



PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

Hydrangea L.

HYDRANGEA

UPOV Species Code: HYDRN

Adopted on 21/03/2012

Entry into force on 30/11/2011

I SUBJECT OF THE PROTOCOL

The protocol describes the technical procedures to be followed in order to meet the Council Regulation No. 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/133/4 dated 24/03/2010 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all vegetatively propagated varieties of *Hydrangea L.*

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. Closing dates for applications and material requirements 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 or affected by any important pest or disease, especially virus.

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 (EC) N° 874/2009, 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) Stem: colour (characteristic 5)
- b) Leaf blade: variegation (characteristic 15)
- c) Leaf blade: main colour (characteristic 16)
- d) Inflorescence: shape (characteristic 20)
- e) Inflorescence: conspicuousness of fertile flowers (characteristic 23)
- f) Sterile flower: type (characteristic 26)
- g) Sterile flower: main colour of sepal (characteristic 29) with the following groups:
 - Gr. 1: white
 - Gr. 2: light pink
 - Gr. 3 dark pink
 - Gr. 4: purple pink
 - Gr. 5: red
 - GR. 6: green

5. Trial designs and growing conditions

The minimum duration of tests will normally be two growing cycles 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.

Plants should not be grown in a medium that will specifically affect sepal color. In the case that a sample has been delivered that has been treated for blueing, an additional third growing cycle will be necessary to observe the daughter plants.

The test design is as follows:

For the first cycle: As a minimum, each test should include a total of 8 plants (mother plants). For the second cycle each test should include a total of 5 mother plants (5 out of the 8 submitted mother plants are kept for comparison to the daughter plants) and 8 daughter plants derived from, and representing each of the original mother 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 the 8 mother plants or 8 parts taken from 8 mother plants during the first cycle, and on 8 daughter plants or 8 parts taken from 8 daughter plants during the second cycle.

All observations on the flower should be made on terminal inflorescences on one year old shoots when stamens are visible.

All observations on the stem should be made on shoots from that year's growth.

All observations on the leaf should be made on fully developed leaves on the third pair of leaves below the terminal vegetative bud after full flowering period.

Plants should be grown 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 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 in a sample size between 6 and 35 plants does not exceed 1.

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 two growing cycle but in some cases three 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.

VI ENTRY INTO FORCE

The present protocol enters into force on **30.11.2011**. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the partially revised 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.

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Legend:	
(+) See explanations on the Table of characteristics	
QL: Qualitative characteristic	
QN: Quantitative characteristic	
PQ: Pseudo-qualitative characteristic	
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ANNEX II

Technical questionnaire

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.		Plant: type		
	QL		climbing	Nana Yakushimanum	1
			non-climbing	Merveille	2
2.	2.		<u>Only varieties with plant type: non-climbing:</u> Plant: growth habit		
	PQ		upright	Merveille	1
			semi upright		2
			spreading		3
3.	3.		<u>Only varieties with plant type: non-climbing::</u> Plant: natural height including inflorescence		
	(+)	QN	short	Hörnli	3
			medium	Merveille	5
			tall	Maman	7
4.	4.		Stem: fasciation		
	(+)	QL	absent	Merveille	1
			present	Domotoi	9
5.	5.		Stem: colour		
		PQ	green	Merveille	1
			brownish		2
			purplish		3
	G		blackish	Nigra	4
6.	6.		Stem: lenticels (in autumn)		
		QN	absent or few	Zorro	1
			medium	Merveille	2
			many		3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
7.	7.	PQ	Stem: colour of lenticels		
			white	Pink Diamond	1
			red	Leuchtfeuer	2
			black	Merveille	3
8.	8.	QN	Leaf blade: length		
			short	Hörnli	3
			medium	Rosita	5
			long	Merveille	7
9.	9.	QN	Leaf blade: width		
			narrow	Shichidanka	3
			medium	Mrs Kumiko	5
			broad	Snowflake	7
10. (+)	10.	QL	Leaf blade: lobbing		
			absent	Merveille	1
			present	Harmony	9
11. (+)	11.	PQ	<u>Only varieties with leaf blade lobbing: absent:</u> Leaf blade: shape		
			ovate	Merveille	1
			elliptic	Blue Wave	2
			circular	Rosita	3
12. (+)	12.	QN	Leaf blade: length of tip		
			short	Chaperon Rouge	1
			medium	Mme E. Mouillère	2
			long	Hallasan	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
13.	13.		Leaf blade: shape of base		
(+)	PQ		acute	Europa	1
			obtuse	Bosco, Hamburg	2
			rounded	Rosabelle	3
			cordate	Annabelle	4
14.	14.		Leaf blade: depth of incisions		
	QN		shallow	King George	3
			medium	Europa	5
			deep	Altona	7
15.	15.		Leaf blade: variegation		
	QL		absent	Merveille	1
G			present	Tricolor	9
16.	16.		Leaf blade: main colour		
(+)	PQ		yellow	Ogonda	1
			light green	Mousseline	2
			medium green	Hobergine	3
			dark green	Rosalba	4
G			purple	Merveille Sanguinea	5
17.	17.		Leaf blade: secondary colour		
	PQ		white only	Variegata	1
			white and yellow	Tricolor	2
			yellow only	Lemon Wave	3
18.	18.		Leaf blade: glossiness of upper side		
	QN		absent or weak	Maman	1
			moderate	Merveille	2
			strong	Ayesha, Joseph Banks	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
19.	19.	QN	Leaf blade: blistering		
			weak	Mme Mouillère	1
			medium	Rosita	2
			strong	Merveille	3
20.	20.	PQ	Inflorescence: shape		
			(+) flattened	Mousmée, Sea Foam	1
			globular	Merveille	2
		G	conical	Snowflake	3
21.	21.	QN	Inflorescence: height		
			(+) short	Shichidanka	3
			medium	Mrs Kumiko	5
			tall	Snowflake	7
22.	22.	QN	Inflorescence: diameter		
			(+) small	Hörnli	3
			medium	Merveille	5
			large	Maman	7
23.	23.	QN	Inflorescence: conspicuousness of fertile flowers		
			(+) inconspicuous or slightly conspicuous	Merveille	1
			moderately conspicuous	Mucke	2
		G	very conspicuous	Mousmée, Sea Foam	3
24.	24.	PQ	<u>Only varieties with inflorescence shape flattened:</u> Inflorescence: arrangement of sterile flowers		
			(+) irregular	Vetchie	1
			in one whorl	Tricolor	2
			in two or more whorls	Jogasaki	3

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
25.	25.		Sterile flower: diameter at calyx		
(+)	QN		small	Ayesha	3
			medium	Homli/Mariesi	5
			large	Alpenglühen	7
26.	26.		Sterile flower: type		
(+)	QL		single	Merveille	1
G			double	Amethyst, Izu-no-Hana	2
27.	27.		Sterile flower: degree of overlapping of sepals		
(+)	QN		absent or very weak	Hörnli	1
			weak	Madame Plumecoq	2
			medium	Bichon	3
			strong	Heinrich Siedel, Madame Gilles Goujon	4
			very strong	Etoile Violette, Merveille Sanguinée	5
28.	28.		Sterile flower: incisions of margin of sepal		
(+)	QN		absent on all sepals	Maman, Merveille	1
			present on some sepals	Gloria	2
			present on all sepals	Europa	3
29.	29.		Sterile flower: main colour of sepal		
(+)	PQ		RHS Colour Chart (indicate reference number)		
G					
30.	30.		Sterile flower: secondary colour of sepal		
(+)			absent		1
			white	Raberah	2
			pink	Sandra	3
			red	Ripple	4
			green		5

CPVO N°	UPOV N°	Stage, Method	Characteristics	Examples	Note
31.	31.		Sterile flower: distribution of secondary colour of sepal		
(+)	PQ		distal part	Ripple	1
			marginal zone	Sandra	2
			diffuse	Rosalba	3
32.	32.		Fertile flower: colour of petals		
	PQ		white	Rosalba	1
			pink	Tricolor	2
			purple	Lemon Wave	3
33.	33.		Time of beginning of flowering		
(+)	QN		early	Freudenstein	3
			medium	Maman, Merveille	5
			late	Europa, Hörnli, Magicien	7

EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

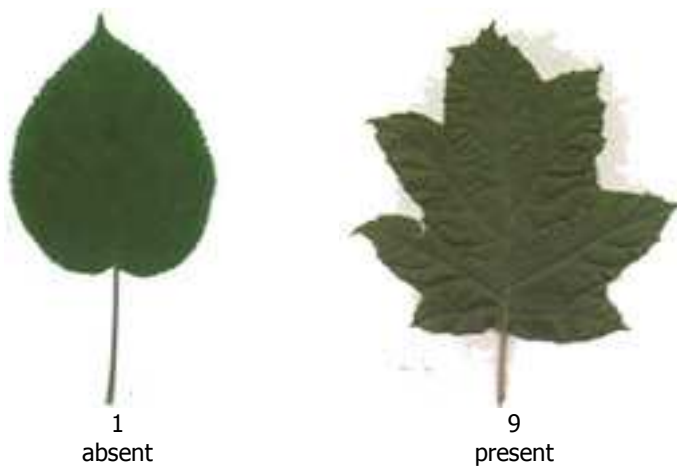
Ad 3: Only varieties with plant type non-climbing: Plant: natural height including inflorescence

Plants should be examined during the flowering period.




Ad 4: Stem: fasciation



Ad 10: Leaf blade: lobbing



Ad 11: Only varieties with leaf blade lobbing: absent: Leaf blade: shape

		< position of broadest part >	
		below middle	at middle
< length/width ratio >	high	 <p>1 ovate</p>	 <p>2 elliptic</p>
	low		 <p>3 circular</p>

Ad 12: Leaf blade: length of tip



1
short



2
medium



3
long

Ad 13: Leaf blade: shape of base



1
acute



2
obtuse



3
rounded



4
cordate

Ad 16: Leaf blade: main colour

The main colour is the colour with the largest surface area.

Ad 20: inflorescence: shape



1
flattened



2
globular



3
conical

Ad 21: Inflorescence: height



Ad 22: Inflorescence: diameter



Ad 23: Inflorescence: conspicuousness of fertile flower

Fertile flowers tend to have a small inconspicuous calyx and sterile flowers have a large prominent calyx.



inconspicuous



very conspicuous

Ad 24: Only varieties with flower head shape: flattened: Inflorescence: arrangement of sterile flower



1
irregular



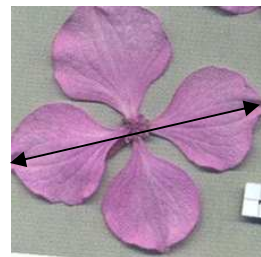
2
in one whorl



3
in two or more whorls

Ad 25: Sterile flower: diameter of calyx

The diameter should be observed at the broadest part of the calyx.



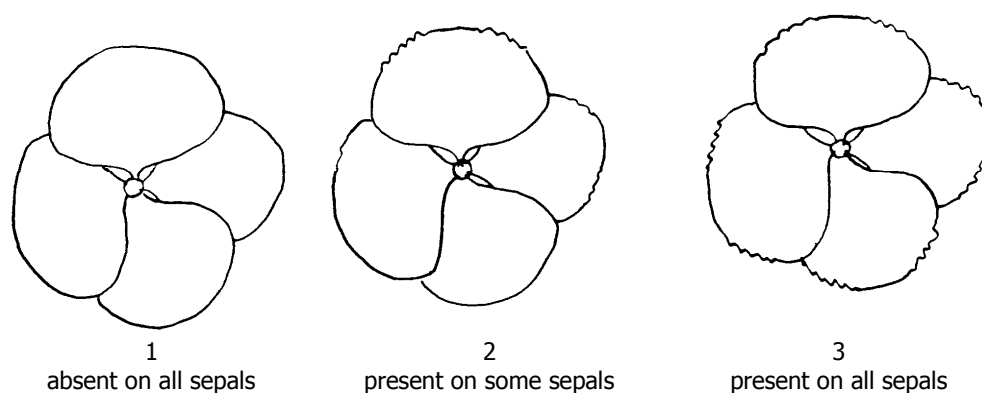
Ad 26: Sterile flower: type

single: when the number of sepals is 3 to 6
double: when the number of sepals is > 6

Ad 27: Sterile flower: degree of overlapping of sepals



Ad 28: Sterile flower: incision of margin of sepal



Ad 29: Sterile flower: main colour of sepal

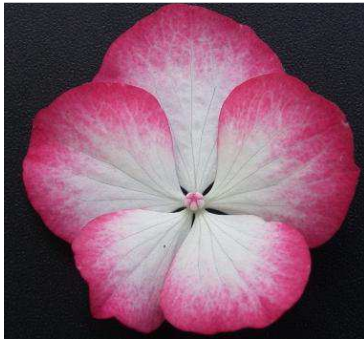
Ad 30: Sterile flower: secondary colour of sepal

The colour should be observed on plants grown in pots in a medium with pH higher than 5 and with no added aluminium or other metals that would affect the colour. In other growing conditions the colour could be different. The main colour is the colour with the largest surface area. The secondary colour is the colour with the second largest surface area.

Ad 30: Sterile flower: secondary colour of sepal



Ad 31: Sterile flower: distribution of secondary colour of sepal



1
distal part



2
marginal zone



3
diffuse

Ad 33: Time of beginning of flowering

The time of beginning of flowering is when one or more inflorescences have at least 90% coloured sepals.

LITERATURE

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ANNEX II

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/133/2