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| |  |  |  | | --- | --- | --- | |  |  | **E** | |  |  |  | |  | wordml://75.png | |  | | --- | | **TG/36/7(proj.5)** | | **ORIGINAL:** English | | **DATE:** 2023-08-15 | | | **INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS** | | | |  | Geneva |  | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | DRAFT |  | |  |  |  | |  | |  |  |  | |  | |  | | --- | |  | | **OILSEED RAPE** | |  | | |  | | --- | |  | | |  | | --- | | UPOV Code(s): BRASS\_NAP\_NUS | | |  | | |  | | |  |  | | --- | --- | | |  | | --- | | *Brassica napus* L. ssp. *napus* | | |  | | | |  | | --- | | \* | | |  |  |  | | |  | | --- | | **GUIDELINES** | |  | | **FOR THE CONDUCT OF TESTS** | |  | | **FOR DISTINCTNESS, UNIFORMITY AND STABILITY** | | | | |  |  |  | | |  | | --- | | *prepared by an expert from the United Kingdom*  *to be considered by*  *the Technical Committee at its fifty-ninth session*  *to be held in Geneva on October 23 and 24, 2023* | | | | | *Disclaimer: this document does not represent UPOV policies or guidance* | | | | |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  | | --- | | Alternative names:\* | | | | | | | |  | | --- | |  | | | | | | | *Botanical name* | *English* | *French* | *German* | *Spanish* | | |  | | --- | | *Brassica napus* L. ssp. *napus, Brassica campestris* L. ssp. *napus* (L.) Hook. f. & T. Anderson, *Brassica napus* L. ssp. *oleifera* (Delile) Sinskaya, *Brassica napus* L. var. *oleifera* Delile, *Brassica napus* L. var. *sahariensis* A. Chev. | | |  | | --- | | Oilseed Rape, Rapeseed, Swede Rape, Canola | | |  | | --- | | Colza | | |  | | --- | | Raps | | |  | | --- | | Colza | | | | | |  |  |  | | 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. |

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| |  |  | | --- | --- | | 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...................................................................................................................................................... | [6](#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........................................................................................ | [7](#Section6-2) | | 6.3 | Types of Expression.................................................................................................................................. | [7](#Section6-3) | | 6.4 | Example Varieties...................................................................................................................................... | [7](#Section6-4) | | 6.5 | Legend....................................................................................................................................................... | [8](#Section6-5) | | | |  |  |  | | 7. | TABLE OF CHARACTERISTICS/TABLEAU DES CARACTÈRES/MERKMALSTABELLE/TABLA DE CARACTERES...................................................................................................................................................... | [9](#Section7) | |  |  |  | | 8. | EXPLANATIONS ON THE TABLE OF CHARACTERISTICS............................................................................... | [18](#Section8) | |  | |  |  |  | | --- | --- | --- | | 8.1 | Explanations covering several characteristics........................................................................................... | [18](#Section8-1) | | |  | | --- | | 8.2 | | Explanations for individual characteristics................................................................................................. | [19](#Section8-2) | | 8.3 | Phenological growth stages and BBCH-identification keys of oilseed rape (*Brassica napus* L. ssp. *napus*) | [22](#Section9) | | | |  |  |  | | 9. | LITERATURE......................................................................................................................................................... | [23](#Section9) | |  |  |  | | 10. | TECHNICAL QUESTIONNAIRE............................................................................................................................ | [24](#Section10) | |  |  |  | |  | |  | | --- | |  | |  | | | |

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| 1. | Subject of these Test Guidelines |
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|  | |  | | --- | | These Test Guidelines apply to all varieties of *Brassica napus* L. ssp. *napus*. | |

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| 2. | Material Required |
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| 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 seed. | |
|  |  |
| 2.3 | |  | | --- | | The minimum quantity of plant material, to be supplied by the applicant, should be: | |
|  |  |
|  | |  | | --- | | Candidate: 300g  Component of controlled-cross pollination hybrids: 50g | |
|  |  |
|  | The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant. |
|  |  |
| 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. | |

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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. |
|  |  |
| |  | | --- | | 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 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 number in the Table of Characteristics. The stages of development denoted by each number are described in Chapter 8.3. |
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| *3.4* | *Test Design* |
|  |  |
| 3.4.1 | |  | | --- | | Each test should be designed to result in a total of at least 200 plants, which should be divided between at least 2 replicates. | |
|  |  |
| |  | | --- | | 3.4.2 | | |  | | --- | | The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle. | |
|  |  |
| |  | | --- | | 3.4.3 | | |  | | --- | | The tendency to form inflorescences when sown in alternate season of winter rape varieties should be recorded in spring sown trials; that of spring rape varieties in late summer sown trials. Each test should be designed to result in at least 100 plants. | |
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| |  | | --- | |  |   *3.5* | *Additional Tests* |
|  |  |
|  | Additional tests, for examining relevant characteristics, may be established. |

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| 4. | Assessment of Distinctness, Uniformity and Stability |
|  |  |
| *4.1* | *Distinctness* |
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| 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. |
|  |  |
|  | |  | | --- | | To assess distinctness of hybrids, the parent lines and the formula may be used according to the following recommendations: | |  | | (i) description of parent lines according to the Test Guidelines; | |  | | (ii) check of the originality of the parent lines in comparison with the variety collection, based on the characteristics in Chapter 7, in order to identify similar parent lines; | |  | | (iii) check of the originality of the hybrid formula in relation to the hybrids in the variety collection, taking into account the most similar lines; and | |  | | (iv) assessment of the distinctness at the hybrid level for varieties with a similar formula. | |  | | Further guidance is provided in documents TGP/9 "Examining Distinctness" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability". | |
|  |  |
| 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 | |  | | --- | | 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 45 plants or parts of plants taken from each of 45 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 plants  VS: visual assessment by observation of individual plants or parts of plants | |
|  |  |
|  | Type of observation: visual (V) or measurement (M) |
|  |  |
|  | “Visual” observation (V) is an observation made on the basis of the expert’s judgment. For the purposes of this document, “visual” observation refers to the sensory observations of the experts and, therefore, also includes smell, taste and touch. Visual observation includes observations where the expert uses reference points (e.g. diagrams, example varieties, side-by-side comparison) or non-linear charts (e.g. color charts). Measurement (M) is an objective observation against a calibrated, linear scale e.g. using a ruler, weighing scales, colorimeter, dates, counts, etc. |
|  |  |
|  | |  | | --- | | Type of record: for a group of plants (G) or for single, individual plants (S) | |
|  |  |
|  | |  | | --- | | For the purposes of distinctness, observations may be recorded as a single record for a group of plants or parts of plants (G), or may be recorded as records for a number of single, individual plants or parts of plants (S). In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness. | |
|  |  |
|  | In cases where more than one method of observing the characteristic is indicated in the Table of Characteristics (e.g. VG/MG), guidance on selecting an appropriate method is provided in document TGP/9, Section 4.2. |
|  |  |
| *4.2* | *Uniformity* |
|  |  |
| 4.2.1 | It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines: |
|  |  |
| |  | | --- | | 4.2.2 | | |  | | --- | | These Test Guidelines have been developed for the examination of seed-propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed. | |
|  |  |
| |  | | --- | | 4.2.3 | | The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction. |
|  |  |
| 4.2.4 | The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction. |
|  |  |

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| 4.2.5 | Where the assessment of a hybrid variety involves the parent lines, the uniformity of the hybrid variety should, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity of its parent lines. |
|  |  |
| 4.2.6 | |  | | --- | | For the assessment of uniformity of inbred varieties and component lines of hybrid varieties, a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 200 plants, 7 off-types are allowed. For the assessment of uniformity of single and multiple-cross hybrid varieties, a population standard of 10% and an acceptance probability of at least 95% should be applied.  In the case of a sample size of 200 plants, 27 off-types are allowed. | |
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| *4.3* | *Stability* |
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| 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. |
|  |  |
| 4.3.3 | Where appropriate, or in cases of doubt, the stability of a hybrid variety may, in addition to an examination of the hybrid variety itself, also be assessed by examination of the uniformity and stability of its parent lines. |

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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. |
|  |  |
| 5.3 | The following have been agreed as useful grouping characteristics: |
|  | |  |  |  | | --- | --- | --- | |  |  |  | | |  | | --- | | (a) | |  | |  | | --- | | Seed: erucic acid (characteristic 1) | | | |  | | --- | | (b) | |  | |  | | --- | | Leaf: lobes (characteristic 9) | | | |  | | --- | | (c) | |  | |  | | --- | | Time of flowering (characteristic 12) | | | |  | | --- | | (d) | |  | |  | | --- | | Flower: color of petals (characteristic 13) | | | |  | | --- | | (e) | |  | |  | | --- | | Production of pollen (characteristic 17) | | | |  | | --- | | (f) | |  | |  | | --- | | Plant: length (characteristic 18) | | | |  |  | | --- | --- | | |  | | --- | |  | | | | | |
| 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 |
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| *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. |

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| --- | --- |
| *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. |
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| 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. |
|  | |  | | --- | | In the table of characteristics, the seasonal type of the example varieties is denoted as (S) for Spring and (W) for winter. | |

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| --- | --- |
| *6.5* | *Legend* |
|  |  |
| |  |  | English | | français | | deutsch | español | Example Varieties Exemples Beispielssorten Variedades 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)-(c) | | |  |  | | --- | --- | | |  | | --- | | 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 | | | | | |

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

|  |  | English | | français | | deutsch | español | Example Varieties Exemples Beispielssorten Variedades ejemplo | Note/ Nota |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1.** |  | **QL** | **MG** | **(+)** |  | **00** | | | |
|  |  | |  | | --- | | **Seed: erucic acid** | | | |  | | --- | | **Graine : acide érucique** | | | |  | | --- | | **Samen: Erucasäure** | | |  | | --- | | **Semilla: ácido erúcico** | |  |  |
|  |  | low | | bas | | gering | bajo | (S) Lagoon,  (W) Severino KWS | 1 |
|  |  | high | | élevé | | hoch | alto | (S) Petranova,  (W) Greenland,  (W) MSL049C12 | 9 |
| **2.** |  | **QN** | **MS/VG** |  | **(a)** | **13-17** | | | |
|  |  | |  | | --- | | **Cotyledon: ratio saddle height/width** | | | |  | | --- | | **Cotylédon : rapport hauteur/largeur de la selle** | | | |  | | --- | | **Keimblatt: Verhältnis Höhe/Breite des Sattels** | | |  | | --- | | **Cotiledón: relación altura/anchura del sillín** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (S) PR46H75,  (W) Severino KWS | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Proximo,  (W) DK Expansion | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) Joscha KWS,  (W) AH 12 | 7 |
|  |  | high to very high | | élevé à très élevé | | groß bis sehr groß | alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **3.** |  | **QN** | **MS/VG** |  | **(a)** | **13-17** | | | |
|  |  | |  | | --- | | **Cotyledon: saddle depth** | | | |  | | --- | | **Cotylédon : profondeur de la selle** | | | |  | | --- | | **Keimblatt: Satteltiefe** | | |  | | --- | | **Cotiledón: profundidad del sillín** | |  |  |
|  |  | very shallow | | très peu profonde | | sehr flach | muy poco profunda |  | 1 |
|  |  | very shallow to shallow | | très peu profonde à peu profonde | | sehr flach bis flach | muy poco profunda a poco profunda |  | 2 |
|  |  | shallow | | peu profonde | | flach | poco profunda | (S) FJ6447, (S) MS 4903, (W) MSL049C12 | 3 |
|  |  | shallow to medium | | peu profonde à moyenne | | flach bis mittel | poco profunda a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Proximo, (W) Blazen | 5 |
|  |  | medium to deep | | moyenne à profonde | | mittel bis tief | media a profunda |  | 6 |
|  |  | deep | | profonde | | tief | profunda | (S) MSL 545 C,  (W) WRG 1501 | 7 |
|  |  | deep to very deep | | profonde à très profonde | | tief bis sehr tief | profunda a muy profunda |  | 8 |
|  |  | very deep | | très profonde | | sehr tief | muy profunda |  | 9 |
| **4.** |  | **QN** | **MS/VG** |  | **(a)** | **13-17** | | | |
|  |  | |  | | --- | | **Cotyledon: ratio lobe separation/width** | | | |  | | --- | | **Cotylédon : rapport séparation des lobes/largeur** | | | |  | | --- | | **Keimblatt: Verhältnis Lappenabstand/Breite** | | |  | | --- | | **Cotiledón: relación separación de lóbulos/anchura** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (S) R501S11,  (W) WRG 1501 | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Proximo,  (W) PT256 | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) D 619908,  (W) DK Expansion | 7 |
|  |  | high to very high | | élevé à très élevé | | groß bis sehr groß | alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **5.** |  | **QN** | **MS/VG** |  | **(a)** | **13-17** | | | |
|  |  | |  | | --- | | **Cotyledon: ratio lobe separation/saddle depth** | | | |  | | --- | | **Cotylédon : rapport séparation des lobes/profondeur de la selle** | | | |  | | --- | | **Keimblatt: Verhältnis Lappenabstand/Satteltiefe** | | |  | | --- | | **Cotiledón: relación separación de lóbulos/profundidad del sillín** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (S) Silvershadow,  (W) PX131 | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Proximo,  (W) Severino KWS | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) FJ6447, (S) MS 4903, (W) Greenland | 7 |
|  |  | high to very high | | élevé à très élevé | | groß bis sehr groß | alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **6.** |  | **QN** | **MS/VG** |  | **(a)** | **13-17** | | | |
|  |  | |  | | --- | | **Cotyledon: ratio saddle height/ lamina length** | | | |  | | --- | | **Cotylédon : rapport hauteur de la selle /longueur du limbe** | | | |  | | --- | | **Keimblatt: Verhältnis Sattelhöhe/Länge der Blattspreite** | | |  | | --- | | **Cotiledón: relación altura del sillín/longitud de la lámina** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (W) PX131 | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Jazz KWS,  (W) DK Expansion | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) Cleopatra,  (W) Architect | 7 |
|  |  | very high to high | | élevé à très élevé | | sehr groß bis groß | muy alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **7.** | **(\*)** | **QN** | **VG** |  |  | **23-27** | | | |
|  |  | |  | | --- | | **Leaf: intensity of green color** | | | |  | | --- | | **Feuille : intensité de la couleur verte** | | | |  | | --- | | **Blatt: Intensität der Grünfärbung** | | |  | | --- | | **Hoja: intensidad del color verde** | |  |  |
|  |  | 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 | (S) D 619908, (W) Axel | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Joscha KWS,  (W) Architect | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | (S) 46130, (W) Kadore | 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 |
| **8.** | **(\*)** | **QL** | **VG** |  |  | **23-27** | | | |
|  |  | |  | | --- | | **Leaf: glaucosity** | | | |  | | --- | | **Feuille : glaucescence** | | | |  | | --- | | **Blatt: Bereifung** | | |  | | --- | | **Hoja: glauescencia** | |  |  |
|  |  | absent | | absente | | fehlend | ausente |  | 1 |
|  |  | present | | présente | | vorhanden | presente | (S) Proximo, (W) Architect | 9 |
| **9.** | **(\*)** | **QL** | **VG** | **(+)** | **(b)** | **23-27** | | | |
|  |  | |  | | --- | | **Leaf: lobes** | | | |  | | --- | | **Feuille : lobes** | | | |  | | --- | | **Blatt: Lappung** | | |  | | --- | | **Hoja: lóbulos** | |  |  |
|  |  | absent | | absents | | fehlend | ausentes | (S) MSL 545 C,  (W) Greenland | 1 |
|  |  | present | | présents | | vorhanden | presentes | (S) Proximo, (W) Blazen | 9 |
| **10.** | **(\*)** | **QN** | **MS/VG** | **(+)** | **(b)** | **23-27** | | | |
|  |  | |  | | --- | | **Leaf: number of lobes** | | | |  | | --- | | **Feuille : nombre de lobes** | | | |  | | --- | | **Blatt: Anzahl Lappen** | | |  | | --- | | **Hoja: número de lóbulos** | |  |  |
|  |  | very few | | très petit | | sehr gering | muy bajo |  | 1 |
|  |  | very few to few | | très petit à petit | | sehr gering bis gering | muy bajo a bajo |  | 2 |
|  |  | few | | petit | | gering | bajo | (S) Brander, (W) Skye | 3 |
|  |  | few to medium | | petit à moyen | | gering bis mittel | bajo a medio |  | 4 |
|  |  | medium | | moyen | | mittel | medio | (S) Jazz KWS,  (W) Blazen | 5 |
|  |  | medium to many | | moyen à élevé | | mittel bis groß | medio a alto |  | 6 |
|  |  | many | | élevé | | groß | alto | (S) PA4EN171,  (W) Architect | 7 |
|  |  | many to very many | | élevé à très élevé | | groß bis sehr groß | alto a muy alto |  | 8 |
|  |  | very many | | très élevé | | sehr groß | muy alto |  | 9 |
| **11.** | **(\*)** | **QN** | **VG** | **(+)** | **(b)** | **23-27** | | | |
|  |  | |  | | --- | | **Leaf: dentation of margin** | | | |  | | --- | | **Feuille : denture du bord** | | | |  | | --- | | **Blatt: Zähnung des Randes** | | |  | | --- | | **Hoja: dentado del borde** | |  |  |
|  |  | 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 | (S) R501S11,  (W) Aardvark | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a medio |  | 4 |
|  |  | medium | | moyenne | | mittel | medio | (S) Proximo, (W) Blazen | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | medio a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | (S) Fergus,  (W) Severino KWS | 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 |
| **12.** | **(\*)** | **QN** | **MG/MS** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Time of flowering** | | | |  | | --- | | **Époque de floraison** | | | |  | | --- | | **Zeitpunkt der Blüte** | | |  | | --- | | **Época de floración** | |  |  |
|  |  | very early | | très précoce | | sehr früh | muy temprana | (W) DK Excursion | 1 |
|  |  | very early to early | | très précoce à précoce | | sehr früh bis früh | muy temprana a temprana |  | 2 |
|  |  | early | | précoce | | früh | temprana | (S) Brander,  (W) DK Expansion | 3 |
|  |  | early to medium | | précoce à moyenne | | früh bis mittel | temprana a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Jangle KWS,  (W) Kadore | 5 |
|  |  | medium to late | | moyenne à tardive | | mittel bis spät | media a tardía |  | 6 |
|  |  | late | | tardive | | spät | tardía | (S) MSL 554 C, (W) Akela | 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 | (W) Greenland | 9 |
| **13.** | **(\*)** | **PQ** | **VG** |  |  | **62-65** | | | |
|  |  | |  | | --- | | **Flower: color of petals** | | | |  | | --- | | **Fleur : couleurs de pétales** | | | |  | | --- | | **Blüte: Farbe der Blütenblätter** | | |  | | --- | | **Flor: color de los pétalos** | |  |  |
|  |  | white | | blanc | | weiß | blanco | (W) Witt | 1 |
|  |  | yellowish white | | blanc jaunâtre | | gelblichweiß | blanco amarillento | (S) Silvershadow,  (W) Greenland | 2 |
|  |  | yellow | | jaune | | gelb | amarillo | (S) Proximo,  (W) Severino KWS | 3 |
|  |  | orange-yellow | | jaune orangé | | orangegelb | naranja amarillento |  | 4 |
| **14.** |  | **QN** | **MS/VG** | **(+)** |  | **62-65** | | | |
|  |  | |  | | --- | | **Flower: length of petals** | | | |  | | --- | | **Fleur : longueur des pétales** | | | |  | | --- | | **Blüte: Länge der Blütenblätter** | | |  | | --- | | **Flor: longitud de los pétalos** | |  |  |
|  |  | 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 | (S) PA4EN171,  (W) MSL049C12 | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Jangle KWS,  (W) Blazen | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | (S) Sunder, (W) PR44D06 | 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 |
| **15.** |  | **QN** | **MS/VG** | **(+)** |  | **62-65** | | | |
|  |  | |  | | --- | | **Flower: width of petals** | | | |  | | --- | | **Fleur : largeur des pétales** | | | |  | | --- | | **Blüte: Breite der Blütenblätter** | | |  | | --- | | **Flor: anchura de los pétalos** | |  |  |
|  |  | 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 | (S) MSL 545 C, (W) MSL236C11 | 3 |
|  |  | narrow to medium | | étroite à moyenne | | schmal bis mittel | estrecha a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Proximo, (W) PT256 | 5 |
|  |  | medium to broad | | moyenne à large | | mittel bis breit | media a ancha |  | 6 |
|  |  | broad | | large | | breit | ancha | (S) Lancia, (W) PX131 | 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 |
| **16.** |  | **QN** | **MS/VG** | **(+)** |  | **62-65** | | | |
|  |  | |  | | --- | | **Flower: ratio length/width of petals** | | | |  | | --- | | **Fleur : rapport longueur/largeur des pétales** | | | |  | | --- | | **Blüte: Verhältnis Länge/Breite der Blütenblätter** | | |  | | --- | | **Flor: relación longitud/anchura de los pétalos** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (S) R501S11,  (W) DK Expansion | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Proximo,  (W) WRG 1501 | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) Silvershadow,  (W) Akela | 7 |
|  |  | high to very high | | élevé à très élevé | | groß bis sehr groß | alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **17.** | **(\*)** | **QL** | **VG** |  |  | **62-65** | | | |
|  |  | |  | | --- | | **Production of pollen** | | | |  | | --- | | **Production de pollen** | | | |  | | --- | | **Pollenproduktion** | | |  | | --- | | **Producción de polen** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | (S) MSL 554 C,  (W) MSL049C12 | 1 |
|  |  | present | | présente | | vorhanden | presente | (S) Proximo, (W) PT256 | 9 |
| **18.** | **(\*)** | **QN** | **MG/MS** | **(+)** |  | **70-80** | | | |
|  |  | |  | | --- | | **Plant: length** | | | |  | | --- | | **Plante : longueur** | | | |  | | --- | | **Pflanze: Länge** | | |  | | --- | | **Planta: 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 | (S) MSL 545 C,  (W) PX131 | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Jazz KWS, (W) Skye | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | (S) D 271310,  (W) Annapolis | 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 |
| **19.** |  | **QN** | **MS** |  | **(c)** | **75-89** | | | |
|  |  | |  | | --- | | **Silique: length** | | | |  | | --- | | **Silique : longueur** | | | |  | | --- | | **Schote: Länge** | | |  | | --- | | **Silicua: 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 | (S) R501S11,  (W) Architect | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Joscha KWS,  (W) Blazen | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | (S) PR46H75, (W) PT275 | 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 |
| **20.** |  | **QN** | **MS** |  | **(c)** | **75-89** | | | |
|  |  | |  | | --- | | **Silique: width** | | | |  | | --- | | **Silique : largeur** | | | |  | | --- | | **Schote: Breite** | | |  | | --- | | **Silicua: 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 | (S) Joscha KWS,  (W) PR44D06 | 3 |
|  |  | narrow to medium | | étroite à moyenne | | schmal bis mittel | estrecha a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Sunder,  (W) Severino KWS | 5 |
|  |  | medium to broad | | moyenne à large | | mittel bis breit | media a ancha |  | 6 |
|  |  | broad | | large | | breit | ancha | (S) Lancia, (W) PT296 | 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 |
| **21.** |  | **QN** | **MS** |  | **(c)** | **75-89** | | | |
|  |  | |  | | --- | | **Silique: ratio length/width** | | | |  | | --- | | **Silique : rapport longueur/largeur** | | | |  | | --- | | **Schote: Verhältnis Länge/Breite** | | |  | | --- | | **Silicua: relación longitud/anchura** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja |  | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | (S) R501S11,  (W) ICR 166 | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | (S) Joscha KWS,  (W) DK Excursion | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | (S) PR46H75,  (W) RNX5621 | 7 |
|  |  | high to very high | | élevé à très élevé | | groß bis sehr groß | alta a muy alta |  | 8 |
|  |  | very high | | très élevé | | sehr groß | muy alta |  | 9 |
| **22.** |  | **QN** | **MS** |  | **(c)** | **75-89** | | | |
|  |  | |  | | --- | | **Silique: length of beak** | | | |  | | --- | | **Silique : longueur du bec** | | | |  | | --- | | **Schote: Länge der Spitze** | | |  | | --- | | **Silicua: longitud de la punta** | |  |  |
|  |  | 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 | (S) R104D NHT,  (W) ICR 166 | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Jazz KWS,  (W) WRG 1501 | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | (S) SW 0928725A,  (W) MSL 107 C | 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 |
| **23.** |  | **QN** | **MS** |  | **(c)** | **75-89** | | | |
|  |  | |  | | --- | | **Silique: length of pedicel** | | | |  | | --- | | **Silique : longueur du pédicelle** | | | |  | | --- | | **Schote: Länge des Blütenstiels** | | |  | | --- | | **Silicua: longitud del pedicelo** | |  |  |
|  |  | 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 | (S) PA4EN171,  (W) MSL 315 C | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) Joscha KWS,  (W) AH 12 | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | (S) Jazz KWS, (W) PT297 | 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 |
| **24.** |  | **QN** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Tendency to form inflorescences in alternate season** | | | |  | | --- | | **Tendance à former des inflorescences en saison alternée** | | | |  | | --- | | **Tendenz zur Bildung von Blütenständen in der Zwischensaison** | | |  | | --- | | **Tendencia a formar inflorescencias en alternancia** | |  |  |
|  |  | absent or very weak | | absente ou très faible | | fehlend oder sehr gering | ausente o muy débil | (S) SRR 36112 CL,  (W) PX131 | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | (S) D 271310,  (W) Blazen | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | (S) MSL 554 C,  (W) Aardvark | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | (S) Jazz KWS, (W) AH 12 | 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 | (S) MSL 545 C,  (W) Severino KWS | 9 |

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| |  |  |  |  | | --- | --- | --- | --- | | 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) | | |  | | --- | | wordml://76.png  Lamina base  4 mm wide  Lamina length  Main axis  Saddle height  Saddle depth  Lobe separation  Width  Observations should be made on cotyledons of 40 seedlings.  If the two cotyledons differ in size, the biggest one should be measured. | | | | |  |  |  |  | | |  | | --- | | (b) | | |  | | --- | | Observations should be made on the largest, fully expanded leaf from the lower part of the plant showing no indication of senescence. | | | | |  |  |  |  | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  | | --- | | (c) | | |  | | --- | | wordml://77.png  Ch. 19 - Silique: length  Ch. 20 - Silique: width  Ch. 22 - Silique: length of beak  Ch. 23 - Silique: length of pedicel  Observations should be made on siliques from the midpart of the inflorescence of the main stem. | | | | |  |  |  |  | |

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| |  |  |  | | --- | --- | --- | | |  | | --- | | *8.2* | | *Explanations for individual characteristics* | |  | | | |  | | --- | | Ad. 1: Seed: erucic acid  The erucic acid content should be observed on seed submitted by the applicant.  It should be expressed as a percentage by mass of methyl esters in accordance with the ISO standard in document 12966-4 2015, paragraph 6.2.2.1.  Seed containing 2.0% or less would be classified as “low” whereas seed containing more than 2.0% would be classified as “high”.   Any alternative method may be used if it gives the same result. | | | | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Ad. 9: Leaf: lobes   |  |  | | --- | --- | |  | | | 1 | 9 | | absent | present |   Parts of the leaf blade are considered as lobes if their length is at least equivalent to the width of the leaf petiole at their point of attachment and if the upper notch of the blade has at least half the length of the lobe itself. Secondary structures (indicated by an “s”) are not counted. | | | | |  | | --- | | Ad. 10: Leaf: number of lobes  See Ad. 9  Observations can only be made on varieties with Leaf: lobes: present. | | | |

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| |  |  | | --- | --- | | |  | | --- | | Ad. 16: Flower: ratio length/width of petals  See Ad. 14 | | | |  | | --- | | Ad. 18: Plant: length  To measure the length all side branches should be raised to vertical orientation (position 1 to 2). The measurement should be taken from the base of the plant to the tip of the longest branch. | | | |  | | --- | | Ad. 24: Tendency to form inflorescences in alternate season  Tendency to form inflorescence in alternate season should be assessed from the growth stage reached in relation to example varieties. For winter oilseed rape varieties, observations should be made in summer when late spring oilseed rape varieties are flowering (on spring sown plots). For spring oilseed rape varieties, observations should be made in autumn, when their development stagnates (late summer sown plots). | | |

*8.3 Phenological growth stages and BBCH-identification keys of oilseed rape (Brassica napus L. ssp. napus)*

|  |  |
| --- | --- |
|  | **Principal growth stage 0: Germination** |
| 00 | Dry seed |
| 01 | Beginning of seed imbibition |
| 03 | Seed imbibition complete |
| 05 | Radicle emerged from seed |
| 07 | Hypocotyl with cotyledons emerged from seed |
| 08 | Hypocotyl with cotyledons growing towards soil surface |
| 09 | Emergence: cotyledons emerge through soil surface |
|  |  |
|  | **Principal growth stage 1: Leaf development** |
| 10 | Cotyledons completely unfolded |
| 11 | First leaf unfolded |
| 12 | 2 leaves unfolded |
| 13 | 3 leaves unfolded |
| 1- | Stages continuous until… |
| 19 | 9 or more leaves unfolded |
|  |  |
|  | *Stem elongation may occur earlier than stage 19; in this case continue with stage 20.* |
|  |  |
|  | **Principal growth stage 2: Formation of side shoots** |
| 20 | No side shoots |
| 21 | Beginning of side shoot development: first side shoot detectable |
| 22 | 2 side shoots detectable |
| 23 | 3 side shoots detectable |
| 2- | Stages continuous until… |
| 29 | End of side shoot development: 9 or more side shoots detectable |
|  |  |
|  | **Principal growth stage 3: Stem elongation** |
| 30 | Beginning of stem elongation: no internodes (“rosette”) |
| 31 | 1 visibly extended internode |
| 32 | 2 visibly extended internodes |
| 33 | 3 visibly extended internodes |
| 3- | Stages continuous until… |
| 39 | 9 or more visibly extended internodes |
|  |  |
|  | *Visibly extended internode "n" develops between leaf "n" and leaf "n+1"* |
|  |  |
|  | **Principle growth stage 4: does not apply** |
|  |  |
|  | **Principal growth stage 5: Inflorescence emergence** |
| 50 | Flower buds present, still enclosed by leaves |
| 51 | Flower buds visible from above (“green bud”) |
| 52 | Flower buds free, level with the youngest leaves |
| 53 | Flower buds raised above the youngest leaves |
| 55 | Individual flower buds (main inflorescence) visible but still closed |
| 57 | Individual flower buds (secondary inflorescences) visible but still closed |
| 59 | First petals visible, flower buds still closed (“yellow bud”) |
|  |  |
|  | **Principal growth stage 6: Flowering** |
| 60 | First flowers open |
| 61 | 10% of flowers on main raceme open, main raceme elongating |
| 62 | 20% of flowers on main raceme open |
| 63 | 30% of flowers on main raceme open |
| 64 | 40% of flowers on main raceme open |
| 65 | Full flowering: 50% flowers on main raceme open, older petals falling |
| 67 | Flowering declining: majority of petals fallen |
| 69 | End of flowering Principal growth stage |
|  |  |
|  | **Principal growth stage 7: Development of fruit** |
| 71 | 10% of pods have reached final size |
| 72 | 20% of pods have reached final size |
| 73 | 30% of pods have reached final size |
| 74 | 40% of pods have reached final size |
| 75 | 50% of pods have reached final size |
| 76 | 60% of pods have reached final size |
| 77 | 70% of pods have reached final size |
| 78 | 80% of pods have reached final size |
| 79 | Nearly all pods have reached final size |
|  |  |
|  | **Principal growth stage 8: Ripening** |
| 80 | Beginning of ripening: seed green, filling pod cavity |
| 81 | 10% of pods ripe, seeds dark and hard |
| 82 | 20% of pods ripe, seeds dark and hard |
| 83 | 30% of pods ripe, seeds dark and hard |
| 84 | 40% of pods ripe, seeds dark and hard |
| 85 | 50% of pods ripe, seeds dark and hard |
| 86 | 60% of pods ripe, seeds dark and hard |
| 87 | 70% of pods ripe, seeds dark and hard |
| 88 | 80% of pods ripe, seeds dark and hard |
| 89 | Fully ripe: nearly all pods ripe, seeds dark and hard |
|  |  |
|  | **Principal growth stage 9: Senescence** |
| 97 | Plant dead and dry |
| 99 | Harvested product |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | |  |  | | --- | --- | | 9. | Literature | | |  |  |  | | --- | | Growth stage key adapted from:  2001: Growth stages of mono-and dicotyledonous plants.  BBCH Monograph 2nd Edition.  Federal Biological Research Centre for Agriculture and Forestry. | | |

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| --- | --- | --- |
| |  |  | | --- | --- | | 10. | Technical Questionnaire | |
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|  |
| |  |  | | --- | --- | |  | Application date: (not to be filled in by the applicant) | | TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights | | | In the case of hybrid varieties which are the subject of an application for plant breeders' rights, and where the parent lines are to be submitted as a part of the examination of the hybrid variety, this Technical Questionnaire should be completed for each of the parent lines, in addition to being completed for the hybrid variety. | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | | 1. | Subject of the Technical Questionnaire | | | | |  |  |  |  |  | |  | |  | | --- | | 1.1 | | Botanical name | |  | | --- | | *Brassica napus* L. ssp. *napus* | | |  | | --- | |  | | |  |  |  |  |  | |  | |  | | --- | | 1.2 | | Common name | |  | | --- | | Oilseed Rape, Rapeseed, Swede Rape, Canola | |  | |  |  |  | |  | | --- | |  | |  | |  |  |  |  |  | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | | 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 | |  |  | |  |  |  |  |  | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | 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 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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| |  |  |  | | --- | --- | --- | |  |  |  | |  | 4.2 | Method of propagating the variety | |  | |  |  |  | | --- | --- | --- | | |  | | --- | | 4.2.1 | | |  | | --- | | Seed-propagated varieties | |  | | |  | | --- | | (a) | | |  | | --- | | Cross-pollination | | [ ] | | |  | | --- | | (b) | | |  | | --- | | Hybrid | | [ ] | | |  | | --- | | (i) | | |  | | --- | | Single hybrid | | [ ] | | |  | | --- | | (ii) | | |  | | --- | | Three-way hybrid | | [ ] | | |  | | --- | | (c) | | |  | | --- | | Inbred line | | [ ] | | |  | | --- | | (d) | | |  | | --- | | Other (please provide details) | | [ ] | |  |  |  | |  |  |  | |  |  |  | | |  | | --- | | 4.2.2 | | 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. | | | |

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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** |  |  | | --- | | **(1)** | | |  | | --- | | **Seed: erucic acid** | |  |  |
|  | |  | | --- | | low | | |  | | --- | | (S) Lagoon, (W) Severino KWS | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | high | | |  | | --- | | (S) Petranova, (W) Greenland, (W) MSL049C12 | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.2** |  |  | | --- | | **(8)** | | |  | | --- | | **Leaf: glaucosity** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | (S) Proximo, (W) Architect | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.3** |  |  | | --- | | **(9)** | | |  | | --- | | **Leaf: lobes** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | (S) MSL 545 C, (W) Greenland | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | (S) Proximo, (W) Blazen | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.4** |  |  | | --- | | **(12)** | | |  | | --- | | **Time of flowering** | |  |  |
|  | |  | | --- | | very early | | |  | | --- | | (W) DK Excursion | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very early to early | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | early | | |  | | --- | | (S) Brander, (W) DK Expansion | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | early to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | (S) Jangle KWS, (W) Kadore | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to late | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | late | | |  | | --- | | (S) MSL 554 C, (W) Akela | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | late to very late | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very late | | |  | | --- | | (W) Greenland | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.5** |  |  | | --- | | **(13)** | | |  | | --- | | **Flower: color of petals** | |  |  |
|  | |  | | --- | | white | | |  | | --- | | (W) Witt | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | yellowish white | | |  | | --- | | (S) Silvershadow, (W) Greenland | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | yellow | | |  | | --- | | (S) Proximo, (W) Severino KWS | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | orange-yellow | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.6** |  |  | | --- | | **(17)** | | |  | | --- | | **Production of pollen** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | (S) MSL 554 C, (W) MSL049C12 | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | (S) Proximo, (W) PT256 | | |  | | --- | | 9 [   ] | |
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| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |

|  | Characteristics | Example Varieties | Note |
| --- | --- | --- | --- |
|  |  |  |  |
| |  | | --- | | **5.7** |  |  | | --- | | **(18)** | | |  | | --- | | **Plant: length** | |  |  |
|  | |  | | --- | | very short | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very short to short | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | short | | |  | | --- | | (S) MSL 545 C, (W) PX131 | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | short to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | (S) Jazz KWS, (W) Skye | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to long | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | long | | |  | | --- | | (S) D 271310, (W) Annapolis | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | long to very long | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very long | | |  | | --- | |  | | |  | | --- | | 9 [   ] | |
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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
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| |  |  | | --- | --- | | 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* | | |  | | --- | | *early* | | |  | | --- | | *medium* | | |  |  |  |  | |  |  |  |  | |  |  |  |  | | | |  | Comments: | |

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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 | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | 7.3.1 | Seasonal type: |  | |  | Winter | [  ] | |  | Spring | [  ] | |  | Alternative (grown in winter or spring) | [  ] | |  |  |  | | 7.3.2 | Use: |  | |  | Forage | [  ] | |  | Oil | [  ] | |  |  |  | | 7.3.3 | In case of male sterility: |  | |  | GMS | [  ] | |  | CMS | [  ] | |  |  |  | | 7.3.4 | Other: |  | | | | | | | |  |  |  |  |  | |

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