

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

***Echinacea* Moench.**

ECHINACEA, CONE FLOWER

UPOV Code: ECNCE

Adopted on 28/11/2012

Entry into force on 28/11/2012

I SUBJECT OF THE PROTOCOL

The protocol describes the technical procedures to be followed in order to meet the Council Regulation (EC) N°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/281/1 dated 28/03/2012 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all varieties of ***Echinacea Moench.***

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

Information with respect to closing dates and submission requirements of plant material for technical examination of varieties can be found on the CPVO website (www.cpvo.europa.eu) and in the special Issue S2 of the Official Gazette of the Office.

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

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 I. 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° 874/2009, to insert additional characteristics and their states of expression 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) Leaf: variegation (characteristic 12)
- b) Ray floret: main colour of inner side (characteristic 31), with the following groups:
 - Gr. 1: green
 - Gr. 2: white
 - Gr. 3: yellow
 - Gr. 4: orange
 - Gr. 5: red
 - Gr. 6: pink
 - Gr. 7: purple
- c) Disc: type (characteristic 39)
- d) Only varieties with disc type: daisy: Disc: colour of paleae (spikes) (characteristic 47)
- e) Only varieties with disc type: anemone: Disc: colour after disc florets open (characteristic 50), with the following groups:
 - Gr. 1: green
 - Gr. 2: white
 - Gr. 3: yellow
 - Gr. 4: orange
 - Gr. 5: red
 - Gr. 6: pink
 - Gr. 7: purple
- f) Only varieties with disc type: daisy: Disc: presence of ray florets within the disc (characteristic 51)

5. Trial designs and growing conditions

The minimum duration of tests should normally be a single growing cycle if the results on distinctness and uniformity are conclusive. Tests will be carried out under conditions ensuring normal growth.

The test design is as follows:

Each test should be designed to result in a total of at least 10 plants for vegetatively propagated varieties and 40 plants for seed propagated varieties.

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.

Unless otherwise indicated, all observations should be made on 10 plants or parts taken from each of 10 plants for vegetatively propagated varieties and 30 plants for seed propagated varieties.

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

The test should normally be conducted at one place.

The test should be carried out under conditions ensuring normal growth.

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 of vegetatively propagated varieties, a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size between 6 and 35 plants, 1 off-type is allowed.

For the assessment of uniformity of seed-propagated varieties, recommendations for cross-pollinated varieties shall be applied.

c) **Stability**

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

Where appropriate, or in case of doubt, stability may be tested, either by growing a further generation, or testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

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 many cases two or occasionally 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.

VI ENTRY INTO FORCE

The present protocol enters into force on **28.11.2012**. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the new Technical Protocol. Technical examinations of candidate varieties are carried out according to the TP in force when the DUS test starts. The starting date of a DUS examination is considered to be the due date for submitting of plant material for the first test period.

In cases where the Office requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process to be carried out at the moment of this request, such report can only be accepted if the technical examination has been carried out according to the CPVO TP which was in force at the moment when the technical examination started.

ANNEXES TO FOLLOW

ANNEX I

PAGE

Table of characteristics to be used in DUS test and preparation of description	7
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Legend:

- (+) See Explanations on the Table of Characteristics
- (a)-(d) See Explanations on the Table of Characteristics
- G Grouping characteristics
- (1) The characteristic only applies to varieties in Group A
- (2) The characteristic only applies to varieties in Group B

Types of expression of characteristics:

- QL Qualitative characteristic
- QN Quantitative characteristic
- PQ Pseudo-qualitative characteristic

Type of 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

Explanations on the Table of Characteristics	18
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Literature	26
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ANNEX II

Technical questionnaire	27
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ANNEX I

TABLE OF CHARACTERISTICS TO BE USED IN DUS-TEST AND PREPARATION OF DESCRIPTION

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
1.	1.	VG	Plant: growth habit		
QN	QN		upright	Mount Hood	1
			semi upright	Green Jewel, Ida	2
			semi spreading	Mistral	3
			spreading		4
2.	2. (*)	VG/MG	Plant: height		
(+)	(+)		short	Mistral	3
QN	QN		medium	Green Jewel	5
			tall	Mount Hood	7
3.	3.	VG	Plant: floriferousness		
(+)	(+)		weak	Tiki Torch	3
QN	QN		medium	Green Jewel	5
			strong	Mistral	7
4.	4.	VG	Plant: density		
(+)	(+)		sparse	Hot Summer	3
QN	QN		medium	Mount Hood	5
			dense	Mistral	7
5.	5.	VG	Stem: colour		
PQ	PQ	(a)	green	Green Jewel	1
			green tinged slightly purple	Catharina	2
			green tinged heavily purple	Merlot	3
			purple	Fatal Attraction	4
6.	6.	VG	Stem: number of leaves		
QN	QN		few		3
			medium	Green Jewel	5
			many	Ida, Mistral	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
7.	7. (*)	VG/MS	Leaf: length (including petiole)		
QN	QN	(b)	short	Mistral	3
			medium	Merlot	5
			long	Green Jewel	7
8.	8. (*)	VG/MS	Leaf: width		
QN	QN	(b)	narrow	Purity	3
			medium	Green Jewel	5
			broad	Catharina	7
9.	9. (*)	VG/MS	Leaf: length/width ratio		
QN	QN	(b)	slightly elongated	Merlot	3
			moderately elongated	Polar Breeze	5
			strongly elongated		7
10.	10.	VG	Leaf: position of broadest part		
QN	QN	(b)	at middle or slightly towards base		1
			moderately towards base	Tomato Soup	2
			strongly towards base	Milkshake	3
11.	11.	VG	Leaf: intensity of green colour		
QN	QN	(b)	light	Tomato Soup	1
			medium	Purity	2
			dark	Fatal Attraction	3
12.	12. (*)	VG	Leaf: variegation		
QL	QL	(b)	absent	Tomato Soup	1
G			present	Prairie Frost	9

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
13.	13. (*)	VG	Leaf: colour of variegation		
PQ	PQ	(b)	white		1
			yellowish white	Prairie Frost	2
			yellow		3
			yellow green		4
14.	14. (*)	VG	Leaf: distribution of variegation		
PQ	PQ	(b)	marginal	Prairie Frost	1
			central zone		2
			irregular	Sparkler	3
15.	15. (*)	VG	Leaf: rugosity		
QN	QN	(b)	absent or very weak	Hot Papaya	1
			weak	Summer Cocktail	3
			medium	Green Jewel	5
			strong	Catharina	7
16.	16.	VG	Leaf: glossiness		
QN	QN	(b)	absent or very weak	Mistral, Lilliput	1
			weak	After Midnight	2
			medium		3
			strong	Pineapple Sundae	4
17.	17. (*)	VG	Leaf: indentations of margin		
(+)	(+)	(b)	absent or very few	Hot Papaya	1
QN	QN		few	Catharina	2
			medium	Green Jewel	3
			many	Avalanche	4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
18.	18. (*)	VG	Peduncle: colour		
PQ	PQ		green	Green Jewel	1
			green tinged slightly purple	Tomato Soup	2
			green tinged heavily purple		3
			purple	After Midnight	4
19.	19. (*)	VG	Peduncle: pubescence		
QN	QN		absent or very sparse		1
			sparse	Hot Papaya	2
			medium	Tomato Soup	3
			dense	Green Jewel	4
			very dense	Mistral	5
20.	20. (*)	VG/MS	Flower head: diameter		
(+)	(+)	(c)	small	Kims Mop Head	3
QN	QN		medium	Green Jewel	5
			large	Merlot	7
21.	21. (*)	VG/MS	Flower head: height		
(+)	(+)	(c)	low		3
QN	QN		medium	Mistral	5
			high	Hot Papaya	7
22.	22. (*)	VG/MS	Flower head: number of ray florets		
(+)	(+)	(c)	few	Tiki Torch	3
QN	QN		medium	Mistral	5
			many	Fatal Attraction	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
23.	23. (*)	VG	Flower head: attitude of ray florets at origin		
(+)	(+)	(c)	semi-erect	Lilliput	1
QN	QN		horizontal	Merlot	2
			semi-drooping	Mount Hood	3
			drooping	Hot Papaya	4
24.	24. (*)	VG	Flower head: relative number of ligulate ray florets		
(+)	(+)	(c)	none	All That Jazz	1
QN	QN		few		2
			medium		3
			many	Sundown	4
			all or almost all	Merlot	5
25.	25. (*)	VG	Flower head: relative number of spatulate ray florets		
(+)	(+)	(c)	none		1
QN	QN		few	All That Jazz	2
			medium	Sundown	3
			many		4
			all or almost all		5
26.	26. (*)	VG	Flower head: relative number of quilled ray florets		
(+)	(+)	(c)	none		1
QN	QN		few	Sundown	2
			medium		3
			many	All That Jazz	4
			all or almost all		5
27.	27. (*)	VG/MS	Ray floret: length		
QN	QN	(c)	short	Fatal Attraction	3
		(d)	medium	Merlot	5
			long	Tomato Soup	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
28.	28. (*)	VG/MS	Ray floret: width		
QN	QN	(c)	narrow	Fatal Attraction	3
		(d)	medium	Summer Cocktail	5
			broad	Milkshake	7
29.	29. (*)	VG/MS	Ray floret: length/width ratio		
QN	QN	(c)	low	Meditation	3
		(d)	medium	Razzmatazz	5
			high	Mount Hood	7
30.	30. (*)	VG	<u>Only varieties with spatulate or quilled ray florets:</u> Ray floret: colour of outer side		
(+)	(+)	(c)	RHS Colour Chart (indicate reference number)		
PQ	PQ	(d)			
31.	31. (*)	VG	Ray floret: main colour of inner side		
PQ	PQ	(c)	RHS Colour Chart (indicate reference number)		
G		(d)			
32.	32. (*)	VG	Ray floret: secondary colour of inner side		
PQ	PQ	(c)	RHS Colour Chart (indicate reference number)		
		(d)			
33.	33. (*)	VG	Ray floret: distribution of secondary colour of inner side		
(+)	(+)	(c)	at the base		1
PQ	PQ	(d)	in the basal quarter	Green Envy	2
			in the basal half	Summer Cocktail	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
34.	34.	VG	Ray floret: curvature		
(+)	(+)	(c)	strongly incurving		1
QN	QN	(d)	weakly incurving	Green Jewel	2
			straight	Mount Hood	3
			weakly reflexing	Lilliput	4
			strongly reflexing	Hot Papaya	5
35.	35. (*)	VG	Ray floret: twisting		
QN	QN	(c)	absent or very weak	Merlot	1
		(d)	weak	Hot Papaya	2
			moderate		3
			strong		4
36.	36.	VG	Ray floret: profile in cross section		
(+)	(+)	(c)	strongly concave	Vintage Wine	1
QN	QN	(d)	moderately concave	Green Jewel	2
			weakly concave	Merlot	3
			flat	Tomato Soup	4
			weakly convex		5
			moderately convex		6
			strongly convex		7
37.	37. (*)	VG	Ray floret: shape of apex		
(+)	(+)	(c)	pointed	Purity	1
PQ	PQ	(d)	rounded	Tiki Torch	2
			truncate	Green Jewel	3
38.	38. (*)	VG	Ray floret: indentations of tip		
(+)	(+)	(c)	absent or very shallow		1
QN	QN	(d)	shallow	Hot Summer	2
			medium	Green Jewel	3
			deep		4

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
39.	39. (*)	VG	Disc: type		
(+)	(+)	(c)	daisy	Merlot	1
QL	QL		anemone	Hot Papaya	2
G					
40.	40. (*)	VG/MS	<u>Only varieties with disc type: daisy:</u> Disc: diameter		
(+)	(+)	(c)	small	Tomato Soup	3
QN	QN		medium	Summer Cocktail	5
			large	Merlot	7
41.	41. (*)	VG/MS	<u>Only varieties with disc type: anemone:</u> Disc: diameter		
QN	QN	(c)	small	Pink Double Delight	3
			medium	Razzmatazz	5
			large	Hot Papaya	7
42.	42. (*)	VG/MS	<u>Only varieties with disc type: daisy:</u> Disc: height		
(+)	(+)	(c)	low	Fatal Attraction	3
QN	QN		medium	Purity	5
			high	After Midnight	7
43.	43. (*)	VG/MS	<u>Only varieties with disc type: anemone:</u> Disc: height		
QN	QN	(c)	low	Meringue	3
			medium		5
			high	Catharina	7
44.	44. (*)	VG/MS	<u>Only varieties with disc type: daisy:</u> Disc: ratio height/diameter		
(+)	(+)	(c)	low	Green Jewel	3
QN	QN		medium	Purity	5
			high	Tiki Torch	7

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
45.	45. (*)	VG/MS	<u>Only varieties with disc type: anemone:</u> Disc: ratio height/diameter		
QN	QN	(c)	low	Meringue	3
			medium		5
			high	Hot Papaya	7
46.	46. (*)	VG	Disc: diameter in relation to flower head		
(+)	(+)	(c)	small	Tomato Soup	1
QN	QN		medium	Green Jewel	2
			large	Milkshake	3
47.	47. (*)	VG	<u>Only varieties with disc type: daisy:</u> Disc: colour of paleae (spikes)		
(+)	(+)	(c)	green		1
PQ	PQ		yellowish green	Green Jewel	2
			yellow		3
			orange	Purity, Mount Hood	4
			red orange		5
			red brown	Merlot, Hot Summer	6
G			purple brown	Fatal Attraction	7
48.	48. (*)	VG	<u>Only varieties with disc type: daisy:</u> Disc: second colour of paleae (spikes)		
(+)	(+)	(c)	green	Purity, Green Jewel	1
PQ	PQ		yellow	Hot Summer	2
			orange	Mount Hood	3
			red orange	Merlot, Fatal Attraction	4
			red brown		5
49.	49. (*)	VG	<u>Only varieties with disc type: anemone:</u> Disc: colour before disc florets open		
PQ	PQ		RHS Colour Chart (indicate reference number)		

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
50.	50. (*)	VG	<u>Only varieties with disc type: anemone:</u> Disc: colour after disc florets open		
PQ	PQ		RHS Colour Chart (indicate reference number)		
G					
51. (+)	51. (*) (+)	VG	<u>Only varieties with disc type: daisy:</u> Disc: presence of ray florets within the disc		
QL	QL	(c)	absent	Merlot	1
G			present	Mount Hood	9
52.	52. (*)	VG	<u>Only varieties with disc type: daisy:</u> <u>with ray florets within the disc: Disc:</u> number of ray florets within the disc		
(+)	(+)	(c)	few	Mount Hood	3
QN	QN		medium	Double Decker	5
			many	Pink Poodle	7
53.	53. (*)	VG/MS	<u>Only varieties with disc type: anemone:</u> Disc floret: length		
QN	QN	(c)	short	Milkshake	3
			medium		5
			long	Hot Papaya	7
54.	54.	VG/MS	<u>Only varieties with disc type: anemone:</u> Disc floret: width		
QN	QN	(c)	very narrow	Milkshake	1
			narrow		2
			medium	Pink Sorbet	3
			broad	Hot Papaya	4
			very broad		5
55.	55.	VG	<u>Only varieties with disc type: anemone:</u> Disc floret: curvature		
(+)	(+)	(c)	straight	Milkshake	1
QN	QN		weakly reflexed	Pink Sorbet	2
			strongly reflexed	Hot Papaya	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
56.	56. (*)	VG	<u>Only varieties with disc type: anemone:</u> Disc floret: length of tube		
(+)	(+)	(c)	short	Hot Papaya	3
QN	QN		medium		5
			long	Milkshake	7
57.	57. (*)	VG	<u>Only varieties with disc type: anemone:</u> Disc floret: depth of indentations of tip		
QN	QN	(c)	absent or very shallow		1
			shallow		2
			medium	Pink Sorbet	3
			deep	Hot Papaya	4

EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

Explanations covering several characteristics

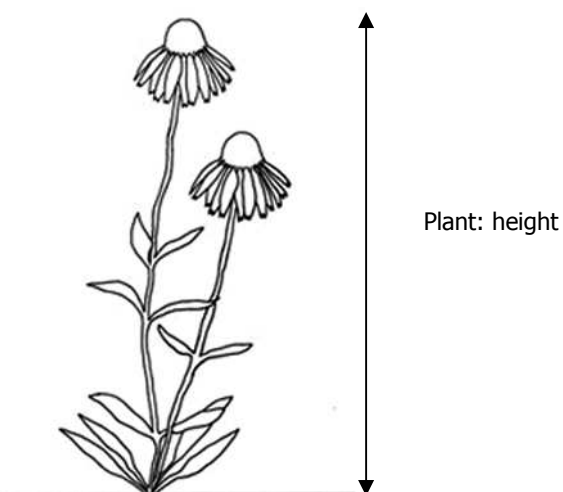
Unless otherwise indicated, all characteristics should be observed at the time of full flowering.

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

- (a) Stem characteristics are recorded on the middle third of the stem, excluding the peduncle.
- (b) Leaf characteristics are recorded on typical stem leaves taken from the middle third of the flowering stem, and are recorded looking at the upper surface unless otherwise indicated.
- (c) Unless otherwise indicated, all flower head, ray floret and disc characters to be recorded when half the disc florets in the head have dehisced/opened.
- (d) All ray floret characteristics should be observed on the most typical ray florets of the predominant type.

Explanations for individual characteristics

Ad. 2: Plant: height



Ad. 3: Plant: floriferousness

The number of flowers should be observed as the number of flowers open at the same time on the plant, at the time of full flowering



3
weak



5
Medium



7
strong

Ad. 4: Plant: density

The plant density is observed as the overall impression, based on stems, leaves and flowers.



3
sparse



5
medium



7
dense

Ad. 17: Leaf: indentations of margin



1
absent or very few



2
few



3
medium

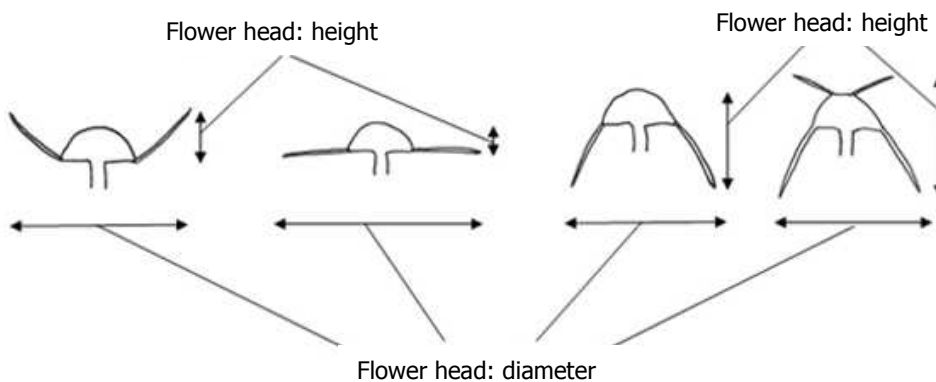


4
many

Ad. 20: Flower head: diameter

Ad. 21: Flower head: height

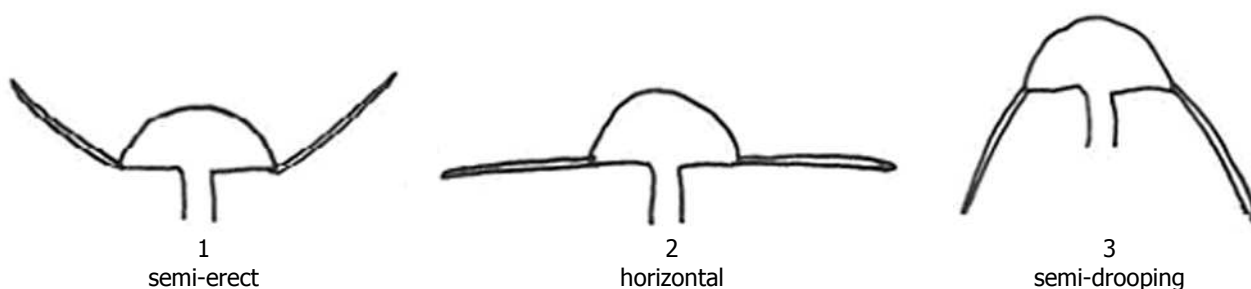
It is the natural flower head diameter and height which is recorded.



Ad. 22: Flower head: number of ray florets

This excludes any ray florets within the disc (see characteristic 51).

Ad. 23: Flower head: attitude of ray florets at origin



Ad. 24: Flower head: relative number of ligulate ray florets

“Relative” means the number of ligulate ray florets relative to the overall number of ray florets. It is this which is assessed, not the absolute number of ligulate ray florets.

Ligulate florets are flat.



Ad. 25: Flower head: relative number of spatulate ray florets

“Relative” means the number of spatulate ray florets relative to the overall number of ray florets. It is this which is assessed, not the absolute number of spatulate ray florets.

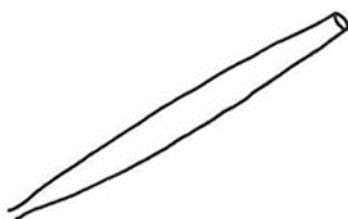
Spatulate ray florets are where part of the floret is tubular and part is flat.



Ad. 26: Flower head: relative number of quilled ray florets

“Relative” means the number of quilled ray florets relative to the overall number of ray florets. It is this which is assessed, not the absolute number of quilled ray florets.

Quilled florets are where the whole length of the floret is tubular.



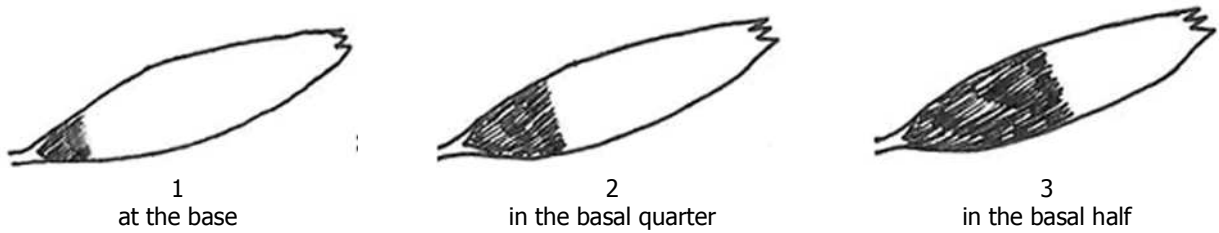
Ad. 30: Only varieties with spatulate or quilled ray florets: Ray floret: colour of outer side

To be record on the quilled part of the floret, on the area facing upwards

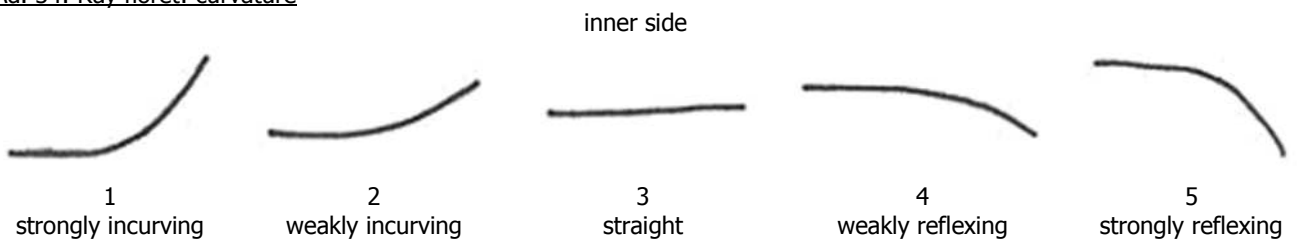


Colour to be recorded on this part

Ad. 33: Ray floret: distribution of secondary colour of inner side

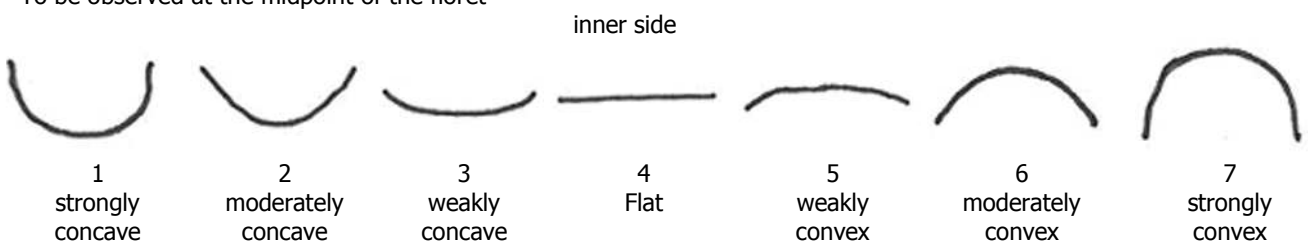


Ad. 34: Ray floret: curvature

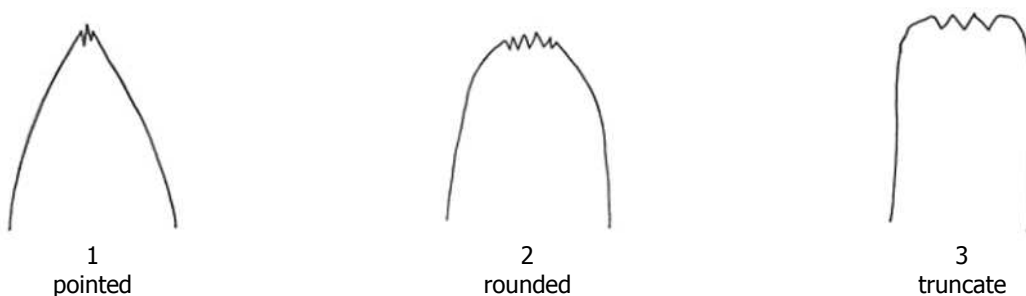


Ad. 36: Ray floret: profile in cross section

To be observed at the midpoint of the floret



Ad. 37: Ray floret: shape of apex



Ad. 38: Ray floret: indentations of tip



2
shallow



3
medium



4
deep

Ad. 39: Disc: type



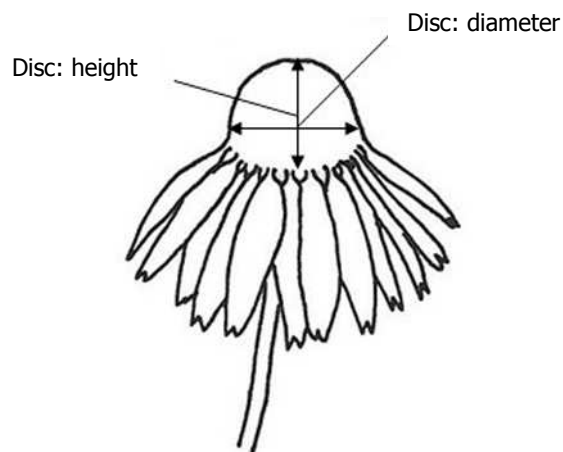
1
daisy



2
anemone

Ad. 40: Only varieties with disc type: daisy: Disc: diameter

Ad. 42: Only varieties with disc type: daisy: Disc: height



Ad. 44: Only varieties with disc type: daisy: Disc: ratio height/diameter



3
low



5
medium



7
high

Ad. 46: Disc: diameter in relation to flower head

The disc diameter is assessed relative to the natural flower head diameter



3
small



5
medium



7
large

Ad. 47: Only varieties with disc type: daisy: Disc: colour of paleae (spikes)

Ad. 48: Only varieties with disc type: daisy: Disc: second colour of paleae (spikes)

To be recorded on paleae half way between the base and the top of the disc, just before the disc florets associated with the paleae have dehisced/opened – (see diagram below).



Correct stage and position in head to record paleae colour

The colour of the paleae (spikes) (characteristic 47) is always observed as the colour at the tip, irrespective of area covered.

The second colour (characteristic 48) is observed as the colour directly below the tip (if different from the tip colour).

Any further colours should be ignored.



Disc: colour of paleae (spikes)

Disc: second colour of paleae (spikes)

Ad. 51: Only varieties with disc type: daisy: Disc: presence of ray florets within the disc



1
absent



9
present

Ad. 52: Only varieties with disc type: daisy: with ray florets within the disc: Disc: number of ray florets within the disc



3
few



7
many

Ad. 55: Only varieties with disc type: anemone: Disc floret: curvature



1
straight

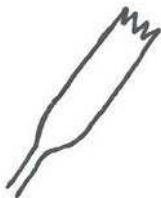


2
weakly reflexed



3
strongly reflexed

Ad. 56: Only varieties with disc type: anemone: Disc floret: length of tube



3
short



5
medium



7
long

LITERATURE

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ANNEX II



TECHNICAL QUESTIONNAIRE

to be completed in connection with an application for Community Plant Variety Rights
Please answer all questions. A question without any answer will lead to a non-attribution
of an application date. **In cases where a field / question is not applicable, please state so**

1. Botanical taxon: Name of the genus, species or sub-species to which the variety belongs and common name

Echinacea Moench.

ECHINACEA, CONE FLOWER

Species (please complete)

2. Applicant(s): Name(s) and address(es), phone and fax number(s), Email address, and where appropriate name and address of the procedural representative

3. Variety denomination

a) Where appropriate proposal for a variety denomination:

b) Provisional designation (breeder's reference):

4. Information on origin, maintenance and reproduction of the variety

4.1 Breeding, maintenance and reproduction of the variety

Please indicate breeding scheme, parents and other relevant information

Variety resulting from:

4.1.1 Crossing

a) controlled cross (indicate parent varieties)[]

b) partially unknown cross (indicate known parent varieties).....[]

c) totally unknown cross.....[]

4.1.2 Mutation (indicate parent variety)[]

4.1.3 Discovery (indicate where, when
and how the variety has been developed):[]

4.1.4 Other (please provide details)[]

4.2 Method of propagation

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. Vegetative propagated varieties

- a) Cuttings.....[]
- b) In vitro propagation.....[]
- c) Other (state method).....[]

4.3 Geographical origin of the variety: the region and the country in which the variety was bred or discovered and developed.

5. Characteristics of the variety to be indicated: (the number in brackets refers to the corresponding characteristic in the CPVO Technical Protocol; please mark the state of expression which best corresponds).

Characteristics	Example varieties	Note
5.1 (12)	Leaf: variegation	
absent	Tomato Soup	1 []
present	Prairie Frost	9 []

	Characteristics	Example varieties	Note
5.2 (31)	Ray floret: main colour of inner side		
	green	Green Jewel	1 []
	white	Purity	2 []
	yellow	Harvest Moon	3 []
	orange	Tiki Torch	4 []
	red	Tomato Soup	5 []
	pink	Meditation	6 []
	purple	Magnus, Catharina	7 []
5.3 (32)	Ray floret: secondary colour of inner side		
	green		1 []
	white		2 []
	yellow		3 []
	orange		4 []
	red		5 []
	pink	Green Envy	6 []
	purple		7 []
5.4 (39)	Disc: type		
	daisy	Merlot	1 []
	anemone	Hot Papaya	2 []
5.5 (47)	<u>Only varieties with disc type: daisy</u>: Disc: colour of paleae (spikes)		
	green		1 []
	yellowish green	Green Jewel	2 []
	yellow		3 []
	orange	Purity, Mount Hood	4 []
	red orange		5 []
	red brown	Merlot, Hot Summer	6 []
	purple brown	Fatal Attraction	7 []

Characteristics	Example varieties	Note	
<u>Please fill in point (i) if possible, otherwise point (ii)</u>			
5.6 (i) (50)	<u>Only varieties with disc type: anemone:</u> Disc: colour after disc florets open		
	RHS Colour Chart (indicate reference number)		
5.6 (ii) (50)	<u>Only varieties with disc type: anemone:</u> Disc: colour after disc florets open		
	Colour		
5.7 (51)	<u>Only varieties with disc type: daisy:</u> Disc: presence of ray florets within the disc		
	absent	Merlot 1 []	
	present	Mound Hood 9 []	
6. Similar varieties and differences from these varieties:			
Denomination of similar variety	Characteristic in which the similar variety is different ¹⁾	State of expression of similar variety	State of expression of candidate variety
¹⁾ In the case of identical states of expressions of both varieties, please indicate the size of the difference			
7. Additional information which may help to distinguish the variety			
A representative printed-out colour photo of the variety must be added to the Technical Questionnaire.			
7.1 Resistance to pests and diseases			
[] YES, please specify			
[] NO			

7.2 Special conditions for the examination of the variety

YES, please specify

NO

7.3 Other information

7.3.1. Main use

Garden plant

Cut flower

Herbal/pharmaceutical

Other

7.3.2. Other information

YES, please specify

NO

8. GMO-information required

The variety represents a Genetically Modified Organism within the meaning of Article 2(2) of Council Directive 2001/18/EC of 12/03/2001.

YES NO

If yes, please add a copy of the written attestation of the responsible authorities stating that a technical examination of the variety under Articles 55 and 56 of the Basic Regulation does not pose risks to the environment according to the norms of the above-mentioned Directive.

9. Information on plant material to be examined

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 or pesticide) | [] Yes | [] No |
| (c) Tissue culture | [] Yes | [] No |
| (d) Other factors | [] Yes | [] No |

Please provide details of where you have indicated "Yes":

10. Possible place of the technical examination

In case the CPVO needs to arrange a technical examination for this candidate variety, there might be more than one examination office entrusted by the CPVO suitable to grow your variety. In this case, the Office will decide on the place of the technical examination but you might wish to express here a preference in respect of an examination office. The available entrusted examination offices for that species can be found in the S2 Gazette under:

<http://www.cpvo.europa.eu/main/en/home/documents-and-publications/s2-gazette>

I/We hereby declare that to the best of my/our knowledge the information given in this form is complete and correct.

Date

Signature

Name

[End of document]