with the final report.

The CPVO must receive interim reports and final reports by the date agreed between the CPVO and the examination office.

Interim reports and final examination reports shall be signed by the responsible member of the staff of the Examination Office and shall expressly acknowledge the exclusive rights of disposal of CPVO.

V - LIAISON WITH THE APPLICANT

If problems arise during the course of the test the CPVO should be informed immediately so that the information can be passed on to the applicant. Subject to prior agreement, the applicant may be directly informed at the same time as the CPVO particularly if a visit to the trial is advisable.

The interim report and final report shall be sent by the Examination Office to the CPVO.

ANNEXES TO FOLLOW

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Technical questionnaire

ANNEX I

TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Characteristics	Examples	Note	
1.	1.	Leaf: length	short	Planluck, Planpret	3
			medium	Terfame	5
			long	Pretalex	7
2.	2.	Leaf: width	narrow	Planluck, Planpret	3
			medium	Pretalex	5
			broad	Terflame	7
3.	3.	Leaf blade: blistering	absent or very weak		1
			weak	Planluck	3
			medium	Ferrari	5
			strong	Daydream	7
			very strong		9
4.	4.	Leaf blade: pubescence on <u>upper</u> side (midrib excluded)	absent or very sparse	Daydream, Terflame	1
			sparse	Ferrari	3
			medium	Indian-Summer	5
			dense	Pretalex	7
			very dense		9
5.	5.	Leaf blade: depth of incisions on the <u>middle</u> third	shallow	Preparet, Pretaram	3
			medium		5
			deep	Ferrari	7

CPVO N°	UPOV N°	Characteristics	Examples	Note	
6.	6.	Leaf blade: green colour of <u>upper</u> side	light	Termoulin	3
			medium	Ferrari, Indian-Summer	5
			dark	Prevamoon	7
7.	7.	Leaf blade: shape of apex	narrow acute	Luna, Otelly	1
			moderately acute	Ferrari, Indian-Summer	3
			right angle	Planluck, Pretaram	5
			obtuse	Bluebell	7
			rounded	Rosa-Lin	9
8.	8.	Peduncle: length	short	Planluck	3
			medium	Ferrari, Indian-Summer	5
			long	Sedandy	7
9.	9.	Peduncle: intensity of anthocyanin coloration at base	absent or very weak	Victory	1
			weak	Planpret, Sedandy	3
			medium	Ferrari, Schrepal	5
			strong	Daydream, Testarossa	7
			very strong		9
10.	10.	Peduncle: anthocyanin coloration at top	absent	Ferrari, Testarossa	1
			present	Ashley, Lucifer	9
11.	11.	Peduncle: bracts below involucre	absent	Ashley, Testarossa	1
			present	Indian-Summer, Pretalex	9
12. (+)	12. (+)	Flower head: type	single	Lucifer	1
			semi-double	Ferrari, Indian-Summer	2
			G double	Floricitrine	3
13.	13.	Flower head: diameter	very small	Teroranje	1

CPVO N°	UPOV N°	Characteristics	Examples	Note
		small	Ashley	3
		medium	Daydream, Ferrari	5
		large	Nevada, Premodal	7
		very large		9
14. (+)	14. (+)	<u>Semi-double or double varieties only:</u> Flower head: diameter of mass of inner ray florets compared to that of flower head		
		small	Indian-Summer, Nevada	3
		medium	Ferrari	5
		large	Baby-Doll, Bugatti	7
15. (+)	15. (+)	<u>Semi-double or double varieties only:</u> Flower head: border of mass of inner ray florets		
		regular	Testarossa	1
		irregular	Ferrari	2
16.	16.	Flower head: height of involucre		
		short	Charlim, Flocarin	3
		medium	Daydream, Ferrari	5
		tall	Ashley, Planluck	7
17.	17.	Flower head: diameter of involucre		
		small	Baby-Doll, Terflash	3
		medium	Ferrari, Indian-Summer	5
		large	Moana, Zsa-Zsa	7
18.	18.	Flower head: position of distal part of bracts in relation to outer ray florets		
		apart	Ferrari, Indian-Summer	1
		touching	Testarossa, Zsa-Zsa	9
19.	19.	Flower head: anthocyanin coloration at distal part of <u>inner</u> bracts		
		absent	Baby-Doll, Ferrari	1
		present	Ashley, Nevada	9

CPVO N°	UPOV N°	Characteristics	Examples	Note	
20.	20.	Flower head: intensity of anthocyanin coloration at distal part of <u>inner</u> bracts	weak	Moana, Planpret	3
			medium	Lucifer, Zsa-Zsa	5
			strong	Terthermo	7
21. (+)	21. (+)	<u>Outer</u> ray floret: level of apex relative to top of involucre	below	Daydream	1
			same level	Indian-Summer, Pretalex	2
			above	Ashley, Nevada	3
22.	22.	<u>Outer</u> ray floret: shape	narrow elliptic	Ashley, Ferrari	1
			narrow obovate	Baby-Doll, Teroranje	2
23.	23.	<u>Outer</u> ray floret: longitudinal axis	strongly incurving	Floricitrine	1
			moderately incurving		2
			straight	Ferrari	3
			moderately reflexing	Ashley, Indian-Summer	4
			strongly reflexing		5
24.	24.	<u>Inner</u> ray floret: longitudinal axis	strongly incurving	Floricitrine	1
			moderately incurving	Eeuwsar	2
			straight	Ferrari, Moana	3
			moderately reflexing	Ashley, Nevada	4
			strongly reflexing		5
25.	25.	<u>Outer</u> ray floret: profile in cross section of middle part of ray	concave	Floricitrine, Terflorin	1
			straight	Ashley, Indian-Summer	2

CPVO N°	UPOV N°	Characteristics	Examples	Note	
		convex	Ferrari, Planpret	3	
26.	26.	Outer ray floret: length	very short	Tersnow	1
			short	Ashley, Teroranje	3
			medium	Ferrari, Indian-Summer	5
			long	Nevada, Testarossa	7
			very long		9
27.	27.	Outer ray floret: width	narrow	Planluck, Tersnow	3
			medium	Ashley, Ferrari	5
			broad	Planorg	7
28.	28.	Outer ray floret: shape of apex	pointed	Ferrari, Tersnow	1
			rounded	Ashley, Pretalex	2
29.	29.	Outer ray floret: depth of incisions	absent or very shallow	Planpret	1
			shallow	Nevada	3
			medium	Ashley, Ferrari	5
			deep	Pretatrix	7
			very deep	Daydream, Lucifer	9
30. (+)	30. (+)	Outer ray floret: tendency to form long free petals	absent	Ashley, Baby-Doll	1
			present	Ferrari, Tersnow	9
31. G	31.	Outer ray floret: colour of inner side	RHS Colour Chart (Indicate reference number) 		
32.	32.	Outer ray floret: number of colours	one	Ferrari, Nevada	1
			two	Indian-Summer, Terbase	2
33.	33.	Single colored varieties only: Outer ray floret	none	Ferrari, Indian-Summer	1

CPVO N°	UPOV N°	Characteristics	Examples	Note
		only: distribution of colour		
		lighter towards base	Planper	2
		lighter towards top	Indian-Summer, Nevada	3
34.	34.	Outer ray floret: presence of striation		
		absent	Ashley, Ferrari	1
		present	Indian-Summer, Planluck	9
35.	35.	Bicolored varieties only: Outer ray floret: secondary colour at basal half		
		absent	Baby-Doll	1
		present	Planper	9
36.	36.	Bicolored varieties only: Outer ray floret: secondary colour at distal half		
		absent	Indian-Summer, Planper	1
		present	Baby-Doll	9
37.	37.	Bicolored varieties only: Outer ray floret: secondary colour at margin		
		absent	Baby-Doll, Indian-Summer	1
		present	Terflame	9
38.	38.	Bicolored varieties only: Outer ray floret: secondary colour at tip only		
		absent	Indian-Summer	1
		present	Baby-Doll, Terfetti	9
39.	39.	Bicolored varieties only: Outer ray floret: secondary colour		
		white	Baby-Doll	1
		yellow	Planper, Terflame	2
		orange	Indian-Summer	3
		pink	Terfetti	4
		red	Glory	5

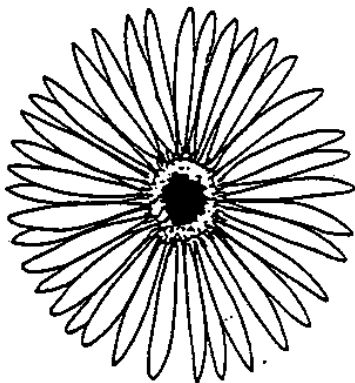
CPVO N°	UPOV N°	Characteristics	Examples	Note	
		purple	Josiane	6	
40.	40.	<u>Outer ray floret: main colour of outer side</u>	white	Baby-Doll	1
		yellow white	Tersnow	2	
		yellow green	Ashley	3	
		green	Adventure, Terstrom	4	
		yellow	Indian-Summer, Nevada	5	
		orange	Daydream, Ferrari	6	
		pink	Planpret, Zsa-Zsa	7	
		red	Lucifer, Testarossa	8	
		purple	Moana	9	
41.	41.	<u>Single or semi-double varieties only: Disc diameter</u>	small	Tersnow	3
		medium	Ashley, Lucifer	5	
		large	Floru	7	
42.	42.	<u>Single or semi-double varieties only: Dark disc (before opening of disc florets)</u>	absent	Baby-Doll, Ferrari	1
G			present	Ashley, Indian-Summer	9
43.	43.	<u>Single varieties only: Disc florets of outer rows: main colour of perianth lobes</u>	white	Tersnow	1
		yellow	Bugatti, Nevada	2	
		orange	Daydream, Indian-Summer	3	
		pink	Ashley, Baby-Doll	4	
		red	Ferrari, Lucifer	5	
		purple	Planpret	6	
		brown		7	

CPVO N°	UPOV N°	Characteristics	Examples	Note
44.	44.	<u>Semi-double and double varieties only</u>: Disc florets of outer rows: main colour of perianth lobes	RHS Colour Chart (indicate reference number)	
45.	45.	Disc: main colour of perianth lobes of bisexual florets	white yellow orange pink red purple brown	Tersnow Indian-Summer, Nevada Daydream Ashley, Baby-Doll Ferrari, Zsa-Zsa Planpret 1 2 3 4 5 6 7
46.	46.	Style: main colour of distal part	white yellow orange pink red purple brown	Ferrari, Nevada Indian-Summer, Lucifer Bugatti, Testarossa Floru, Zsa-Zsa Ponsy Ashley 1 2 3 4 5 6 7
47.	47.	Stigma: main colour	white yellow orange pink red purple brown	Ashley, Tersnow Ferrari, Terflash Jodi, Sunburn Ponsy Teractie Bluebell, Commodore Malou 1 2 3 4 5 6 7
48.	48.	Anthers: main colour	yellow	Ferrari 1

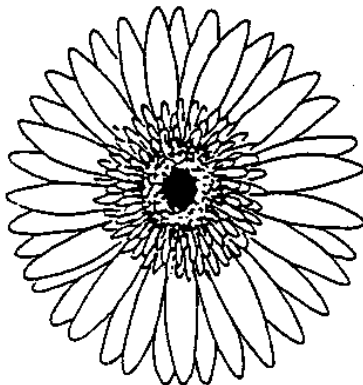
CPVO N°	UPOV N°	Characteristics	Examples	Note
		orange	Indian-Summer, Tersnow	2
		pink	Alami, Sunburn	3
		red	Amarou	4
		purple	Tersanne	5
		brown	Shanty	6
49.	49.	Anthers: colour of top relative to other parts		
		lighter	Ferrari, Terflash	1
		same	Indian-Summer, Tersnow	2
		darker	Ashley, Nevada	3
50.	50.	Anthers: longitudinal stripes		
		absent	Ferrari, Indian-Summer	1
		present	Ashley, Nevada	9
51.	51.	Pappus: colour of top relative to other parts		
		lighter		1
		same	Ferrari, Tersnow	2
		darker	Ashley, Lucifer	3
52.	52.	Pappus: level of top relative to closed disc florets		
		below	Baby-Doll	1
		same level	Indian-Summer	2
		above	Ferrari, Tersnow	3

EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

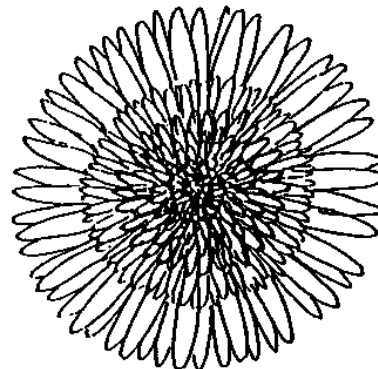
Ad. 12: Flower head: type



1
single

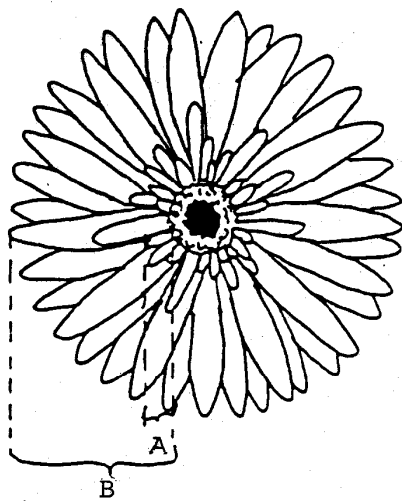


2
semi-double

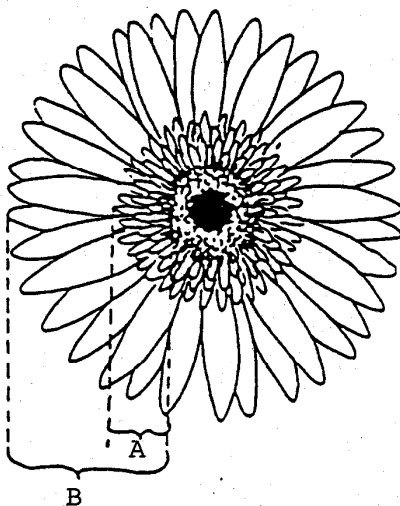


3
double

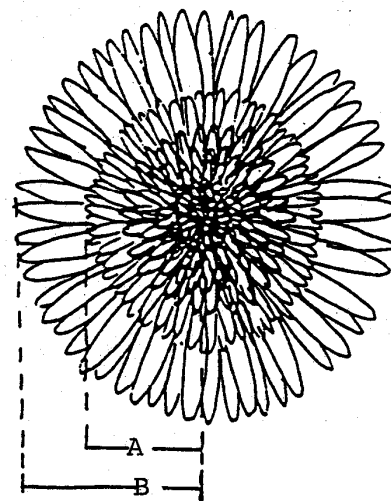
Ad. 14: Semi-double or double varieties only: flower head: diameter of mass of inner ray florets (A) compared to that of flower head (B)



3
small

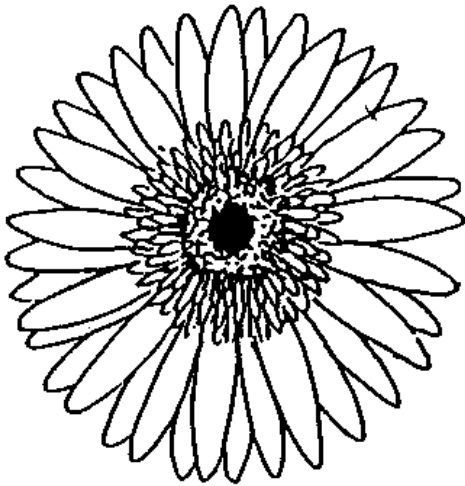


5
medium

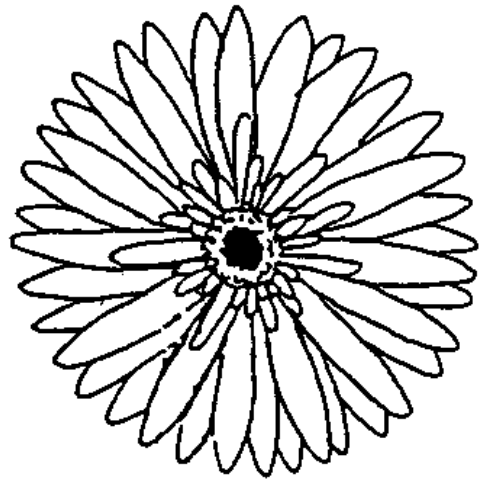


7
large

Ad. 15: semi-double or double varieties only: flower head: border of mass of inner ray florets

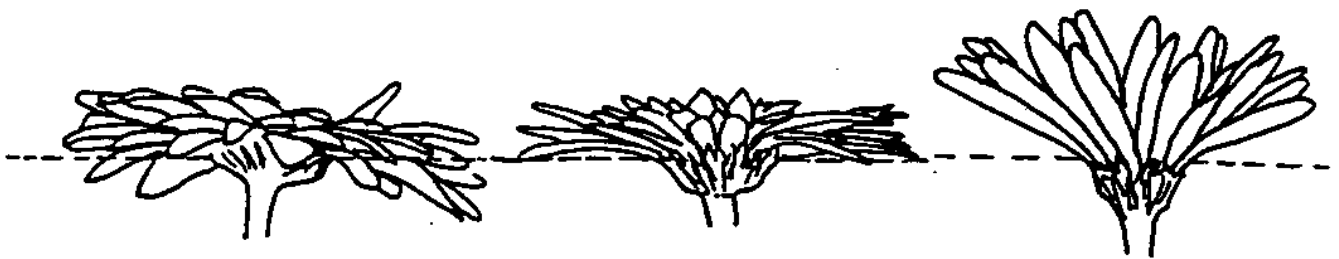


1
regular



2
irregular

Ad. 21: outer ray floret: level of apex relative to top of involucre

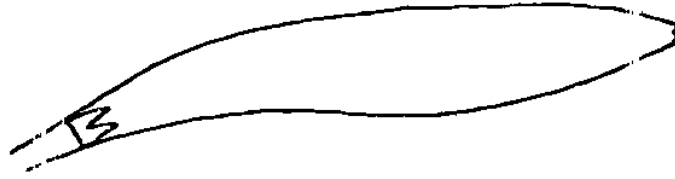


1
below

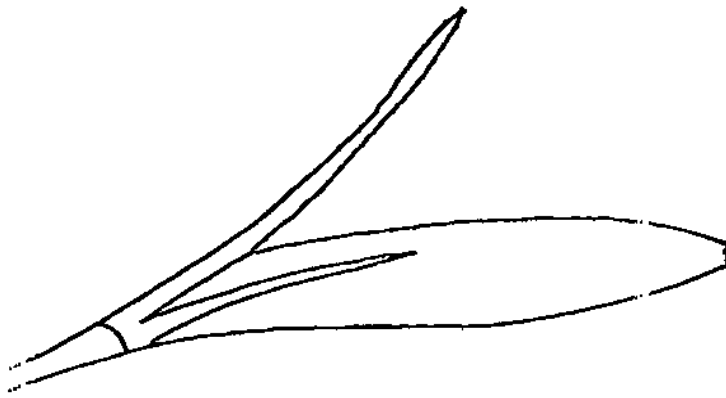
2
same level

3
above

Ad. 30: outer ray floret: tendency to form long free petals



1
absent



9
present

LITERATURE

- Hansen, H.V., 1985: "A Taxonomic Revision of the Genus *Gerbera* (Compositae, Mutiseae), Sections *Gerbera*, *Parra*, *Pieloselloides* (in Africa) and *Lasropus*", *Opera Botanica*, VI. 78, pp. 5-36.
- Hilliard, O.M., 1977: "Compositae in Natal", University of Natal Press, Pietermaritzburg, ZA.

ANNEX II

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/077/1