|  |  |  |
| --- | --- | --- |
|  |  | **E** |
|  |   |  |
|  | wordml://75.png |

|  |
| --- |
| **TG/5/8** |
| **ORIGINAL:** English |
| **DATE:** 2020-12-17 |

 |
| **INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS** |
|  | Geneva  |  |
|  |  |  |
|  |   |  |
|  |

|  |
| --- |
|   |
| **RED CLOVER** |
|   |
|

|  |
| --- |
|  |
|

|  |
| --- |
| UPOV Code(s): TRFOL\_PRA |

 |
|  |

 |
|   |
|

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

|  |
| --- |
| *Trifolium pratense* L. |

 |

 |
|   |

 |

|  |
| --- |
| \* |

 |
|  |   |  |
|

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

 |
|

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

|  |
| --- |
| Alternative names:\* |

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

|  |
| --- |
| *Trifolium pratense* L. |

 |

|  |
| --- |
| Red Clover |

 |

|  |
| --- |
| Trèfle violet |

 |

|  |
| --- |
| Rotklee |

 |

|  |
| --- |
| Trébol rojo, Trébol violeta |

 |

 |
|  |   |  |
| 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. |

|  |  |
| --- | --- |
| TABLE OF CONTENTS | PAGE |
|   |  |
|

|  |  |  |
| --- | --- | --- |
| 1. | SUBJECT OF THESE TEST GUIDELINES.......................................................................................................... | [3](#Section1) |
|  |   |  |
| 2. | MATERIAL REQUIRED......................................................................................................................................... | [3](#Section2) |
|  |   |  |
| 3. | METHOD OF EXAMINATION................................................................................................................................ | [3](#Section3) |
|  |   |  |
|  |

|  |  |  |
| --- | --- | --- |
| 3.1 | Number of Growing Cycles........................................................................................................................ | [3](#Section3-1) |
| 3.2 | Testing Place............................................................................................................................................. | [3](#Section3-2) |
| 3.3 | Conditions for Conducting the Examination............................................................................................... | [3](#Section3-3) |
| 3.4 | Test Design................................................................................................................................................ | [3](#Section3-4) |
| 3.5 | Additional Tests......................................................................................................................................... | [4](#Section3-5) |

 |
|  |   |  |
| 4. | ASSESSMENT OF DISTINCTNESS, UNIFORMITY AND STABILITY................................................................. | [4](#Section4) |
|  |   |  |
|  |

|  |  |  |
| --- | --- | --- |
| 4.1 | Distinctness............................................................................................................................................... | [4](#Section4-1) |
| 4.2 | Uniformity.................................................................................................................................................. | [5](#Section4-2) |
| 4.3 | Stability...................................................................................................................................................... | [5](#Section4-3) |

 |
|  |   |  |
| 5. | GROUPING OF VARIETIES AND ORGANIZATION OF THE GROWING TRIAL................................................ | [6](#Section5) |
|  |   |  |
| 6. | INTRODUCTION TO THE TABLE OF CHARACTERISTICS................................................................................ | [6](#Section6) |
|  |   |  |
|  |

|  |  |  |
| --- | --- | --- |
| 6.1 | Categories of Characteristics..................................................................................................................... | [6](#Section6-1) |
| 6.2 | States of Expression and Corresponding Notes........................................................................................ | [6](#Section6-2) |
| 6.3 | Types of Expression.................................................................................................................................. | [6](#Section6-3) |
| 6.4 | Example Varieties...................................................................................................................................... | [6](#Section6-4) |
| 6.5 | Legend....................................................................................................................................................... | [7](#Section6-5) |

 |
|  |   |  |
| 7. | TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES...................................................................................................................................................... | [8](#Section7) |
|  |   |  |
| 8. | EXPLANATIONS ON THE TABLE OF CHARACTERISTICS............................................................................... | [14](#Section8) |
|  |

|  |   |  |
| --- | --- | --- |
| 8.1 | Explanations covering several characteristics........................................................................................... | [14](#Section8-1) |
|

|  |
| --- |
| 8.2 |

 | Explanations for individual characteristics................................................................................................. | [14](#Section8-2) |
| 8.3 | Phenological growth stages based on the general BBCH-scale (Meier, 2001) adjusted for Red Clover.. | [16](#Section9) |

 |
|  |   |  |
| 9. | LITERATURE......................................................................................................................................................... | [17](#Section9) |
|  |   |  |
| 10. | TECHNICAL QUESTIONNAIRE............................................................................................................................ | [18](#Section10) |
|  |   |  |
|  |

|  |
| --- |
|  |

 |  |

 |

|  |  |
| --- | --- |
| 1. | Subject of these Test Guidelines |
|  |   |
|  |

|  |
| --- |
| These Test Guidelines apply to all varieties of *Trifolium pratense* L.. |

 |

|  |  |
| --- | --- |
|  |   |
| 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 seeds. |

 |
|  |   |
| 2.3 |

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

 |
|  |   |
|  |

|  |
| --- |
| 500 g of seed |

 |
|  |   |
|  | The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. |
|  |   |
| 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 two independent growing cycles. |
|  |   |
|

|  |
| --- |
| 3.1.2 |

 | The two independent growing cycles should be in the form of two separate plantings. |
|  |  |
| 3.1.3 | 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 | The optimum stage of development for the assessment of each characteristic is indicated by a reference in the Table of Characteristics. The stages of development denoted by each reference are described in Chapter 8.3. |
|  |   |
|

|  |
| --- |
| 3.3.3 |

 | The recommended type of plot in which to observe the characteristic is indicated by the following key in the Table of Characteristics: |
|  |   |
|  |

|  |  |  |
| --- | --- | --- |
| A: |

|  |
| --- |
|   spaced plants |

 |
| B: |

|  |
| --- |
|   row plots |

 |
| C: |

|  |
| --- |
|   special tests |

 |

 |
|  |   |
| *3.4* | *Test Design* |
|  |   |
| 3.4.1 | Spaced plants: Each test should be designed to result in a total of at least 60 plants, which should be divided between at least 3 replicates. |
|  |  |
| 3.4.2 | Row plots: Each test should be designed to result in a total of at least 3000 plants, which should be divided between at least 2 replicates. |
|  |  |
|

|  |
| --- |
| 3.4.3 |

 | 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 60 plants or parts of plants taken from each of 60 plants and any other observations made on all plants in the test, disregarding any off-type plants. |

 |
|  |   |
|  |

|  |
| --- |
| In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 1. |

 |
|  |   |
| 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 |

 |
|  |   |

|  |  |
| --- | --- |
|  | 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 cross-pollinated 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 |

 | The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction. |
|  |   |
| *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 seed 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: ploidy (characteristic 1) |

 |
|

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

 |  |

|  |
| --- |
| Time of flowering (characteristic 15) |

 |
|

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

 |  |

|  |
| --- |
| Stem: length (characteristic 16) |

 |
|

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

|  |
| --- |
|  |

 |

 |

 |
| 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* |
|  |   |
|

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |
| --- |
| **1** |

 |

|  |
| --- |
| **2** |

 |

|  |
| --- |
| **3** |

 |

|  |
| --- |
| **4** |

 |

|  |
| --- |
| **5** |

 |

|  |
| --- |
| **6** |

 |

|  |
| --- |
| **7** |

 |
|  |  |

|  |
| --- |
| **Name of characteristics in English** |

 |

|  |
| --- |
| **Nom du caractère en français** |

 |

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

 |

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

 |  |  |
|  |  |

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

 |

|  |
| --- |
| types d’expression |

 |

|  |
| --- |
| Ausprägungsstufen |

 |

|  |
| --- |
| tipos de expresión |

 |

|  |
| --- |
|  |

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

 |
|

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

|  |
| --- |
| (+) |

 |

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

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

 |

 |
|  |   |  |  |
| 6 |

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

 |

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

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

 |

 |
|  |   |  |  |
| 7 |

|  |
| --- |
| Growth stage key See Explanations on the Table of Characteristics in Chapter 8.3 |

 |

 |
|  |
| Type of plot:A spaced plantsB row plantsC special test |

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

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** | **(\*)** | **QL** | **MG|C** | **(+)** |  |  |
|  |  |

|  |
| --- |
| **Plant: ploidy** |

 |

|  |
| --- |
| **Plante : ploïdie** |

 |

|  |
| --- |
| **Pflanze: Ploidie** |

 |

|  |
| --- |
| **Planta: ploidía** |

 |  |  |
|  |  | diploid | diploïde | diploid | diploide | Start | 2 |
|  |  | tetraploid | tétraploïde | tetraploid | tetraploide | Titus | 4 |
| **2.** |  | **QN** | **MS|C** | **(+)** |  | **11** |
|  |  |

|  |
| --- |
| **Cotyledon: length** |

 |

|  |
| --- |
| **Cotylédon : longueur** |

 |

|  |
| --- |
| **Keimblatt: Länge** |

 |

|  |
| --- |
| **Cotiledón: longitud** |

 |  |  |
|  |  | short | courte | kurz | corta |  | 1 |
|  |  | short to medium | courte à moyenne | kurz bis mittel | corta a media |  | 2 |
|  |  | medium | moyenne | mittel | media | Agil, Temara | 3 |
|  |  | medium to long | moyenne à longue | mittel bis lang | media a larga |  | 4 |
|  |  | long | longue | lang | larga | Atlantis, Maro | 5 |
| **3.** |  | **QN** | **MS|C** | **(+)** |  | **11** |
|  |  |

|  |
| --- |
| **Cotyledon: width** |

 |

|  |
| --- |
| **Cotylédon : largeur** |

 |

|  |
| --- |
| **Keimblatt: Breite** |

 |

|  |
| --- |
| **Cotiledón: anchura** |

 |  |  |
|  |  | narrow | étroite | schmal | estrecha | Vltavín, Lemmon | 1 |
|  |  | narrow to medium | étroite à moyenne | schmal bis mittel | estrecha a media |  | 2 |
|  |  | medium | moyenne | mittel | media | Renegade, Temara | 3 |
|  |  | medium to broad | moyenne à large | mittel bis breit | media a ancha |  | 4 |
|  |  | broad | large | breit | ancha | Maro | 5 |
| **4.** | **(\*)** | **QN** | **VG|C** |  |  | **13-19** |
|  |  |

|  |
| --- |
| **Petiole: density of hairs** |

 |

|  |
| --- |
| **Pétiole : densité de la pilosité** |

 |

|  |
| --- |
| **Blattstiel: Dichte der Behaarung** |

 |

|  |
| --- |
| **Pecíolo: densidad de la vellosidad** |

 |  |  |
|  |  | sparse | lâche | locker | escasa | Lucrum | 1 |
|  |  | sparse to medium | lâche à moyenne | locker bis mittel | escasa a media |  | 2 |
|  |  | medium | moyenne | mittel | media | Formica | 3 |
|  |  | medium to dense | moyenne à dense | mittel bis dicht | media a densa |  | 4 |
|  |  | dense | dense | dicht | densa | Grasslands Pawera | 5 |
| **5.** |  | **QN** | **MG|B/VG|B** |  |  | **29** |
|  |  |

|  |
| --- |
| **Plant: natural height without vernalization** |

 |

|  |
| --- |
| **Plante : hauteur naturelle sans vernalisation** |

 |

|  |
| --- |
| **Pflanze: natürliche Höhe ohne Vernalisation** |

 |

|  |
| --- |
| **Planta: altura natural sin vernalización** |

 |  |  |
|  |  | very short | très basse | sehr niedrig | muy baja |  | 1 |
|  |  | very short to short | très basse à basse | sehr niedrig bis niedrig | muy baja a baja |  | 2 |
|  |  | short | basse | niedrig | baja |  | 3 |
|  |  | short to medium | basse à moyenne | niedrig bis mittel | baja a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Lucrum | 5 |
|  |  | medium to tall | moyenne à haute | mittel bis hoch | media a alta |  | 6 |
|  |  | tall | haute | hoch | alta | Formica | 7 |
|  |  | tall to very tall | haute à très haute | hoch bis sehr hoch | alta a muy alta |  | 8 |
|  |  | very tall | très haute | sehr hoch | muy alta |  | 9 |
| **6.** |  | **QN** | **VG|B** |  |  | **29** |
|  |  |

|  |
| --- |
| **Leaf: intensity of green color without vernalization** |

 |

|  |
| --- |
| **Feuille : intensité de la couleur verte sans vernalisation** |

 |

|  |
| --- |
| **Blatt: Intensität der Grünfärbung ohne Vernalisation** |

 |

|  |
| --- |
| **Hoja: intensidad del color verde sin vernalización** |

 |  |  |
|  |  | very light | très claire | sehr hell | muy clara |  | 1 |
|  |  | very light to light | très claire à claire | sehr hell bis hell | muy clara a clara |  | 2 |
|  |  | light | claire | hell | clara | Kenland | 3 |
|  |  | light to medium | claire à moyenne | hell bis mittel | clara a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Rotra | 5 |
|  |  | medium to dark | moyenne à foncée | mittel bis dunkel | media a oscura |  | 6 |
|  |  | dark | foncée | dunkel | oscura | Tedi | 7 |
|  |  | dark to very dark | foncée à très foncée | dunkel bis sehr dunkel | oscura a muy oscurs |  | 8 |
|  |  | very dark | très foncée | sehr dunkel | muy oscura |  | 9 |
| **7.** | **(\*)** | **QN** | **VS|A** | **(+)** |  | **29** |
|  |  |

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

 |

|  |
| --- |
| **Plante : port** |

 |

|  |
| --- |
| **Pflanze: Wuchsform** |

 |

|  |
| --- |
| **Planta: hábito de crecimiento** |

 |  |  |
|  |  | erect | dressé | aufrecht | erecto |  | 1 |
|  |  | erect to semi-erect | dressé à demi-dressé | aufrecht bis halbaufrecht | erecto a semierecto |  | 2 |
|  |  | semi-erect | demi-dressé | halbaufrecht | semierecto |  | 3 |
|  |  | semi-erect to intermediate | demi-dressé à intermédiaire | halbaufrecht bis mittel | semierecto a intermedio |  | 4 |
|  |  | intermediate | intermédiaire | mittel | intermedio |  | 5 |
|  |  | intermediate to semi‑prostrate | intermédiaire à demi‑étalé | mittel bis halbliegend | intermedio a semipostrado |  | 6 |
|  |  | semi-prostrate | demi-étalé | halbliegend | semipostrado | Rotra, Formica | 7 |
|  |  | semi-prostrate to prostrate | demi-étalé à étalé | halbliegend bis liegend | semipostrado a postrado |  | 8 |
|  |  | prostrate | étalé | liegend | postrado | Montana | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **8.** |  | **QN** | **VG|B/VS|A** | **(+)** |  |  |
|  |  |

|  |
| --- |
| **Plant: tendency to flower without vernalization** |

 |

|  |
| --- |
| **Plante : tendance à la floraison sans vernalisation** |

 |

|  |
| --- |
| **Pflanze: Neigung zur Blütenbildung ohne Vernalisation** |

 |

|  |
| --- |
| **Planta: tendencia a la floración sin vernalización** |

 |  |  |
|  |  | very weak | très faible | sehr gering | muy débil |  | 1 |
|  |  | very weak to weak | très faible à faible | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | faible | gering | débil | Rajah | 3 |
|  |  | weak to medium | faible à moyenne | gering bis mittel | débil a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Podjavorina, Cyklon | 5 |
|  |  | medium to strong | moyenne à forte | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | forte | stark | fuerte | Formica | 7 |
|  |  | strong to very strong | forte à très forte | stark bis sehr stark | fuerte a muy fuerte |  | 8 |
|  |  | very strong | très forte | sehr stark | muy fuerte |  | 9 |
| **9.** | **(\*)** | **QN** | **VG|B/VS|A** |  |  | **29** |
|  |  |

|  |
| --- |
| **Leaf: conspicuousness of marking** |

 |

|  |
| --- |
| **Feuille : netteté des ornementations** |

 |

|  |
| --- |
| **Blatt: Ausprägung der Zeichnung** |

 |

|  |
| --- |
| **Hoja: visibilidad de la mancha** |

 |  |  |
|  |  | absent or very weak | nulle ou très faible | fehlend oder sehr gering | ausente o muy débil |  | 1 |
|  |  | very weak to weak | très faible à faible | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | faible | gering | débil |  | 3 |
|  |  | weak to medium | faible à moyenne | gering bis mittel | débil a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Lucrum | 5 |
|  |  | medium to strong | moyenne à forte | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | forte | stark | fuerte | Astur, Temara | 7 |
|  |  | strong to very strong | forte à très forte | stark bis sehr stark | fuerte a muy fuerte |  | 8 |
|  |  | very strong | très forte | sehr stark | muy fuerte |  | 9 |
| **10.** | **(\*)** | **QN** | **MG|B/MS|A/VG|B** |  |  | **31-39** |
|  |  |

|  |
| --- |
| **Plant: natural height after vernalization** |

 |

|  |
| --- |
| **Plante : hauteur naturelle après vernalisation** |

 |

|  |
| --- |
| **Pflanze: natürliche Höhe nach Vernalisation** |

 |

|  |
| --- |
| **Planta: altura natural después de la vernalización** |

 |  |  |
|  |  | very short | très basse | sehr niedrig | muy baja |  | 1 |
|  |  | very short to short | très basse à basse | sehr niedrig bis niedrig | muy baja a baja |  | 2 |
|  |  | short | basse | niedrig | baja |  | 3 |
|  |  | short to medium | basse à moyenne | niedrig bis mittel | baja a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Lucrum | 5 |
|  |  | medium to tall | moyenne à haute | mittel bis hoch | media a alta |  | 6 |
|  |  | tall | haute | hoch | alta | Manuela, Tedi | 7 |
|  |  | tall to very tall | haute à très haute | hoch bis sehr hoch | alta a muy alta |  | 8 |
|  |  | very tall | très haute | sehr hoch | muy alta |  | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **11.** | **(\*)** | **QN** | **VG|B** |  |  | **31-39** |
|  |  |

|  |
| --- |
| **Leaf: intensity of green color after vernalization** |

 |

|  |
| --- |
| **Feuille : intensité de la couleur verte après vernalisation** |

 |

|  |
| --- |
| **Blatt: Intensität der Grünfärbung nach Vernalisation** |

 |

|  |
| --- |
| **Hoja: intensidad del color verde después de la vernalización** |

 |  |  |
|  |  | very light | très claire | sehr hell | muy clara |  | 1 |
|  |  | very light to light | très claire à claire | sehr hell bis hell | muy clara a clara |  | 2 |
|  |  | light | claire | hell | clara | Renegade | 3 |
|  |  | light to medium | claire à moyenne | hell bis mittel | clara a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Montana, Freedom | 5 |
|  |  | medium to dark | moyenne à foncée | mittel bis dunkel | media a oscura |  | 6 |
|  |  | dark | foncée | dunkel | oscura | Astur, Grasslands Turoa, Lucrum | 7 |
|  |  | dark to very dark | foncée à très foncée | dunkel bis sehr dunkel | oscura a muy oscurs |  | 8 |
|  |  | very dark | très foncée | sehr dunkel | muy oscura |  | 9 |
| **12.** |  | **QN** | **MS|A** | **(+)** | **(b)** | **31-69** |
|  |  |

|  |
| --- |
| **Leaf: length of petiole** |

 |

|  |
| --- |
| **Feuille : longueur du pétiole** |

 |

|  |
| --- |
| **Blatt: Länge des Blattstiels** |

 |

|  |
| --- |
| **Hoja: longitud del pecíolo** |

 |  |  |
|  |  | very short | très courte | sehr kurz | muy corta |  | 1 |
|  |  | short | courte | kurz | corta |  | 2 |
|  |  | medium | moyenne | mittel | media | Metis | 3 |
|  |  | long | longue | lang | larga | Formica | 4 |
|  |  | very long | très longue | sehr lang | muy larga |  | 5 |
| **13.** | **(\*)** | **QN** | **MS|A** |  | **(b)** | **31-69** |
|  |  |

|  |
| --- |
| **Middle leaflet: length** |

 |

|  |
| --- |
| **Foliole du milieu : longueur** |

 |

|  |
| --- |
| **Mittlere Blattfieder: Länge** |

 |

|  |
| --- |
| **Folíolo central: longitud** |

 |  |  |
|  |  | very short | très courte | sehr kurz | muy corta |  | 1 |
|  |  | very short to short | très courte à courte | sehr kurz bis kurz | muy corta a corta |  | 2 |
|  |  | short | courte | kurz | corta | Tuscan | 3 |
|  |  | short to medium | courte à moyenne | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Astur, Vltavín | 5 |
|  |  | medium to long | moyenne à longue | mittel bis lang | media a larga |  | 6 |
|  |  | long | longue | lang | larga |  | 7 |
|  |  | long to very long | longue à très longue | lang bis sehr lang | larga a muy larga |  | 8 |
|  |  | very long | très longue | sehr lang | muy larga |  | 9 |
| **14.** | **(\*)** | **QN** | **MS|A** |  | **(b)** | **31-69** |
|  |  |

|  |
| --- |
| **Middle leaflet: width** |

 |

|  |
| --- |
| **Foliole du milieu : largeur** |

 |

|  |
| --- |
| **Mittlere Blattfieder: Breite** |

 |

|  |
| --- |
| **Folíolo central: anchura** |

 |  |  |
|  |  | very narrow | très étroite | sehr schmal | muy estrecha |  | 1 |
|  |  | very narrow to narrow | très étroite à étroite | sehr schmal bis schmal | muy estrecha a estrecha |  | 2 |
|  |  | narrow | étroite | schmal | estrecha |  | 3 |
|  |  | narrow to medium | étroite à moyenne | schmal bis mittel | estrecha a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Merviot, Lemmon | 5 |
|  |  | medium to broad | moyenne à large | mittel bis breit | media a ancha |  | 6 |
|  |  | broad | large | breit | ancha | Ostro, Rotra | 7 |
|  |  | broad to very broad | large à très large | breit bis sehr breit | ancha muy ancha |  | 8 |
|  |  | very broad | très large | sehr breit | muy ancha |  | 9 |
| **15.** | **(\*)** | **QN** | **MS|A** | **(+)** |  |  |
|  |  |

|  |
| --- |
| **Time of flowering** |

 |

|  |
| --- |
| **Époque de floraison** |

 |

|  |
| --- |
| **Zeitpunkt der Blüte** |

 |

|  |
| --- |
| **Época de floración** |

 |  |  |
|  |  | very early | très précoce | sehr früh | muy temprana |  | 1 |
|  |  | very early to early | très précoce à précoce | sehr früh bis früh | muy temprana a temprana |  | 2 |
|  |  | early | précoce | früh | temprana | Astur, Formica | 3 |
|  |  | early to medium | précoce à moyenne | früh bis mittel | temprana a intermedia |  | 4 |
|  |  | medium | moyenne | mittel | intermedia  | Margot, Agil | 5 |
|  |  | medium to late | moyenne à tardive | mittel bis spät | intermedia a tardía |  | 6 |
|  |  | late | tardive | spät | tardía | Lucrum | 7 |
|  |  | late to very late | tardive à très tardive | spät bis sehr spät | tardía a muy tardía |  | 8 |
|  |  | very late | très tardive | sehr spät | muy tardía | Rajah | 9 |
| **16.** | **(\*)** | **QN** | **MS|A** | **(+)** | **(a)** | **39-69** |
|  |  |

|  |
| --- |
| **Stem: length** |

 |

|  |
| --- |
| **Tige : longueur** |

 |

|  |
| --- |
| **Stängel: Länge** |

 |

|  |
| --- |
| **Tallo: longitud** |

 |  |  |
|  |  | very short | très courte | sehr kurz | muy corta |  | 1 |
|  |  | very short to short | très courte à courte | sehr kurz bis kurz | muy corta a corta |  | 2 |
|  |  | short | courte | kurz | corta | Aberchianti | 3 |
|  |  | short to medium | courte à moyenne | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Slavin, Tempus | 5 |
|  |  | medium to long | moyenne à longue | mittel bis lang | media a larga |  | 6 |
|  |  | long | longue | lang | larga |  | 7 |
|  |  | long to very long | longue à très longue | lang bis sehr lang | larga a muy larga |  | 8 |
|  |  | very long | très longue | sehr lang | muy larga | Jogeva 205 | 9 |

|  |  | English | français | deutsch | español | Example VarietiesExemplesBeispielssortenVariedades ejemplo | Note/Nota |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **17.** |  | **QN** | **MS|A** | **(+)** | **(a)** | **39-69** |
|  |  |

|  |
| --- |
| **Stem: thickness** |

 |

|  |
| --- |
| **Tige : épaisseur** |

 |

|  |
| --- |
| **Stängel: Dicke** |

 |

|  |
| --- |
| **Tallo: grosor** |

 |  |  |
|  |  | thin | mince | dünn | delgado |  | 1 |
|  |  | thin to medium | mince à moyenne | dünn bis mittel | delgado a medio |  | 2 |
|  |  | medium | moyenne | mittel | medio | Astur, Noe | 3 |
|  |  | medium to thick | moyenne à épaisse | mittel bis dick | medio a grueso |  | 4 |
|  |  | thick | épaisse | dick | grueso |  | 5 |
| **18.** | **(\*)** | **QN** | **MS|A** |  | **(a)** | **39-69** |
|  |  |

|  |
| --- |
| **Stem: number of internodes** |

 |

|  |
| --- |
| **Tige : nombre d’entre-nœuds** |

 |

|  |
| --- |
| **Stängel: Anzahl Internodien** |

 |

|  |
| --- |
| **Tallo: número de entrenudos** |

 |  |  |
|  |  | very few | très petit | sehr wenige | muy bajo |  | 1 |
|  |  | very few to few | très petit à petit | sehr wenige bis wenige | muy bajo a bajo |  | 2 |
|  |  | few | petit | wenige | bajo |  | 3 |
|  |  | few to medium | petit à moyen | wenige bis mittel | bajo a medio |  | 4 |
|  |  | medium | moyen | mittel | medio | Polana, Tedi | 5 |
|  |  | medium to many | moyen à élevé | mittel bis viele | medio a alto |  | 6 |
|  |  | many | élevé | viele | alto | Lucrum, Titus | 7 |
|  |  | many to very many | élevé à très élevé | viele bis sehr viele | alto a muy alto |  | 8 |
|  |  | very many | très élevé | sehr viele | muy alto | Jogeva 205 | 9 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **19.** |  | **QN** | **MG|B/VG|B** | **(+)** |  |  |
|  |  |

|  |
| --- |
| **Plant: natural height in aftermath** |

 |

|  |
| --- |
| **Plante : hauteur naturelle de la repousse après la coupe** |

 |

|  |
| --- |
| **Pflanze: natürliche Höhe im Nachwuchs** |

 |

|  |
| --- |
| **Planta: altura natural del rebrote después del corte** |

 |  |  |
|  |  | very short | très basse | sehr niedrig | muy baja |  | 1 |
|  |  | very short to short | très basse à basse | sehr niedrig bis niedrig | muy baja a baja |  | 2 |
|  |  | short | basse | niedrig | baja | Ilte | 3 |
|  |  | short to medium | basse à moyenne | niedrig bis mittel | baja a media |  | 4 |
|  |  | medium | moyenne | mittel | media | Tornado, Lemmon | 5 |
|  |  | medium to tall | moyenne à haute | mittel bis hoch | media a alta |  | 6 |
|  |  | tall | haute | hoch | alta | Tempus, Formica | 7 |
|  |  | tall to very tall | haute à très haute | hoch bis sehr hoch | alta a muy alta |  | 8 |
|  |  | very tall | très haute | sehr hoch | muy alta |  | 9 |

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

|  |  |
| --- | --- |
| 8. | Explanations on the Table of Characteristics |
|   |
| *8.1* | *Explanations covering several characteristics* |
|   |
|  |

|  |
| --- |
|  |

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

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

 |

|  |
| --- |
| Observations should be done on the longest stem excluding side branches. |

 |
|

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

 |

|  |
| --- |
| To be assessed on the longest stem on the third leaf back from the growing tip. |

 |

 |
|

|  |
| --- |
|   |

 |

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

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

|  |
| --- |
| *8.2* |

 | *Explanations for individual characteristics* |
|   |
|

|  |
| --- |
| Ad. 1: Plant: ploidyPloidy should be assessed by standard cytological methods. |

 |
|

|  |
| --- |
| Ad. 2: Cotyledon: lengthObservations should be made 12-14 days after sowing in the greenhouse, when the first leaf is fully developed. If the two cotyledons differ in size, the biggest one should be measured. |

 |
|

|  |
| --- |
| Ad. 3: Cotyledon: widthObservations should be made 12-14 days after sowing in the greenhouse, when the first leaf is fully developed. If the two cotyledons differ in size, the biggest one should be measured. |

 |
|

|  |  |  |
| --- | --- | --- |
| Ad. 7: Plant: growth habit A visual estimate is taken of the angle that the outer shoots make with the horizontal axis.

|  |  |
| --- | --- |
| wordml://76.png |  1 = erect 3 = semi-erect 5 = intermediate 7 = semi-prostrate 9 = prostrate |

  |

 |
|

|  |
| --- |
| Ad. 8: Plant: tendency to flower without vernalizationThe number of plants showing inflorescences should be recorded for each variety. To be assessed at one occasion on the whole trial when the development stagnates before vernalization. |

 |
|  |
|

|  |
| --- |
| Ad. 12: Leaf: length of petioleLength of the petiole should be measured from the base of the middle leaflet to the point of attachment to the stem. |

 |

 |

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

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

|  |
| --- |
| Ad. 15: Time of floweringTime of flowering is reached when 3 inflorescences per plant are showing color. |

 |
|

|  |
| --- |
| Ad. 16: Stem: lengthStem length should be measured from the base of plant to the base of the terminal inflorescence. |

 |
|

|  |
| --- |
| Ad. 17: Stem: thicknessStem thickness should be measured 2 to 4 cm above tillering node.  |

 |
|

|  |
| --- |
| Ad. 19: Plant: natural height in aftermathObservations should be made within 4 to 6 weeks after the summer cut. |

 |

 |
|

|  |
| --- |
|   |
|

|  |
| --- |
| *8.3* |

 |

|  |
| --- |
| *Phenological growth stages based on the general BBCH-scale (Meier, 2001) adjusted for Red Clover*Principal growth stage 0: Germination00: Dry seed Principal growth stage 1: Leaf development11: First leaf unfolded13: 3 leaves unfoldedPrincipal growth stage 2: Formation of side shoots/tillering29: 9 or more shoots visible Principal growth stage 3: Stem elongation31: Stem 10% of final length39: Maximum stem length reachedPrincipal growth stage 6: Flowering69: End of flowering    |

 |

 |

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

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

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

|  |  |
| --- | --- |
| 9. | Literature |

 |
|   |

|  |
| --- |
| Meier, U., 2001: Growth stages of mono- and dicotyledonous plants. BBCH-Monograph, German Federal Biological Research Centre for Agriculture and Forestry.Mousset-Déclas, C., 1992: Le Trèfle Violet. In “Amélioration des espèces végétales cultivées, objectif et critères de sélection,” ed. Gallais et Bannerot, INRA ed., pp.339-348.Mousset-Déclas, C., 1995: Les trèfles ou le genre Trifolium. In “Ressources génétiques des plantes fourragères et à gazon. Prosperi, Guy, Balfourier Coord. Coéd. BRG-INRA, pp. 177-211.Taylor, N.L., 1985: Clover science and technology, Agronomy nr. 25 in the series American Society of Agronomy, Inc., Crop Science Society. Taylor, N.L., Quesenberry, K.H., 1996: Red Clover Science, Kluwer Academic Publishers, 228 pp.   |

 |

 |

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

|  |  |
| --- | --- |
| 10. | Technical Questionnaire |

 |
|   |
|

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

 |
|   |
|

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

 |
|

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

|  |
| --- |
| 1.1 |

 | Botanical name |

|  |
| --- |
| *Trifolium pratense* L. |

 |

|  |
| --- |
|  |

 |
|  |   |  |   |  |
|  |

|  |
| --- |
| 1.2 |

 | Common name |

|  |
| --- |
| Red Clover |

 |  |
|  |   |   |

|  |
| --- |
|  |

 |  |
|  |   |  |   |  |

 |
|

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

 |

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

|  |  |  |
| --- | --- | --- |
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |
|   |
| #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 varieties)(…………………..……………..…)                          x        (……………..…………………..…)female parent                                                                     male parent |

 |
|

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

 |

|  |
| --- |
| partially known cross  |

 | [ ] |
|  |

|  |
| --- |
| (please state known parent varieties)(…………………..……………..…)                          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) | [ ] |
|  |      |
|  |   |

 |

 |

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

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

 |
|   |
|

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

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

|  |
| --- |
| 4.2.1 |

 |

|  |
| --- |
| Seed-propagated varieties |

 |  |
|

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

 |

|  |
| --- |
| Cross-pollination |

 | [ ] |
|

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

 |

|  |
| --- |
| Other (please provide details) |

 | [ ] |
|  |   |  |
|

|  |
| --- |
| 4.2.2 |

 |

|  |
| --- |
| Vegetative propagation |

 |  |
|

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

 |

|  |
| --- |
| Cuttings |

 | [ ] |
|

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

 |

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

 | [ ] |
|

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

 |

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

 | [ ] |
|  |   |  |
|

|  |
| --- |
| 4.2.3 |

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

  |

 |

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

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

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| In the case of hybrid varieties the production scheme for the hybrid should be provided on a separate sheet. This should provide details of all the parent lines required for propagating the hybrid e.g.*Single Hybrid*

|  |  |  |
| --- | --- | --- |
|  (…………………..……………..…) | x | (……………..…………………..…) |
| female parent |  | male parent |

*Three-Way Hybrid*

|  |  |  |
| --- | --- | --- |
| (…………………..……………..…) | x | (……………..…………………..…) |
| female line |  | male line |

|  |  |  |
| --- | --- | --- |
|  (……………..…………………..…)  | x | (……………..…………………..…) |
| single hybrid used as female parent |  | male parent |

and should identify in particular:(a) any male sterile lines(b) maintenance system of male sterile lines. |

 |

 |

 |

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

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

 |
|   |
|

|  |  |
| --- | --- |
| 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** |

|  |
| --- |
| **(1)** |

 |

|  |
| --- |
| **Plant: ploidy** |

 |  |  |
|  |

|  |
| --- |
| diploid |

 |

|  |
| --- |
| Start |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| tetraploid |

 |

|  |
| --- |
| Titus |

 |

|  |
| --- |
| 4 [   ] |

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

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

|  |
| --- |
| **(13)** |

 |

|  |
| --- |
| **Middle leaflet: length** |

 |  |  |
|  |

|  |
| --- |
| very short |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very short to short |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| short |

 |

|  |
| --- |
| Tuscan |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| short to medium |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Astur, Vltavín |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| long to very long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 9 [   ] |

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

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

|  |
| --- |
| **(14)** |

 |

|  |
| --- |
| **Middle leaflet: width** |

 |  |  |
|  |

|  |
| --- |
| very narrow |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very narrow to narrow |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| narrow |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| narrow to medium |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Lemmon, Merviot |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to broad |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| broad |

 |

|  |
| --- |
| Ostro, Rotra |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| broad to very broad |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very broad |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |

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

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

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

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

|  |
| --- |
| **(15)** |

 |

|  |
| --- |
| **Time of flowering** |

 |  |  |
|  |

|  |
| --- |
| very early |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

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

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| early |

 |

|  |
| --- |
| Astur, Formica |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

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

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Agil, Margot |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

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

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| late |

 |

|  |
| --- |
| Lucrum |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

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

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very late |

 |

|  |
| --- |
| Rajah |

 |

|  |
| --- |
| 9 [   ] |

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

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

|  |
| --- |
| **(16)** |

 |

|  |
| --- |
| **Stem: length** |

 |  |  |
|  |

|  |
| --- |
| very short |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 1 [   ] |

 |
|  |

|  |
| --- |
| very short to short |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 2 [   ] |

 |
|  |

|  |
| --- |
| short |

 |

|  |
| --- |
| Aberchianti |

 |

|  |
| --- |
| 3 [   ] |

 |
|  |

|  |
| --- |
| short to medium |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 4 [   ] |

 |
|  |

|  |
| --- |
| medium |

 |

|  |
| --- |
| Slavin, Tempus |

 |

|  |
| --- |
| 5 [   ] |

 |
|  |

|  |
| --- |
| medium to long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 6 [   ] |

 |
|  |

|  |
| --- |
| long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 7 [   ] |

 |
|  |

|  |
| --- |
| long to very long |

 |

|  |
| --- |
|  |

 |

|  |
| --- |
| 8 [   ] |

 |
|  |

|  |
| --- |
| very long |

 |

|  |
| --- |
| Jogeva 205 |

 |

|  |
| --- |
| 9 [   ] |

 |
|  |  |  |  |

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

|  |  |  |
| --- | --- | --- |
| 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* |

|  |
| --- |
| *Time of flowering* |

 |

|  |
| --- |
| *very early* |

 |

|  |
| --- |
| *early* |

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

 |
|  | Comments:    |

 |

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

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

 |
|   |
|

|  |  |
| --- | --- |
| #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 |
|  |  |   |  |  |

 |

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

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