CPVO · OCVV
Community Plant Variety Office
Office Communautaire des Variétés Végétales

# PROTOCOL FOR DISTINCTNESS, UNIFORMITY AND STABILITY TESTS

## *Hippophae rhamnoides* L.

## COMMON SEA BUCKTHORN

UPOV Code: HIPPH_RHA

**Adopted on 01/04/2009**

**Entered into force on 01/03/2009**

# 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/240/1 dated 09/04/2008 for the conduct of tests for Distinctness, Uniformity and Stability. This protocol applies to fruit varieties of ***Hippophae rhamnoides* 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 of technical examination and sending of Technical Questionnaire by the CPVO as well as submission date, quantity and quality of plant material by the applicant can be found in the S2 supplement of the CPVO Official Gazette and the CPVO website (www.cpvo.europa.eu).

   Quality of plants:..... Should not be less than the standards laid down in Council Directive 2000/29/EC and its amendments concerning quarantine organisms, and Council Directive 2008/90/EC and Commission Directive 93/48/EEC and their amendments concerning organisms impairing quality, at the date of adoption of this protocol; please refer to "Eur-Lex" for the full text and in case of any subsequent amendments to the three aforesaid Directives.

   **Healthy plant material of the candidate variety should be delivered to the test station in accordance with the requirements outlined in the instructions sent by the CPVO for the submission of plant material, and which can also be consulted in the relevant entries for common sea buckthorn within the S2 Gazette and the CPVO website. In particular with respect to the phytosanitary requirements, the plant material must be accompanied by a valid certificate from a recognised authority attesting to the fact that the plant material sent for the DUS technical examination has shown negative laboratory test results for the list of pests and pathogens outlined in the pertinent entry of the examination office in the S2 Gazette/CPVO website, where the candidate common sea buckthorn variety is to undergo its DUS technical examination.**

Chemical 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.

Labelling of individual plants in sample: .....
- Species
- File number of the application allocated by the CPVO
- Breeder's reference
- Examination office's 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 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 common sea buckthorn. 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 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 could be the following:

a) Plant: sex (characteristic 1)

b) Plant: growth type (characteristic 2)

c) Plant: attitude of branches (characteristic 3)

d) Shoot: number of thorns (from middle part to top) (characteristic 8)

5. Trial designs and growing conditions

The minimum duration of tests (independent growing cycles) will normally include at least two satisfactory crops of fruit. 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

Each test should include 5 plants.

Unless otherwise indicated, all observations should be made on 5 plants or parts taken from each of 5 plants. In the case of parts of plants, the number to be taken from each of the plants should be 3.

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**

A candidate will be considered to be sufficiently uniform if the number of off-types does not exceed the number of plants as indicated in the table below. A population standard of 1% and an acceptance probability of 95% should be applied.

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

| Number of plants | off-types allowed |
|---|---|
| ≤ 5 | 0 |

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 fruiting periods but in some cases three fruiting 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.

## V ENTRY INTO FORCE

The present protocol enters into force on **01 March 2009**. Any ongoing DUS examination of candidate varieties started before the aforesaid date will not be affected by the approval of the new TP. 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 the submission of plant material for the first growing period.

In cases where the CPVO requests to take-over a DUS report for which the technical examination has either been finalized or which is in the process of being carried out at the moment of the 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

**ANNEX I** PAGE

Table of characteristics to be used in DUS-test and preparation of descriptions ..... 7

Legend:

(+) See explanations on the Table of characteristics
(a)-(e) See Explanations on the Table of Characteristics
G Grouping characteristic

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

When a method of observation is attributed to a certain characteristic, the first differentiation is made depending if the action taken is a visual observation (V) or a measurement (M).

The second differentiation deals with the number of observations the expert attributes to each variety, thus the attribution of either G or S.
If a single observation of a group consisting of an undefined number of individual plants is appropriate to assess the expression of a variety, we talk about a visual observation or a measurement made on a group of plants, thus we attribute the letter G (either VG or MG). If the expert makes more than one observation on that group of plants, the decisive part is that we have at the end only one data entry per variety which means that we have to deal with G (e.g. measurement of plant length on a plot – MG, visual observation of green colour of leaves on a plot – VG).
If it is necessary to observe a number of individual plants to assess the expression of a variety, we should attribute the letter S (thus either VS or MS). Single plant data entries are kept per variety for further calculations like the variety mean (e.g. measurement of length of ears – MS, visual observation of growth habit of single plants in grasses – VS). The number of individual plants to be observed in such cases is stated in section III.5.

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**ANNEX II**

Technical Questionnaire

# ANNEX I

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

| CPVO N° | UPOV N° | Observation | Characteristics | Examples | Note |
|---|---|---|---|---|---|
| **1.** | **1.** | **VG** | **Plant: sex** | | |
| **(+)** | **(*) (+)** | | | | |
| **QL** | **QL** | **(a)** | female | Bojan, Leikora, Slovan | 1 |
| **G** | | | male | Pollmix 1 | 2 |
| **2.** | **2.** | **VG** | **Plant: growth type** | | |
| | **(*)** | | | | |
| **(+)** | **(+)** | **(a)** | tree-type | Maslichnaya, Novost` Altaya, Slovan, Vitaminaya | 1 |
| **QL** | **QL** | | | | |
| **G** | | | bush-type | Bojan, Dorana, Terhi | 2 |
| **3.** | **3.** | **VG** | **Plant: attitude of branches** | | |
| | **(*)** | **(a)** | erect | Ascola, Frugana | 1 |
| **PQ** | **PQ** | | semi-erect | Leikora, Slovan, Vitaminaya | 2 |
| | | | horizontal | Bojan, Maslichnaya | 3 |
| **G** | | | arching | Hergo | 4 |
| **4.** | **4.** | **VG** | **Plant: vigor** | | |
| | **(+)** | **(a)** | weak | Dorana, Maslichnaya | 3 |
| **QN** | **QN** | | medium | Bojan, Hergo | 5 |
| | | | strong | Ascola | 7 |
| | | | very strong | Leikora | 9 |
| **5.** | **5.** | **VG** | **Plant: density of shoots** | | |
| **QN** | **QN** | **(a)** | sparse | Pollmix 3, Vitaminaya | 3 |
| | | | medium | Bojan | 5 |
| | | | dense | Maslichnaya, Slovan | 7 |
| **6.** | **6.** | **VG** | **Plant: position of inflorescence** | | |
| **QL** | **QL** | **(b)** | on one-year-old shoots only | Leikora, Pollmix 1, Pollmix 2 | 1 |
| | | | both on one-year-old and older shoots | Ascola, Dorana, Frugana | 2 |

| CPVO N° | UPOV N° | Observation | Characteristics | Examples | Note |
|---|---|---|---|---|---|
| **7.** | **7.** | **VG** | **One-year-old shoot: thickness** | | |
| **QN** | **QN** | **(b)** | thin | | 3 |
| | | | medium | Bojan, Slovan | 5 |
| | | | thick | Leikora, Maslichnaya | 7 |
| **8.** | **8.** | **VG** | **Shoot: number of thorns (from middle part to top)** | | |
| | **(*)** | **(b)** | absent or very few | Obil´naya, Yantarnaya | 1 |
| **QN** | **QN** | | few | Pollmix 1, Vitaminaya | 3 |
| | | | medium | Slovan | 5 |
| **G** | | | many | Bojan, Leikora, Pollmix 2 | 7 |
| **9.** | **9.** | **VG** | **Shoot: length of thorns** | | |
| **(+)** | **(+)** | **(b)** | short | Silvia, Tiberiu | 3 |
| **QN** | **QN** | | medium | Auras, Victoria | 5 |
| | | | long | Diana | 7 |
| **10.** | **10.** | **VG** | **Leaf blade: shape** | | |
| | **(*)** | **(c)** | very narrow elliptic | Bojan, Dorana, Maslichnaya, Vitaminaya | 1 |
| **(+)** | **(+)** | | narrow elliptic | Slovan | 2 |
| **PQ** | **PQ** | | narrow ovate | Frugana | 3 |
| **11.** | **11.** | **MG/VG** | **Leaf blade: size** | | |
| | **(*)** | **(c)** | small | Dorana, Maslichnaya | 3 |
| **QN** | **QN** | | medium | Hergo, Slovan | 5 |
| | | | large | Bojan, Leikora, Vitaminaya | 7 |
| **12.** | **12.** | **VG** | **Leaf blade: undulation of margin** | | |
| **QL** | **QL** | **(c)** | absent | Bojan, Dorana, Maslichnaya, Slovan, Vitaminaya | 1 |
| | | | present | Frugana | 9 |
| **13.** | **13.** | **VG** | **Leaf blade: colour of upper side** | | |
| | **(*)** | **(c)** | green | Dorana, Leikora, Pollmix 1 | 1 |
| **QL** | **QL** | | silverish | Bojan, Maslichnaya, Slovan, Sprite | 2 |

| CPVO N° | UPOV N° | Observation | Characteristics | Examples | Note |
|---|---|---|---|---|---|
| **14.** | **14.** | **VG** | **Leaf blade: intensity of green colour of upper side** | | |
| **QN** | **QN** | **(c)** | light | Dorana | 1 |
| | | | medium | Leikora | 2 |
| | | | dark | Pollmix 1 | 3 |
| **15.** | **15.** | **VG** | **Leaf blade: pubescence of lower side** | | |
| | **(*)** | **(c)** | weak | Bojan, Diana, Ovidiu, Slovan, Tiberiu | 3 |
| **QN** | **QN** | **(d)** | medium | Auras, Serpenta, Victoria | 5 |
| | | | strong | Silvia | 7 |
| **16.** | **16.** | **VG** | **Fruit: size** | | |
| | **(*)** | **(e)** | small | Bojan, Dorana | 3 |
| **QN** | **QN** | | medium | Hergo, Maslichnaya | 5 |
| | | | large | Leikora | 7 |
| **17.** | **17.** | **VG** | **Fruit: shape** | | |
| | **(*)** | **(e)** | pear-shaped | Dorana | 1 |
| **(+)** | **(+)** | | ovate | Leikora, Slovan | 2 |
| **PQ** | **PQ** | | transverse elliptic | Silvia | 3 |
| | | | circular | Tashkent | 4 |
| | | | elliptic | Askola, Bojan, Frugana | 5 |
| | | | oblong | Hergo, Terhi | 6 |
| **18.** | **18.** | **VG** | **Fruit: colour of skin** | | |
| | **(*)** | **(e)** | light yellow | | 1 |
| **PQ** | **PQ** | | dark yellow | Terhi, Tytti | 2 |
| | | | yellow orange | Hergo, Slovan | 3 |
| | | | orange red | Ascola, Bojan, Leikora | 4 |
| | | | red | L 90/539, Sirola | 5 |

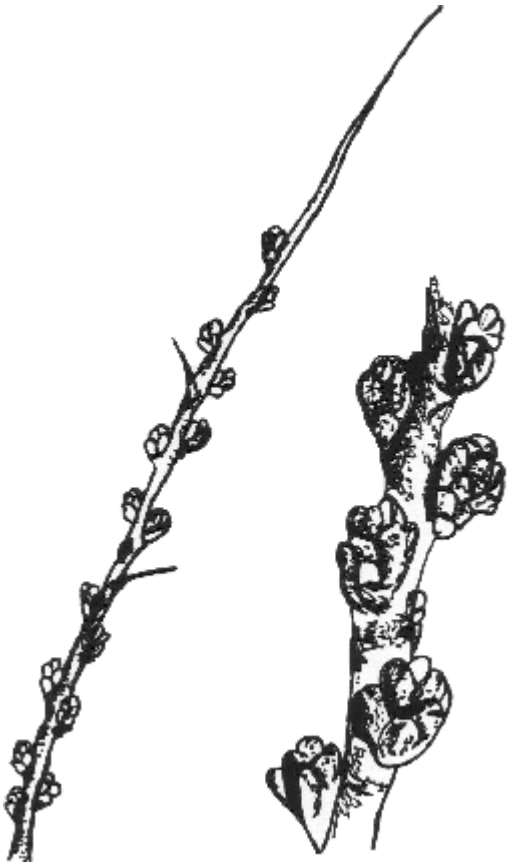
| CPVO N° | UPOV N° | Observation | Characteristics | Examples | Note |
|---|---|---|---|---|---|
| **19.** | **19.** | **VG** | **Fruit: pubescence** | | |
| **QN** | **QN** | **(d)** | weak | Bojan, Frugana, Maslichnaya, Vitaminaya | 3 |
| | | **(e)** | medium | Hergo | 5 |
| | | | strong | Ascola, Slovan | 7 |
| **20.** | **20.** | **VG** | **Fruit: length of stalk** | | |
| **QN** | **QN** | **(e)** | short | Bojan, Hergo | 1 |
| | | | medium | Leikora, Maslichnaya | 2 |
| | | | long | Frugana, Slovan | 3 |
| **21.** | **21.** | **MG** | **Time of beginning of flowering** | | |
| **(+)** | **(+)** | | early | Terhy, Tytti | 3 |
| **QN** | **QN** | | medium | Bojan, Dorana, Hergo, Maslichnaya | 5 |
| | | | late | Leikora, Slovan | 7 |
| **22.** | **22.** | **MG** | **Time of beginning of fruit ripening** | | |
| **(+)** | **(+)** | | very early | Terhi, Tytti | 1 |
| **QN** | **QN** | | early | Frugana | 3 |
| | | | medium | Dorana, Hergo | 5 |
| | | | late | Leikora | 7 |
| | | | very late | | 9 |

## EXPLANATIONS AND METHODS

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

(a) Plant: Observations should be made during winter dormancy.
(b) Shoot: Observations should be made during active growth.
(c) Leaf blade: Observations should be made on mature leaves taken from the middle third of the current season's growth in the middle part of plant.
(d) Pubescence: Observations should be made using a magnifying glass.
(e) Fruit: Observations should be made at the time of fruit maturity.

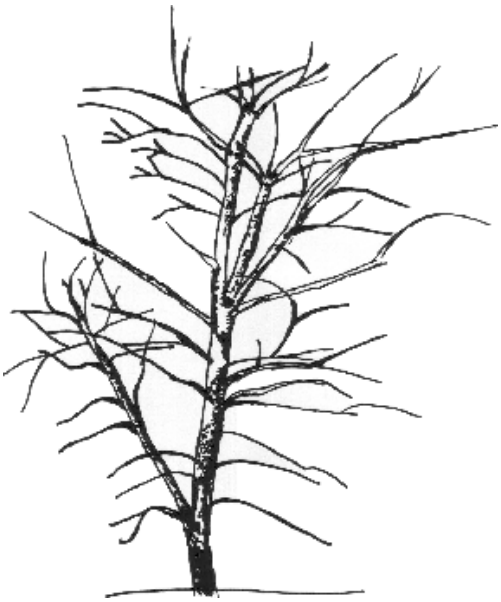
Ad. 1: Plant: sex



1
male

2
female

Ad. 2: Plant: growth type



1
tree-type

2
bush-type

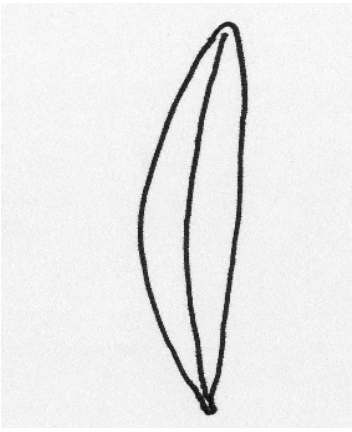
Ad. 4: Plant: vigour

The vigour of the plant should be considered as the overall abundance of vegetative growth.

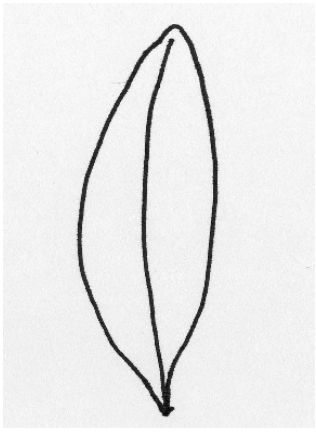
Ad 9: Shoot: length of thorns

Lateral thorns should be assessed exclusively, since the terminal thorns (at the tip of the central leading shoots) are longer.

Ad. 10: Leaf blade: shape



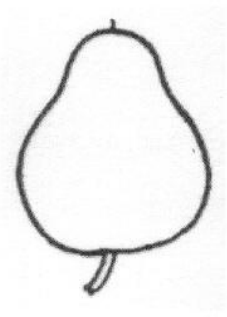
1
very narrow elliptic



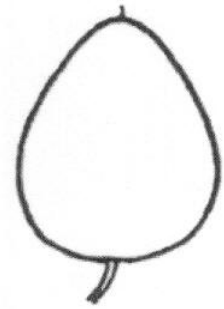
2
narrow elliptic

3
narrow ovate

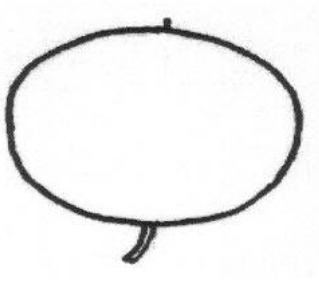
Ad. 17: Fruit: shape



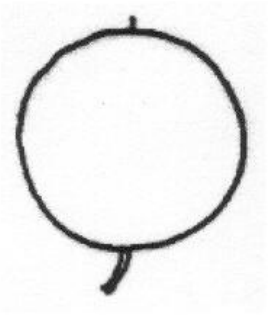
1
pear-shaped



2
ovate

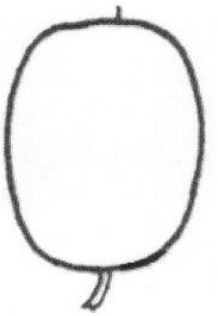


3
transverse elliptic



4
circular

5
elliptic



6
oblong

Ad. 21: Time of beginning of flowering

The time of beginning of flowering is when 10% of the flowers are fully open.

Ad. 35: Time of beginning of fruit ripening

The time of fruit maturity is when at least 90% of fruits have achieved full colour.

# LITERATURE

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# ANNEX II

The Technical Questionnaire is available on the CPVO website under the following reference:
CPVO-TQ/240/1