These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.

GUIDELINES
FOR THE CONDUCT OF TESTS
FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative names:*

<table>
<thead>
<tr>
<th>Botanical name</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>Spanish</th>
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<td>Berberis, Épine-vinette</td>
<td>Berberitze</td>
<td>Béberero</td>
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The purpose of these guidelines (“Test Guidelines”) is to elaborate the principles contained in the General Introduction (document TG/1/3), and its associated TGP documents, into detailed practical guidance for the harmonized examination of distinctness, uniformity and stability (DUS) and, in particular, to identify appropriate characteristics for the examination of DUS and production of harmonized variety descriptions.

ASSOCIATED DOCUMENTS

These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents.

* These names were correct at the time of the introduction of these Test Guidelines but may be revised or updated. [Readers are advised to consult the UPOV Code, which can be found on the UPOV Website (www.upov.int), for the latest information.]
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1. **Subject of these Test Guidelines**


2. **Material Required**

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.

2.2 The material is to be supplied in the form of plants capable of flowering and expressing all relevant characteristics of the variety during the first growing cycle.

2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

   6 plants

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

2.5 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 it has been treated, full details of the treatment must be given.

3. **Method of Examination**

3.1 **Number of Growing Cycles**

3.1.1 The minimum duration of tests should normally be a single growing cycle.

3.1.2 The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test.

3.2 **Testing Place**

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 “Examining Distinctness”.

3.3 **Conditions for Conducting the Examination**

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

3.3.2 Because daylight varies, color determinations made against a color chart should be made either in a suitable cabinet providing artificial daylight or in the middle of the day in a room without direct sunlight. The spectral distribution of the illuminant for artificial daylight should conform with the CIE Standard of Preferred Daylight D 6500 and should fall within the tolerances set out in the British Standard 950, Part I. These determinations should be made with the plant part placed against a white background. The color chart and version used should be specified in the variety description.
3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 6 plants.

3.4.2 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.

3.5 Additional Tests

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

4. Assessment of Distinctness, Uniformity and Stability

4.1 Distinctness

4.1.1 General Recommendations

It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding distinctness. However, the following points are provided for elaboration or emphasis in these Test Guidelines.

4.1.2 Consistent Differences

The differences observed between varieties may be so clear that more than one growing cycle is not necessary. In addition, in some circumstances, the influence of the environment is not such that more than a single growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent. One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic in at least two independent growing cycles.

4.1.3 Clear Differences

Determining whether a difference between two varieties is clear depends on many factors, and should consider, in particular, the type of expression of the characteristic being examined, i.e. whether it is expressed in a qualitative, quantitative, or pseudo-qualitative manner. Therefore, it is important that users of these Test Guidelines are familiar with the recommendations contained in the General Introduction prior to making decisions regarding distinctness.

4.1.4 Number of Plants or Parts of Plants to be Examined

Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 5 plants or parts of plants taken from each of 5 plants and any other observations made on all plants in the test, disregarding any off-type plants.

4.1.5 Method of Observation

The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “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
Type of observation: visual (V) or measurement (M)

"Visual" observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, "visual" observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc.

Type of record: for a group of plants (G) or for single, individual plants (S)

For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.

In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2.

4.2 Uniformity

4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:

4.2.2 These Test Guidelines have been developed for the examination of vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed.

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

4.3 Stability

4.3.1 In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable.

4.3.2 Where appropriate, or in cases of doubt, stability may be further examined by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied.
5. **Grouping of Varieties and Organization of the Growing Trial**

5.1 The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics.

5.2 Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

(a) Plant: type (characteristic 1)
(b) Plant: growth habit (characteristic 2)
(c) Plant: height in relation to width (characteristic 4)
(d) Stem: type of spines (characteristic 8)
(e) Leaf blade: main color (characteristic 16) with the following groups:
   - Gr. 1: green
   - Gr. 2: yellow
   - Gr. 3: red
(f) Leaf blade: secondary color (characteristic 17)
(g) Floral type (characteristic 24)
(h) Fruit: shape in lateral view (characteristic 29)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction and document TGP/9 “Examining Distinctness”.

6. **Introduction to the Table of Characteristics**

6.1 **Categories of Characteristics**

6.1.1 Standard Test Guidelines Characteristics

Standard Test Guidelines characteristics are those which are approved by UPOV for examination of DUS and from which members of the Union can select those suitable for their particular circumstances.

6.1.2 Asterisked Characteristics

Asterisked characteristics (denoted by *) are those included in the Test Guidelines which are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate.

6.2 **States of Expression and Corresponding Notes**

6.2.1 States of expression are given for each characteristic to define the characteristic and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording of data and for the production and exchange of the description.

6.2.2 All relevant states of expression are presented in the characteristic.

6.2.3 Further explanation of the presentation of states of expression and notes is provided in document TGP/7 “Development of Test Guidelines”.
6.3 **Types of Expression**

An explanation of the types of expression of characteristics (qualitative, quantitative and pseudo-qualitative) is provided in the General Introduction.

6.4 **Example Varieties**

Where appropriate, example varieties are provided to clarify the states of expression of each characteristic.

6.5 **Legend**

<table>
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<th>English</th>
<th>français</th>
<th>deutsch</th>
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<th>Note/Nota</th>
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<td>Pseudo-qualitative characteristic</td>
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### Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de características

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<td>purpurn</td>
<td>púrpura</td>
<td>Decora</td>
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<td>7. (*)</td>
<td>PQ</td>
<td>VG</td>
<td>(a), (b)</td>
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<tr>
<td>Young shoot: leaf color</td>
<td>Jeune rameau : couleur de la feuille</td>
<td>Jungtrieb: Blattfarbe</td>
<td>Brote joven: pigmentación de la hoja</td>
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<tr>
<td>green</td>
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<td>grün</td>
<td>verde</td>
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<tr>
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<td>jaune</td>
<td>gelb</td>
<td>amarilla</td>
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<td>orange</td>
<td>naranja</td>
<td>Orange Ice</td>
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<td>rot</td>
<td>roja</td>
<td>Lutin Rouge</td>
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<td>rosa</td>
<td>rosa</td>
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<td>6</td>
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<tr>
<td>8. (*)</td>
<td>QL</td>
<td>VG</td>
<td>(+)</td>
<td>(c)</td>
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<td></td>
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<tr>
<td>Stem: type of spines</td>
<td>Tige : type d’épines</td>
<td>Trieb: Dornentyp</td>
<td>Tallo: tipo de espinas</td>
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<tr>
<td>simple</td>
<td>simple</td>
<td>einfach</td>
<td>simple</td>
<td>Redtorch</td>
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<tr>
<td>trid</td>
<td>trificate</td>
<td>dreistrahlig</td>
<td>trifido</td>
<td>Lombarts purple, Red Tears</td>
<td>2</td>
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<td>9.</td>
<td>Stem: length of spines</td>
<td>Example Varieties</td>
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<td>deutsch</td>
<td>español</td>
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<td>courte</td>
<td>kurz</td>
<td>corta</td>
<td>Golden Torch</td>
<td>1</td>
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<tr>
<td>short to medium</td>
<td>courte à moyenne</td>
<td>kurz bis mittel</td>
<td>corta a media</td>
<td>Tottenham</td>
<td>2</td>
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<td>mittel</td>
<td>media</td>
<td></td>
<td>3</td>
<td></td>
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<tr>
<td>medium to long</td>
<td>moyenne à longue</td>
<td>mittel bis lang</td>
<td>media a larga</td>
<td></td>
<td>4</td>
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<td>long</td>
<td>longue</td>
<td>lang</td>
<td>larga</td>
<td>Dart's Superb</td>
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<table>
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<th>10.</th>
<th>Stem: leaves per node</th>
<th>Example Varieties</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>one to three</td>
<td>une à trois</td>
<td>ein bis drei</td>
</tr>
<tr>
<td>four to six</td>
<td>quatre à six</td>
<td>vier bis sechs</td>
</tr>
<tr>
<td>more than six</td>
<td>plus de six</td>
<td>mehr als sechs</td>
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<table>
<thead>
<tr>
<th>11.</th>
<th>Leaf: length</th>
<th>Example Varieties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>very short</td>
<td>très courte</td>
<td>sehr kurz</td>
</tr>
<tr>
<td>very short to short</td>
<td>très courte à courte</td>
<td>sehr kurz bis kurz</td>
</tr>
<tr>
<td>short</td>
<td>courte</td>
<td>kurz</td>
</tr>
<tr>
<td>short to medium</td>
<td>courte à moyenne</td>
<td>kurz bis mittel</td>
</tr>
<tr>
<td>medium</td>
<td>moyenne</td>
<td>mittel</td>
</tr>
<tr>
<td>medium to long</td>
<td>moyenne à longue</td>
<td>mittel bis lang</td>
</tr>
<tr>
<td>long</td>
<td>longue</td>
<td>lang</td>
</tr>
<tr>
<td>long to very long</td>
<td>longue à très longue</td>
<td>lang bis sehr lang</td>
</tr>
<tr>
<td>very long</td>
<td>très longue</td>
<td>sehr lang</td>
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<table>
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<tr>
<th>12.</th>
<th>Leaf: width</th>
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<tbody>
<tr>
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<td>very narrow</td>
<td>très étroite</td>
<td>sehr schmal</td>
</tr>
<tr>
<td>very narrow to narrow</td>
<td>très étroite à étroite</td>
<td>sehr schmal bis schmal</td>
</tr>
<tr>
<td>narrow</td>
<td>étroite</td>
<td>schmal</td>
</tr>
<tr>
<td>narrow to medium</td>
<td>étroite à moyenne</td>
<td>schmal bis mittel</td>
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<td>medium</td>
<td>moyenne</td>
<td>mittel</td>
</tr>
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<td>moyenne à large</td>
<td>mittel bis breit</td>
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<tr>
<td>broad</td>
<td>large</td>
<td>breit</td>
</tr>
<tr>
<td>broad to very broad</td>
<td>large à très large</td>
<td>breit bis sehr breit</td>
</tr>
<tr>
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<td>très large</td>
<td>sehr breit</td>
</tr>
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<td>PQ</td>
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<td>-----</td>
<td>----</td>
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<tr>
<td>13</td>
<td></td>
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</tr>
<tr>
<td>Leaf: shape</td>
<td>Feuille : forme</td>
<td>Blatt: Form</td>
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<tr>
<td>ovate</td>
<td>ovale</td>
<td>eiförmig</td>
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<tr>
<td>circular</td>
<td>circulaire</td>
<td>kreisförmig</td>
</tr>
<tr>
<td>broad elliptic</td>
<td>elliptique large</td>
<td>breit elliptisch</td>
</tr>
<tr>
<td>narrow elliptic</td>
<td>elliptique étroite</td>
<td>schmal elliptisch</td>
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<td>linear</td>
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<td>obovale</td>
<td>verkehrt eiförmig</td>
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<tr>
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<td>oblanœlée</td>
<td>verkehrt lanzettlich</td>
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<td>spatulée</td>
<td>spatelförmig</td>
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<td>14</td>
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<tr>
<td>Leaf: spines</td>
<td>Feuille : épines</td>
<td>Blatt: Stacheln</td>
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<td>absent</td>
<td>absentes</td>
<td>fehlend</td>
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<td>seulement à l'extrémité</td>
<td>nur am Apex</td>
</tr>
<tr>
<td>on apex and margin</td>
<td>à l'extrémité et au bord</td>
<td>am Apex und am Rand</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaf: shape of apex</td>
<td>Feuille : forme de l'extrémité</td>
<td>Blatt: Form des Apex</td>
</tr>
<tr>
<td>acute</td>
<td>aiguë</td>
<td>spitz</td>
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<tr>
<td>obtuse</td>
<td>obtuse</td>
<td>stumpf</td>
</tr>
<tr>
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<td>arrondie</td>
<td>abgerundet</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
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<tr>
<td>Leaf blade: main color</td>
<td>Limbe : couleur principale</td>
<td>Blattspreite: Hauptfarbe</td>
</tr>
<tr>
<td>none</td>
<td>aucune</td>
<td>keine</td>
</tr>
<tr>
<td>whitish</td>
<td>blanchâtre</td>
<td>weißlich</td>
</tr>
<tr>
<td>green</td>
<td>vert</td>
<td>grün</td>
</tr>
<tr>
<td>yellow</td>
<td>jaune</td>
<td>gelb</td>
</tr>
<tr>
<td>orange</td>
<td>orange</td>
<td>orange</td>
</tr>
<tr>
<td>pink</td>
<td>rose</td>
<td>rosa</td>
</tr>
<tr>
<td>red</td>
<td>rouge</td>
<td>rot</td>
</tr>
<tr>
<td>purple</td>
<td>pourpre</td>
<td>purpur</td>
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<td>deutsch</td>
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<td>---------</td>
<td>---------</td>
<td>---------</td>
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<tr>
<td>18. (*)</td>
<td>QL</td>
<td>VG (+)</td>
</tr>
<tr>
<td>Leaf blade: distribution of secondary color</td>
<td>Limbe : répartition de la couleur secondaire</td>
<td>Blattspreite: Verteilung der Sekundärfarbe</td>
</tr>
<tr>
<td>on margin</td>
<td>au bord</td>
<td>am Rand</td>
</tr>
<tr>
<td>irregular</td>
<td>irrégulière</td>
<td>unregelmäßig</td>
</tr>
</tbody>
</table>

| 19. (*) | PQ      | VG      | (d), (e) |                   |           |
| Leaf blade: tertiary color | Limbe : couleur tertiaire | Blattspreite: Tertiärfarbe | Limbo: color terciario |                   |           |
| none | aucune | keine | ausente | 1 |
| whitish | blanchâtre | weißlich | blanquecino | 2 |
| green | vert | grün | verde | 3 |
| yellow | jaune | gelb | amarillo | 4 |
| orange | orange | orange | naranja | 5 |
| pink | rose | rosa | rosa | 6 |
| red | rouge | rot | rojo | 7 |
| purple | pourpre | purpurn | púrpura | 8 |

| 20. (*) | PQ      | VG      | (d), (e) |                   |           |
| Leaf blade: quaternary color | Limbe : couleur quaternaire | Blattspreite: Quartärfarbe | Limbo: color cuaternario |                   |           |
| none | aucune | keine | ausente | 1 |
| whitish | blanchâtre | weißlich | blanquecino | 2 |
| green | vert | grün | verde | 3 |
| yellow | jaune | gelb | amarillo | 4 |
| orange | orange | orange | naranja | 5 |
| pink | rose | rosa | rosa | 6 |
| red | rouge | rot | rojo | 7 |
| purple | pourpre | purpurn | púrpura | 8 |

<p>| 21. | QN      | VG      | (d)      |                   |           |
| Leaf blade: glossiness | Limbe : brillance | Blattspreite: Glanz | Limbo: brillo |                   |           |
| absent or weak | absente ou faible | fehlend oder gering | ausente o débil | Fireball | 1 |
| medium | moyenne | mittel | medio | Dart's Improvement | 2 |
| strong | forte | stark | fuerte | Lutin Rouge | 3 |</p>
<table>
<thead>
<tr>
<th>22. (*)</th>
<th>PQ</th>
<th>VG</th>
<th>(+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf: profile in cross-section</td>
<td>Feuille : profil en section transversale</td>
<td>Blatt: Profil im Querschnitt</td>
<td>Hoja: perfil transversal</td>
</tr>
<tr>
<td>flat or weakly convex</td>
<td>plat ou faiblement convexe</td>
<td>gerade oder leicht konvex</td>
<td>plano o débilmente convexo</td>
</tr>
<tr>
<td>moderately convex</td>
<td>modérément convexe</td>
<td>mäßig konvex</td>
<td>moderadamente convexo</td>
</tr>
<tr>
<td>revolute</td>
<td>révoluté</td>
<td>abwärts gerollt</td>
<td>revoluto</td>
</tr>
<tr>
<td>23. (*)</td>
<td>QN</td>
<td>VG</td>
<td>(+)</td>
</tr>
<tr>
<td>Leaf: undulation of margin</td>
<td>Feuille : ondulation du bord</td>
<td>Blatt: Randwellung</td>
<td>Hoja: ondulación del borde</td>
</tr>
<tr>
<td>absent or very weak</td>
<td>nulle ou très faible</td>
<td>fehlend oder sehr gering</td>
<td>ausente o muy débil</td>
</tr>
<tr>
<td>very weak to weak</td>
<td>très faible à faible</td>
<td>sehr gering bis gering</td>
<td>muy débil a débil</td>
</tr>
<tr>
<td>weak</td>
<td>faible</td>
<td>gering</td>
<td>débil</td>
</tr>
<tr>
<td>weak to medium</td>
<td>faible à moyenne</td>
<td>gering bis mittel</td>
<td>débil a media</td>
</tr>
<tr>
<td>medium</td>
<td>moyenne</td>
<td>mittel</td>
<td>media</td>
</tr>
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<td>medium to strong</td>
<td>moyenne à forte</td>
<td>mittel bis stark</td>
<td>media a fuerte</td>
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<td>forte</td>
<td>stark</td>
<td>fuerte</td>
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<td>forte à très forte</td>
<td>stark bis sehr stark</td>
<td>fuerte a muy fuerte</td>
</tr>
<tr>
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<td>très forte</td>
<td>sehr stark</td>
<td>muy fuerte</td>
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<td>24. (*)</td>
<td>QL</td>
<td>VG</td>
<td>(+)</td>
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<td>Floral type</td>
<td>Type de fleur</td>
<td>Blüentyp</td>
<td>Tipo de flor</td>
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<td>einzeln</td>
<td>solitaria</td>
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<td>ombelle</td>
<td>Dolde</td>
<td>umbela</td>
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<td>grappe</td>
<td>Blütentraube</td>
<td>racimo</td>
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<td>panicule</td>
<td>Rispe</td>
<td>panícula</td>
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<td>25. (*)</td>
<td>PQ</td>
<td>VG</td>
<td>(+)</td>
</tr>
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<td>Flower bud: color</td>
<td>Bouton floral : couleur</td>
<td>Blütenknospe: Farbe</td>
<td>Botón floral: color</td>
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<td>jaune clair</td>
<td>hellgelb</td>
<td>amarillo claro</td>
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<td>dark yellow</td>
<td>jaune foncé</td>
<td>dunkelgelb</td>
<td>amarillo oscuro</td>
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<td>orange</td>
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<td>orange</td>
<td>naranja</td>
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<td>rouge</td>
<td>rot</td>
<td>rojo</td>
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<td>26. (*)</td>
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<td>Petal: main color</td>
<td>Pétale : couleur principale</td>
<td>Blütenblatt: Hauptfarbe</td>
<td>Pétalo: color principal</td>
</tr>
<tr>
<td>RHS Colour Chart (indicate reference number)</td>
<td>Code RHS des couleurs (indiquer le numéro de référence)</td>
<td>RHS-Farbkarte (Nummer angeben)</td>
<td>Carta de colores RHS (indíquese el número de referencia)</td>
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<td>deutsch</td>
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<td>---------</td>
</tr>
<tr>
<td>27.</td>
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<td>VG</td>
<td>(+)</td>
</tr>
<tr>
<td>Petal: shape of apex</td>
<td>Pétale : forme de l’extrémité</td>
<td>Blütenblatt: Form des Apex</td>
<td>Pétalo: forma del ápice</td>
</tr>
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<td>aiguë</td>
<td>spitz</td>
<td>aguda</td>
</tr>
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<td>arrondie</td>
<td>abgerundet</td>
<td>redondeada</td>
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<td>échancrée</td>
<td>eingekerbt</td>
<td>emarginada</td>
</tr>
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<td>28.</td>
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<td>QN</td>
<td>VG</td>
</tr>
<tr>
<td>Plant: number of fruits</td>
<td>Plante : nombre de fruits</td>
<td>Pflanze: Anzahl Früchte</td>
<td>Planta: número de frutos</td>
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<td>absent or few</td>
<td>nul ou petit</td>
<td>keine oder gering</td>
<td>ausente o bajo</td>
</tr>
<tr>
<td>medium</td>
<td>moyen</td>
<td>mittel</td>
<td>medio</td>
</tr>
<tr>
<td>many</td>
<td>grand</td>
<td>hoch</td>
<td>alto</td>
</tr>
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<td>29.</td>
<td>(*)</td>
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<td>VG</td>
</tr>
<tr>
<td>Fruit: shape in lateral view</td>
<td>Fruit : forme en vue latérale</td>
<td>Frucht: Form in der Seitenansicht</td>
<td>Fruto: forma en vista lateral</td>
</tr>
<tr>
<td>ovate</td>
<td>ovale</td>
<td>eiförmig</td>
<td>oval</td>
</tr>
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<td>circulaire</td>
<td>kreisförmig</td>
<td>circular</td>
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<td>elliptique</td>
<td>elliptisch</td>
<td>elíptica</td>
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<td>oblongue</td>
<td>rechteckig</td>
<td>oblonga</td>
</tr>
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<td>30.</td>
<td>QN</td>
<td>VG</td>
<td>(f)</td>
</tr>
<tr>
<td>Fruit: bloom of skin</td>
<td>Fruit : pruine de l’épiderme</td>
<td>Frucht: Bereifung der Haut</td>
<td>Fruto: pruína de la piel</td>
</tr>
<tr>
<td>absent or weak</td>
<td>absente ou faible</td>
<td>fehlend oder gering</td>
<td>ausente o débil</td>
</tr>
<tr>
<td>medium</td>
<td>moyenne</td>
<td>mittel</td>
<td>media</td>
</tr>
<tr>
<td>strong</td>
<td>forte</td>
<td>stark</td>
<td>fuerte</td>
</tr>
<tr>
<td>31.</td>
<td>(*)</td>
<td>PQ</td>
<td>VG</td>
</tr>
<tr>
<td>Fruit: color of skin</td>
<td>Fruit : couleur de l’épiderme</td>
<td>Frucht: Farbe der Haut</td>
<td>Fruto: color de la piel</td>
</tr>
<tr>
<td>RHS Colour Chart (indicate reference number)</td>
<td>Code RHS des couleurs (indiquer le numéro de référence)</td>
<td>RHS-Farbkarte (Nummer angeben)</td>
<td>Carta de colores RHS (indíquese el número de referencia)</td>
</tr>
</tbody>
</table>
8.  **Explanations on the Table of Characteristics**

8.1  **Explanations covering several characteristics**

Unless otherwise indicated, observations should be made at the time of full flowering.

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

(a)  Observations should be made just before flowering.

(b)  Observations should be made on current year’s shoots.

(c)  Observations should be made on fully expanded spines from the middle third of the stem.

(d)  Observations should be made on the upper side of fully expanded leaves from the middle third of the stem.

(e)  The main color is the color with the largest surface area. In cases, where the areas of the main and secondary colors are too similar to reliably decide which color has the largest area, the darker color is considered to be the main color. The same classification rules should be used for the secondary, tertiary, and the quaternary colors.

(f)  Observations should be made on fully developed fruits from the middle third of the stem.

8.2  **Explanations for individual characteristics**

**Ad. 2: Plant: growth habit**

1. upright  
2. irregularly rounded  
3. compact rounded  
4. spreading

**Ad. 5: Branch: attitude**

1. erect  
2. semi-erect  
3. horizontal  
4. drooping
Ad. 8: Stem: type of spines

1. simple

2. trifid

Ad. 10: Stem: leaves per node

Observations should be made on fully expanded leaves from the middle third of the stem.
Ad. 13: Leaf: shape

<table>
<thead>
<tr>
<th>relative width</th>
<th>below middle</th>
<th>at middle</th>
<th>above middle</th>
</tr>
</thead>
<tbody>
<tr>
<td>narrow</td>
<td></td>
<td><img src="image" alt="Linear" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 linear</td>
<td></td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td><img src="image" alt="Narrow Elliptic" /></td>
<td><img src="image" alt="Oblanceolate" /></td>
<td><img src="image" alt="Spatulate" /></td>
</tr>
<tr>
<td></td>
<td>4 narrow elliptic</td>
<td>7 oblanceolate</td>
<td>8 spatulate</td>
</tr>
<tr>
<td>broad</td>
<td><img src="image" alt="Ovate" /></td>
<td><img src="image" alt="Broad Elliptic" /></td>
<td><img src="image" alt="Obovate" /></td>
</tr>
<tr>
<td></td>
<td>1 ovate</td>
<td>3 broad elliptic</td>
<td>6 obovate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 circular</td>
<td></td>
</tr>
</tbody>
</table>

Ad. 14: Leaf: spines

1. absent
2. only on apex
3. on apex and margin
Ad. 15: Leaf: shape of apex

1. acute
2. obtuse
3. rounded

Ad. 18: Leaf blade: distribution of secondary color

1. on margin
2. irregular

Ad. 22: Leaf: profile in cross-section

Observations should be made on fully expanded leaves from the middle third of the stem.

1. flat or weakly convex
2. moderately convex
3. revolute

Ad. 23: Leaf: undulation of margin

Observations should be made on fully expanded leaves from the middle third of the stem.
Ad. 24: Floral type

1. solitary
2. umbel
3. raceme
4. panicle

Ad. 25: Flower bud: color

Observation on the flower bud should be made on the middle third of the stem just before flower opening.

Ad. 27: Petal: shape of apex

1. acute
2. rounded
3. emarginate

Ad. 28: Plant: number of fruits

Observations should be made on the number of fruits, independently from the number of flowers.
Ad. 29: Fruit: shape in lateral view

<table>
<thead>
<tr>
<th>relative width</th>
<th>← broadest part →</th>
<th>below middle</th>
<th>at middle</th>
<th>above middle</th>
</tr>
</thead>
<tbody>
<tr>
<td>narrow</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 oblong</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td></td>
<td>1 ovate</td>
<td>3 elliptic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>broad</td>
<td></td>
<td>2 circular</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ad. 31: Fruit: color of skin

Observations should be made after removal of bloom on fruit.
9. Literature


### 1. Subject of the Technical Questionnaire

1.1 Botanical name

*Berberis L.*

1.2 Common name

Barberry, Berberis

1.3 Species (please indicate):

### 2. Applicant

Name

Address

Telephone No.

Fax No.

E-mail address

Breeder (if different from applicant)

### 3. Proposed denomination and breeder's reference

Proposed denomination (if available)

Breeder's reference
### 4. Information on the breeding scheme and propagation of the variety

#### 4.1 Breeding scheme

Variety resulting from:

- **4.1.1 Crossing**
  - (a) controlled cross
    (please state parent variety) [ ]
    
    (…………………………………….) x (…………………………………….)
    
    female parent male parent
  
  - (b) partially known cross
    (please state known parent variety(ies)) [ ]
    
    (…………………………………….) x (…………………………………….)
    
    female parent male parent
  
  - (c) unknown cross [ ]

- **4.1.2 Mutation**
  (please state parent variety) [ ]

- **4.1.3 Discovery and development**
  (please state where and when discovered and how developed) [ ]

- **4.1.4 Other**
  (Please provide details) [ ]
<table>
<thead>
<tr>
<th>TECHNICAL QUESTIONNAIRE</th>
<th>Reference Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 Method of propagating the variety</td>
<td></td>
</tr>
<tr>
<td>4.2.1 Vegetative propagation</td>
<td></td>
</tr>
<tr>
<td>(a) Cuttings</td>
<td>[ ]</td>
</tr>
<tr>
<td>(b) <em>In vitro</em> propagation</td>
<td>[ ]</td>
</tr>
<tr>
<td>(c) Other (state method)</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

4.2.2 Other
(Please provide details)

[ ]
5. Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines; please mark the note which best corresponds).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Example Varieties</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1 Plant: type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>deciduous</td>
<td>Helmond Pillar</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>semi-evergreen</td>
<td>Parkjuweel</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>evergreen</td>
<td>Tottenham</td>
<td>3 [ ]</td>
</tr>
<tr>
<td><strong>5.2 Plant: growth habit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>upright</td>
<td>Helmond Pillar, Redtorch</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>irregularly rounded</td>
<td>Electra, Orange Dream, STARBUST</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>compact rounded</td>
<td>Admiration, Lutin Rouge, Tiny Gold</td>
<td>3 [ ]</td>
</tr>
<tr>
<td>spreading</td>
<td>Green Ornament</td>
<td>4 [ ]</td>
</tr>
<tr>
<td><strong>5.3 Plant: height</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>very short</td>
<td>Fireball</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>very short to short</td>
<td></td>
<td>2 [ ]</td>
</tr>
<tr>
<td>short</td>
<td>Admiration</td>
<td>3 [ ]</td>
</tr>
<tr>
<td>short to medium</td>
<td></td>
<td>4 [ ]</td>
</tr>
<tr>
<td>medium</td>
<td>Orange Rocket</td>
<td>5 [ ]</td>
</tr>
<tr>
<td>medium to tall</td>
<td></td>
<td>6 [ ]</td>
</tr>
<tr>
<td>tall</td>
<td>Fireflame</td>
<td>7 [ ]</td>
</tr>
<tr>
<td>tall to very tall</td>
<td></td>
<td>8 [ ]</td>
</tr>
<tr>
<td>very tall</td>
<td>Decora</td>
<td>9 [ ]</td>
</tr>
<tr>
<td><strong>5.4 Plant: height in relation to width</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>taller than broad</td>
<td>Helmond Pillar, Redtorch</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>as tall as broad</td>
<td>Electra, Orange Dream, STARBUST</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>broader than tall</td>
<td>Admiration, Green Ornament, Lutin Rouge, Tiny Gold</td>
<td>3 [ ]</td>
</tr>
<tr>
<td><strong>5.5 Stem: type of spines</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>simple</td>
<td>Redtorch</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>trifid</td>
<td>Lombarts purple, Red Tears</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Example Varieties</td>
<td>Note</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.6(i) Leaf blade: main color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) RHS Colour Chart (indicate reference number)</td>
<td>Crawley Gem</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>5.6(ii) Leaf blade: main color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16) green</td>
<td>Red Rocket</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>yellow</td>
<td>Red Tears</td>
<td>3 [ ]</td>
</tr>
<tr>
<td>red</td>
<td>Barbarossa</td>
<td>4 [ ]</td>
</tr>
<tr>
<td>other (please indicate)</td>
<td></td>
<td>[ ]</td>
</tr>
<tr>
<td>5.7 Leaf blade: secondary color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17) none</td>
<td></td>
<td>1 [ ]</td>
</tr>
<tr>
<td>whitish</td>
<td></td>
<td>2 [ ]</td>
</tr>
<tr>
<td>green</td>
<td></td>
<td>3 [ ]</td>
</tr>
<tr>
<td>yellow</td>
<td></td>
<td>4 [ ]</td>
</tr>
<tr>
<td>orange</td>
<td></td>
<td>5 [ ]</td>
</tr>
<tr>
<td>pink</td>
<td></td>
<td>6 [ ]</td>
</tr>
<tr>
<td>red</td>
<td></td>
<td>7 [ ]</td>
</tr>
<tr>
<td>purple</td>
<td></td>
<td>8 [ ]</td>
</tr>
<tr>
<td>5.8 Floral type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24) solitary</td>
<td>Crawley Gem</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>umbel</td>
<td>Red Rocket</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>raceme</td>
<td>Red Tears</td>
<td>3 [ ]</td>
</tr>
<tr>
<td>panicle</td>
<td>Barbarossa</td>
<td>4 [ ]</td>
</tr>
<tr>
<td>5.9(i) Petal: main color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26) RHS Colour Chart (indicate reference number)</td>
<td>Erecta, Golden Torch, Kobold, Orange Ice</td>
<td>1 [ ]</td>
</tr>
<tr>
<td>5.9(ii) Petal: main color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26) green</td>
<td>Orange Dream, Unique</td>
<td>2 [ ]</td>
</tr>
<tr>
<td>yellow</td>
<td></td>
<td>3 [ ]</td>
</tr>
<tr>
<td>red</td>
<td></td>
<td>4 [ ]</td>
</tr>
<tr>
<td>other (please indicate)</td>
<td></td>
<td>[ ]</td>
</tr>
<tr>
<td>5.10 Plant: number of fruits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28) absent or few</td>
<td>Forescate, Red Tears</td>
<td>3 [ ]</td>
</tr>
<tr>
<td>medium</td>
<td></td>
<td>2 [ ]</td>
</tr>
<tr>
<td>many</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 5.11 Fruit: shape in lateral view

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Example Varieties</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>ovate</td>
<td>Sibbertoft Coral</td>
<td>1</td>
</tr>
<tr>
<td>circular</td>
<td>Irwinii</td>
<td>2</td>
</tr>
<tr>
<td>elliptic</td>
<td>Orange Rocket</td>
<td>3</td>
</tr>
<tr>
<td>oblong</td>
<td>Dart's Superb</td>
<td>4</td>
</tr>
</tbody>
</table>

### 5.12(i) Fruit: color of skin

RHS Colour Chart (indicate reference number)

### 5.12(ii) Fruit: color of skin

<table>
<thead>
<tr>
<th>Color</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>whitish</td>
<td>1</td>
</tr>
<tr>
<td>green</td>
<td>2</td>
</tr>
<tr>
<td>yellow</td>
<td>3</td>
</tr>
<tr>
<td>orange</td>
<td>4</td>
</tr>
<tr>
<td>pink</td>
<td>5</td>
</tr>
<tr>
<td>red</td>
<td>6</td>
</tr>
<tr>
<td>purple</td>
<td>7</td>
</tr>
<tr>
<td>blackish blue</td>
<td>8</td>
</tr>
<tr>
<td>other (please indicate)</td>
<td></td>
</tr>
</tbody>
</table>
6. Similar varieties and differences from these varieties

*Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.*

<table>
<thead>
<tr>
<th>Denomination(s) of variety(ies) similar to your candidate variety</th>
<th>Characteristic(s) in which your candidate variety differs from the similar variety(ies)</th>
<th>Describe the expression of the characteristic(s) for the similar variety(ies)</th>
<th>Describe the expression of the characteristic(s) for your candidate variety</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Example</em></td>
<td>Fruit: shape in lateral view</td>
<td>oblong</td>
<td>circular</td>
</tr>
</tbody>
</table>

Comments:
### Technical Questionnaire

#### 7. Additional information which may help in the examination of the variety

**7.1** In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

*(If yes, please provide details)*

**7.2** Are there any special conditions for growing the variety or conducting the examination?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

*(If yes, please provide details)*

**7.3** Other information

A representative color photograph of the variety displaying its main distinguishing feature(s), should accompany the Technical Questionnaire. The photograph will provide a visual illustration of the candidate variety which supplements the information provided in the Technical Questionnaire.

The key points to consider when taking a photograph of the candidate variety are:

- Indication of the date and geographic location
- Correct labeling (breeder’s reference)
- Good quality printed photograph (minimum 10 cm x 15 cm) and/or sufficient resolution electronic format version (minimum 960 x 1280 pixels)

Further guidance on providing photographs with the Technical Questionnaire is available in document TGP/7 "Development of Test Guidelines", Guidance Note 35 (http://www.upov.int/tgp/en/).

[The link provided may be deleted by members of the Union when developing authorities' own test guidelines.]

---

# Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.
8. **Authorization for release**

   (a) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?
   
   Yes [  ]  
   No [  ]

   (b) Has such authorization been obtained?

   Yes [  ]  
   No [  ]

   If the answer to (b) is yes, please attach a copy of the authorization.

9. **Information on plant material to be examined or submitted for examination**

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, pesticide)  
   Yes [  ]  
   No [  ]

   (c) Tissue culture  
   Yes [  ]  
   No [  ]

   (d) Other factors  
   Yes [  ]  
   No [  ]

   Please provide details for where you have indicated “yes”.

10. **I hereby declare that, to the best of my knowledge, the information provided in this form is correct:**

    Applicant’s name

    [Signature]

    Date

[End of document]