



European Union
Community Plant Variety Office

PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

Ocimum basilicum L.

BASIL

UPOV Species Code: OCIMU_BAS

Adopted on 25/03/2004

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/BASIL dated 17/01/2003 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to varieties of ***Ocimum basilicum L.***

II **SUBMISSION OF SEED AND OTHER 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.

A sub-sample of the material submitted for test will be held in the variety collection as the definitive sample of the candidate variety.

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. Immediately after the closing date for the receipt of plant material the Examination Office should inform the CPVO whether acceptable plant material has been received or not. However if unsatisfactory plant material is submitted the CPVO should be informed as soon as possible.

3. Plant material requirements

The 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 can be found in the S2 supplement of the CPVO Official Gazette and the CPVO website.

Seed Treatment:	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.
Special requirements:	-
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" - In the case of a split sample, the quantity of seed being submitted.

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 variety 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 or at least in one of the EEA Member States;
- varieties protected in other UPOV Member States;
- any other variety in common knowledge.

The composition of the variety collection in each Examination Office depends on the environmental conditions in which the Examination Office is located.

Variety collections will be held under conditions which ensure the long term maintenance of each accession. It is the responsibility of Examination Offices to replace reference material which has deteriorated or become depleted. Replacement material can only be introduced if appropriate tests confirm conformity with the existing reference material. If any difficulties arise for the replacement of reference material Examination Offices must inform the CPVO. If authentic plant material of a variety cannot be supplied to an Examination Office the variety will be removed from the variety collection.

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. Examination Offices should therefore make efforts to co-ordinate the work with other Offices involved in DUS testing of basil. There should be at least an exchange of technical questionnaires for each candidate variety, and during the test period, Examination Offices should notify each other and the CPVO of candidate varieties which are likely to present problems in establishing distinctness. In order to solve particular problems Examination Offices may exchange plant material.

3. Characteristics to be used

The characteristics to be used in DUS tests and preparation of descriptions shall be those referred to in the 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 characteristics which may be used for grouping are the following:

- (a) Plant: growth habit (characteristic 1)
- (b) Leaf blade: anthocyanin coloration of upper side (characteristic 11)
- (c) Flower: colour of corolla (characteristic 25)

5. Trial designs and growing conditions

The minimum duration of tests will normally be two independent growing cycles. For vegetatively propagated varieties, the duration of the testing may be reduced to 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 40 plants for seed propagated varieties or 20 plants for vegetatively propagated varieties, which should be divided between two or more replicates.

All observations determined by measurements or counting should be made on 10 plants or parts of 10 plants.

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 seed propagated varieties, relative uniformity standards should be used.

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

Table of maximum numbers of off-types allowed for uniformity standards for vegetatively propagated varieties.

Number of plants	off-types allowed
6-35	1
36-82	2

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 recording season 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 periods but in some cases three growing periods 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 as well as the final report shall be sent by the Examination Office to the CPVO.

ANNEXES TO FOLLOW

ANNEX I

	<u>PAGE</u>
Table of characteristics	8
Explanations and methods	13
Literature	16

ANNEX II

Technical Questionnaire

ANNEX I

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

CPVO N°	UPOV N°	Characteristics	Examples	Note
1.	1.	(a) Plant: growth habit		
(+)		rounded	Balkonstar, Biborgömb, Bubikopf, Fin vert nain compact	1
		intermediate	Lemon	2
G		erect	Genovese, Grand vert, Zöldgömb	3
2.	2.	(a) Plant: total height		
		short	Fin vert nain compact	3
		medium	Lemon	5
		tall	Genovese, Grand vert	7
3.	3.	(a) Plant: density		
		loose	Grand vert	3
		medium	Lemon, Keskenylevelü	5
		dense	Bubikopf, Fin vert nain compact	7
4.	4.	Stem: anthocyanin coloration		
		absent	Grand vert	1
		present	Purple Ruffles	9
5.	5.	Stem: intensity of anthocyanin coloration		
		weak	Anis, Cinnamon	3
		medium		5
		strong	Osmin	7
6.	6.	Stem: hairiness		
		absent	A feuille de laitue	1
		present	Lemon	9

CPVO N°	UPOV N°		Characteristics	Examples	Note
7.	7.		Stem : number of flowering shoots (at full flowering)		
(+)			one	Lemon	1
			three	Feinblättriges	2
			more than three	True Thaï	3
8.	8.	(a)	Leaf blade: shape		
(+)			broad ovate	Italian Large Leaf	1
			ovate	Fin vert	2
			elliptic	Keskenylevelü	3
9.	9.	(a)	Leaf blade: length		
			short	Balkonstar	3
			medium	Osmin	5
			long	Géant Mammouth	7
10.	10.	(a)	Leaf blade: width		
			narrow	Balkonstar, Keskenylevelü	3
			medium	Genovese	5
			broad	A feuille de laitue	7
11.	11.	(a)	Leaf blade: anthocyanin coloration of upper side		
			absent	Grand vert, Zöldgömb	1
G			present	Biborgömb, Purple Ruffles	9
12.	12.	(a)	Leaf blade: intensity of anthocyanin coloration of upper side		
			weak	Rothaut	3
			medium	Red Rubin	5
			strong	Purple Ruffles	7

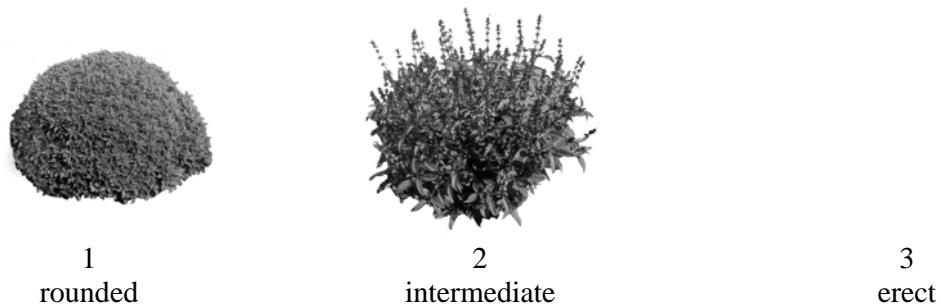
CPVO N°	UPOV N°		Characteristics	Examples	Note
13.	13.	(a)	Leaf blade: distribution of anthocyanin		
			few mottles		1
			many mottles		2
			total surface	Purple Ruffles	3
14.	14.	(a)	Varieties without anthocyanin only: Leaf blade: green colour		
			light	A feuille de laitue	3
			medium	Fin vert nain, Lemon	5
			dark	Sweet Thaï	7
15.	15.	(a)	Leaf blade: glossiness		
			absent or very weak	Lemon	1
			weak	Rothaut	3
			medium	Osmin	5
			strong	Grand vert	7
			very strong	Purple Ruffles	9
16.	16.	(a)	Leaf blade: blistering		
			absent or very weak	Fin vert nain compact	1
			weak	Dark Opal, Keskenylevelü	3
			medium	Genovese, Grand vert	5
			strong	A feuille de laitue, Purple Ruffles	7
17.	17.	(a)	Leaf blade: profile in cross section		
(+)			convex	Genovese, Grand vert	1
			flat	Dark Opal, Rothaut	2
			concave	A feuille de laitue	3
			v-shaped	Lemon	4
18.	18.	(a)	Leaf blade: serration of margin		
			absent	Grand vert	1
			present	Purple Ruffles	9

CPVO N°	UPOV N°	Characteristics	Examples	Note
19.	19.	Leaf blade: depth of serration		
(+)		shallow	Italian Large Leaf	3
		medium	Osmin, Rubin	5
		deep	Purple Ruffles	7
20.	20.	(a) Leaf blade: undulation of margin		
		absent or very weak	Grand vert	1
		weak		3
		medium	Osmin, Rubin	5
		strong	Purple Ruffles	7
21.	21.	Petiole: length		
		short	Oase, Osmin	3
		short to medium		4
		medium	Genovese	5
		medium to long	A feuille de laitue, Salattaltuges	6
		long		7
22.	22.	Flowering stem: average length of internodes (at end of flowering)		
(+)		short	Spicy Bush	3
		medium	Grand vert	5
		long	Feinblättriges	7
23.	23.	Flowering stem: total length (at end of flowering)		
(+)		short	Bubikopf, Fin vert nain	3
		medium	Genovese	5
		long	Lemon	7
24.	24.	Flowering stem: hairiness of bracts	t	
		absent	Grand vert	1
		present	Lemon	9

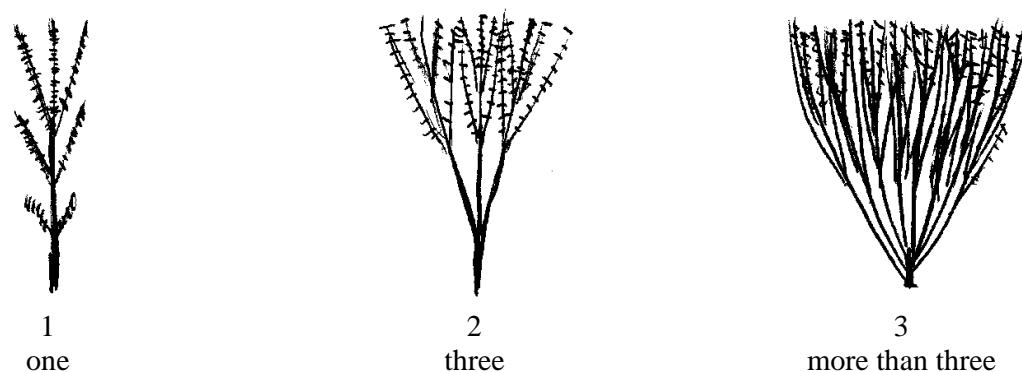
CPVO N°	UPOV N°	Characteristics	Examples	Note
25.	25.	Flower: colour of corolla		
		white	Genovese, Grand vert	1
		pink	Red Rubin	2
G		dark violet	Osmin	3
26.	26.	Flower: colour of style		
		white	Genovese	1
		light violet	Lemon, Opal	2
27.	27.	Time of flowering (10% of plants flowering)		
		very early	Lemon	1
		early	Keskenylevelü	3
		medium	Genovese, Grand vert	5
		late	Balkonstar, Rothaut	7
		very late	Purple Ruffles	9

EXPLANATIONS AND METHODS

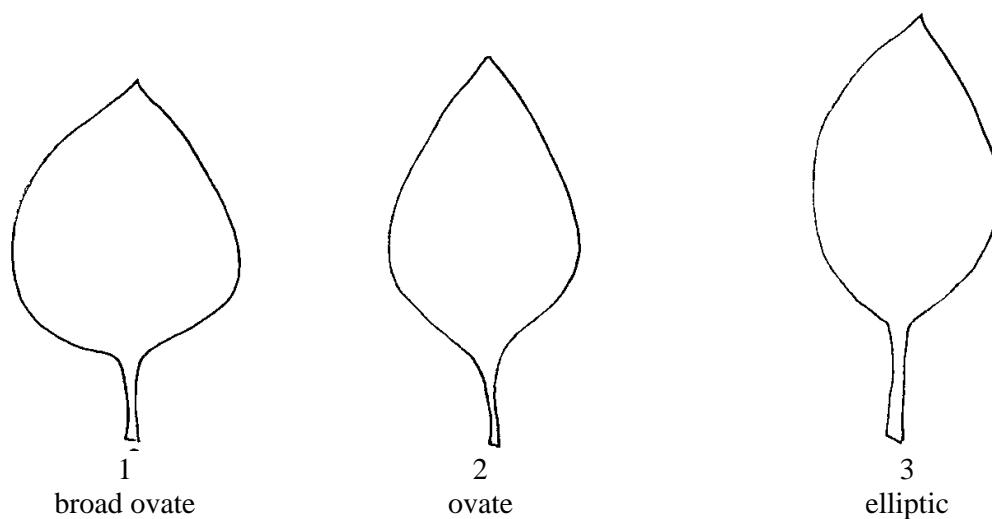
Ad. 1: Plant: growth habit



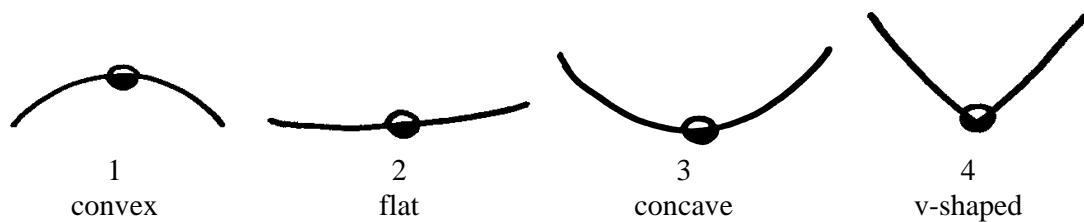
Ad. 7: Stem: number of flowering shoots (at full flowering)



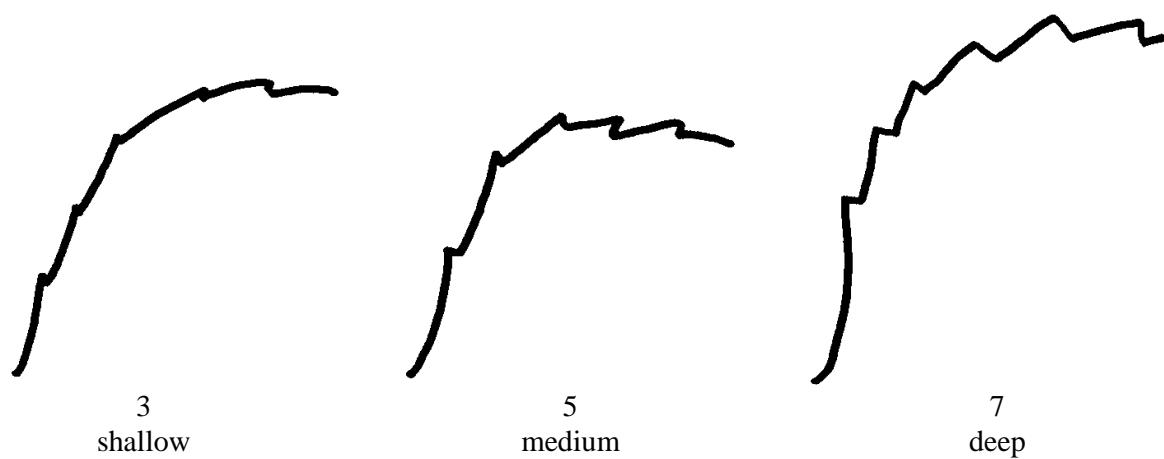
Ad. 8: Leaf blade: shape



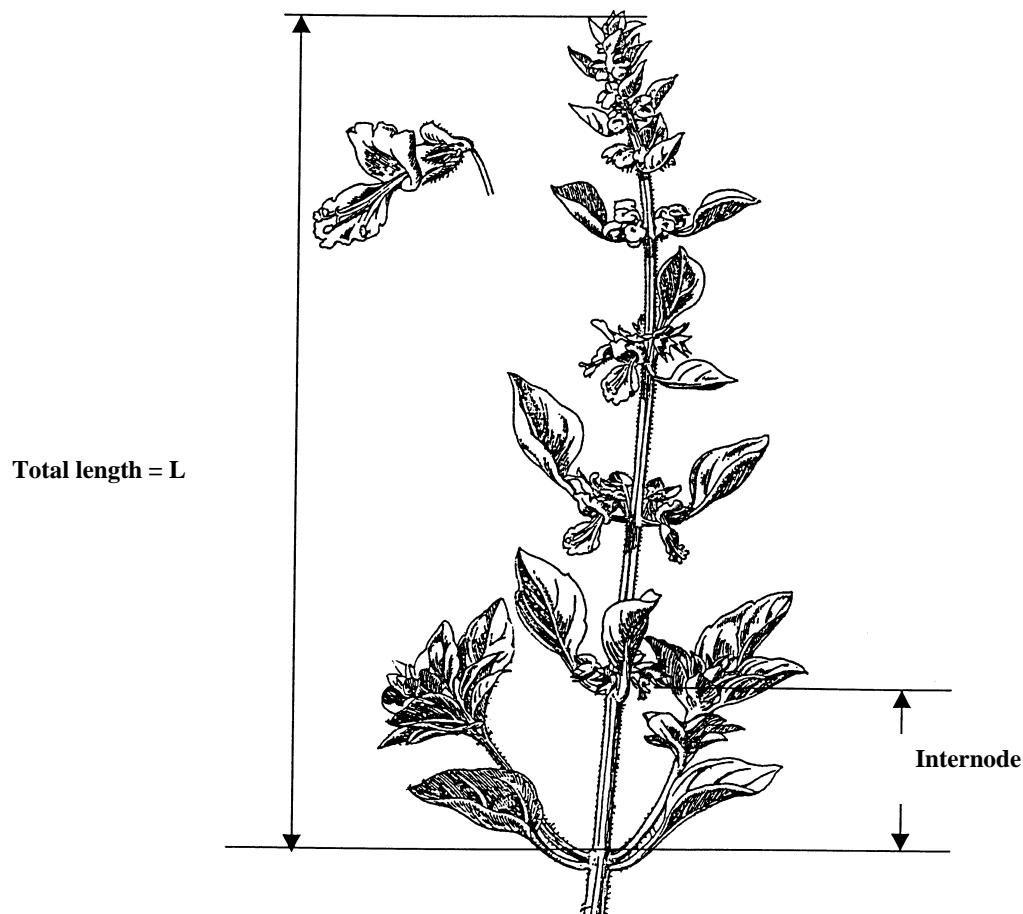
Ad. 17: leaf blade: profile in cross section



Ad. 19: Leaf blade: depth of serration



Ad. 22: Flowering stem: average length of internodes (at the end of flowering); and
Ad. 23: Flowering stem: total length (at end of flowering)



At the end of flowering, measure the total length of the flowering stem (L), taking into account the part where internodes are expressed. Count the number of internodes (x). The average length of internodes is expressed by the ratio L/x .

LITERATURE

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ANNEX II



European Union
Community Plant Variety Office

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

Ocimum basilicum L.

BASIL

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 Method of maintenance and reproduction of the variety

(a)

(i) open-pollinated variety []

(ii) other type (please specify)..... []

(b)

(i) seed propagated[]

(ii) vegetatively propagated.....[]

(c) Other information on genetic origin and breeding method..... []

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

4.3 Shall the information on data relating to components of hybrid varieties including data related to their cultivation be treated as confidential?

[] YES [] NO

If yes, please give this information on the attached form for confidential information.

If no, please give information on data relating to components of hybrid varieties including data related to their cultivation:

Breeding scheme (indicate female component first)

5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in the CPVO Protocol; please mark the state of expression which best corresponds).			
	Characteristics	Example varieties	Note
5.1 (1)	Plant: growth habit		
	rounded	Balkonstar, Biborgömb, Bubikopf, Fin vert nain compact	1 []
	intermediate	Lemon	2 []
	erect	Genovese, Grand vert, Zöldgömb	3 []
5.2 (8)	Leaf blade: shape		
	broad ovate	Italian Large Leaf	1 []
	ovate	Fin vert	2 []
	elliptic	Keskenylevelü	3 []
5.3 (11)	Leaf blade: anthocyanin coloration of upper side		
	absent	Grand vert, Zöldgömb	1 []
	present	Biborgömb, Purple Ruffles	9 []
5.4 (25)	Flower: colour of corolla		
	white	Genovese, Grand vert	1 []
	pink	Red Rubin	2 []
	dark violet	Osmin	3 []
5.5 (27)	Time of flowering (10% of plants flowering)		
	very early	Lemon	1 []
	early	Keskenylevelü	3 []
	medium	Genovese, Grand vert	5 []
	late	Balkonstar, Rothaut	7 []
	very late	Purple Ruffles	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
<hr/>			

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

7.1 Resistance to pests and diseases

7.2 Special conditions for the examination of the variety

[] YES, please specify

[] NO

7.3 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 EC/2001/18 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) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (b) Chemical treatment (e.g. growth retardant or pesticide) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (c) Tissue culture | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| (d) Other factors | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Please provide details of where you have indicated “Yes”:

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]