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| **TG/43/8(proj.2)** |
| **ORIGINAL:** English |
| **DATE:** 2022-05-24 |

 |
| **INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS** |
|  | Geneva  |  |
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|  | DRAFT |  |
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|   |
| **RASPBERRY** |
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| UPOV Code(s): RUBUS\_IDA |

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| --- |
| *Rubus idaeus* L. |

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

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| --- |
| *prepared by experts from Germany* |
| *to be considered by the* |
|

|  |
| --- |
| *Technical Working Party for Fruit Crops* |

 |
| *at its fifty-third session, to be held virtually,* |
|

|  |
| --- |
| *from 2022-07-11 to 2022-07-15* |

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 |
| *Disclaimer: this document does not represent UPOV policies or guidance* |
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| --- |
| Alternative names:\* |

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 |
| *Botanical name* | *English* | *French* | *German* | *Spanish* |
|

|  |
| --- |
| *Rubus idaeus* L. |

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|  |
| --- |
| Raspberry |

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| --- |
| Framboisier |

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|  |
| --- |
| Himbeere |

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| --- |
| Frambueso, Sangüeso |

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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. |
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| **ASSOCIATED DOCUMENTS** |
| These Test Guidelines should be read in conjunction with the General Introduction and its associated TGP documents. |
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|  |  |  |
| --- | --- | --- |
| Other associated UPOV documents: |

|  |
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| TG/37 (Blackberry) |

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| 1. | Subject of these Test Guidelines |
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| These Test Guidelines apply to all varieties of *Rubus idaeus* L. and to its hybrids with *Rubus occidentalis* L. |

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| 2. | Material Required |
|  |   |
| 2.1 |

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| 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. |

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| 2.2 |

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| The material is to be supplied in the form of plants with good root formation and with a satisfactory number of adventitious buds on the roots. |

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| 2.3 |

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

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| --- |
| 10 plants. |

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| 2.4 |

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

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| 2.5 |

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| 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. |

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| 3. | Method of Examination |
|  |   |
| *3.1* | *Number of Growing Cycles* |
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| 3.1.1 |

 | The minimum duration of tests should normally be two independent growing cycles. |
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| 3.1.2 |

 | The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles. |
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| 3.1.3 |

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| In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles. |

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| 3.1.4 |

 | The growing cycle is considered to be the duration of a single growing season, beginning with bud burst (flowering and/or vegetative), flowering and fruit harvest and concluding when the following dormant period ends with the swelling of new season buds. |
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| 3.1.5 |

 | The testing of a variety may be conducted 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”.  |
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| *3.3* | *Conditions for Conducting the Examination* |
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| 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. |
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| 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. |
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| *3.4* | *Test Design* |
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| 3.4.1 |

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| Each test should be designed to result in a total of at least 10 plants. |

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| 3.4.2 |

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| 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. |

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*3.5* | *Additional Tests* |
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|  | Additional tests, for examining relevant characteristics, may be established. |

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| 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. |
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| 4.1.4 |

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| Number of Plants or Parts of Plants to be Examined |

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| 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. |

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| 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 plantsVS: visual assessment by observation of individual plants or parts of plants |

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

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| 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. |

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|  | 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:  |
|  |   |
|

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| 4.2.2 |

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| --- |
| 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. |

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| 4.2.3 |

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| 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 10 plants, 1 off-type is allowed. |

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| *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. |

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| 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. |
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| 5.3 | The following have been agreed as useful grouping characteristics: |
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|

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| --- |
| (a) |

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| --- |
| Very young shoot: anthocyanin coloration of apex during rapid growth (characteristic 3) |

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| --- |
| (b) |

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| --- |
| Spines: presence (characteristic 10) |

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| --- |
| (c) |

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| --- |
| Current year's cane: flower (characteristic 22) |

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| --- |
| (d) |

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|  |
| --- |
| Fruit: color (characteristic 33) |

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| --- |
| (e) |

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| --- |
| Time of beginning of flowering on current season’s cane (characteristic 40) |

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| --- |
| (f) |

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| --- |
| Time of beginning of fruit ripening on previous year’s cane (characteristic 41) |

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| 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”. |

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| 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. |

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| *6.5* | *Legend* |
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|

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **1** |

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| **2** |

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| **3** |

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| **4** |

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| **5** |

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| **6** |

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| **7** |

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| **Name of characteristics in English** |

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| **Nom du caractère en français** |

 |

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| --- |
| **Name des Merkmals auf Deutsch** |

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|  |
| --- |
| **Nombre del carácter en español** |

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|  |  |

|  |
| --- |
| states of expression |

 |

|  |
| --- |
| types d’expression |

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| --- |
| Ausprägungsstufen |

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| --- |
| tipos de expresión |

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| --- | --- |
| 1 | Characteristic number |
|  |   |  |  |
| 2 | (\*) | Asterisked characteristic | – see Chapter 6.1.2 |
|  |   |  |  |
| 3 | Type of expression |
|  | QL | Qualitative characteristic | – see Chapter 6.3 |
|  | QN | Quantitative characteristic | – see Chapter 6.3 |
|  | PQ | Pseudo-qualitative characteristic | – see Chapter 6.3 |
|  |   |  |  |
| 4 | Method of observation (and type of plot, if applicable) |
|  | MG, MS, VG, VS  | – see Chapter 4.1.5 |
|  |   |  |  |
| 5 |

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| See Explanations on the Table of Characteristics in Chapter 8.2 |

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| 6 |

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| (a)-(f) |

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| See Explanations on the Table of Characteristics in Chapter 8.1 |

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| 7 |

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| --- |
| Not applicable |

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| --- | --- |
| 7. | Table of Characteristics/Tableau des caractères/Merkmalstabelle/Tabla de caracteres |
|  |   |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** |  | **PQ** | **VG** | **(+)** |  |  |
|  |  |

|  |
| --- |
| **Plant: habit** |

 |  |  |  |  |  |
|  |  | upright |  |  |  | Ontario, Watson | 1 |
|  |  | semi-upright |  |  |  | Autumn Bliss, Preußen, Schönemann | 2 |
|  |  | arching |  |  |  | Joan Squire, Meeker | 3 |
| **2.** | **(\*)** | **QN** | **MG/VG** | **(+)** |  |  |
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| **Plant: number of current season’s canes** |

 |  |  |  |  |  |
|  |  | very few |  |  |  |  | 1 |
|  |  | very few to few |  |  |  |  | 2 |
|  |  | few |  |  |  | Joy, Tulameen | 3 |
|  |  | few to medium |  |  |  | Qualicum | 4 |
|  |  | medium |  |  |  | Drisrasptwo, Fruatfri, Isabel, Malling Delight, Rafzelsa | 5 |
|  |  | medium to many |  |  |  | Adelita, Dolomia Plus, Golden Bliss, Grandeur, Multiraspa, Regina | 6 |
|  |  | many |  |  |  | Bountiful, Poranna Rosa | 7 |
|  |  | many to very many |  |  |  | Carmelina, Cascade Dawn, ma 2920 | 8 |
|  |  | very many |  |  |  |  | 9 |
| **3.** | **(\*)** | **QN** | **VG** |  | **(a)** |  |
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| **Very young shoot: anthocyanin coloration of apex during rapid growth** |

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 |  |  |
|  |  | absent or very weak |  |  |  | Gevalo | 1 |
|  |  | very weak to weak |  |  |  | Rusilva | 2 |
|  |  | weak |  |  |  | Brilliance, Driscoll Sevillana, Sapphire, Schönemann | 3 |
|  |  | weak to medium |  |  |  | Fruatfri, Satine, Sugana | 4 |
|  |  | medium |  |  |  | Regina, Tulameen | 5 |
|  |  | medium to strong |  |  |  | Malling Freya, Maravilla | 6 |
|  |  | strong |  |  |  | Joy, Polka, Sanibelle | 7 |
|  |  | strong to very strong |  |  |  | Royalty | 8 |
|  |  | very strong |  |  |  | Glen Moy, Malling Delight, Multiraspa | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **4.** |  | **QN** | **VG** |  | **(b)** |  |
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| **Current season’s cane: bloom** |

 |  |  |  |  |  |
|  |  | absent or very weak |  |  |  | Adelita, Lupita, Majestic | 1 |
|  |  | very weak to weak |  |  |  | Bountiful, Diamond, Elegance | 2 |
|  |  | weak |  |  |  | Drisrasptwo, Fruatfri, Regina | 3 |
|  |  | weak to medium |  |  |  | Meeker, Qualicum, Rubifall | 4 |
|  |  | medium |  |  |  | ma 2920, Rafzeter, Rafzmach | 5 |
|  |  | medium to strong |  |  |  | Lagorai Plus, NR 7, Schönemann | 6 |
|  |  | strong |  |  |  | Advabereen, Malling Freya, Sanibelle | 7 |
|  |  | strong to very strong |  |  |  | Brilliance, Pokusa | 8 |
|  |  | very strong |  |  |  | Francesca, Ontario, Royalty | 9 |
| **5.** |  | **QN** | **VG** |  | **(b)** |  |
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| **Current season’s cane: anthocyanin coloration** |

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|  |  | absent or very weak |  |  |  | Golden Bliss, Poranna Rosa, Sungold, Valentina | 1 |
|  |  | very weak to weak |  |  |  | ma 2920, Sapphire | 2 |
|  |  | weak |  |  |  | Cardinal, Vajolet | 3 |
|  |  | weak to medium |  |  |  | Evita, Fruatfri, Tulameen | 4 |
|  |  | medium |  |  |  | Holyoke, Rafzaqu, Satine | 5 |
|  |  | medium to strong |  |  |  | Advarberimar, Autumn Treasure, Glen Ample, Lagorai Plus | 6 |
|  |  | strong |  |  |  | Drisraspfour, Malling Juno | 7 |
|  |  | strong to very strong |  |  |  | Rafzmach, Sanibelle, Tulameen Plus | 8 |
|  |  | very strong |  |  |  |  | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **6.** |  | **QN** | **MG/VG** |  | **(b)** |  |
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| **Current season’s cane: length of internode** |

 |  |  |  |  |  |
|  |  | very short |  |  |  |  | 1 |
|  |  | very short to short |  |  |  | NR 7 | 2 |
|  |  | short |  |  |  | Autumn Treasure, NY One, Poranna Rosa | 3 |
|  |  | short to medium |  |  |  | Francesca, Maravilla, Octavia | 4 |
|  |  | medium |  |  |  | Driscoll Madonna, Glen Ample, Holyoke | 5 |
|  |  | medium to long |  |  |  | Polka | 6 |
|  |  | long |  |  |  | Caliber, Seneca | 7 |
|  |  | long to very long |  |  |  |  | 8 |
|  |  | very long |  |  |  |  | 9 |
| **7.** |  | **QN** | **MG/VG** | **(+)** | **(b)** |  |
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| **Current season’s cane: length of vegetative bud** |

 |  |  |  |  |  |
|  |  | short |  |  |  | Autumn Bliss, Drisraspsix | 1 |
|  |  | medium |  |  |  | Driscoll Madonna, Grandeur | 2 |
|  |  | long |  |  |  | Schönemann | 3 |
| **8.** | **(\*)** | **QN** | **MG/VG** | **(+)** | **(b)** |  |
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| **Cane: length** |

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|  |  | very short |  |  |  |  | 1 |
|  |  | very short to short |  |  |  | NR 7 | 2 |
|  |  | short |  |  |  |  | 3 |
|  |  | short to medium |  |  |  | Advabertwee, Gevalo, Loganlike | 4 |
|  |  | medium |  |  |  | Advarberimar | 5 |
|  |  | medium to long |  |  |  | Drisraspone, Radiance | 6 |
|  |  | long |  |  |  | Driscoll Madonna, Schönemann, Tulameen | 7 |
|  |  | long to very long |  |  |  | Meeker, Royalty | 8 |
|  |  | very long |  |  |  | Malling Leo | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **9.** | **(\*)** | **PQ** | **VG** | **(+)** |  |  |
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| **Dormant cane: color** |

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|  |  | brownish grey |  |  |  | Malling Leo, Schönemann | 1 |
|  |  | greyish brown |  |  |  | Malling Orion | 2 |
|  |  | brown |  |  |  | Caliber, Glen Clova | 3 |
|  |  | purplish brown |  |  |  | Festival, Malling Landmark | 4 |
|  |  | brownish purple |  |  |  | Royalty, Titan | 5 |
| **10** | **(\*)** | **QL** | **VG** |  | **(c)** |  |
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| **Spines: presence** |

 |  |  |  |  |  |
|  |  | absent |  |  |  | Glen Moy | 1 |
|  |  | present |  |  |  | Malling Promise | 9 |
| **11** | **(\*)** | **QN** | **VG** |  | **(c)** |  |
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| **Spines: density** |

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|  |  | absent or very sparse |  |  |  | Ontario | 1 |
|  |  | very sparse to sparse |  |  |  | Festival, Korbfüller | 2 |
|  |  | sparse |  |  |  | Valentina | 3 |
|  |  | sparse to medium |  |  |  | Lagorai Plus, Maravilla, Pearl, Tulameen | 4 |
|  |  | medium |  |  |  | Annamaria, Lupita, Octavia | 5 |
|  |  | medium to dense |  |  |  | ma 2920, Schönemann | 6 |
|  |  | dense |  |  |  | Drisrasptwo, Fruatfri, NY One, Regina | 7 |
|  |  | dense to very dense |  |  |  | Golden Bliss | 8 |
|  |  | very dense |  |  |  | Lloyd George | 9 |
| **12** |  | **QN** | **VG** | **(+)** | **(c)** |  |
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| **Spines: size of base** |

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|  |  | very small |  |  |  |  | 1 |
|  |  | very small to small |  |  |  | Gleam, Tola | 2 |
|  |  | small |  |  |  | Caroline, Driscoll Pacifica, Rafzmach | 3 |
|  |  | small to medium |  |  |  | Lupita, NY One, Octavia, Radiance | 4 |
|  |  | medium |  |  |  | Cardinal, Regina | 5 |
|  |  | medium to large |  |  |  | Fruatfri, Isabel, Vajolet | 6 |
|  |  | large |  |  |  | BP 1, Dolomia Plus, Drisrasptwo | 7 |
|  |  | large to very large |  |  |  | JEF-FL | 8 |
|  |  | very large |  |  |  | Lowden | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **13** |  | **QN** | **MG/VG** | **(+)** | **(c)** |  |
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| **Spines: length** |

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 |  |  |
|  |  | very short |  |  |  | Resa, Tola | 1 |
|  |  | short |  |  |  | Carmelina, Grandeur | 2 |
|  |  | medium |  |  |  | Amaranta, Fruatfri, Regina | 3 |
|  |  | long |  |  |  | BP 1, Drisrasptwo | 4 |
|  |  | very long |  |  |  | Lowden | 5 |
| **14** |  | **PQ** | **VG** |  | **(c)** |  |
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| **Spines: color** |

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|  |  | green |  |  |  | Golden Bliss, Malling Delight | 1 |
|  |  | brownish green |  |  |  | Brilliance, Holyoke | 2 |
|  |  | greenish brown |  |  |  | Advabereen, Drisraspfour, Radiance | 3 |
|  |  | brown |  |  |  | Glen Magna, Rusilva | 4 |
|  |  | purplish brown |  |  |  | Cardinal, Fruatfri, Rafzeter | 5 |
|  |  | brownish purple |  |  |  | BP 1, Caroline, Maravilla, Octavia | 6 |
|  |  | purple |  |  |  | Driscoll Madonna, Pokusa, Polka, Sugana | 7 |
| **15** | **(\*)** | **QN** | **VG** |  | **(d)** |  |
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| **Leaf: green color of upper side** |

 |  |  |  |  |  |
|  |  | greenish yellow |  |  |  | JDEBOER005 | 1 |
|  |  | light green |  |  |  | Skeena, Watson | 2 |
|  |  | medium green |  |  |  | Annamaria, Autumn Bliss, Isabel, Multiraspa | 3 |
|  |  | dark green |  |  |  | Dolomia Plus | 4 |
| **16** | **(\*)** | **PQ** | **VG** |  | **(d)** |  |
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| **Leaf: predominant number of leaflets** |

 |  |  |  |  |  |
|  |  | three |  |  |  | Veten, Zefa 3 | 1 |
|  |  | equally three and five |  |  |  | Malling Exploit, Multiraspa, Sirius | 2 |
|  |  | five |  |  |  | Ontario, Pujallup, Rusilva | 3 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **17** |  | **QN** | **VG** |  | **(d)** |  |
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| **Leaf: profile of leaflets in cross section** |

 |  |  |  |  |  |
|  |  | concave |  |  |  | Glen Clova, Glen Moy | 1 |
|  |  | straight |  |  |  | Gevalo | 2 |
|  |  | convex |  |  |  | Gigant | 3 |
| **18** | **(\*)** | **QN** | **VG** |  | **(d)** |  |
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| **Leaf: rugosity** |

 |  |  |  |  |  |
|  |  | very weak |  |  |  | Heritage, Watson | 1 |
|  |  | weak |  |  |  | Rusilva | 2 |
|  |  | medium |  |  |  | Caliber, Malling Landmark, Pujallup | 3 |
|  |  | strong |  |  |  | Malling Exploit, Spica | 4 |
|  |  | very strong |  |  |  | Korbfüller | 5 |
| **19** |  | **QN** | **VG** | **(+)** | **(d)** |  |
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| **Leaf: relative position of lateral leaflets** |

 |  |  |  |  |  |
|  |  | free |  |  |  | Willamette | 1 |
|  |  | touching |  |  |  | Malling Orion | 2 |
|  |  | overlapping |  |  |  | Gigant, Resa, Rumiloba | 3 |
| **20** |  | **QN** | **MG/VG** |  | **(d)** |  |
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| **Terminal leaflet: length** |

 |  |  |  |  |  |
|  |  | very short |  |  |  |  | 1 |
|  |  | very short to short |  |  |  |  | 2 |
|  |  | short |  |  |  | NR 7 | 3 |
|  |  | short to medium |  |  |  | JDEBOER005 | 4 |
|  |  | medium |  |  |  | Glen Carron | 5 |
|  |  | medium to long |  |  |  | Advabereen, ma 2920, NY One, Sanibelle | 6 |
|  |  | long |  |  |  | Amaranta, Drisrasptwo, Elegance, Versailles | 7 |
|  |  | long to very long |  |  |  | BP 1, Dolomia Plus, Polka | 8 |
|  |  | very long |  |  |  | Motueka, Tea | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **21** |  | **QN** | **MG/VG** |  | **(d)** |  |
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| **Terminal leaflet: width** |

 |  |  |  |  |  |
|  |  | very narrow |  |  |  |  | 1 |
|  |  | very narrow to narrow |  |  |  |  | 2 |
|  |  | narrow |  |  |  | Summit | 3 |
|  |  | narrow to medium |  |  |  | Caroline | 4 |
|  |  | medium |  |  |  | Advabertwee, Drisraspone | 5 |
|  |  | medium to broad |  |  |  | Brilliance, Cardinal, Joan J, Rafzaqu, Rubaca | 6 |
|  |  | broad |  |  |  | Fruatfri, Pokusa, Sugana | 7 |
|  |  | broad to very broad |  |  |  | Annamaria, Regina | 8 |
|  |  | very broad |  |  |  | Malling Sirius, Tea | 9 |
| **22** | **(\*)** | **QL** | **VG** |  | **(e)** |  |
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| **Current year's cane: flower** |

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 |  |  |
|  |  | absent |  |  |  |  | 1 |
|  |  | present |  |  |  |  | 9 |
| **23** |  | **QN** | **MG/VG** |  | **(e)** |  |
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| **Pedicel: number of spines** |

 |  |  |  |  |  |
|  |  | absent or very few |  |  |  | Glen Moy, Malling Juno | 1 |
|  |  | very few to few |  |  |  | JDEBOER005, Resa, Wakefield | 2 |
|  |  | few |  |  |  | Bountiful, Lagorai Plus, Valentina | 3 |
|  |  | few to medium |  |  |  | Diamond, Drisraspone, NY One | 4 |
|  |  | medium |  |  |  | Cardinal, Fruatfri, Octavia | 5 |
|  |  | medium to many |  |  |  | Francesca, Maravilla, Sugana | 6 |
|  |  | many |  |  |  | Holyoke, Isabel, Poranna Rosa | 7 |
|  |  | many to very many |  |  |  | Autumn Bliss, Satine | 8 |
|  |  | very many |  |  |  | Ariadne, Golden Bliss | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **24** | **(\*)** | **QN** | **VG** |  | **(e)** |  |
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| **Peduncle: anthocyanin coloration** |

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|  |  | absent or very weak |  |  |  | Golden Bliss, Orange Marie | 1 |
|  |  | very weak to weak |  |  |  | Autumn Bliss, Driscoll Pacifica, Joan J | 2 |
|  |  | weak |  |  |  | Fruatfri, Lupita | 3 |
|  |  | weak to medium |  |  |  | NR 7 | 4 |
|  |  | medium |  |  |  | Grandeur, Isabel, Radiance | 5 |
|  |  | medium to strong |  |  |  | Malling Juno, Qualicum | 6 |
|  |  | strong |  |  |  | Advabereen, Brilliance | 7 |
|  |  | strong to very strong |  |  |  | ABB 122, Glen Doll | 8 |
|  |  | very strong |  |  |  | Rafzmach | 9 |
| **25** |  | **QN** | **MG/VG** | **(+)** | **(e)** |  |
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| **Flower: diameter** |

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 |  |  |
|  |  | very small |  |  |  |  | 1 |
|  |  | very small to small |  |  |  | Trent | 2 |
|  |  | small |  |  |  | Bella, Korfu Wonder | 3 |
|  |  | small to medium |  |  |  | Brilliance, Elegance, Radiance | 4 |
|  |  | medium |  |  |  | Bountiful, ma 2920, Pearl | 5 |
|  |  | medium to large |  |  |  | Joan J | 6 |
|  |  | large |  |  |  | Evita, Lagorai Plus, Malling Freya | 7 |
|  |  | large to very large |  |  |  | Amaranta | 8 |
|  |  | very large |  |  |  |  | 9 |
| **26** |  | **QN** | **VG** |  | **(e)** |  |
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| **Previous year's cane: attitude of fruiting lateral** |

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|  |  | erect |  |  |  | Advarberimar, NR 7 | 1 |
|  |  | semi-erect |  |  |  | Bountiful, Pearl, Sapphire | 2 |
|  |  | horizontal to drooping |  |  |  | Malling Freya | 3 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **27** | **(\*)** | **QN** | **MG/VG** |  | **(e)** |  |
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| **Pevious year's cane: length of fruiting lateral** |

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 |  |  |
|  |  | very short |  |  |  |  | 1 |
|  |  | very short to short |  |  |  | Vene | 2 |
|  |  | short |  |  |  | Cola 1, Glen Moy | 3 |
|  |  | short to medium |  |  |  | Driscoll Pacifica | 4 |
|  |  | medium |  |  |  | Fruatfri, Radiance, Sugana | 5 |
|  |  | medium to long |  |  |  | Grandeur, Regina, Versailles | 6 |
|  |  | long |  |  |  | Glen Ample | 7 |
|  |  | long to very long |  |  |  | Malling Leo | 8 |
|  |  | very long |  |  |  |  | 9 |
| **28** | **(\*)** | **QN** | **MG/VG** |  | **(e), (f)** |  |
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| **Fruit: length** |

 |  |  |  |  |  |
|  |  | very short |  |  |  |  | 1 |
|  |  | very short to short |  |  |  |  | 2 |
|  |  | short |  |  |  | Vene | 3 |
|  |  | short to medium |  |  |  | Boheme | 4 |
|  |  | medium |  |  |  | Octavia, Sugana | 5 |
|  |  | medium to long |  |  |  | Brilliance, Carmelina, Rafzaqu | 6 |
|  |  | long |  |  |  | Driscoll Pacifica, Radiance | 7 |
|  |  | long to very long |  |  |  | Lagorai Plus, Maravilla | 8 |
|  |  | very long |  |  |  | Evita | 9 |
| **29** | **(\*)** | **QN** | **MG/VG** |  | **(e), (f)** |  |
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| **Fruit: width** |

 |  |  |  |  |  |
|  |  | very narrow |  |  |  |  | 1 |
|  |  | very narrow to narrow |  |  |  |  | 2 |
|  |  | narrow |  |  |  |  | 3 |
|  |  | narrow to medium |  |  |  | Chiliwak | 4 |
|  |  | medium |  |  |  | Carmelina, ma 2920, Rafzmach | 5 |
|  |  | medium to broad |  |  |  | Drisrasptwo, NY One | 6 |
|  |  | broad |  |  |  | Bountiful, Lagorai Plus, Pearl | 7 |
|  |  | broad to very broad |  |  |  | Adelita, Amaranta, NR 7 | 8 |
|  |  | very broad |  |  |  |  | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **30** | **(\*)** | **QN** | **MG/VG** |  | **(e), (f)** |  |
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| **Fruit: ratio length/ width** |

 |  |  |  |  |  |
|  |  | very small |  |  |  |  | 1 |
|  |  | very small to small |  |  |  |  | 2 |
|  |  | small |  |  |  | Orange Marie | 3 |
|  |  | small to medium |  |  |  | Poranna Rosa | 4 |
|  |  | medium |  |  |  | Glen Ample, Octavia, Sugana | 5 |
|  |  | medium to large |  |  |  | Advabertwee, Drisrasptwo, Grandeur, NY One, Radiance | 6 |
|  |  | large |  |  |  | Dolomia Plus, Driscoll Madonna, Pearl, Sapphire | 7 |
|  |  | large to very large |  |  |  | Amaranta, Autumn Treasure, Malling Freya | 8 |
|  |  | very large |  |  |  |  | 9 |
| **31** | **(\*)** | **PQ** | **VG** | **(+)** | **(e), (f)** |  |
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| **Fruit: general shape in lateral view** |

 |  |  |  |  |  |
|  |  | circular |  |  |  | Lowden, Orange Marie | 1 |
|  |  | broad conical |  |  |  | Autumn Bliss, Cardinal, Glen Ample, Octavia | 2 |
|  |  | conical |  |  |  | Autumn Treasure, Driscoll Madonna, Francesca, Maravilla | 3 |
|  |  | trapezoidal |  |  |  | Titan | 4 |
| **32** |  | **QN** | **VG** |  | **(e), (f)** |  |
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| **Fruit: size of single drupe** |

 |  |  |  |  |  |
|  |  | very small |  |  |  |  | 1 |
|  |  | small |  |  |  | Jochems Roem | 2 |
|  |  | medium |  |  |  | Carmelina, Qualicum | 3 |
|  |  | large |  |  |  | Holyoke, Joan J, Maravilla, Octavia | 4 |
|  |  | very large |  |  |  | Pokusa | 5 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **33** | **(\*)** | **PQ** | **VG** |  | **(e), (f)** |  |
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| **Fruit: color** |

 |  |  |  |  |  |
|  |  | yellow |  |  |  | Golden Bliss, Sungold | 1 |
|  |  | orange |  |  |  | Valentina | 2 |
|  |  | light red |  |  |  | Annamaria, Maravilla, Qualicum | 3 |
|  |  | medium red |  |  |  | Diamond, Pearl, Sapphire | 4 |
|  |  | dark red |  |  |  | Bella, BP 1 | 5 |
|  |  | purple |  |  |  | Deep Purple, Royalty | 6 |
|  |  | dark purple |  |  |  | Lowden | 7 |
| **34** |  | **QN** | **VG** |  | **(e), (f)** |  |
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| **Fruit: glossiness** |

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 |  |  |
|  |  | very weak |  |  |  |  | 1 |
|  |  | weak |  |  |  | Glen Magna, Poranna Rosa | 2 |
|  |  | medium |  |  |  | Malling Juno, Pearl, Sapphire | 3 |
|  |  | strong |  |  |  | Adelita, Advabertwee, Sanibelle | 4 |
|  |  | very strong |  |  |  | Resa | 5 |
| **35** | **(\*)** | **QN** | **MG/VG** |  | **(e), (f)** |  |
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| **Fruit: firmness** |

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|  |  | very soft |  |  |  |  | 1 |
|  |  | soft |  |  |  | Fallred, Salviraspa | 2 |
|  |  | medium |  |  |  | Brilliance, Carmelina, Francesca | 3 |
|  |  | firm |  |  |  | Advabereen, Maravilla | 4 |
|  |  | very firm |  |  |  |  | 5 |
| **36** |  | **PQ** | **VG** | **(+)** | **(e), (f)** |  |
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| **Fruit: color of torus at distal end** |

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|  |  | greenish |  |  |  | NR 7 | 1 |
|  |  | whitish |  |  |  |  | 2 |
|  |  | yellowish white |  |  |  | Drisraspthirteen | 3 |
|  |  | orange reddish |  |  |  | Drisraspsix | 4 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **37** | **(\*)** | **QN** | **MG/VG** |  |  |  |
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| **Time of vegetative bud burst** |

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|  |  | very early |  |  |  |  | 1 |
|  |  | ver early to early |  |  |  | Vene | 2 |
|  |  | early |  |  |  | Grandeur | 3 |
|  |  | early to medium |  |  |  | Advabertwee, Brilliance, Qualicum | 4 |
|  |  | medium |  |  |  | Advarberimar, Diamond, Lagorai Plus, Regina | 5 |
|  |  | medium to late |  |  |  | Glen Ample, Vajolet | 6 |
|  |  | late |  |  |  | Glen Magna, Lowden | 7 |
|  |  | late to very late |  |  |  | Drisraspfour | 8 |
|  |  | very late |  |  |  | Gaia | 9 |
| **38** | **(\*)** | **QN** | **MG/VG** |  |  |  |
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| **Time of cane emergence** |

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|  |  | very early |  |  |  |  | 1 |
|  |  | very early to early |  |  |  | Drisraspthirteen, Majestic | 2 |
|  |  | early |  |  |  | Sungold | 3 |
|  |  | early to medium |  |  |  | Advarberimar, ma 2920, Maravilla | 4 |
|  |  | medium |  |  |  | Cardinal, Grandeur, Lagorai Plus, Sugana | 5 |
|  |  | medium to late |  |  |  | Amaranta, Tulameen Plus | 6 |
|  |  | late |  |  |  | Glen Fyne | 7 |
|  |  | late to very late |  |  |  | Glen Ample | 8 |
|  |  | very late |  |  |  | Malling Juno, Valentina | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **39** | **(\*)** | **QN** | **MG/VG** | **(+)** | **(e)** |  |
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| **Time of beginning of flowering on previous year’s cane** |

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|  |  | very early |  |  |  |  | 1 |
|  |  | very early to early |  |  |  | Malling Freya | 2 |
|  |  | early |  |  |  | Advabereen, Malling Juno, NY One | 3 |
|  |  | early to medium |  |  |  | Brilliance, Fruatfri, Glen Fyne | 4 |
|  |  | medium |  |  |  | Diamond, Sapphire | 5 |
|  |  | medium to late |  |  |  | Drisraspone, Grandeur | 6 |
|  |  | late |  |  |  | Octavia, Tulameen Plus | 7 |
|  |  | late to very late |  |  |  | Annamaria | 8 |
|  |  | very late |  |  |  |  | 9 |
| **40** | **(\*)** | **QN** | **MG/VG** | **(+)** | **(e)** |  |
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| **Time of beginning of flowering on current season’s cane** |

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|  |  | very early |  |  |  |  | 1 |
|  |  | very early to early |  |  |  | Polana | 2 |
|  |  | early |  |  |  | Adelita, Joan J, Polka | 3 |
|  |  | early to medium |  |  |  | Brilliance, Cardinal, Grandeur, ma 2920, Radiance | 4 |
|  |  | medium |  |  |  | Rafzaqu, Regina | 5 |
|  |  | medium to late |  |  |  | Francesca, Maravilla, Sugana | 6 |
|  |  | late |  |  |  | Advabertwee, Annamaria, Tulameen Plus, Vajolet | 7 |
|  |  | late to very late |  |  |  | Drisraspone, Lagorai Plus | 8 |
|  |  | very late |  |  |  | Driscoll Madonna, Pearl | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
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| **41** | **(\*)** | **QN** | **MG/VG** | **(+)** | **(e)** |  |
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| **Time of beginning of fruit ripening on previous year’s cane** |

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 |  |  |
|  |  | very early |  |  |  |  | 1 |
|  |  | very early to early |  |  |  | ABB 122, Malling Freya | 2 |
|  |  | early |  |  |  | Advabereen, Lupita, ma 2920, Valentina | 3 |
|  |  | early to medium |  |  |  | Adelita, Advarberimar, BP 1, Driscoll Madonna | 4 |
|  |  | medium |  |  |  | Advabertwee, NR 7, Radiance | 5 |
|  |  | medium to late |  |  |  | Mayfair, Satine | 6 |
|  |  | late |  |  |  | Grandeur, Malling Sirius, Octavia | 7 |
|  |  | late to very late |  |  |  | Lowden | 8 |
|  |  | very late |  |  |  | Augusta | 9 |
| **42** | **(\*)** | **QN** | **MG/VG** | **(+)** | **(e)** |  |
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| **Time of beginning of fruit ripening on current year’s cane** |

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|  |  | very early |  |  |  |  | 1 |
|  |  | very early to early |  |  |  | Mayfair | 2 |
|  |  | early |  |  |  | Driscoll Madonna, Isabel, Sugana | 3 |
|  |  | early to medium |  |  |  | Advarberimar, Grandeur, Lagorai Plus | 4 |
|  |  | medium |  |  |  | Diamond, Drisrasptwo, Elegance, NY One | 5 |
|  |  | medium to late |  |  |  | Brilliance, NR 7, Octavia | 6 |
|  |  | late |  |  |  | Caroline, Glen Ample | 7 |
|  |  | late to very late |  |  |  | ABB 122 | 8 |
|  |  | very late |  |  |  |  | 9 |

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| 8. | Explanations on the Table of Characteristics |
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| *8.1* | *Explanations covering several characteristics* |
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|  | Characteristics containing the following key in the Table of Characteristics should be examined as indicated below: |
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| (a) |

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| Very young shoot: Observations on the very young shoot should be made when the shoots are about 15 cm long. |

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| (b) |

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| Current season’s cane: Observations on the current season’s cane should be made when the cane is about 1 m to 1.50 m long. For varieties flowering and fruiting on the previous year's cane these observations should be made just after harvest, for varieties flowering and fruiting on the current year's cane these observations should be made just before or at harvest. The bloom of the current season’s cane should only be observed when fully grown. |

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| (c) |

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| Spines: Observations on spines should be made in the middle third of the current season’s cane, when the cane is fully developed. |

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| (d) |

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| Leaf: Observations on the leaf should be made on fully developed leaves from the middle third of the cane. |

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| (e) |

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| Flower/fruit: Observations on the flower and the fruit should be recorded from canes with flowers and fruits appearing first in the vegetation period (either on previous year's canes in summer or on current year’s canes in autumn). When flowers or fruits have been observed on the current year's cane, they will not be observed on the same canes in the following year.(consider to add:) In the absence of previous year's canes observations should be carried out on current year's canes only. |

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| (f) |

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| Fruit: Observations on the fruit should be made on fruit picked during the second and third harvest. |

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| *8.2* |

 | *Explanations for individual characteristics* |
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| Ad. 1: Plant: habit

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| --- | --- | --- |
| wordml://76.png | wordml://77.png | wordml://78.png |
| 1 | 2 | 3 |
| upright | semi-upright | arching |

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| Ad. 2: Plant: number of current season’s canesThe number of current season’s canes should be considered as the number per meter length of the row before thinning, for the first time observed in the beginning of the second year. |

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| Ad. 7: Current season’s cane: length of vegetative budObservations on the vegetative bud should be made in the middle third of the cane.

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| wordml://79.png | wordml://80.png | wordml://81.png |
| 2 | 3 | 4 |
| short | medium | long |

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| Ad. 8: Cane: lengthThe length of the cane should be assessed as the length of a current year's cane at the end of the vegetation period. |

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| Ad. 9: Dormant cane: colorIf the canes peel, the dominant color should be the color of the bark in an unpeeled area. |

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| Ad. 12: Spines: size of basewordml://82.png |

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| Ad. 13: Spines: lengthSee Ad. 12 |

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| Ad. 19: Leaf: relative position of lateral leaflets

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| wordml://83.png | wordml://84.png | wordml://85.png |
| 1 | 2 | 3 |
| free | touching | overlapping |

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| Ad. 25: Flower: diameterThe diameter of the flower should be assessed with petals pressed into horizontal position. |

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| Ad. 31: Fruit: general shape in lateral view

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| wordml://86.png | wordml://87.png | wordml://88.png | wordml://89.png |
| 1 | 2 | 3 | 4 |
| circular | broad conical | conical | trapezoidal |

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| Ad. 36: Fruit: color of torus at distal endwordml://90.png |

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| Ad. 39: Time of beginning of flowering on previous year’s caneThe time of beginning of flowering should be considered as the time when 10% of the flowers have opened. |

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| Ad. 40: Time of beginning of flowering on current season’s caneSee Ad. 39 |

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| Ad. 41: Time of beginning of fruit ripening on previous year’s caneThe time of beginning of fruit ripening is when the fruit is most easily removed from the plug. |

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| Ad. 42: Time of beginning of fruit ripening on current year’s caneSee Ad. 41 |

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| 9. | Literature |

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| Bundessortenamt, 2006: Beschreibende Sortenliste Himbeere, Brombeere, Deutscher Landwirtschaftsverlag GmbH, Hannover, Germany. Edin, M.; Gaillard, P.; Massardier, P., 1999: Le framboisier. Mongraphie Ctifl.Leemans, J.A.; Nannenga, E.T., 1957: A Morphological Classification of Raspberry varieties. Instituut voor de veredeling van tuinbouwgewassen, Wageningen, The Netherlands.         |

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| 10. | Technical Questionnaire |

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| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

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|  | Application date:(not to be filled in by the applicant) |
| TECHNICAL QUESTIONNAIREto be completed in connection with an application for plant breeders' rights |

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| 1. | Subject of the Technical Questionnaire |
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| 1.1 |

 | Botanical name |

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| *Rubus idaeus* L. |

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| 1.2 |

 | Common name |

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| Raspberry |

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| 2. | Applicant |
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|  | Name |  |  |
|  |  |  |   |  |
|  | Address |  |  |
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|  |  |  |  |
|  |  |  |   |  |
|  | Telephone No. |  |  |
|  |  |  |   |  |
|  | Fax No. |  |  |
|  |  |  |   |  |
|  | E-mail address |  |  |
|  |  |  |   |  |
|  | Breeder (if different from |  |  |
|  | applicant) |  |  |
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| 3. | Proposed denomination and breeder's reference |
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|  | Proposed denomination |  |  |
|  | (if available) |  |  |
|  |  |  |   |  |
|  | Breeder's reference |  |  |
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| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |
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| #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) | [ ] |
|  |      |
|  |   |

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| --- | --- | --- |
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

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|   |
|

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| --- | --- | --- |
|  |  |   |
|  | 4.2 | Method of propagating the variety |
|  |

|  |  |  |
| --- | --- | --- |
|

|  |
| --- |
| 4.2.1 |

 |

|  |
| --- |
| Vegetative propagation |

 |  |
|

|  |
| --- |
| (a) |

 |

|  |
| --- |
| *In vitro* propagation |

 | [ ] |
|

|  |
| --- |
| (b) |

 |

|  |
| --- |
| Rhizomes |

 | [ ] |
|

|  |
| --- |
| (c) |

 |

|  |
| --- |
| Other (state method) |

 | [ ] |
|  |   |  |
|  |  |  |
|  |   |  |
|

|  |
| --- |
| 4.2.2 |

 | Other(Please provide details) | [ ] |
|  |   |  |
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|  |   |  |

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| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

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|   |
|

|  |  |
| --- | --- |
| 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). |
|  |   |  |  |

 |

|  | Characteristics | Example Varieties | Note |
| --- | --- | --- | --- |
|  |  |  |  |
|

|  |
| --- |
| **5.1** |

|  |
| --- |
| **(2)** |

 |

|  |
| --- |
| **Plant: number of current season’s canes** |

 |  |  |
|  |

|  |
| --- |
| very few |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very few to few |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| few |

 |

|  |
| --- |
| Joy, Tulameen |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| few to medium |

 |

|  |
| --- |
| Qualicum |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Drisrasptwo, Fruatfri, Isabel, Malling Delight, Rafzelsa |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to many |

 |

|  |
| --- |
| Adelita, Dolomia Plus, Golden Bliss, Grandeur, Multiraspa, Regina |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| many |

 |

|  |
| --- |
| Bountiful, Poranna Rosa |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| many to very many |

 |

|  |
| --- |
| Carmelina, Cascade Dawn, ma 2920 |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very many |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.2** |

|  |
| --- |
| **(9)** |

 |

|  |
| --- |
| **Dormant cane: color** |

 |  |  |
|  |

|  |
| --- |
| brownish grey |

 |

|  |
| --- |
| Malling Leo, Schönemann |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| greyish brown |

 |

|  |
| --- |
| Malling Orion |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| brown |

 |

|  |
| --- |
| Caliber |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| purplish brown |

 |

|  |
| --- |
| Festival, Malling Landmark |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| brownish purple |

 |

|  |
| --- |
| Royalty, Titan |

 |

|  |
| --- |
| 5 [   ] |

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|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.3** |

|  |
| --- |
| **(10)** |

 |

|  |
| --- |
| **Spines: presence** |

 |  |  |
|  |

|  |
| --- |
| absent |

 |

|  |
| --- |
| Glen Moy |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| present |

 |

|  |
| --- |
| Malling Promise |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.4** |

|  |
| --- |
| **(22)** |

 |

|  |
| --- |
| **Current year's cane: flower** |

 |  |  |
|  |

|  |
| --- |
| absent |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| present |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |

|  | Characteristics | Example Varieties | Note |
| --- | --- | --- | --- |
|  |  |  |  |
|

|  |
| --- |
| **5.5** |

|  |
| --- |
| **(30)** |

 |

|  |
| --- |
| **Fruit: ratio length/ width** |

 |  |  |
|  |

|  |
| --- |
| very small |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very small to small |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| small |

 |

|  |
| --- |
| Orange Marie |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| small to medium |

 |

|  |
| --- |
| Poranna Rosa |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Glen Ample, Octavia, Sugana |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to large |

 |

|  |
| --- |
| Advabertwee, Drisrasptwo, Grandeur, NY One, Radiance |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| large |

 |

|  |
| --- |
| Dolomia Plus, Driscoll Madonna, Pearl, Sapphire |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| large to very large |

 |

|  |
| --- |
| Amaranta, Autumn Treasure, Malling Freya |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very large |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 9 [   ] |

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|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.6** |

|  |
| --- |
| **(31)** |

 |

|  |
| --- |
| **Fruit: general shape in lateral view** |

 |  |  |
|  |

|  |
| --- |
| circular |

 |

|  |
| --- |
| Lowden, Orange Marie |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| broad conical |

 |

|  |
| --- |
| Autumn Bliss, Cardinal, Glen Ample, Octavia |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| conical |

 |

|  |
| --- |
| Autumn Treasure, Driscoll Madonna, Francesca, Maravilla |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| trapezoidal |

 |

|  |
| --- |
| Titan |

 |

|  |
| --- |
| 4 [   ] |

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|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.7** |

|  |
| --- |
| **(33)** |

 |

|  |
| --- |
| **Fruit: color** |

 |  |  |
|  |

|  |
| --- |
| yellow |

 |

|  |
| --- |
| Golden Bliss, Sungold |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| orange |

 |

|  |
| --- |
| Valentina |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| light red |

 |

|  |
| --- |
| Annamaria, Maravilla, Qualicum |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| medium red |

 |

|  |
| --- |
| Diamond, Pearl, Sapphire |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| dark red |

 |

|  |
| --- |
| Bella, BP 1 |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| purple |

 |

|  |
| --- |
| Deep Purple, Royalty |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| dark purple |

 |

|  |
| --- |
| Lowden |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |  |  |  |
|  |  |  |  |
|

|  |
| --- |
| **5.8** |

|  |
| --- |
| **(41)** |

 |

|  |
| --- |
| **Time of beginning of fruit ripening on previous year’s cane** |

 |  |  |
|  |

|  |
| --- |
| very early |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very early to early |

 |

|  |
| --- |
| ABB 122, Malling Freya |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| early |

 |

|  |
| --- |
| Advabereen, Lupita, ma 2920, Valentina |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| early to medium |

 |

|  |
| --- |
| Adelita, Advarberimar, BP 1, Driscoll Madonna |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Advabertwee, NR 7, Radiance |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to late |

 |

|  |
| --- |
| Mayfair, Satine |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| late |

 |

|  |
| --- |
| Grandeur, Malling Sirius, Octavia |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| late to very late |

 |

|  |
| --- |
| Lowden |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very late |

 |

|  |
| --- |
| Augusta |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |

|  | Characteristics | Example Varieties | Note |
| --- | --- | --- | --- |
|  |  |  |  |
|

|  |
| --- |
| **5.9** |

|  |
| --- |
|  |

 |

|  |
| --- |
| **Fruit: bearing type** |

 |  |  |
|  |

|  |
| --- |
| mainly on previous year's cane in summer |

 |

|  |
| --- |
| Malling Promise |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| bith on previous year's cane in summer and on current year's cane in autumn |

 |

|  |
| --- |
| Isabel |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| mainly on current year's cane in autumn |

 |

|  |
| --- |
| Autumn Bliss |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
|

|  |  |  |
| --- | --- | --- |
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

 |
|   |
|

|  |  |
| --- | --- |
| 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.*   |

 |
|

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| Denomination(s) of variety(ies) similar to your candidate variety |

 |

|  |
| --- |
| Characteristic(s) in which your candidate variety differs from the similar variety(ies) |

 |

|  |
| --- |
| Describe the expression of the characteristic(s) for the **similar** variety(ies) |

 |

|  |
| --- |
| Describe the expression of the characteristic(s) for **your** candidate variety |

 |

 |
|

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| *Example* |

|  |
| --- |
| *Fruit: firmness* |

 |

|  |
| --- |
| *very soft* |

 |

|  |
| --- |
| *firm* |

 |
|     |   |   |   |
|   |   |   |   |
|   |   |   |   |

 |
|  | Comments:    |

 |

|  |  |  |  |
| --- | --- | --- | --- |
|

|  |  |  |
| --- | --- | --- |
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

 |
|   |
|

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| --- | --- | --- |
|

|  |
| --- |
| #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? |
|  | Yes | [ ] | No | [ ] |
|  | (If yes, please provide details) |
|  7.2 |  Are there any special conditions for growing the variety or conducting the examination? |
|  | Yes | [ ] | No | [ ] |
|  | (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.] |
|

|  |
| --- |
| Virus status        The variety is free from all known viruses as follows:                             [   ]       (indicate from which viruses)        The plant material is virus tested:                                                             [   ]       (indicate against which viruses)        The virus status is unknown                                                                     [   ]  |

 |
|  |  |   |  |  |

 |

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| --- | --- | --- | --- |
|

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| --- | --- | --- |
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

 |
|   |
|

|  |  |
| --- | --- |
| 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] |