

**PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS**

*Calluna vulgaris* (L.) Hull

**LING, SCOTS HEATHER**

**UPOV Species Code: CALLU\_VUL**

**Adopted on 28/10/2009**

**Entered into force on 04/11/2009**

## **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/94/6Corr. dated 27<sup>th</sup> February 2009 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to all vegetatively propagated varieties of *Calluna vulgaris* (L.) **Hull**.

## **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](http://www.cpvo.europa.eu)) and in the special Issue S2 of the Official Gazette of the Office published yearly during the month of September.

Quality: ..... The plant material supplied should be visibly healthy, not lacking in vigour or affected by any important pest or disease, especially virus, as laid down in Council Directive 2000/29/EC and its amendments, or organisms impairing quality as indicated in Council Directive 98/56/EEC and Commission Directive 93/49 and their amendments.

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 or at least in one of the EEA Member States;
- 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 that 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: opening of bud (characteristic 13)
- (b) Varieties with opening buds only: Flower: type (characteristic 14)
- (c) Varieties with opening buds only: Flower: colour of outer side of petal at beginning of flowering (characteristic 18) with the following groups:
  - Gr. 1: white
  - Gr. 2: light pink
  - Gr. 3: dark pink
  - Gr. 4: blue violet
  - Gr. 5: purple red
  - Gr. 6: red
- (d) Varieties with non-opening buds only: Flower: main colour at beginning of flowering (characteristic 20) with the following groups:
  - Gr. 1: white
  - Gr. 2: light pink
  - Gr. 3: dark pink
  - Gr. 4: blue violet
  - Gr. 5: purple red
  - Gr. 6: red

## 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 15 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 and any other observations on all plants in the test.

All observations on the plant, on the flowering shoot and on the leaf should be made before the beginning of flowering.

Unless otherwise indicated, all observations on the flower should be made at the beginning of flowering when one-third of the flowers are flowering on 50% of the plants. The observation on the flower at the end of flowering should be made when at least 10 flowers on 10% of the plants present brown coloration.

The test should normally be conducted at one place.

The tests 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.

## 8. 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 2% 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 plant.

**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.

## **VI – ENTRY INTO FORCE**

The present protocol enters into force on 04/11/2009. 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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## ANNEXES TO FOLLOW

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## ANNEX II

Technical questionnaire



## ANNEX I

### TABLE OF CHARACTERISTICS

CPVO N°	UPOV N°	Characteristics	Examples	Note	
1. (+)	1. (+)	<b>Plant: growth habit</b>	upright	Amethyst	1
			narrow bushy	Long White	2
			broad bushy	Marleen	3
			creeping	Heidezwerg	4
2.	2.	<b>Plant: density</b>	open	Peter Sparkes	3
			medium	Marleen	5
			dense	Darkness	7
3.	3.	<b>Plant: height</b>	short	J.H. Hamilton	3
			medium	Marleen	5
			tall	Long White	7
4.	4.	<b>Shoot tip: anthocyanin coloration (during winter)</b>	absent or very weak	Melanie	1
			weak	Dark Beauty	3
			medium	Radnor	5
			strong	Marlies	7
			very strong	Alexandra	9

CPVO N°	UPOV N°	Characteristics	Examples	Note	
5.	5.	<b>Shoot tip: colour of new growth (3 cm long shoot)</b>	yellow	Lambstails	1
			yellow green		2
			light green	Melanie	3
			medium green	Roswitha	4
			dark green		5
			grey green	Alportii	6
			blue green		7
			brown green	Marlies	8
			red green		9
			brown red		10
			dark red		11
			purple red		12
6.	6.	<b>Shoot tip: anthocyanin coloration (in middle of summer)</b>	absent or very weak	Josephine	1
			weak	Elsie Purnell	3
			medium	Allegro	5
			strong	Marleen	7
			very strong	Monja	9

CPVO N°	UPOV N°	Characteristics	Examples	Note	
7.	7. <sup>1</sup>	<b>Shoot: colour on sunny side (as for 6)</b>	orange		1
			yellow orange		2
			yellow	Sandy	3
			yellow green	Melanie	4
			light green	Long White	5
			medium green		6
			dark green		7
			grey green		8
			grey red	Amethyst	9
			red	Marleen	10
			brown red		11
			brown		12
8.	8.	<b>Leaf: colour</b>	yellow	Lambstails	1
			yellow green	Adrie	2
			light green	Melanie	3
			medium green	Marleen	4
			dark green	Monja	5
			grey green	Nico	6
			blue green		7
			brown green		8
			red green		9
			brown red		10
			dark red		11
			purple red		12

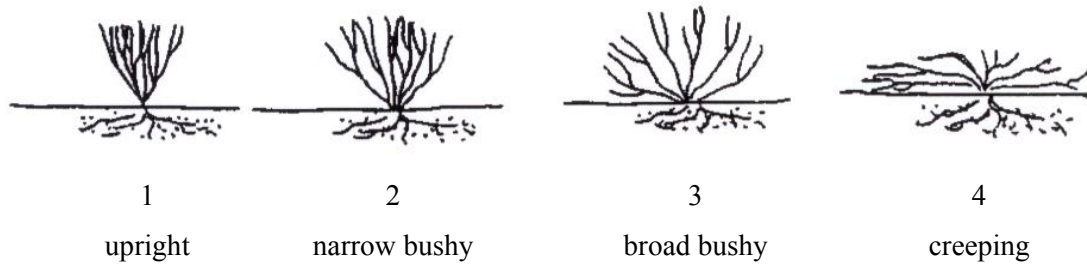
<sup>1</sup> States of expression 1-10 are identical to Characteristic 7 of UPOV TG/94/6 Corr.

CPVO N°	UPOV N°	Characteristics	Examples	Note	
9.	9.	<b>Flowering shoot: length of current season's growth</b>	short	Darkness	3
			medium	Marleen	5
			long	Amethyst	7
10.	10.	<b>Flowering shoot: colour</b>	yellow		1
			yellow green	Melanie	2
			light green	Long White	3
			grey red	Alportii	4
			red	Marlies	5
11.	11.	<b>Flowering shoot: colour of tip at beginning of flowering</b>	yellow		1
			yellow green		2
			light green		3
			medium green		4
			dark green		5
			red green		6
12.	12.	<b>Inflorescence: density of flowers</b>	sparse	Visser's Fancy	3
			medium	Marleen	5
			dense	Dark Beauty	7
13.	13.	<b>Flower: opening of bud</b>	absent	Marleen	1
			present	Long White	9
14.	14.	<b><u>Varieties with opening buds only</u>: Flower: type</b>	single	Long White	1
			double	Annemarie	2
15.	15.	<b>Flower: size</b>	small	Lydia	3
			medium	Dark Beauty, Roswitha	5
			large	Kinlochruel	7

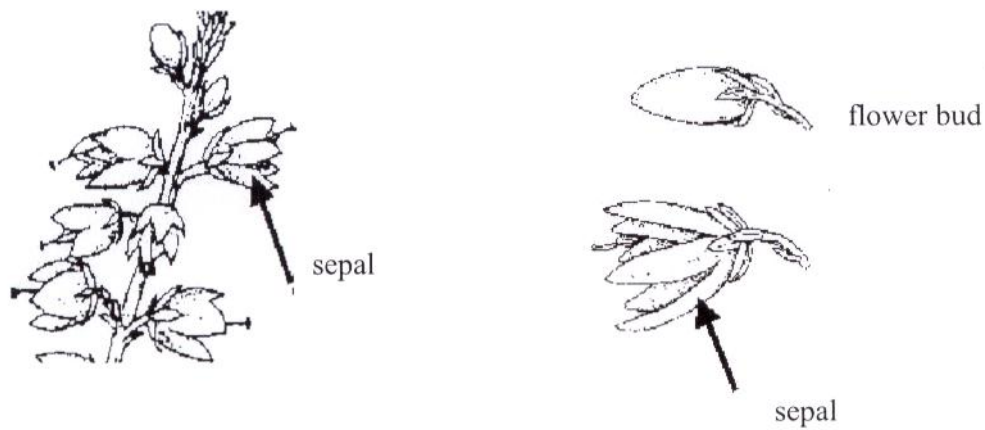
CPVO N°	UPOV N°	Characteristics	Examples	Note	
16.	16.	<b><u>Varieties with opening buds only: Flower: length of calyx relative to length of corolla</u></b>	shorter same length longer	Red Pimpernel Arabella Allegro	1 2 3
17. (+)	17. (+)	<b><u>Varieties with opening buds only: Flower: colour of outer side of sepal</u></b>	RHS Colour Chart (indicate reference number)		
18.	18.	<b><u>Varieties with opening buds only: Flower: colour of outer side of petal at beginning of flowering</u></b>	RHS Colour Chart (indicate reference number)		
19.	19.	<b><u>Varieties with opening buds only: Flower: colour of outer side of petal at the end of flowering</u></b>	RHS Colour Chart (indicate reference number)		
20.	20.	<b><u>Varieties with non-opening buds only: Flower: main colour at beginning of flowering</u></b>	RHS Colour Chart (indicate reference number)		
21.	21.	<b><u>Varieties with non-opening buds only: Flower: main colour at the end of flowering</u></b>	RHS Colour Chart (indicate reference number)		
22.	22.	<b>Time of beginning of flowering</b>	very early early medium late very late	Tib Carmen Annemarie Romina Perestrojka	1 3 5 7 9

## EXPLANATIONS ON THE TABLE OF CHARACTERISTICS

Ad. 1: Plant: growth habit



Ad. 17: Varieties with opening buds only: Flower: colour of outer side of sepal



## LITERATURE

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Denkewitz, Lothar, 1977: *Heidegärten*, Verlag Eugen Ulmer, Stuttgart, DE.

Hieke, K, 1990: 'Beschreibungen der wichtigsten Calluna- und Ericasorten', *Mitt. DG* 79:9-90.

Knight, F.P., 1986: *Heaths and Heathers* (Wisley Handbook; Cassell/RHS).

Maxwell, D.F. and Patrick, P.S, 1966: *The English Heather Garden* (Macdonald).

Munson, R.H., 1984: 'Heaths and Heathers cultivated in North America (Ericaceae)', *Baileya* 22, 101-133.

Proudley, B. and V, 1974: *Heathers in Colour* (Blandford Press).

Underhill, Terry L., 1990: *Heaths & Heathers*, *The Growers Encyclopedia*, David & Charles, Newton Abbot, London 1990, GB.

Van de Laar, H., 1978: *Het Heidetuinboek*, trans. as *The Heather Garden* (Collins).

## 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:**

*Calluna vulgaris* (L.) Hull

**LING, SCOTS HEATHER**

- 2. Applicant(s): Name(s) and address(es), phone and fax number(s), e-mail 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 Origin**

(a) Seedling (indicate parent varieties) ..... [ ]

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(b) Mutation (indicate parent variety) ..... [ ]

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

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(d) Other (please specify) ..... [ ]

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**4.2 Method of propagation**

(a) Cuttings ..... [ ]

(b) *In vitro* propagation ..... [ ]

(c) Seed ..... [ ]

(d) Other (please specify): ..... [ ]

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**4.3 Other information**

**In the case of seed propagated varieties** method of production:

(a) Self-pollinated ..... [ ]

(b) Cross-pollinated (please give details)..... [ ]

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(c) Hybrid (please give details)..... [ ]

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**4.4 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
<b>5.1 Plant: growth habit</b> <b>(1)</b>		
upright	Amethyst	1 [ ]
narrow bushy	Long White	2 [ ]
broad bushy	Marleen	3 [ ]
creeping	Heidezwerg	4 [ ]
<b>5.2 Flower: opening of bud</b> <b>(13)</b>		
absent	Marleen	1 [ ]
present	Long White	9 [ ]

Characteristics	Example varieties	Note																		
<b>5.3 (14)</b> <b><u>Varieties with opening buds only: Flower: type</u></b>  <div style="text-align: center;"> <table border="0"> <tr> <td style="padding-right: 20px;">single</td> <td>Long White</td> <td>1 [ ]</td> </tr> <tr> <td>double</td> <td>Annemarie</td> <td>2 [ ]</td> </tr> </table> </div>	single	Long White	1 [ ]	double	Annemarie	2 [ ]														
single	Long White	1 [ ]																		
double	Annemarie	2 [ ]																		
<b>Please fill in point (i) if possible, otherwise point (ii)</b>																				
<b>5.4 (i) (18)</b> <b><u>Varieties with opening buds only: Flower: colour of outer side of petal at beginning of flowering</u></b>  <div style="text-align: center;"> RHS Colour Chart (indicate reference number): ..... </div>																				
<b>5.4 (ii)</b> <b><u>Varieties with opening buds only: Flower: colour of outer side of petal at beginning of flowering</u></b>  <div style="text-align: center;"> <table border="0"> <tr> <td style="padding-right: 20px;">white</td> <td>Long White</td> <td>1 [ ]</td> </tr> <tr> <td>light pink</td> <td>Peter Sparkes</td> <td>2 [ ]</td> </tr> <tr> <td>dark pink</td> <td>Annemarie</td> <td>3 [ ]</td> </tr> <tr> <td>blue violet</td> <td>Tipp</td> <td>4 [ ]</td> </tr> <tr> <td>purple red</td> <td>Dark Beauty</td> <td>5 [ ]</td> </tr> <tr> <td>red</td> <td>Kir Royal</td> <td>6 [ ]</td> </tr> </table> </div>	white	Long White	1 [ ]	light pink	Peter Sparkes	2 [ ]	dark pink	Annemarie	3 [ ]	blue violet	Tipp	4 [ ]	purple red	Dark Beauty	5 [ ]	red	Kir Royal	6 [ ]		
white	Long White	1 [ ]																		
light pink	Peter Sparkes	2 [ ]																		
dark pink	Annemarie	3 [ ]																		
blue violet	Tipp	4 [ ]																		
purple red	Dark Beauty	5 [ ]																		
red	Kir Royal	6 [ ]																		
<b>Please fill in point (i) if possible, otherwise point (ii)</b>																				
<b>5.5 (i) (20)</b> <b><u>Varieties with non opening buds only: Flower: main colour at beginning of flowering</u></b>  <div style="text-align: center;"> RHS Colour Chart (indicate reference number): ..... </div>																				
<b>5.5 (ii)</b> <b><u>Varieties with non opening buds only: Flower: main colour at beginning of flowering</u></b>  <div style="text-align: center;"> <table border="0"> <tr> <td style="padding-right: 20px;">white</td> <td>Melanie</td> <td>1 [ ]</td> </tr> <tr> <td>light pink</td> <td>Anette</td> <td>2 [ ]</td> </tr> <tr> <td>dark pink</td> <td>Plantarium</td> <td>3 [ ]</td> </tr> <tr> <td>blue violet</td> <td>Marleen</td> <td>4 [ ]</td> </tr> <tr> <td>purple red</td> <td>Aphrodite</td> <td>5 [ ]</td> </tr> <tr> <td>red</td> <td>Marlies, Larissa</td> <td>6 [ ]</td> </tr> </table> </div>	white	Melanie	1 [ ]	light pink	Anette	2 [ ]	dark pink	Plantarium	3 [ ]	blue violet	Marleen	4 [ ]	purple red	Aphrodite	5 [ ]	red	Marlies, Larissa	6 [ ]		
white	Melanie	1 [ ]																		
light pink	Anette	2 [ ]																		
dark pink	Plantarium	3 [ ]																		
blue violet	Marleen	4 [ ]																		
purple red	Aphrodite	5 [ ]																		
red	Marlies, Larissa	6 [ ]																		

<b>6. Similar varieties and differences from these varieties:</b>			
<b>Denomination of similar variety</b>	<b>Characteristic in which the similar variety is different<sup>1)</sup></b>	<b>State of expression of similar variety</b>	<b>State of expression of candidate variety</b>
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
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.....	.....	.....	.....
<p>1) <b>In the case of identical states of expressions of both varieties, please indicate the size of the difference</b></p>			
<p><b>7. Additional information which may help to distinguish the variety</b> A representative printed-out colour photo of the variety <b>must</b> be added to the technical questionnaire.</p> <p><b>7.1 Resistance to pests and diseases</b></p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>			
<p><b>7.2 Special conditions for the examination of the variety</b></p> <p><input type="checkbox"/> YES, please specify .....</p> <p><input type="checkbox"/> NO</p>			
<p><b>7.3 Other information</b></p> <p><input type="checkbox"/> YES, please specify .....</p> <p><input type="checkbox"/> NO</p>			
<p><b>8. GMO-information required</b></p> <p>The variety represents a Genetically Modified Organism within the meaning of Article 2(2) of Council Directive 2001/18/EC of 12/03/2001.</p> <p><input type="checkbox"/> YES                      <input type="checkbox"/> NO</p> <p>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 (EC) No. 2100/94 does not pose risks to the environment according to the norms of the above-mentioned Directive.</p>			

**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”:

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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