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| |  |  |  | | --- | --- | --- | |  |  | **E** | |  |  |  | |  |  | |  | | --- | | **TG/76/9(proj.6)** | | **ORIGINAL:** English | | **DATE:** 2023-08-29 | | | **INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS** | | | |  | Geneva |  | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | DRAFT |  | |  |  |  | |  | |  |  |  | |  | |  | | --- | |  | | **SWEET PEPPER, HOT PEPPER, PAPRIKA, CHILI** | |  | | |  | | --- | |  | | |  | | --- | | UPOV Code(s): CAPSI\_ANN | | |  | | |  | | |  |  | | --- | --- | | |  | | --- | | *Capsicum annuum* L. | | |  | | |  | | |  | | --- | | \* | | |  |  |  | | |  | | --- | | **GUIDELINES** | |  | | **FOR THE CONDUCT OF TESTS** | |  | | **FOR DISTINCTNESS, UNIFORMITY AND STABILITY** | | | | |  |  |  | | |  | | --- | | *prepared by an expert from the Netherlands*  *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* | | |  | | --- | | *Capsicum annuum* L. | | |  | | --- | | Sweet Pepper, Hot Pepper, Paprika, Chili | | |  | | --- | | Piment, Poivron | | |  | | --- | | Paprika | | |  | | --- | | Aji, Chile, Pimiento | | | | | |  |  |  | | 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................................................................................................................................................ | [4](#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................................................ | [5](#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...................................................................................................................................... | [7](#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............................................................................... | [26](#Section8) | |  | |  |  |  | | --- | --- | --- | | 8.1 | Explanations covering several characteristics........................................................................................... | [26](#Section8-1) | | |  | | --- | | 8.2 | | Explanations for individual characteristics................................................................................................. | [26](#Section8-2) | | | |  |  |  | | 9. | LITERATURE......................................................................................................................................................... | [52](#Section9) | |  |  |  | | 10. | TECHNICAL QUESTIONNAIRE............................................................................................................................ | [54](#Section10) | |  |  |  | |  | |  | | --- | |  | |  | | | |

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| --- | --- |
| 1. | Subject of these Test Guidelines |
|  |  |
| 1.1 | |  | | --- | | These Test Guidelines apply to all varieties of *Capsicum annuum* L. including rootstocks and ornamentals. | |
|  |  |

|  |  |
| --- | --- |
| 1.2 | In the case of ornamental and rootstock varieties, in particular, it may be necessary to use additional characteristics or additional states of expression to those included in the Table of Characteristics in order to examine Distinctness, Uniformity and Stability. |
|  |  |
| 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 seed or plants. | |
|  |  |
| 2.3 | |  | | --- | | The minimum quantity of plant material, to be supplied by the applicant, should be: | |
|  |  |
|  | |  | | --- | | (a)    seed-propagated varieties: 2,500 seeds  (b)   vegetatively propagated varieties:   25 non grafted young plants not yet bearing flowers and fruits, with at least 2 growing points per plant. For disease resistance testing, additional plants may be requested. | |
|  |  |
|  | In the case 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. | |

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| 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* |
|  |  |
| |  | | --- | |  | | 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. |
|  |  |

|  |  |
| --- | --- |
| *3.4* | *Test Design* |
|  |  |
| 3.4.1 | |  | | --- | | Each test should be designed to result in a total of at least 20 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 | | |  | | --- | | When resistance characteristics are used for assessing distinctness, uniformity and stability of seed‑propagated varieties, records must be taken under conditions of controlled infection and, unless otherwise specified, on at least 20 plants.  In the case of vegetatively propagated varieties, when resistance characteristics are used for assessing distinctness, uniformity and stability, records must be taken on at least 10 plants. | |
|  |  |
| |  | | --- | |  |   *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* |
|  |  |
| 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 10 plants or parts of plants taken from each of 10 plants and any other observations made on all plants in the test, disregarding any off-type plants. | |
|  |  |

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| 4.1.5 | Method of Observation |
|  |  |
|  | The recommended method of observing the characteristic for the purposes of distinctness is indicated by the following key in the Table of Characteristics (see document TGP/9 “Examining Distinctness”, Section 4 “Observation of characteristics”): |
|  |  |
|  | |  | | --- | | MG: single measurement of a group of plants or parts of plants  MS: measurement of a number of individual plants or parts of plants  VG: visual assessment by a single observation of a group of plants or parts of 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 and vegetatively propagated varieties. For varieties with other types of propagation, the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species" Section 4.5 "Testing Uniformity" should be followed. | |
|  |  |
| |  | | --- | | 4.2.3 | | The assessment of uniformity for cross-pollinated should be according to the recommendations for cross-pollinated varieties in the General Introduction. |
|  |  |
| 4.2.4 | |  | | --- | | For the assessment of uniformity of self-pollinated varieties, hybrids and vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, 1 off-type is allowed. | |
|  |  |
| *4.3* | *Stability* |
|  |  |
| 4.3.1 | In practice, it is not usual to perform tests of stability that produce results as certain as those of the testing of distinctness and uniformity. However, experience has demonstrated that, for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable. |
|  |  |
| 4.3.2 | Where appropriate, or in cases of doubt, stability may be further examined by testing a new seed or plant stock to ensure that it exhibits the same characteristics as those shown by the initial material supplied. |

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| 5. | Grouping of Varieties and Organization of the Growing Trial |
|  |  |
| 5.1 | The selection of varieties of common knowledge to be grown in the trial with the candidate varieties and the way in which these varieties are divided into groups to facilitate the assessment of distinctness are aided by the use of grouping characteristics. |
|  |  |
| 5.2 | Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together. |
|  |  |

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| --- | --- |
| 5.3 | The following have been agreed as useful grouping characteristics: |
|  | |  |  |  | | --- | --- | --- | |  |  |  | | |  | | --- | | (a) | |  | |  | | --- | | Plant: shortened internodes (characteristic 4) | | | |  | | --- | | (b) | |  | |  | | --- | | Flower: anthocyanin coloration of anther (characteristic 23) | | | |  | | --- | | (c) | |  | |  | | --- | | Immature fruit: color (characteristic 26) | | | |  | | --- | | (d) | |  | |  | | --- | | Fruit: length (characteristic 30) | | | |  | | --- | | (e) | |  | |  | | --- | | Fruit: diameter (characteristic 31) | | | |  | | --- | | (f) | |  | |  | | --- | | Fruit: ratio length/diameter (characteristic 32) | | | |  | | --- | | (g) | |  | |  | | --- | | Fruit: shape in longitudinal section (characteristic 33) | | | |  | | --- | | (h) | |  | |  | | --- | | Fruit: color (characteristic 41) | | | |  | | --- | | (i) | |  | |  | | --- | | Fruit: capsaicin in placenta (characteristic 48) | | | |  | | --- | | (j) | |  | |  | | --- | | Resistance to Tobamovirus - *Tobacco mosaic virus***-** Group 0 (TMV: 0) (characteristic 54) | | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  | | --- | | (k) | |  | |  | | --- | | Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 2 (PMMoV: 1.2) (characteristic 55) | | | |  | | --- | | (l) | |  | |  | | --- | | Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 3 (PMMoV: 1.2.3) (characteristic 56) | | | |  | | --- | | (m) | |  | |  | | --- | | Resistance to *Potato Y virus* (PVY) - Pathotype 0 (PVY: 0) (characteristic 57) | | | |  | | --- | | (n) | |  | |  | | --- | | Resistance to *Tomato spotted wilt virus* Pathotype 0 (TSWV: 0) (characteristic 62) | | | |  |  | | --- | --- | | |  | | --- | |  | | | | | |
| 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. |
| *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. |

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| *6.4* | *Example Varieties* |
|  | Where appropriate, example varieties are provided to clarify the states of expression of each characteristic. |

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| *6.5* | *Legend* |
|  |  |
| |  |  | 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)-(d) | | |  |  | | --- | --- | | |  | | --- | | See Explanations on the Table of Characteristics in Chapter 8.1 | | | | |  |  |  |  | | 7 | |  | | --- | | Not applicable | | | | | |

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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** | **VG** |  |  |  | | | |
|  |  | |  | | --- | | **Seedling: anthocyanin coloration of hypocotyl** | | | |  | | --- | | **Plantule : pigmentation anthocyanique de l'hypocotyle** | | | |  | | --- | | **Keimpflanze: Anthocyanfärbung des Hypokotyls** | | |  | | --- | | **Plántula: pigmentación antociánica del hipocotilo** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Albaregia | 1 |
|  |  | present | | présente | | vorhanden | presente | Lamuyo | 9 |
| **2.** |  | **QN** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Plant: habit** | | | |  | | --- | | **Plante : port** | | | |  | | --- | | **Pflanze: Wuchsform** | | |  | | --- | | **Planta: porte** | |  |  |
|  |  | upright | | dressé | | aufrecht | erguido | De Cayenne,  Doux très long des Landes, Piquant d’Algérie | 1 |
|  |  | semi-upright | | demi-dressé | | halbaufrecht | semierguido | Sonar | 2 |
|  |  | prostrate | | étalé | | liegend | postrado |  | 3 |
| **3.** | **(\*)** | **QN** | **MG/MS/VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Plant: height** | | | |  | | --- | | **Plante : hauteur** | | | |  | | --- | | **Pflanze: Höhe** | | |  | | --- | | **Planta: altura** | |  |  |
|  |  | very short | | très courte | | sehr niedrig | muy baja |  | 1 |
|  |  | very short to short | | très courte à courte | | sehr niedrig bis niedrig | muy baja a baja |  | 2 |
|  |  | short | | courte | | niedrig | baja | Bravia | 3 |
|  |  | short to medium | | courte à moyenne | | niedrig bis mittel | baja a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | HRF | 5 |
|  |  | medium to tall | | moyenne à haute | | mittel bis hoch | media a alta |  | 6 |
|  |  | tall | | haute | | hoch | alta | Century | 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 | Brutus | 9 |
| **4.** | **(\*)** | **QL** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Plant: shortened internodes** | | | |  | | --- | | **Plante : entre-nœuds raccourcis** | | | |  | | --- | | **Pflanze: verkürzte Internodien** | | |  | | --- | | **Planta: entrenudos acortados** | |  |  |
|  |  | absent | | absents | | fehlend | ausentes | California wonder,  De Cayenne | 1 |
|  |  | present | | présents | | vorhanden | presentes | Bucano | 9 |
| **5.** |  | **PQ** | **MS** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Only varieties with plant: shortened internodes: present: number of internodes between the first flower and shortened internodes** | | | |  | | --- | | **Seulement variétés avec plante : entre-nœuds raccourcis : présents : nombre d’entre-nœuds entre la première fleur et les entre-nœuds raccourcis** | | | |  | | --- | | **Nur Sorten mit Pflanze: verkürzte Internodien: vorhanden: Anzahl Internodien zwischen der ersten Blüte und den verkürzten Internodien** | | |  | | --- | | **Solo variedades con planta: entrenudos acortados: presentes: número de entrenudos entre la primera flor y los entrenudos acortados** | |  |  |
|  |  | none | | aucun | | keine | ninguno |  | 1 |
|  |  | one to three | | un à trois | | ein bis drei | uno a tres |  | 2 |
|  |  | more than three | | plus de trois | | mehr als drei | más de tres |  | 3 |
| **6.** |  | **QN** | **MS/VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Only varieties with plant: shortened internodes: absent: length of internodes** | | | |  | | --- | | **Seulement variétés avec plante : entre-nœuds raccourcis : absents : longueur des entre-nœuds** | | | |  | | --- | | **Nur Sorten mit Pflanze: verkürzte Internodien: fehlend: Länge der Internodien** | | |  | | --- | | **Sólo variedades con planta: entrenudos acortados: ausentes: longitud de los entrenudos** | |  |  |
|  |  | very short | | très courte | | sehr kurz | muy corta | Albaregia | 1 |
|  |  | short to very short | | courte à très courte | | kurz bis sehr kurz | muy corta a corta |  | 2 |
|  |  | short | | courte | | kurz | corta | Tenor | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Florian | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | Corno di toro rosso | 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 | Fenice | 9 |
| **7.** |  | **QN** | **MS/VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **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 | Bomenta, Corvinus | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Bravia, Lamuyo, Nestoss, Remus | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | Lipari, Marconi | 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 |
| **8.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Stem: intensity of anthocyanin coloration of nodes** | | | |  | | --- | | **Tige : intensité de la pigmentation anthocyanique des nœuds** | | | |  | | --- | | **Stängel: Intensität der Anthocyanfärbung der Knoten** | | |  | | --- | | **Tallo: intensidad de la pigmentación antociánica de los nudos** | |  |  |
|  |  | absent or very weak | | absente ou très faible à faible | | fehlend oder sehr gering | ausente o muy débil | Bravia, Nestoss, Remus | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | California wonder | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Lamuyo, Sonar | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Piquant d’Algérie | 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 | Smolder | 9 |
| **9.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Stem: hairiness of nodes** | | | |  | | --- | | **Tige : pilosité des nœuds** | | | |  | | --- | | **Stängel: Behaarung der Knoten** | | |  | | --- | | **Tallo: pilosidad de los nudos** | |  |  |
|  |  | absent or very weak | | absente ou très faible | | fehlend oder sehr gering | ausente o muy débil | Arlequin | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | Bravia, Nestoss | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Doux très long des Landes, Farnese | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Fenice, Solario | 7 |
|  |  | strong very strong | | forte à très forte | | stark bis sehr stark | fuerte a muy fuerte |  | 8 |
|  |  | very strong | | très forte | | sehr stark | muy fuerte | Brutus | 9 |
| **10.** |  | **QN** | **MS/VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: length** | | | |  | | --- | | **Limbe : longueur** | | | |  | | --- | | **Blattspreite: Länge** | | |  | | --- | | **Limbo: longitud** | |  |  |
|  |  | very short | | très courte | | sehr kurz | muy corta | Macska sárga | 1 |
|  |  | very short to short | | très courte à courte | | sehr kurz bis kurz | muy corta a corta |  | 2 |
|  |  | short | | courte | | kurz | corta | De Cayenne | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Marconi | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | Allrounder | 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 | Solario | 9 |
| **11.** |  | **QN** | **MS/VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: width** | | | |  | | --- | | **Limbe : largeur** | | | |  | | --- | | **Blattspreite: Breite** | | |  | | --- | | **Limbo: anchura** | |  |  |
|  |  | very narrow | | très étroite | | sehr schmal | muy estrecha | Macska sárga | 1 |
|  |  | very narrow to narrow | | très étroite à étroite | | sehr schmal bis schmal | muy estrecha a estrecha |  | 2 |
|  |  | narrow | | étroite | | schmal | estrecha | De Cayenne | 3 |
|  |  | narrow to medium | | étroite à moyenne | | schmal bis mittel | estrecha a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Marconi | 5 |
|  |  | medium to broad | | moyenne à large | | mittel bis breit | media a ancha |  | 6 |
|  |  | broad | | large | | breit | ancha | Allrounder | 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 | Solario | 9 |
| **12.** |  | **PQ** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: ratio length/width** | | | |  | | --- | | **Limbe : rapport longueur/largeur** | | | |  | | --- | | **Blattspreite: Verhältnis Länge/Breite** | | |  | | --- | | **Limbo: relación longitud/anchura** | |  |  |
|  |  | low | | bas | | klein | baja | Solario | 1 |
|  |  | medium | | moyen | | mittel | media | Balico, Sonar | 2 |
|  |  | high | | élevé | | groß | alta | Brutus, De Cayenne | 3 |
| **13.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: intensity of green color** | | | |  | | --- | | **Limbe : intensité de la couleur verte** | | | |  | | --- | | **Blattspreite: Intensität der Grünfärbung** | | |  | | --- | | **Limbo: intensidad del color verde** | |  |  |
|  |  | 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 | Blondy | 3 |
|  |  | light to medium | | claire à moyenne | | hell bis mittel | clara a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Allrounder, Frazier | 5 |
|  |  | medium to dark | | moyenne à foncée | | mittel bis dunkel | media a oscura |  | 6 |
|  |  | dark | | foncée | | dunkel | oscura | Rioverde | 7 |
|  |  | dark to very dark | | foncée à très foncée | | dunkel bis sehr dunkel | oscura a muy oscura |  | 8 |
|  |  | very dark | | très foncée | | sehr dunkel | muy oscura | Japo,  Morrón de conserva 3, Roial | 9 |
| **14.** |  | **QN** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: intensity of anthocyanin coloration of upper side** | | | |  | | --- | | **Limbe : intensité de la pigmentation anthocyanique de la face supérieure** | | | |  | | --- | | **Blattspreite: Intensität der Anthocyanfärbung der Oberseite** | | |  | | --- | | **Limbo: intensidad de la pigmentación antociánica del haz** | |  |  |
|  |  | absent or very weak | | absente ou très faible | | fehlend oder sehr gering | ausente o muy débil |  | 1 |
|  |  | weak | | faible | | gering | débil | Omiyamurasaki,  Purple Rain | 2 |
|  |  | medium | | moyenne | | mittel | media | Calico | 3 |
|  |  | strong | | forte | | stark | fuerte | Black Pearl | 4 |
|  |  | very strong | | très forte | | sehr stark | muy fuerte | Purple Flash,  Takiama Purple to Red, TF802 | 5 |
| **15.** |  | **PQ** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: distribution of anthocyanin coloration of lower side** | | | |  | | --- | | **Limbe : répartition de la pigmentation anthocyanique de la face inférieure** | | | |  | | --- | | **Blattspreite: Verteilung der Anthocyanfärbung der Unterseite** | | |  | | --- | | **Limbo: distribución de la pigmentación antociánica del envés** | |  |  |
|  |  | absent | | absente | | fehlend | ausente |  | 1 |
|  |  | on veins throughout | | partout le long des nervurés | | überall entlang der Adern | a lo largo de los nervios en la totalidad | Takiama Purple to Red | 2 |
|  |  | on veins and diffuse on distal part | | le long des nervurés et diffuse sur la partie distale | | entlang der Adern und flächig im distalen Teil | a lo largo de los nervios y difusa en la parte distal |  | 3 |
|  |  | on veins and diffuse throughout | | le long des nervurés et diffuse partout | | entlang der Adern und flächig überall | a lo largo de los nervios y difusa en la totalidad | Black Pearl, Purple Flash | 4 |
|  |  | throughout | | partout | | überall | en la totalidad | TF802 | 5 |
| **16.** |  | **QL** | **VG** | **(+)** | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: variegation** | | | |  | | --- | | **Limbe : panachure** | | | |  | | --- | | **Blattspreite: Panaschierung** | | |  | | --- | | **Limbo: variegación** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Omiyamurasaki | 1 |
|  |  | present | | présente | | vorhanden | presente | Calico, Purple Rain | 9 |
| **17.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: undulation of margin** | | | |  | | --- | | **Limbe : ondulation du bord** | | | |  | | --- | | **Blattspreite: Randwellung** | | |  | | --- | | **Limbo: ondulación del margen** | |  |  |
|  |  | absent or very weak | | absente ou très faible | | fehlend oder sehr gering | ausente o muy débil | De Cayenne | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | Doux très long des Landes | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Tenor | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Tosca | 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 |
| **18.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: blistering** | | | |  | | --- | | **Limbe : cloqûre** | | | |  | | --- | | **Blattspreite: Blasigkeit** | | |  | | --- | | **Limbo: abullonado** | |  |  |
|  |  | very weak | | très faible | | sehr gering | muy débil | Brutus | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | Pusztagold | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Bravia, Nestoss | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Greygo | 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 | Florian | 9 |
| **19.** |  | **QN** | **VG** |  | **(a)** |  | | | |
|  |  | |  | | --- | | **Leaf blade: glossiness** | | | |  | | --- | | **Limbe : brillance** | | | |  | | --- | | **Blattspreite: Glanz** | | |  | | --- | | **Limbo: brillo** | |  |  |
|  |  | 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 | Brutus, Doux très long des Landes | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a medio |  | 4 |
|  |  | medium | | moyenne | | mittel | medio | Bravia | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | medio a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Floridor | 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 |
| **20.** |  | **QN** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Time of beginning of flowering** | | | |  | | --- | | **Époque de début de la floraison** | | | |  | | --- | | **Zeitpunkt des Blühbeginns** | | |  | | --- | | **Época de inicio de la 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 | Brutus | 3 |
|  |  | early to medium | | précoce à moyenne | | früh bis mittel | temprana a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Allrounder, Lamuyo | 5 |
|  |  | medium to late | | moyenne à tardive | | mittel bis spät | media a tardía |  | 6 |
|  |  | late | | tardive | | spät | tardía | Piquant d’Algérie | 7 |
|  |  | late to very late | | tardive à très tardive | | spat bis sehr spät | tardía a muy tardía |  | 8 |
|  |  | very late | | très tardive | | sehr spät | muy tardía |  | 9 |
| **21.** |  | **PQ** | **VG** | **(+)** | **(b)** |  | | | |
|  |  | |  | | --- | | **Flower: attitude of peduncle** | | | |  | | --- | | **Fleur : port du pédoncule** | | | |  | | --- | | **Blüte: Haltung des Blütenstandsstiels** | | |  | | --- | | **Flor: porte del pedúnculo** | |  |  |
|  |  | erect | | dressé | | aufrecht | erecto | Floridor | 1 |
|  |  | semi-drooping | | semi-pendant | | halbüberhängend | semicolgante | Bravia | 2 |
|  |  | drooping | | pendant | | überhängend | colgante | Brutus, Lamuyo | 3 |
| **22.** |  | **PQ** | **VG** |  | **(b)** |  | | | |
|  |  | |  | | --- | | **Flower: color** | | | |  | | --- | | **Fleur : couleur** | | | |  | | --- | | **Blüte: Farbe** | | |  | | --- | | **Flor: color** | |  |  |
|  |  | white | | blanc | | weiß | blanco | Lamuyo | 1 |
|  |  | light purple | | pourpre clair | | hellpurpurn | púrpura claro |  | 2 |
|  |  | medium purple | | pourpre moyen | | mittelpurpurn | púrpura medio |  | 3 |
|  |  | dark purple | | pourpre foncé | | dunkelpurpurn | púrpura oscuro | Black Pearl | 4 |
| **23.** | **(\*)** | **QL** | **VG** | **(+)** | **(b)** |  | | | |
|  |  | |  | | --- | | **Flower: anthocyanin coloration of anther** | | | |  | | --- | | **Fleur : pigmentation anthocyanique de l'anthère** | | | |  | | --- | | **Blüte: Anthocyanfärbung des Staubbeutels** | | |  | | --- | | **Flor: pigmentación antociánica de la antera** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Bravia | 1 |
|  |  | present | | présente | | vorhanden | presente | Brutus, Lamuyo | 9 |
| **24.** |  | **QL** | **VG** | **(+)** | **(b)** |  | | | |
|  |  | |  | | --- | | **Flower: anthocyanin coloration of filament** | | | |  | | --- | | **Fleur : pigmentation anthocyanique du filament** | | | |  | | --- | | **Blüte: Anthocyanfärbung Staubgefäßes** | | |  | | --- | | **Flor: pigmentación antociánica del filamento** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | AG33 | 1 |
|  |  | present | | présente | | vorhanden | presente | Bao-11, Morningput | 9 |
| **25.** |  | **QN** | **VS** | **(+)** | **(b)** |  | | | |
|  |  | |  | | --- | | **Male sterility** | | | |  | | --- | | **Stérilité mâle** | | | |  | | --- | | **Männliche Sterilität** | | |  | | --- | | **Androesterilidad** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | California wonder | 1 |
|  |  | partially present | | partiellement présente | | teilweise vorhanden | parcialmente presente |  | 2 |
|  |  | totally present | | totalement présente | | vollständig vorhanden | totalmente presente | Angelito | 3 |
| **26.** | **(\*)** | **PQ** | **VG** | **(+)** | **(c)** |  | | | |
|  |  | |  | | --- | | **Immature fruit: color** | | | |  | | --- | | **Fruit immature : couleur** | | | |  | | --- | | **Unreife Frucht: Farbe** | | |  | | --- | | **Fruto no maduro: color** | |  |  |
|  |  | greenish white | | blanc verdâtre | | grünlichweiß | blanco verdoso | Bravia | 1 |
|  |  | greenish yellow | | jaune verdâtre | | grünlichgelb | amarillo verdoso | Don, Sweet banana | 2 |
|  |  | green | | vert | | grün | verde | Allrounder, Black Bullet, Cornus, Hitman, Impala, Syrto | 3 |
|  |  | purple | | pourpre | | purpurn | púrpura | Cardinal, Lilo, Loco, Tequila, Tonaya | 4 |
| **27.** | **(\*)** | **QN** | **VG** |  | **(c)** |  | | | |
|  |  | |  | | --- | | **Only varieties with immature fruit green or purple: intensity of color** | | | |  | | --- | | **Seulement les variétés avec fruits immatures verts ou pourpres : intensité de la couleur** | | | |  | | --- | | **Nur Sorten mit unreifer Frucht: grün oder violett: Intensität der Farbe** | | |  | | --- | | **Solo variedades con fruto no maduro verde o púrpura : intensidad del color** | |  |  |
|  |  | 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 | Cornus, Loco, Syrto | 3 |
|  |  | light to medium | | claire à moyenne | | hell bis mittel | clara a media | Tequila | 4 |
|  |  | medium | | moyenne | | mittel | media | Allrounder | 5 |
|  |  | medium to dark | | moyenne à foncée | | mittel bis dunkel | media a oscura | Cardinal | 6 |
|  |  | dark | | foncée | | dunkel | oscura | Impala, Lilo, Tonaya | 7 |
|  |  | dark to very dark | | foncée à très foncée | | dunkel bis sehr dunkel | oscura a muy oscura |  | 8 |
|  |  | very dark | | très foncée | | sehr dunkel | muy oscura | Black Bullet, Hitman | 9 |
| **28.** |  | **QN** | **VG** |  | **(c)** |  | | | |
|  |  | |  | | --- | | **Excluding varieties with immature fruit color: purple: Immature fruit: anthocyanin coloration** | | | |  | | --- | | **À l'exclusion des variétés avec fruits immatures: pourpre: Fruit immature : pigmentation anthocyanique** | | | |  | | --- | | **Ohne Sorten mit Farbe unreifer Frucht: purpurn: Unreife Frucht: Anthocyanfärbung** | | |  | | --- | | **Excluidas las variedades con fruto no maduro púrpura: Fruto no maduro: pigmentación antociánica** | |  |  |
|  |  | absent or weak | | absente ou faible | | fehlend oder gering | ausente o débil | Lamuyo | 1 |
|  |  | medium | | moyenne | | mittel | media |  | 2 |
|  |  | strong | | forte | | stark | fuerte | Sweet banana | 3 |
| **29.** |  | **PQ** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: attitude** | | | |  | | --- | | **Fruit : port** | | | |  | | --- | | **Frucht: Haltung** | | |  | | --- | | **Fruto: porte** | |  |  |
|  |  | erect | | dressé | | aufrecht | erecto | Pusztagold | 1 |
|  |  | horizontal | | horizontal | | waagerecht | horizontal | PAZ szentesi | 2 |
|  |  | drooping | | pendant | | überhängend | colgante | De Cayenne, Lamuyo | 3 |
| **30.** | **(\*)** | **QN** | **MS/VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: length** | | | |  | | --- | | **Fruit : longueur** | | | |  | | --- | | **Frucht: Länge** | | |  | | --- | | **Fruto: longitud** | |  |  |
|  |  | very short | | très courte | | sehr kurz | muy corta | Cherry Bomb,  PAZ szentesi | 1 |
|  |  | very short to short | | très courte à courte | | sehr kurz bis kurz | muy corta a corta |  | 2 |
|  |  | short | | courte | | kurz | corta | Ophelia, Smolder | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | California wonder | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | Bravia, De Cayenne | 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 | Carboni,  Corno di toro rosso, Doux très long des Landes | 9 |
| **31.** | **(\*)** | **QN** | **MS/VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: diameter** | | | |  | | --- | | **Fruit : diamètre** | | | |  | | --- | | **Frucht: Durchmesser** | | |  | | --- | | **Fruto: diámetro** | |  |  |
|  |  | very small | | très petit | | sehr klein | muy pequeño | De Cayenne | 1 |
|  |  | very small to small | | très petit à petit | | sehr klein bis klein | muy pequeño a pequeño |  | 2 |
|  |  | small | | petit | | klein | pequeño | Cherry Bomb | 3 |
|  |  | small to medium | | petit à moyen | | klein bis mittel | pequeño a medio |  | 4 |
|  |  | medium | | moyen | | mittel | medio | Doux italien | 5 |
|  |  | medium to large | | moyen à grand | | mittel bis groß | medio a grande |  | 6 |
|  |  | large | | grand | | groß | grande | Lamuyo, Maduro | 7 |
|  |  | large to very large | | grand à très grand | | groß bis sehr groß | grande a muy grande |  | 8 |
|  |  | very large | | très grand | | sehr groß | muy grande | Floridor, Ibleor | 9 |
| **32.** | **(\*)** | **QN** | **MS/VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: ratio length/diameter** | | | |  | | --- | | **Fruit : rapport longueur/diamètre** | | | |  | | --- | | **Frucht: Verhältnis Länge/Durchmesser** | | |  | | --- | | **Fruto: relación longitud/diámetro** | |  |  |
|  |  | very low | | très bas | | sehr klein | muy baja | Liebesapfel, PAZ szentesi | 1 |
|  |  | very low to low | | très bas à bas | | sehr klein bis klein | muy baja a baja |  | 2 |
|  |  | low | | bas | | klein | baja | Bucano | 3 |
|  |  | low to medium | | bas à moyen | | klein bis mittel | baja a media |  | 4 |
|  |  | medium | | moyen | | mittel | media | Maduro | 5 |
|  |  | medium to high | | moyen à élevé | | mittel bis groß | media a alta |  | 6 |
|  |  | high | | élevé | | groß | alta | Lamuyo, Vidi | 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 | De Cayenne, Doux très long des Landes | 9 |
| **33.** | **(\*)** | **PQ** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: shape in longitudinal section** | | | |  | | --- | | **Fruit: forme en section longitudinale** | | | |  | | --- | | **Frucht: Form im Längsschnitt** | | |  | | --- | | **Fruto: forma en sección longitudinal** | |  |  |
|  |  | triangular | | triangulaire | | dreieckig | triangular | Bravia,  Corno di toro rosso,  De Cayenne | 1 |
|  |  | ovate | | ovale | | eiförmig | oval | Jalapeño | 2 |
|  |  | cordate | | cordée | | herzförmig | cordada | Morrón de conserva 3 | 3 |
|  |  | elliptic | | elliptique | | elliptisch | elíptica |  | 4 |
|  |  | circular | | circulaire | | kreisförmig | circular | Capperino | 5 |
|  |  | oblate | | arrondie-aplatie | | breitrund | achatada | Koral | 6 |
|  |  | rectangular | | rectangulaire | | rechteckig | rectangular | Raggio | 7 |
|  |  | square | | équilatérale | | quadratisch | cuadrada | Maranello | 8 |
|  |  | transverse rectangular | | transverse rectangulaire | | verkehrt rechteckig | rectangular transversal | Liebesapfel, PAZ szentesi | 9 |
|  |  | trapezoid | | trapézoïdale | | trapezförmig | trapezoidal | Altea | 10 |
| **34.** |  | **PQ** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: curvature** | | | |  | | --- | | **Fruit : courbure** | | | |  | | --- | | **Frucht: Krümmung** | | |  | | --- | | **Fruto: curvatura** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Kappy, Lamuyo | 1 |
|  |  | C-shaped | | en forme de C | | C-förmig | en forma de C | Sweet banana | 2 |
|  |  | S-shaped | | en forme de S | | S-förmig | en forma de S | Doux italien | 3 |
| **35.** |  | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: twisting** | | | |  | | --- | | **Fruit : torsion** | | | |  | | --- | | **Frucht: Drehung** | | |  | | --- | | **Fruto: torsión** | |  |  |
|  |  | absent or weak | | absente ou faible | | fehlend oder gering | ausente o débil | California wonder | 1 |
|  |  | medium | | moyenne | | mittel | media | Bubión | 2 |
|  |  | strong | | forte | | stark | fuerte | BN8707 | 3 |
| **36.** |  | **PQ** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: shape in cross section** | | | |  | | --- | | **Fruit : forme en section transversale** | | | |  | | --- | | **Frucht: Form im Querschnitt** | | |  | | --- | | **Fruto: forma en sección transversal** | |  |  |
|  |  | elliptic | | elliptique | | elliptisch | elíptica | Sweet banana | 1 |
|  |  | angular | | angulaire | | eckig | angular | Solario | 2 |
|  |  | circular | | circulaire | | kreisförmig | circular | Doux très long des Landes | 3 |
| **37.** | **(\*)** | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: sinuation of pericarp at basal part** | | | |  | | --- | | **Fruit : sinuosité du péricarpe sur la partie basale** | | | |  | | --- | | **Frucht: Wellung des Perikarps am basalen Teil** | | |  | | --- | | **Fruto: sinuosidad del pericarpio de la parte basal** | |  |  |
|  |  | absent or very weak | | absente ou très faible | | fehlend oder sehr gering | ausente o muy débil | Smolder | 1 |
|  |  | very weak to weak | | très faible à faible | | sehr gering bis gering | muy débil a débil |  | 2 |
|  |  | weak | | faible | | gering | débil | Donat, Kappy | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Banán | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | media a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Hawker | 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 | Doux italien, Gelber Spiral | 9 |
| **38.** | **(\*)** | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: sinuation of pericarp excluding basal part** | | | |  | | --- | | **Fruit : sinuosité du péricarpe excluant la partie basale** | | | |  | | --- | | **Frucht: Wellung des Perikarps ohne basalen Teil** | | |  | | --- | | **Fruto: sinuosidad del pericarpio excluida la parte basal** | |  |  |
|  |  | absent or weak | | absente ou faible | | fehlend oder gering | ausente o débil | Sonar, Yolo Wonder | 1 |
|  |  | medium | | moyenne | | mittel | media | Rodri | 2 |
|  |  | strong | | forte | | stark | fuerte | De Cayenne, Doux italien | 3 |
| **39.** | **(\*)** | **PQ** | **VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: shape of apex** | | | |  | | --- | | **Fruit : forme de l'apex** | | | |  | | --- | | **Frucht: Form des Apex** | | |  | | --- | | **Fruto: forma del ápice** | |  |  |
|  |  | strongly acute | | fortement aiguë | | sehr spitz | fuertemente aguda | De Cayenne | 1 |
|  |  | moderately acute | | modérément aiguë | | mäßig spitz | moderadamente aguda | Kappone | 2 |
|  |  | rounded | | arrondie | | abgerundet | redondeada | Red Tinkerbell | 3 |
|  |  | moderately depressed | | modérément déprimée | | mäßig eingesenkt | moderadamente deprimida | Maduro | 4 |
|  |  | strongly depressed | | fortement déprimée | | sehr eingesenkt | fuertemente deprimida | Monte | 5 |
| **40.** |  | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: texture of surface** | | | |  | | --- | | **Fruit : texture de la surface** | | | |  | | --- | | **Frucht: Textur der Oberfläche** | | |  | | --- | | **Fruto: textura de la superficie** | |  |  |
|  |  | smooth or weakly wrinkled | | lisse ou légèrement ridée | | glatt oder leicht gerieft | lisa o débilmente arrugada | Smolder | 1 |
|  |  | moderately wrinkled | | modérément ridée | | mäßig gerieft | moderadamente arrugada |  | 2 |
|  |  | strongly wrinkled | | fortement ridée | | stark gerieft | fuertemente arrugada |  | 3 |
| **41.** | **(\*)** | **PQ** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: color** | | | |  | | --- | | **Fruit : couleur** | | | |  | | --- | | **Frucht: Farbe** | | |  | | --- | | **Fruto: color** | |  |  |
|  |  | yellow | | jaune | | gelb | amarillo | Allrounder | 1 |
|  |  | orange | | orange | | orange | naranja | Arancia | 2 |
|  |  | red | | rouge | | rot | rojo | Lamuyo | 3 |
|  |  | brown | | marron | | braun | marrón | Bastan, Chocolony | 4 |
|  |  | green | | vert | | grün | verde | Raymond | 5 |
| **42.** | **(\*)** | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: intensity of color** | | | |  | | --- | | **Fruit : intensité de la couleur** | | | |  | | --- | | **Frucht: Intensität der Farbe** | | |  | | --- | | **Fruto: intensidad del color** | |  |  |
|  |  | 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 |  | 3 |
|  |  | light to medium | | claire à moyenne | | hell bis mittel | clara a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media |  | 5 |
|  |  | medium to dark | | moyenne à foncée | | mittel bis dunkel | media a oscura |  | 6 |
|  |  | dark | | foncée | | dunkel | oscura |  | 7 |
|  |  | dark to very dark | | foncée à très foncée | | dunkel bis sehr dunkel | oscura a muy oscura |  | 8 |
|  |  | very dark | | très foncée | | sehr dunkel | muy oscura |  | 9 |
| **43.** |  | **QN** | **VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: glossiness** | | | |  | | --- | | **Fruit : brillance** | | | |  | | --- | | **Frucht: Glanz** | | |  | | --- | | **Fruto: brillo** | |  |  |
|  |  | 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 | Macska sárga | 3 |
|  |  | weak to medium | | faible à moyenne | | gering bis mittel | débil a medio |  | 4 |
|  |  | medium | | moyenne | | mittel | medio | Sonar | 5 |
|  |  | medium to strong | | moyenne à forte | | mittel bis stark | medio a fuerte |  | 6 |
|  |  | strong | | forte | | stark | fuerte | Doux italien | 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 | Ocelot | 9 |
| **44.** | **(\*)** | **QN** | **VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: depth of peduncle cavity** | | | |  | | --- | | **Fruit : profondeur de la dépression pédonculaire** | | | |  | | --- | | **Frucht: Tiefe der Stielhöhle** | | |  | | --- | | **Fruto: profundidad de la cavidad peduncular** | |  |  |
|  |  | absent or very shallow | | absente ou très peu profonde | | fehlend oder sehr flach | ausente o muy poco profunda | Sweet banana | 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 | Doux italien | 3 |
|  |  | shallow to medium | | peu profonde à moyenne | | flach bis mittel | poco profunda a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Lamuyo, Maduro | 5 |
|  |  | medium to deep | | moyenne à profonde | | mittel bis tief | media a profunda |  | 6 |
|  |  | deep | | profonde | | tief | profunda | Baquero | 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 | Dumbo34 | 9 |
| **45.** |  | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: depth of interloculary grooves** | | | |  | | --- | | **Fruit : profondeur des dépressions interloculaires** | | | |  | | --- | | **Frucht: Tiefe der Furchen zwischen den Kammern** | | |  | | --- | | **Fruto: profundidad de los surcos interloculares** | |  |  |
|  |  | absent or very shallow | | absente ou très peu profonde | | fehlend oder sehr flach | ausente o muy poco profunda | De Cayenne | 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 | Kappone | 3 |
|  |  | shallow to medium | | peu profonde à moyenne | | flach bis mittel | poco profunda a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Lamuyo, Marconi | 5 |
|  |  | medium to deep | | moyenne à profonde | | mittel bis tief | media a profunda |  | 6 |
|  |  | deep | | profonde | | tief | profunda | Round of Hungary | 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 |
| **46.** | **(\*)** | **QN** | **MG/VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: number of locules** | | | |  | | --- | | **Fruit : nombre de loges** | | | |  | | --- | | **Frucht: Anzahl Kammern** | | |  | | --- | | **Fruto: número de lóculos** | |  |  |
|  |  | predominantly two | | le plus souvent deux | | vorwiegend zwei | predominante dos | De Cayenne | 1 |
|  |  | equally two and three | | également deux et trois | | gleichermaßen zwei und drei | igualmente dos y tres | Banán | 2 |
|  |  | predominantly three | | le plus souvent trois | | vorwiegend drei | predominante tres | Century | 3 |
|  |  | equally three and four | | également trois et quatre | | gleichermaßen drei und vier | igualmente tres y cuatro | Lamuyo, Sonar | 4 |
|  |  | predominantly four | | le plus souvent quatre | | vorwiegend vier | predominantement cuatro | PAZ szentesi | 5 |
| **47.** | **(\*)** | **QN** | **VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: thickness of flesh** | | | |  | | --- | | **Fruit : épaisseur de la chair** | | | |  | | --- | | **Frucht: Dicke des Fleisches** | | |  | | --- | | **Fruto: grosor de la pulpa** | |  |  |
|  |  | very thin | | très mince | | sehr dünn | muy delgado | De Cayenne,  Macska sárga | 1 |
|  |  | very thin to thin | | très mince à mince | | sehr dünn bis dünn | muy delgado a delgado |  | 2 |
|  |  | thin | | mince | | dünn | delgado | Banán, Doux très long des Landes | 3 |
|  |  | thin to medium | | mince à moyenne | | dünn bis mittel | delgado a medio |  | 4 |
|  |  | medium | | moyenne | | mittel | medio | Lamuyo | 5 |
|  |  | medium to thick | | moyenne à épaisse | | mittel bis dick | medio a grueso |  | 6 |
|  |  | thick | | épaisse | | dick | grueso | Deimos | 7 |
|  |  | thick to very thick | | épaisse à très épaisse | | dick bis sehr dick | grueso a muy grueso |  | 8 |
|  |  | very thick | | très épaisse | | sehr dick | muy grueso | Solario | 9 |
| **48.** | **(\*)** | **QL** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: capsaicin in placenta** | | | |  | | --- | | **Fruit : capsaïcine dans le placenta** | | | |  | | --- | | **Frucht: Capsaicin in der Plazenta** | | |  | | --- | | **Fruto: capsaicina en la placenta** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Sonar, Sweet banana | 1 |
|  |  | present | | présente | | vorhanden | presente | De Cayenne | 9 |
| **49.** |  | **QL** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Fruit: seeds** | | | |  | | --- | | **Fruit : graines** | | | |  | | --- | | **Frucht: Samen** | | |  | | --- | | **Fruto: semillas** | |  |  |
|  |  | absent | | absentes | | fehlend | ausentes | Angelito | 1 |
|  |  | present | | présentes | | vorhanden | presentes | Lamuyo | 9 |
| **50.** |  | **QN** | **MS/VG** |  | **(d)** |  | | | |
|  |  | |  | | --- | | **Peduncle: length** | | | |  | | --- | | **Pédoncule : longueur** | | | |  | | --- | | **Blütenstandsstiel: Länge** | | |  | | --- | | **Pedúnculo: longitud** | |  |  |
|  |  | very short | | très courte | | sehr kurz | muy corta | Jablina | 1 |
|  |  | very short to short | | très courte à courte | | sehr kurz bis kurz | muy corta a corta |  | 2 |
|  |  | short | | courte | | kurz | corta | Corvinus, Yolo Wonder | 3 |
|  |  | short to medium | | courte à moyenne | | kurz bis mittel | corta a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Sonar | 5 |
|  |  | medium to long | | moyenne à longue | | mittel bis lang | media a larga |  | 6 |
|  |  | long | | longue | | lang | larga | De Cayenne | 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 | Farnese, Lipari | 9 |
| **51.** |  | **QN** | **MS/VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Peduncle: thickness** | | | |  | | --- | | **Pédoncule : épaisseur** | | | |  | | --- | | **Blütenstandsstiel: Dicke** | | |  | | --- | | **Pedúnculo: grosor** | |  |  |
|  |  | very thin | | très mince | | sehr dünn | muy delgado | De Cayenne,  Doux très long des Landes, Macska sárga | 1 |
|  |  | very thin to thin | | très mince à mince | | sehr dünn bis dünn | muy delgado a delgado |  | 2 |
|  |  | thin | | mince | | dünn | delgado | Sweet banana | 3 |
|  |  | thin to medium | | mince à moyenne | | dünn bis mittel | delgado a medio |  | 4 |
|  |  | medium | | moyenne | | mittel | medio | Doux italien | 5 |
|  |  | medium to thick | | moyenne à épaisse | | mittel bis dick | medio a grueso |  | 6 |
|  |  | thick | | épaisse | | dick | grueso | Lamuyo | 7 |
|  |  | thick to very thick | | épaisse à très épaisse | | dick bis sehr dick | grueso a muy grueso |  | 8 |
|  |  | very thick | | très épaisse | | sehr dick | muy grueso |  | 9 |
| **52.** |  | **QN** | **VG** | **(+)** | **(d)** |  | | | |
|  |  | |  | | --- | | **Calyx: aspect** | | | |  | | --- | | **Calice : aspect** | | | |  | | --- | | **Kelch: Aussehen** | | |  | | --- | | **Cáliz: aspecto** | |  |  |
|  |  | non enveloping | | non enveloppant | | nicht umhüllend | no envolvente | Lamuyo, Sonar | 1 |
|  |  | semi enveloping | | semi-enrobant | | halb umhüllend | semienvolvente |  | 2 |
|  |  | enveloping | | enrobant | | umhüllend | envolvente | De Cayenne,  Sweet banana | 3 |
| **53.** | **(\*)** | **QN** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Time of maturity** | | | |  | | --- | | **Époque de maturité** | | | |  | | --- | | **Zeitpunkt der Reife** | | |  | | --- | | **Época de madurez** | |  |  |
|  |  | very early | | très précoce | | sehr früh | muy temprana | Macska sárga, Madison | 1 |
|  |  | early | | précoce | | früh | temprana | Kosmik | 3 |
|  |  | early to medium | | précoce à moyenne | | früh bis mittel | temprana a media |  | 4 |
|  |  | medium | | moyenne | | mittel | media | Lamuyo, Sonar | 5 |
|  |  | medium to late | | moyenne à tardive | | mittel bis spät | media a tardía |  | 6 |
|  |  | late | | tardive | | spät | tardía | Doux d’Espagne | 7 |
|  |  | late to very late | | tardive à très tardive | | spat bis sehr spät | tardía a muy tardía |  | 8 |
|  |  | very late | | très tardive | | sehr spät | muy tardía | Teseo | 9 |
| **54.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to Tobamovirus  - *Tobacco mosaic virus* - Group 0  (TMV: 0)** | | | |  | | --- | | **Résistance au tobamovirus  - *Tobacco mosaic virus*  - Groupe 0 (TMV: 0)** | | | |  | | --- | | **Resistenz gegen Tobamovirus  - *Tobacco mosaic virus* - Gruppe 0  (TMV: 0)** | | |  | | --- | | **Resistencia al tobamovirus  - *Tobacco mosaic virus* - Grupo 0  (TMV: 0)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Lamu, Pepita, Piquillo | 1 |
|  |  | present | | présente | | vorhanden | presente | Fehérözön, Ultron,  Yolo Wonder | 9 |
| **55.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to Tobamovirus  - *Pepper mild mottle virus* - Group 2 (PMMoV: 1.2)** | | | |  | | --- | | **Résistance au tobamovirus - *Pepper mild mottle virus*  - Groupe 2  (PMMoV: 1.2)** | | | |  | | --- | | **Resistenz gegen Tobamovirus - *Pepper mild mottle virus*  - Gruppe 2  (PMMoV: 1.2)** | | |  | | --- | | **Resistencia al tobamovirus - *Pepper mild mottle virus*  - Grupo 2  (PMMoV: 1.2)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Fehérözön, Lamu,  Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Achille, Candela, Ferrari, Fudji, Novi 3 | 9 |
| **56.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to Tobamovirus - *Pepper mild mottle virus*  - Group 3  (PMMoV: 1.2.3)** | | | |  | | --- | | **Résistance au tobamovirus -*Pepper mild mottle virus*   - Groupe 3  (PMMoV: 1.2.3)** | | | |  | | --- | | **Resistenz gegen Tobamovirus - *Pepper mild mottle virus*  - Gruppe 3  (PMMoV: 1.2.3)** | | |  | | --- | | **Resistencia al tobamovirus -*Pepper mild mottle virus*  - Grupo 3  (PMMoV: 1.2.3)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Candela, Ferrari, Oida, Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Ettore, Friendly, Tom4 | 9 |
| **57.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Potato Y virus* (PVY)  - Pathotype 0 (PVY: 0)** | | | |  | | --- | | **Résistance au *Potato Y virus* (PVY)  - Pathotype 0 (PVY: 0)** | | | |  | | --- | | **Resistenz gegen *Potato Y virus* (PVY)  - Pathotyp 0 (PVY: 0)** | | |  | | --- | | **Resistencia a *Potato Y virus* (PVY)  - Patotipo 0 (PVY: 0)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Ferrari, Murillo, Piquillo, Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Andalus, Goleador, Vidi, Yolo Y | 9 |
| **58.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Potato Y virus* (PVY)  - Pathotype 1 (PVY: 1)** | | | |  | | --- | | **Résistance au *Potato Y virus* (PVY)  - Pathotype 1 (PVY: 1)** | | | |  | | --- | | **Resistenz gegen *Potato Y virus* (PVY)  - Pathotyp 1 (PVY: 1)** | | |  | | --- | | **Resistencia a *Potato Y virus* (PVY) - Patotipo 1 (PVY: 1)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder, Yolo Y | 1 |
|  |  | present | | présente | | vorhanden | presente | Florida VR2, Ribatejo | 9 |
| **59.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Potato Y virus* (PVY)  - Pathotype 1.2  (PVY: 1.2)** | | | |  | | --- | | **Résistance au *Potato Y virus* (PVY)  - Pathotype 1.2  (PVY: 1.2)** | | | |  | | --- | | **Resistenz gegen *Potato Y virus* (PVY)  - Pathotyp 1.2  (PVY: 1.2)** | | |  | | --- | | **Resistencia a *Potato Y virus* (PVY)  - Patotipo 1.2  (PVY: 1.2)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Florida VR2,  Yolo Wonder, Yolo Y | 1 |
|  |  | present | | présente | | vorhanden | presente | Chouca, Serrano Criollo de Morelos 334 | 9 |
| **60.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Phytophthora capsici* (Pc)** | | | |  | | --- | | **Résistance à *Phytophthora capsici* (Pc)** | | | |  | | --- | | **Resistenz gegen *Phytophthora capsici* (Pc)** | | |  | | --- | | **Resistencia a *Phytophthora capsici* (Pc)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Chistera, Favolor,  Phyo 636, Solario | 9 |
| **61.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Cucumber mosaic virus*(CMV)** | | | |  | | --- | | **Résistance au *Cucumber mosaic virus* (CMV)** | | | |  | | --- | | **Resistenz gegen *Cucumber mosaic virus* (CMV)** | | |  | | --- | | **Resistencia a *Cucumber mosaic virus*(CMV)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Alby, Ducato, Favolor | 9 |
| **62.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Tomato spotted wilt virus* Pathotype 0 (TSWV: 0)** | | | |  | | --- | | **Résistance au *Tomato spotted wilt virus* Pathotype 0 (TSWV: 0)** | | | |  | | --- | | **Resistenz gegen *Tomato spotted wilt virus*  Pathotyp 0 (TSWV: 0)** | | |  | | --- | | **Resistencia a *Tomato spotted wilt virus* Patotipo 0 (TSWV: 0)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Galileo, Jackal, Jackpot, Piamonte | 9 |
| **63.** |  | **QL** | **VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Xanthomonas* spp  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotype 1** | | | |  | | --- | | **Résistance à *Xanthomonas* spp  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 1** | | | |  | | --- | | **Resistenz gegen *Xanthomonas* spp  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 1** | | |  | | --- | | **Resistencia a *Xanthomonas* spp  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Patotipo 1** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Filidor, San Marco | 9 |
| **64.** |  | **QL** | **VG** |  |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotype 2** | | | |  | | --- | | **Résistance à *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 2** | | | |  | | --- | | **Resistenz gegen *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 2** | | |  | | --- | | **Resistencia a *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Patotipo 2** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Filidor, San Marco | 9 |
| **65.** |  | **QL** | **VG** |  |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotype 3** | | | |  | | --- | | **Résistance à *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 3** | | | |  | | --- | | **Resistenz gegen *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Pathotyp 3** | | |  | | --- | | **Resistencia a *Xanthomonas spp*  (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv))  - Patotipo 3** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Filidor, San Marco | 9 |
| **66.** |  | **QL** | **MS/VG** | **(+)** |  |  | | | |
|  |  | |  | | --- | | **Resistance to *Meloidogyne incognita*(Mi)** | | | |  | | --- | | **Résistance à*Meloidogyne incognita*(Mi)** | | | |  | | --- | | **Resistenz gegen *Meloidogyne incognita*(Mi)** | | |  | | --- | | **Resistencia a *Meloidogyne incognita*(Mi)** | |  |  |
|  |  | absent | | absente | | fehlend | ausente | Tom4, Yolo Wonder | 1 |
|  |  | present | | présente | | vorhanden | presente | Bastion, Capital, Kation, W4 | 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) | | |  | | --- | | Observations on plant, stem, internodes and leaves should be made at the time of the first color change of the fruit. Furthermore observations on stem and leaves should be made at the middle third of the plant and observations on leaves should be made on fully developed leaves. | | | | |  |  |  |  | | |  | | --- | | (b) | | |  | | --- | | Observations should be made at the middle third of the plant on fresh fully open flowers. | | | | |  |  |  |  | | |  | | --- | | (c) | | |  | | --- | | Observations should be made before the first color change of the fruit. | | | | |  |  |  |  | | |  | | --- | | (d) | | |  | | --- | | Observations should be made at maturity, after the time of the color change. | | | | |
| |  |  | | --- | --- | |  | | | |  | | --- | | *8.2* | | *Explanations for individual characteristics* | |  | | | |  | | --- | | Ad. 2: Plant: habit  Observations only to be made when plants do not have prominent influence of pruning, guiding or stakes on their natural habit. | | | | |  | | --- | | Ad. 3: Plant: height  Observations should be made after a fruit set on several nodes.  Poor fruit set may influence the vigor and thus the height of the plant. | | | |

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| --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | |  | | --- | | Ad. 7: Stem: length  Observations should be made from the cotyledons to the node of the first flower branch.    Position of cotyledons  First flower branch  Stem: length | | | |  | | --- | | Ad. 10: Leaf blade: length    Width  Length | | |

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| |  |  | | --- | --- | | |  | | --- | | Ad. 11: Leaf blade: width  See Ad. 10 | | | |  | | --- | | Ad. 12: Leaf blade: ratio length/width  See Ad. 10 | | | |  | | --- | | Ad. 14: Leaf blade: intensity of anthocyanin coloration of upper side  Observations should be made on leaves when they are just fully developed. | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Ad. 15: Leaf blade: distribution of anthocyanin coloration of lower side  See Ad. 14 for time of observation.     |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | | 2 | 3 | 4 | 5 | | on veins throughout | on veins and diffuse on distal part | on veins and diffuse throughout | throughout | | | | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Ad. 16: Leaf blade: variegation   |  |  |  |  | | --- | --- | --- | --- | | |  | | --- | |  | | 9 | | present | | | | | |  | | --- | | Ad. 20: Time of beginning of flowering  Time of beginning of flowering is reached when 50% of the plants have the first open flower of the second flowering node. | | | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Ad. 21: Flower: attitude of peduncle  The predominant state of expression should be scored.     |  |  |  | | --- | --- | --- | |  |  |  | | 1 | 2 | 3 | | erect | semi-drooping | drooping | | | |

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| --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | |  | | --- | | Ad. 23: Flower: anthocyanin coloration of anther  Observations should be made on the part of the stamen that normally produces pollen, i.e. the anther.    Filaments  Anthers | | | |  | | --- | | Ad. 24: Flower: anthocyanin coloration of filament  See Ad. 23  Observations should be made on the stalk of the stamen, i.e. the filament. | | |

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Ad. 25: Male sterility  Observations should be made on anthers of fresh, fully open flowers. Male sterile flowers do not have pollen.  Partial sterility  A partially male sterile variety (a parent line) consists of 50% plants with male sterile flowers and 50% of plants with male fertile flowers. This segregation (ref.  TG/1/3 and TGP/10 section 2.4) is a result of the method of propagation of the variety. The heredity of this segregation is known, and behaves in the predicted manner.  Inbreeding and maintenance of the variety ( parent line)  GMS (genetic male sterility) is caused by a recessive gene with alleles A (fertile) and a (sterile). Through inbreeding a line is created that is phenotypically stable and uniform for all traits but still segregates for the GSM locus:  aa (gms, male sterile) x AA (normalgermplasm, male fertile) results in Aa. After selfing the offspring will be 50% Aa, 25% aa and 25% AA. By crossing aa x Aa individuals, it is possible to maintain a population where 50% of all plants have sterile flowers  and 50% fertile flowers.  In a hybrid production this population is used as a mother. The 50% fertile plants are removed before pollination, thus leaving only the sterile plants to be pollinated.   |  |  | | --- | --- | |  |  | | fertile | sterile | | | | |  | | --- | | Ad. 26: Immature fruit: color  For immature greenish white and greenish yellow varieties, particular attention is needed to make observations before the start of the color change. | | | |  | | --- | | Ad. 29: Fruit: attitude  The predominant state of expression should be scored. | | |

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| |  |  | | --- | --- | | |  | | --- | | Ad. 30: Fruit: length  Observations should be made excluding the peduncle.  The length of the fruit for curved or s-shaped fruits should be observed following the C- shape or S‑shape.  The length of the fruit with peduncle cavity or/and depressed apex should be observed without taking into account the cavity and depressed apex.    Length | | | |  | | --- | | Ad. 31: Fruit: diameter  Observations should be made at the broadest part of the fruit. | | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | |  | | --- | | Ad. 32: Fruit: ratio length/diameter  Observations should be made by comparing the ratio of the fruit with the illustrations for the ratios of shapes in the table. | | | | | | | | | |
| ratio length/diameter | 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |
| 7 |  |  |  |  |  |
| 8 |  |  |  |  |  |
| 9 |  |  |  |  |  |
| |  |  | | --- | --- | | |  | | --- | | Ad. 33: Fruit: shape in longitudinal section | | | | | | | | | |

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| --- | --- | --- | --- | --- |
|  |  | 6  oblate | 9  transverse rectangular |  |
|  | 3  cordate | 5  circular | 8  square |  |
| 1  triangular | 2 ovate | 4 elliptic | 7  rectangular | 10  trapezoid |

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| |  |  | | --- | --- | | |  | | --- | | Ad. 45: Fruit: depth of interloculary grooves  Observations should be made on the middle third of the fruit. | | | |  | | --- | | Ad. 48: Fruit: capsaicin in placenta  Observations should be made by tasting the placenta. The placenta is the tissue to which the seeds are attached to. | | |

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Ad. 54: Resistance to Tobamovirus - *Tobacco mosaic virus***-** Group 0 (TMV: 0)

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| --- | --- | --- |
| 1. | Pathogen | Tobamovirus (the genus containing *Tobacco mosaic virus* (TMV), and *Pepper mild mottle virus* (PMMoV)) |
| 2. | Quarantine status | No |
| 3. | Host species | Sweet pepper, hot pepper, paprika and chili – *Capsicum annuum* L. |
| 4. | Source of inoculum | GEVES[[1]](#footnote-1) (FR), Naktuinbouw[[2]](#footnote-2) (NL) or INIA - CSIC[[3]](#footnote-3) (SP) |
| 5. | Isolate | * *Tobacco mosaic virus* group 0 (TMV: 0) strain Vi-6 * *Pepper mild mottle virus* group 2 (PMMoV: 1.2) strain nt203 * *Pepper mild mottle virus* group 3 (PMMoV: 1.2.3) strain Eve   The test protocols have been validated in a CPVO co‑funded project[[4]](#footnote-4) with these 3 isolates/races |
| 6. | Establishment isolate identity | genetically defined pepper differentials (ref. ISF site Feb. 2020: <http://www.worldseed.org/isf/differential_hosts.html>) |

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|  | **Pepper Tobamovirus Group** | 0 | 1 | 2 | 3 |
|  | **ISF Code →** | TMV: 0,1,2  ToMV: 0,1,2  BPMoV | TMGMV  PaMMV | PMMoV: 1.2 | PMMoV: 1.2.3 |
| **Differential hosts** | **Gene** |  |  |  |  |
| Lamu,  Early Calwonder | - | S | S | S | S |
| Tisana, Yolo Wonder | *L1* | HR | S | S | S |
| Tabasco | *L2* | HR | HR | S | S |
| Solario F1, Novi 3, PI159236 | *L3* | HR | HR | HR | S |
| Tom4, PI260429 | *L4* | HR | HR | HR | HR |

S = susceptible; HR = highly resistant;   
TMV= *Tobacco mosaic virus*; ToMV= *Tomato mosaic virus*;   
PMMoV= *Pepper mild mottle virus;* TMGMV= *Tobacco mild green mosaic virus*;   
BPMoV= *Bell pepper mottle virus*; PaMMV= *Paprika mild mottle virus*

|  |  |  |
| --- | --- | --- |
| 7. | Establishment pathogenicity | Test on susceptible plants |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | Regeneration of the virus of plant material before inoculum preparation. |
| 8.2 | Multiplication variety | On susceptible pepper variety, Tobamovirus groups may be multiplied on varieties which are selective for each particular group. For TMV, because tomato and tobacco *Nicotiana tabacum* cv.Samsun have large leaves and can produce a lot of inoculum, they are recommended for the multiplication of TMV: 0. |
| 8.3 | Plant stage at inoculation | see 10.3 |
| 8.4 | Inoculation medium | see 10.1 |
| 8.5 | Inoculation method | see 10.4 |
| 8.6 | Harvest of inoculum | Symptomatic fresh leaves |
| 8.7 | Check of harvested inoculum | option: on young leaves of *Nicotiana tabacum* “Xanthi”, check for local lesions after 5-7 days at 20-25°C. |
| 8.8 | Shelf life/viability inoculum | fresh > 1 day in fridge, desiccated > 1 year in fridge, or juice > 1 year in freezer at - 20°C. |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | At least 20 plants |
| 9.2 | Number of replicates | - |
| 9.3 | Control varieties | TMV: 0:   * Susceptible controls: Lamu, Pepita, Piquillo * Resistant controls: Fehérözön, Yolo Wonder   PMMoV: 1.2:   * Susceptible controls: Fehérözön, Lamu, Yolo Wonder * Resistant controls: Ferrari, Novi 3   PMMoV: 1.2.3:   * Susceptible controls: Ferrari, Yolo Wonder * Resistant controls: Friendly, Tom 4   For PMMoV: 1.2.3, it is advised to choose Ferrari as susceptible control because it is resistant to PMMoV: 1.2 or to add the differentials in tests to confirm the group. |
| 9.4 | Test design | add non-inoculated plants |
| 9.5 | Test facility | Climate room or greenhouse |
| 9.6 | Temperature | 20-25°C |
| 9.7 | Light | 12 hours or longer |
| 9.8 | Season | - |
| 9.9 | Special measures | - |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | 1 g leaf with symptoms with 10 mL PBS or similar buffer or dilution of juice in water.  Homogenize, add carborundum to buffer |
| 10.2 | Quantification inoculum | - |
| 10.3 | Plant stage at inoculation | TMV: 0, cotyledons to first leaf stage  PMMoV: 1.2 and PMMoV: 1.2.3, cotyledon stage |
| 10.4 | Inoculation method | rubbing with the virus suspension |
| 10.5 | First observation | TMV:0:  4-7 days post-inoculation for observation of local necrosis.  PMMoV: 1.2 and PMMoV: 1.2.3:  4-7 days post-inoculation for observation of local necrotic lesions which can lead to cotyledon drop. After this date these necrosis can hardly be seen on fallen cotyledons |
| 10.6 | Second observation | TMV: 0:  two weeks post-inoculation for observation of symptoms of susceptibility.  PMMoV: 1.2 and PMMoV: 1.2.3:  two weeks post-inoculation for observation of symptoms of susceptibility. |
| 10.7 | Final observations | TMV: 0:  three weeks post-inoculation.  PMMoV: 1.2 and PMMoV: 1.2.3:  three weeks post-inoculation.  For TMV:0, PMMoV: 1.2 and PMMoV: 1.2.3, two of these three observations may be sufficient; the third notation is optional for observation of evolution of symptoms (depending on symptoms on controls or heterogeneous behaviour) |
| 11. | Observations |  |
| 11.1 | Method | Visual |
| 11.2 | Observation scale | TMV: 0:   * Susceptibility: mosaic (Aucuba in case of Aucuba strain as Vi-6), growth reduction, death of plants. * Resistance: local necrotic lesions which can lead to leave drop, systemic necrosis, vein necrosis, stem necrosis.   PMMoV: 1.2 and PMMoV: 1.2.3:   * Susceptibility: mosaic (green), growth reduction. * Resistance: local necrotic lesions which can lead to cotyledon drop, systemic necrosis |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls |
| 11.4 | Off-types | - |
| 12. | Interpretation of data in terms of UPOV characteristic states | absent [1] susceptible, see 11.2  present [9] resistant, see 11.2 |
| 13. | Critical control points | - For TMV: 0, plants with no symptoms at all have to be interpreted as escapes of inoculation.  - Recommended dates of notation should be adapted depending of expression of symptoms on controls.  - Environmental conditions can have an effect on the expression of symptoms over time. In this case a third notation could be necessary. |

Ad. 55: Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 2 (PMMoV: 1.2)

See Ad. 54

Ad. 56: Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 3 (PMMoV: 1.2.3)

See Ad. 54

Ad. 57: Resistance to *Potato Y virus* (PVY) - Pathotype 0 (PVY: 0)

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Potato Y virus* (PVY) |
| 2. | Quarantine status | No |
| 3. | Host species | Sweet pepper, hot pepper, paprika and chili – *Capsicum annuum* L |
| 4. | Source of inoculum | GEVES[[5]](#footnote-5) (FR), Naktuinbouw[[6]](#footnote-6) (NL) or INIA - CSIC[[7]](#footnote-7) (SP) |
| 5. | Isolate | - For PVY: 0 strain zb6 (the test protocol has been validated in a CPVO co-funded project[[8]](#footnote-8) with this isolate/race).  - PVY race 1  - PVY race 2 |
| 6. | Establishment isolate identity | genetically defined pepper controls (ref. ISF site: nov. 2020:  [Differential Hosts – International Seed Federation (worldseed.org)](https://www.worldseed.org/our-work/plant-health/differential-hosts/)) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Differential Host** | **gene present** | PVY: 0 | PVY: 1 | PVY: 1.2 |
| Early Cal Wonder, Yolo Wonder | *pvr 0* | S | S | S |
| PI152225 | *pvr 1* | HR | HR | - |
| Yolo Y | *pvr11 (pvr 21)* | HR | S | S |
| Florida VR2 | *pvr12 (pvr 22)* | HR | HR | S |
| Florida VR4, Del Rey Bell, Agronomico 10 | *pvr3* | HR | HR | HR |
| Serrano Criollo de Morelos 334 | *pvr4* | HR | HR | HR |

S= susceptible; HR= highly resistant

Note: In some scientific publications pvr 21 is referred to as pvr 11. Similarly, pvr 22 is referred to as pvr 12

|  |  |  |
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| 7. | Establishment pathogenicity | Test on susceptible plants |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | Regeneration of the virus on plant material before inoculum preparation |
| 8.2 | Multiplication variety | On susceptible pepper variety, PVY races may be multiplied on varieties which are selective for each particular race.  For PVY: 0, because tobacco *Nicotiana tabacum* cv. *Xanthi-nc* has large leaves and can produce a lot of inoculum and has a faster multiplication, it is recommended for the multiplication. |
| 8.3 | Plant stage at inoculation | see 10.3 |
| 8.4 | Inoculation medium | see 10.1 |
| 8.5 | Inoculation method | see 10.4 |
| 8.6 | Harvest of inoculum | Symptomatic fresh leaves |
| 8.7 | Check of harvested inoculum | Option: on *Nicotiana tabacum* cv. *Xanthi-nc,* check mosaic presence and local lesion absence (contamination by Tobamovirus) after 5-7 days. |
| 8.8 | Shelf life/viability inoculum | fresh > 1 day, desiccated > 1 year.  Because problem of stability of PVY: 0, shipments are recommended to be done with fresh infected leaves |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | At least 20 plants |
| 9.2 | Number of replicates | - |
| 9.3 | Control varieties | PVY: 0:   * Susceptible controls: Ferrari, Piquillo,Yolo Wonder * Resistant controls: Andalus, Vidi, Yolo Y   PVV: 1:   * Susceptible controls: Yolo Wonder, Yolo Y * Resistant controls: Florida VR2   PVY: 1.2:   * Susceptible controls: Florida VR2, Yolo Wonder, Yolo Y * Resistant controls: Serrano Criollo de Morelos |
| 9.4 | Test design | add non inoculated plants |
| 9.5 | Test facility | Climate room or greenhouse. In case of test in greenhouse during period of low daylight, shadowy area should not be used |
| 9.6 | Temperature | 18-25°C |
| 9.7 | Light | 12 hours or longer |
| 9.8 | Season | - |
| 9.9 | Special measures | For PVY: 0, it is advised to choose Yolo Y as resistant control or to add the differentials in tests to be able to observe a possible contamination by PVY: 1 or 1.2 |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | 1 g leaf with symptoms with 4 mL PBS with carborundum (80mg) and activated carbon (80mg) or similar buffer, homogenize |
| 10.2 | Quantification inoculum | - |
| 10.3 | Plant stage at inoculation | PVY: 0: cotyledons stage  PVY: 1 and 1.2: cotyledons stage or first pointing leaf stage |
| 10.4 | Inoculation method | rubbing with the virus suspension |
| 10.5 | Final observations | Three weeks post-inoculation |
| 11. | Observations |  |
| 11.1 | Method | Visual |
| 11.2 | Observation scale | Susceptibility: mosaic (can be very light/faint), growth reduction, vein banding and vein necrosis.  Resistance: no symptoms |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls. |
| 11.4 | Off-types | - |
| 12. | Interpretation of data in terms of UPOV characteristic states | absent [1] susceptible, see 11.2  present [9] resistant, see 11.2 |
| 13. | Critical control points | Recommended dates of notation should be adapted depending of expression of symptoms on controls. |

Ad. 58: Resistance to *Potato Y virus* (PVY) - Pathotype 1 (PVY: 1)

See Ad. 57

Ad. 59: Resistance to *Potato Y virus* (PVY) - Pathotype 1.2 (PVY: 1.2)

See Ad. 57

Ad. 60: Resistance to *Phytophthora capsici* (Pc)

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Phytophthora capsici* (Pc) |
| 2. | Quarantine status | no |
| 3. | Host species | *Capsicum annuum* |
| 4. | Source of inoculum | INRAE GAFL (FR) |
| 5. | Isolate | moderately aggressive (e.g. strain P0277) |
| 6. | Establishment isolate identity | on standards  Jupiter, Yolo Wonder (susceptible),  Favolor (moderately resistant),  Solario, Phyo 636 (resistant) |
| 7. | Establishment pathogenicity | in biotest on plants |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | V8 juice-agar (1%) or 10% V8A or PDA+ |
| 8.2 | Multiplication variety | - |
| 8.3 | Plant stage at inoculation | - |
| 8.4 | Inoculation medium | 10% V8A or PDA+ |
| 8.5 | Inoculation method | see 10.4 |
| 8.6 | Harvest of inoculum | - |
| 8.7 | Check of harvested inoculum | - |
| 8.8 | Shelf life/viability inoculum | 10% V8A 3 months, PDA+ 2 months |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | at least 20 (2 untreated plants) |
| 9.2 | Number of replicates | e.g. 1 |
| 9.3 | Control varieties | Jupiter, Yolo Wonder (susceptible),  Favolor (moderately resistant), Solario (resistant) |
| 9.4 | Test design | - |
| 9.5 | Test facility | glasshouse |
| 9.6 | Temperature | 22°C d/n |
| 9.7 | Light | at least 12h |
| 9.8 | Season | - |
| 9.9 | Special measures | - |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | growing on Petri dishes |
| 10.2 | Quantification inoculum | - |
| 10.3 | Plant stage at inoculation | first flower bud |
| 10.4 | Inoculation method | Stem is cut just below point of first branching, a 4mm‑agar plug is placed carefully on the wound and covered with aluminum foil |
| 10.5 | First observation | 7 days post inoculation |
| 10.6 | Second observation | 14 days post inoculation |
| 10.7 | Final observations | 21 days post inoculation |
| 11. | Observations |  |
| 11.1 | Method | visual, comparative or measurement of stem necrosis length; for repeated measurements, the stem is marked with permanent ink |
| 11.2 | Observation scale |  |
|  | - susceptible | e.g. length increase > 0.8 cm/week |
|  | - moderately resistant | e.g. length increase  ≥ 0.5 cm ≤ 0.8 cm/week |
|  | - highly resistant | e.g. length increase  < 0.5 cm/week |
| 11.3 | Validation of test | Evaluation of variety resistance should be based on the stem necrosis increase compared to the control varieties. |
| 11.4 | Off-types | maximum 1 on 20 plants |
| 12. | Interpretation of data in terms of UPOV characteristic states | Absent…… [1] susceptible  Present……[9] moderately resistant and higly resistant |
| 13. | Critical control points | - Absence of differential interactions between host and pathogen  - Maintenance of viability of the strains in the collection |

Ad. 61: Resistance to *Cucumber mosaic virus*(CMV)

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Cucumber mosaic virus* (CMV) |
| 2. | Quarantine status | no |
| 3. | Host species | *Capsicum annuum* |
| 4. | Source of inoculum | INRAE GAFL (FR) |
| 5. | Isolate | e.g. ‘Fulton’ |
| 6. | Establishment isolate identity | - |
| 7. | Establishment pathogenicity | - |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | living plant |
| 8.2 | Multiplication variety | e.g. *Vinca rosea* |
| 8.3 | Plant stage at inoculation | - |
| 8.4 | Inoculation medium | 0.03 M PBS + 0.1% DIECA |
| 8.5 | Inoculation method | rubbing with carborundum |
| 8.6 | Harvest of inoculum | 1 g on 4 ml buffer |
| 8.7 | Check of harvested inoculum | - |
| 8.8 | Shelf life/viability inoculum | - |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | 50 |
| 9.2 | Number of replicates | e.g. 1 |
| 9.3 | Control varieties | Yolo Wonder (susceptible),  Ducato (moderately resistant),  Alby, Favolor (resistant) |
| 9.4 | Test design | - |
| 9.5 | Test facility | - |
| 9.6 | Temperature | 20-22°C |
| 9.7 | Light | 12h |
| 9.8 | Season | - |
| 9.9 | Special measures | - |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | - |
| 10.2 | Quantification inoculum | - |
| 10.3 | Plant stage at inoculation | cotyledon, before emergence of first leaf (12-13 days after sowing) |
| 10.4 | Inoculation method | rubbing cotyledons with carborundum, followed by 48h darkness |
| 10.5 | First observation | 10 days post inoculation |
| 10.6 | Second observation | 15 days post inoculation |
| 10.7 | Final observations | 21 days post inoculation |
| 11. | Observations |  |
| 11.1 | Method | visual, comparative |
| 11.2 | Observation scale |  |
|  | - susceptible | many local lesions, mosaic |
|  | - moderately resistant | intermediate symptoms |
|  | - highly resistant | few local lesions, no or light symptoms |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls. |
| 11.4 | Off-types | maximum 1 on 20 plants |
| 12. | Interpretation of data in terms of UPOV characteristic states | Absent…… [1] susceptible  Present……[9] moderately resistant and highly resistant |
| 13. | Critical control points | - |

Ad. 62: Resistance to *Tomato spotted wilt virus* Pathotype 0 (TSWV: 0)

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Tomato spotted wilt virus*, Pathotype 0 (TSWV: 0) |
| 2. | Quarantine status | yes |
| 3. | Host species | *Capsicum annuum* |
| 4. | Source of inoculum | GEVES (FR), Naktuinbouw (NL), INIA CSIC (ES) |
| 5. | Isolate | e.g. LYE 51 or Br-01 |
| 6. | Establishment isolate identity | - |
| 7. | Establishment pathogenicity | Test on susceptible plant or *Nicotiana benthamiana, N. rustica* |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | living plant |
| 8.2 | Multiplication variety | Yolo Wonder or *N. benthamiana*, *N. rustica* |
| 8.3 | Plant stage at inoculation | Cotyledons fully developed or at “first leaf” pointed stage or 1- 3 leaves |
| 8.4 | Inoculation medium | Ice-cold buffer suspension or 0.03 M PBS + optional addition of 0.1% sodium sulfite freshly added |
| 8.5 | Inoculation method | Rubbing with carborundum |
| 8.6 | Harvest of inoculum | - |
| 8.7 | Check of harvested inoculum | - |
| 8.8 | Shelf life/viability inoculum | Stability in ice cold suspension ca. 15-20 minutes |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | At least 20 |
| 9.2 | Number of replicates | e.g. 1 |
| 9.3 | Control varieties | Lamuyo, Yolo Wonder (susceptible),  Galileo, Jackal, Jackpot, Prior (resistant) |
| 9.4 | Test design | - |
| 9.5 | Test facility | Growth chamber or insect proof glasshouse |
| 9.6 | Temperature | 18-20°C or 20-22°C |
| 9.7 | Light | 12h |
| 9.8 | Season | All seasons, but winter reduces the risk of thrips infestation |
| 9.9 | Special measures | Biohazard sign on compartment for countries with a TSWV quarantine status |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | - |
| 10.2 | Quantification inoculum | - |
| 10.3 | Plant stage at inoculation | Cotyledons fully developed /at “first leaf” pointed stage or 1-3 leaves |
| 10.4 | Inoculation method | Rubbing with carborundum, then apply shading or darkness for 24h  Option:  repeat the inoculation 2-3 days later to reduce accidental escapes |
| 10.5 | First observation | 5-6 days to10 - 15 days post inoculation |
| 10.6 | Second observation | 10-11 days post inoculation to 15 - 21 days post inoculation |
| 10.7 | Final observations | 21 days post inoculation |
| 11. | Observations |  |
| 11.1 | Method | Visual, comparative |
| 11.2 | Observation scale |  |
|  |  | Susceptibility: mosaic on young leaf, some leaf malformation |
|  |  | Resistance: necrosis or only mechanical damage |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls. |
| 11.4 | Off-types | maximum 1 on 20 plants |
| 12. | Interpretation of data in terms of UPOV characteristic states | absent [1] susceptible, see 11.2  present [9] resistant, see 11.2 |
| 13. | Critical control points | - Monitor and control the presence of thrips. TSWV is transmitted by thrips (*Thrips tabaci* and *Frankliniella occidentalis*.). TSWV has a broad host range.  - After a few multiplication the virus could be ineffective. New isolates can be obtained from practice by harvesting fruits of L4 pepper varieties infected naturally with TSWV. The fruits are kept at -70°C temperature. The presence of other viruses must be checked before using this material. |

Ad. 63: Resistance to *Xanthomonas* spp (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv)) - Pathotype 1

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | Xanthomonas spp (ex Xanthomonas campestris pv. vesicatoria)  (X spp (ex Xcv)) |
| 2. | Quarantine status | - |
| 3. | Host species | *Capsicum annuum* |
| 4. | Source of inoculum | Natural; to be taken from any source of infection in the field |
| 5. | Isolate | Expected reactions on resistant standard varieties |
| 6. | Establishment isolate identity | on differentials |

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| --- | --- | --- | --- |
| Differential | Pathotype 1 | Pathotype 2 | Pathotype 3 |
| Early California Wonder | S | S | S |
| Early California Wonder-10R (gene Bs1) | S | R | S |
| Early California Wonder-20R (gene Bs2) | R | R | R |
| Early California Wonder-30R (gene Bs3) | R | S | S |
| PI 235047 (gene Bs4) | R | S | R |

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| --- | --- | --- |
| 7. | Establishment pathogenicity | - |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | A bacterial growth medium, e.g. LPGA |
| 8.2 | Multiplication variety | - |
| 8.3 | Plant stage at inoculation | - |
| 8.4 | Inoculation medium | - |
| 8.5 | Inoculation method | - |
| 8.6 | Harvest of inoculum | 48h culture |
| 8.7 | Check of harvested inoculum | - |
| 8.8 | Shelflife/viability inoculum | - |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | at least 20 |
| 9.2 | Number of replicates | e.g. 1 |
| 9.3 | Control varieties | Fehérözön, Yolo Wonder (susceptible),  Emiro, Filidor, Gotico, San Marco, Solanor (resistant) |
| 9.4 | Test design | - |
| 9.5 | Test facility | - |
| 9.6 | Temperature | 20-26°C day/night |
| 9.7 | Light | 30.000 lux suggested, 16h/day |
| 9.8 | Season | - |
| 9.9 | Special measures | 80% RH |
| 10. | Inoculation |  |
| 10.1 | Preparation inoculum | Harvest cells from LPGA plate after 48 h growing |
| 10.2 | Quantification inoculum | 107 -108 cells per ml (Stronger reaction with the higher concentration.) |
| 10.3 | Plant stage at inoculation | 6-8 true leaves |
| 10.4 | Inoculation method | Infiltration into abaxial surface of the interveinal region on either side of the midrib of a fully expanded leaf in 13-20mm diameter spots |
| 10.5 | First observation | 2-5 days post inoculation |
| 10.6 | Second observation | 6-8 days post inoculation |
| 10.7 | Final observations | 10-14 days post inoculation |
| 11. | Observations |  |
| 11.1 | Method | Visual, comparative |
| 11.2 | Observation scale |  |
|  |  | Susceptibility: Water soaking near infiltration site |
|  |  | Resistance; Necrotic reaction at infiltration site |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls. |
| 11.4 | Off-types | maximum 1 on 20 plants |
| 12. | Interpretation of data in terms of UPOV characteristic states | absent [1] susceptible, see 11.2  present [9] resistant, see 11.2 |
| 13. | Critical control points | - |

Ad. 64: Resistance to *Xanthomonas* spp (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv)) - Pathotype 2

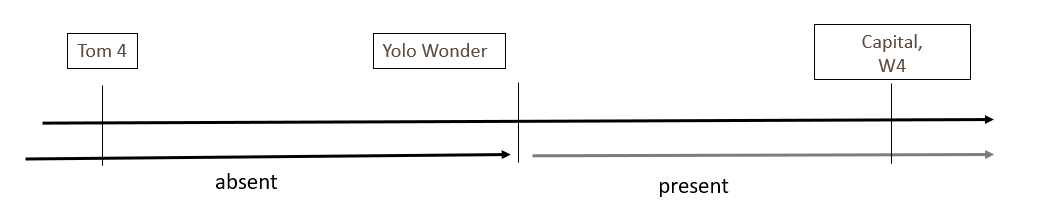
See Ad. 63

Ad. 65: Resistance to *Xanthomonas* spp (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv)) - Pathotype 3

See Ad. 63

Ad. 66: Resistance to *Meloidogyne incognita*(Mi)

|  |  |  |
| --- | --- | --- |
| 1. | Pathogen | *Meloidogyne incognita* (Mi) |
| 2. | Quarantine status | - |
| 3. | Host species | Sweet pepper, hot pepper, paprika and chili – *Capsicum annuum* L. |
| 4. | Source of inoculum | GEVES[[9]](#footnote-9) (F) |
| 5. | Isolate | non-resistance breaking |
| 6. | Establishment isolate identity | use pepper standards |
| 7. | Establishment pathogenicity | use pepper standards |
| 8. | Multiplication inoculum |  |
| 8.1 | Multiplication medium | living plant of pepper or tomato |
| 8.2 | Multiplication variety | susceptible variety |
| 8.3 | Plant stage at inoculation | 2 leaves stage |
| 8.5 | Inoculation method | Deposit of piece of contaminated roots in soil (around 5-10g per plant, to adapt depending of the population aggressivity) |
| 8.6 | Harvest of inoculum | 6 to 10 weeks after inoculation, root systems are cut with scissors into pieces of about 1 cm length |
| 8.7 | Check of harvested inoculum | visual check for presence of root knots and ripe egg masses |
| 8.8 | Shelflife/viability inoculum | 1 day |
| 9. | Format of the test |  |
| 9.1 | Number of plants per genotype | 30 plants, plus at least 10 non-inoculated plants to observe if a possible lack of germination is due to nematode or not. It is recommended to sow more seeds to be sure to get enough plants. |
| 9.2 | Number of replicates | At least 2, preferably 3 . |
| 9.3 | Control varieties | Susceptible: Tom 4 and Yolo Wonder (as additional susceptible control for reduced susceptibility, indicating the border between S and R)  Resistant: Capital and W4 |
| 9.4 | Test design | 3 replicates of 10 plants per variety, in separate trays with contaminated substrate (70% soil +30% sand) to allow statistical analysis. 10 plants in a separate tray with NON contaminated substrate. |
| 9.5 | Test facility | greenhouse or climate room |
| 9.6 | Temperature | 20-26°C, the temperature must be adapted depending on the aggressivity of the test to obtain expected response of controls but should not be above 26°C. |
| 9.7 | Light | at least 12 h per day |
| 10.1 | Preparation inoculum | Small pieces of diseased roots mixed with soil |
| 10.2 | Quantification inoculum | The ratio is depending of aggressiveness of test and laboratories conditions (e.g. between 15g to 30g of infested roots, for 40 plants in a tray of 30\*30 cm containing approximately 3.5 kg of substrate,), galls should be mixed homogeneously with the soil. |
| 10.3 | Plant stage at inoculation | seed |
| 10.4 | Inoculation method | Seeds sown in soil contaminated with infested roots homogeneously mixed with soil |
| 10.5 | First observation | - |
| 10.6 | Second observation | - |
| 10.7 | Final observations | Around 45 days after inoculation depending on test conditions (temperature, season) |
| 11. | Observations |  |
| 11.1 | Method | root inspection |
| 11.2 | Observation scale | Class 0: healthy plant, no galls  Class 1: few and little galls which are difficult to find (for example less than 5)  Class 2: few galls, easy to observe but on few roots, still a lot of roots without galls, no chains  Class 3: many individual galls on most but not all roots, presence of chains  Class 4: many galls on all roots, can lead to dead plants and may suppress emergence. |
| 11.3 | Validation of test | Evaluation of variety resistance should be calibrated with results of resistant and susceptible controls. |
| 11.4 | Off-types | resistant varieties may have a few plants with a few galls |
| 12. | Interpretation of data in terms of UPOV characteristic states | Variety very similar to resistant control is judged as resistant:  Variety very similar to susceptible controls is judged as susceptible: Resistance is absent (1);  If significantly different from resistant and susceptible controls (notations are between resistant and susceptible controls), the variety is judged as resistant; Yolo Wonder is the border control variety for susceptibility. Varieties with higher resistance than Yolo wonder are judged as resistant: Resistance is present (9);  If results are not clear, statistical analysis is advised.  *The analysis of raw data of the couple Mi / Pepper is planned in the Pathostat tool ( free statistic analysis dedicated to quantitative disease resistances)* *[https://pathostat.geves.fr](https://pathostat.geves.fr/)* |



absent

present

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| 13. | Critical control points | Avoid rotting of roots; high temperature causes breakdown of resistance.  In case of an aggressive test, put seeds in a layer of non-contaminated soil or decrease the quantity of inoculum.  In class 4 heavy gall development is seldom observed, normally it can occur as loss of seedlings.  If germination of non-inoculated seeds is 100%, non-germinated inoculated seeds are expected to be in class 4. If germination of non-inoculated seeds is less than 100%, equal lower germination percentage can be expected concerning the inoculated seeds. |

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(ed.), Bannerot, H. (ed.), Amelioration des especes vegetales cultivees.  Objectifs et critères de selection  pp. 420-434, INRA;  Paris, FR  do Rêgo, E. R., do Rêgo, M. M., 2016: Genetics and Breeding of Chili Pepper Capsicum spp. In: do Rego, E.R. et al. 2016: Production and Breeding of Chilli Peppers (Capsicum spp.) Chapter 4, Springer International Publishing Switzerland.    Smilde, W.D. and D. Peters (2007) Pathotyping TSWV in pepper and tomato. In: Niemorowicz-Szczytt, K.  2007: Progress in Research on Capsicum and Eggplant, Eucarpia conference proceedings, Warsaw, pp. 231-236 ([http://www.eucarpia.org/03publications/#Abstracts](http://www.eucarpia.org/03publications/" \l "Abstracts))  Somos, A., 1984: The Paprika, Akadémiai Kiadó, Budapest, HU.    Genetic Resources    Daunay, M.C., Jullian, E., Dauphin, F., 2001:  [Management of eggplant and pepper genetic resources in Europe: networks are emerging](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00004871), EUCARPIA, European Association for Research on Plant Breeding, Paris, FR, Genetics and breeding of Capsicum and eggplant, 11th EUCARPIA Meeting, Antalya, TR, 2001 pp.1-5      Disease Resistance    Caranta, C., Palloix, A., Gébré-Sélassié, K., Marchoux, G., Lefebvre, V., Daubèze, A.M., 1996:  [Genomic organization of multi-virus resistance factors in pepper (Capsicum annuum): Co-localization between QTLs and major genes.  Poster](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00035823)    Lefebvre, V., Caranta, C., Moury, B., Pflieger, S., Daubèze, A.M., Blattes, A., Phaly, T., Nemouchi, G., Palloix, A., 1997: [Status of the intraspecific molecular map of pepper: genome distribution of multiple disease resistance loci and defence genes](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00025819), Sherago International Inc., New York, US, Plant and animal genome V, International Conference on the Status of Plant and Animal Genome Research, San Diego, US, 1997/01/12-16, pp. 115    Pflieger, S., Lefebvre, V., Blattes, A., Caranta, C., Palloix, A., 1998:  [Candidate gene approach for identifying QTLs involved in pepper/pathogen interactions](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00019567), EUCARPIA, European Association fo Research on Plant Breeding, Avignon, FR, Genetics and breeding of Capsicum and eggplant, 10th Meeting EUCARPIA, Avignon, FR, 1998/09/07-11, pp. 245-248  Stacey, G. (ed.), Mullin, B. (ed.), Gresshoff, P.M. (ed.), Biology of plant-microbe interactions  8. International Symposium on molecular plant-microbe interactions, Knoxville (USA), 1996/07/12-19, 1 p., International Society for Molecular Plant-Microbe Interactions, Saint-Paul, US      *Potyvirus*    Parrella, G., Ruffel, S., Moretti, A., Morel, C., Palloix, A., Caranta, C., 2002:  [Recessive resistance genes against potyviruses are localized in colinear genomic regions of the tomato (Lycopersicon spp.) and pepper (Capsicum spp.) genomes](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00002697), Theoretical and Applied Genetics, DE, vol. 105; pp. 855-861    Ruffel, S., Dussault, M.H., Palloix, A., Moury, B., Bendahmane, A., Robaglia, C., Caranta, C., 2002:  [A natural recessive resistance gene against potato virus Y in pepper corresponds to the eukariotic initiation factor 4E (elF4E)](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00002875), Plant Journal, UK, vol. 32 no. 6; pp. 1067-1075      *CMV*    Caranta, C., Daubèze, A.M., Pflieger, S., Lefebvre, V., Thabuis, A., Blattes, A., Nemouchi, G., Phaly, T., Signoret, P., Palloix, A., 2001:  [Identification of quantitative trait loci involved in partial restriction of cucumber mosaic virus (CMV) long-distance movement in pepper](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00004867), EUCARPIA, European Association for Research on Plant Breeding, Paris (FRA), Genetics and breeding of Capsicum and eggplant, 11th EUCARPIA Meeting, Antalya, TR, 2001 pp. 176-180    Caranta, C., Palloix, A., Lefebvre, V., Daubèze, A.M., 1997:  [QTLs for a component of partial resistance to cucumber mosaic virus in pepper:  restriction of virus installation in host-cells](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00024641), Theoretical and Applied Genetics, DE, no. 94; pp. 431-438    Caranta, C., Pflieger, S., Lefebvre, V., Daubèze, A.M., Thabuis, A., Palloix, A., 2002: [QTLs involved in the restriction of cucumber mosaic virus (CMV) long-distance movement in pepper](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00001698), Theoretical and Applied Genetics, DE, vol. 104; pp. 586-591      *Phytophthora*    Lefèbvre, V., Palloix, A., 1995:  [Mapping QTL's affecting the resistance to Phytophthora capsici in pepper (Capsicum annuum)](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00037685), Scherago International Inc., New York, US,  USDA, United States Department of Agriculture, Agricultural Research Service, Washington, US, International Conference on the Status of Plant Genome Research, Plant Genome 3, San Diego, US, 1995/01/15-19 58, USDA-ARS, Washington, US    Lefebvre, V., Palloix, A., 1996:  [Both epistatic and additive effects of QTLs are involved in polygenic induced resistance to disease: a case study, the interaction pepper Phytophthora capsici Leonian](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00030961), Theoretical and Applied Genetics, DE, no. 93; pp. 503-511    Thabuis, A., Palloix, A., Pflieger, S., Daubèze, A.M., Caranta, C., Lefebvre, V., 2003: [Comparative mapping of Phytophthora resistance loci in pepper germplasm: evidence for conserved resistance loci across Solanaceae and for a large genetic diversity](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00000302), Theoretical and Applied Genetics, DE, vol. 106; pp. 1473-1485    *Xanthomonas*    Márkus, F., Kapitány, J., Csilléry, G. and Szarka, J., 2001 b: *Xanthomonas* resistance In Hungarian spice pepper varieties. Int. Jour. of Hort. Sci., Voil. 7. No. 3-4. pp. 69-72    Szarka, J. and Csilléry, G., 1995: Defence system against *Xanthomonas campestris* pv. *vesicatoria*. Eucarpia IXth Meeting on Genetics and Breeding of Capsicum and Eggplant. Budapest, Hungary, August 21-25. pp. 184-187      *TSWV*    Moury, B., Pflieger, S., Blattes, A., Lefebvre, V., Palloix, A., 2000:  [A CAPS marker to assist selection of tomato spotted wilt virus (TSWV) resistance in pepper](http://www.inra.fr/cgi-bin/Internet/Produits/webtexto/cmdlist?/usr/local/www/apache/conf/webtexto/PUB/txtoweb.conf+PUBNEW+INTPUBNEW+00009173), Genome, CA, no. 43;  pp.137-142 | | |

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| |  |  | | --- | --- | | 10. | Technical Questionnaire | |
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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
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| |  |  | | --- | --- | |  | Application date: (not to be filled in by the applicant) | | TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | | 1. | Subject of the Technical Questionnaire | | | | |  |  |  |  |  | |  | |  | | --- | | 1.1 | | Botanical name | |  | | --- | | *Capsicum annuum* L. | | |  | | --- | |  | | |  |  |  |  |  | |  | |  | | --- | | 1.2 | | Common name | |  | | --- | | Sweet Pepper, Hot Pepper, Paprika, Chili | |  | |  |  |  | |  | | --- | |  | |  | |  |  |  |  |  | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | | 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 | | [ ] | | |  | | --- | | (b) | | |  | | --- | | partially known cross | | [ ] | | |  | | --- | | (c) | | |  | | --- | | unknown cross | | [ ] | |  |  | | | |  | | --- | | 4.1.2 | | |  | | --- | | Mutation  (please state parent variety) | | [ ] | |  |  | | |  |  | | | |  | | --- | | 4.1.3 | | |  | | --- | | Discovery and development  (please state where and when discovered and how developed) | | [ ] | |  |  | | |  |  | | | |  | | --- | | 4.1.4 | | Other (Please provide details) | [ ] | |  |  | | |  |  | | | | | | |

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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
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| |  |  |  | | --- | --- | --- | |  |  |  | |  | 4.2 | Method of propagating the variety | |  | |  |  |  | | --- | --- | --- | | |  | | --- | | 4.2.1 | | |  | | --- | | Seed-propagated varieties | |  | | |  | | --- | | (a) | | |  | | --- | | Self-pollination | | [ ] | | |  | | --- | | (b) | | |  | | --- | | Cross-pollination | | [ ] | | |  | | --- | | (c) | | |  | | --- | | Hybrid | | [ ] | | |  | | --- | | (d) | | |  | | --- | | Other (please provide details) | | [ ] | |  |  |  | |  |  |  | |  |  |  | | |  | | --- | | 4.2.2 | | Other (Please provide details) | [ ] | |  |  |  | |  |  |  | |  |  |  | | | |  | |  |  | | --- | --- | | |  | | --- | |  | | | | |

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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 |
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| |  | | --- | | **5.1** |  |  | | --- | | **(3)** | | |  | | --- | | **Plant: height** | |  |  |
|  | |  | | --- | | very short | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very short to short | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | short | | |  | | --- | | Bravia | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | short to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | HRF | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to tall | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | tall | | |  | | --- | | Century | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | tall to very tall | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very tall | | |  | | --- | | Brutus | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.2** |  |  | | --- | | **(4)** | | |  | | --- | | **Plant: shortened internodes** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | California wonder, De Cayenne | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Bucano | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.3** |  |  | | --- | | **(14)** | | |  | | --- | | **Leaf blade: intensity of anthocyanin coloration of upper side** | |  |  |
|  | |  | | --- | | absent or very weak | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | weak | | |  | | --- | | Omiyamurasaki, Purple Rain | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Calico | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | strong | | |  | | --- | | Black Pearl | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | very strong | | |  | | --- | | Purple Flash, Takiama Purple to Red, TF802 | | |  | | --- | | 5 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.4** |  |  | | --- | | **(16)** | | |  | | --- | | **Leaf blade: variegation** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Omiyamurasaki | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Calico, Purple Rain | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.5** |  |  | | --- | | **(23)** | | |  | | --- | | **Flower: anthocyanin coloration of anther** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Bravia | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Brutus, Lamuyo | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.6** |  |  | | --- | | **(25)** | | |  | | --- | | **Male sterility** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | California wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | partially present | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | totally present | | |  | | --- | | Angelito | | |  | | --- | | 3 [   ] | |

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| |  | | --- | | **5.7** |  |  | | --- | | **(26)** | | |  | | --- | | **Immature fruit: color** | |  |  |
|  | |  | | --- | | greenish white | | |  | | --- | | Bravia | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | greenish yellow | | |  | | --- | | Don, Sweet banana | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | green | | |  | | --- | | Allrounder, Black Bullet, Cornus, Hitman, Impala, Syrto | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | purple | | |  | | --- | | Cardinal, Lilo, Loco, Tequila, Tonaya | | |  | | --- | | 4 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.8** |  |  | | --- | | **(27)** | | |  | | --- | | **Only varieties with immature fruit green or purple: intensity of color** | |  |  |
|  | |  | | --- | | very light | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very light to light | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | light | | |  | | --- | | Cornus, Loco, Syrto | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | light to medium | | |  | | --- | | Tequila | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Allrounder | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to dark | | |  | | --- | | Cardinal | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | dark | | |  | | --- | | Impala, Lilo, Tonaya | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | dark to very dark | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very dark | | |  | | --- | | Black Bullet, Hitman | | |  | | --- | | 9 [   ] | |
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|  |  |  |  |
| |  | | --- | | **5.9** |  |  | | --- | | **(30)** | | |  | | --- | | **Fruit: length** | |  |  |
|  | |  | | --- | | very short | | |  | | --- | | Cherry Bomb, PAZ szentesi | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very short to short | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | short | | |  | | --- | | Ophelia, Smolder | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | short to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | California wonder | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to long | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | long | | |  | | --- | | Bravia, De Cayenne | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | long to very long | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very long | | |  | | --- | | Carboni, Corno di toro rosso, Doux très long des Landes | | |  | | --- | | 9 [   ] | |
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| |  | | --- | | **5.10** |  |  | | --- | | **(31)** | | |  | | --- | | **Fruit: diameter** | |  |  |
|  | |  | | --- | | very small | | |  | | --- | | De Cayenne | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very small to small | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | small | | |  | | --- | | Cherry Bomb | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | small to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Doux italien | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to large | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | large | | |  | | --- | | Lamuyo, Maduro | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | large to very large | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very large | | |  | | --- | | Floridor, Ibleor | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.11** |  |  | | --- | | **(32)** | | |  | | --- | | **Fruit: ratio length/diameter** | |  |  |
|  | |  | | --- | | very low | | |  | | --- | | Liebesapfel, PAZ szentesi | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very low to low | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | low | | |  | | --- | | Bucano | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | low to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Maduro | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to high | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | high | | |  | | --- | | Lamuyo, Vidi | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | high to very high | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very high | | |  | | --- | | De Cayenne, Doux très long des Landes | | |  | | --- | | 9 [   ] | |
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|  |  |  |  |
| |  | | --- | | **5.12** |  |  | | --- | | **(33)** | | |  | | --- | | **Fruit: shape in longitudinal section** | |  |  |
|  | |  | | --- | | triangular | | |  | | --- | | Bravia, Corno di toro rosso, De Cayenne | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | ovate | | |  | | --- | | Jalapeño | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | cordate | | |  | | --- | | Morrón de conserva 3 | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | elliptic | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | circular | | |  | | --- | | Capperino | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | oblate | | |  | | --- | | Koral | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | rectangular | | |  | | --- | | Raggio | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | square | | |  | | --- | | Maranello | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | transverse rectangular | | |  | | --- | | Liebesapfel, PAZ szentesi | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | trapezoid | | |  | | --- | | Altea | | |  | | --- | | 10 [   ] | |
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| |  | | --- | | **5.13** |  |  | | --- | | **(37)** | | |  | | --- | | **Fruit: sinuation of pericarp at basal part** | |  |  |
|  | |  | | --- | | absent or very weak | | |  | | --- | | Smolder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very weak to weak | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | weak | | |  | | --- | | Donat, Kappy | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | weak to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Banán | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to strong | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | strong | | |  | | --- | | Hawker | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | strong to very strong | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very strong | | |  | | --- | | Doux italien, Gelber Spiral | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.14** |  |  | | --- | | **(38)** | | |  | | --- | | **Fruit: sinuation of pericarp excluding basal part** | |  |  |
|  | |  | | --- | | absent or weak | | |  | | --- | | Sonar, Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Rodri | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | strong | | |  | | --- | | De Cayenne, Doux italien | | |  | | --- | | 3 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.15** |  |  | | --- | | **(41)** | | |  | | --- | | **Fruit: color** | |  |  |
|  | |  | | --- | | yellow | | |  | | --- | | Allrounder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | orange | | |  | | --- | | Arancia | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | red | | |  | | --- | | Lamuyo | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | brown | | |  | | --- | | Bastan, Chocolony | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | green | | |  | | --- | | Raymond | | |  | | --- | | 5 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.16** |  |  | | --- | | **(42)** | | |  | | --- | | **Fruit: intensity of color** | |  |  |
|  | |  | | --- | | very light | | |  | | --- | |  | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very light to light | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | light | | |  | | --- | |  | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | light to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | |  | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to dark | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | dark | | |  | | --- | |  | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | dark to very dark | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very dark | | |  | | --- | |  | | |  | | --- | | 9 [   ] | |
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| |  | | --- | | **5.17** |  |  | | --- | | **(44)** | | |  | | --- | | **Fruit: depth of peduncle cavity** | |  |  |
|  | |  | | --- | | absent or very shallow | | |  | | --- | | Sweet banana | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | very shallow to shallow | | |  | | --- | |  | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | shallow | | |  | | --- | | Doux italien | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | shallow to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Lamuyo, Maduro | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to deep | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | deep | | |  | | --- | | Baquero | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | deep to very deep | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very deep | | |  | | --- | | Dumbo34 | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.18** |  |  | | --- | | **(46)** | | |  | | --- | | **Fruit: number of locules** | |  |  |
|  | |  | | --- | | predominantly two | | |  | | --- | | De Cayenne | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | equally two and three | | |  | | --- | | Banán | | |  | | --- | | 2 [   ] | |
|  | |  | | --- | | predominantly three | | |  | | --- | | Century | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | equally three and four | | |  | | --- | | Lamuyo, Sonar | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | predominantly four | | |  | | --- | | PAZ szentesi | | |  | | --- | | 5 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.19** |  |  | | --- | | **(48)** | | |  | | --- | | **Fruit: capsaicin in placenta** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Sonar, Sweet banana | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | De Cayenne | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.20** |  |  | | --- | | **(49)** | | |  | | --- | | **Fruit: seeds** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Angelito | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Lamuyo | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.21** |  |  | | --- | | **(53)** | | |  | | --- | | **Time of maturity** | |  |  |
|  | |  | | --- | | very early | | |  | | --- | | Macska sárga, Madison | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | early | | |  | | --- | | Kosmik | | |  | | --- | | 3 [   ] | |
|  | |  | | --- | | early to medium | | |  | | --- | |  | | |  | | --- | | 4 [   ] | |
|  | |  | | --- | | medium | | |  | | --- | | Lamuyo, Sonar | | |  | | --- | | 5 [   ] | |
|  | |  | | --- | | medium to late | | |  | | --- | |  | | |  | | --- | | 6 [   ] | |
|  | |  | | --- | | late | | |  | | --- | | Doux d’Espagne | | |  | | --- | | 7 [   ] | |
|  | |  | | --- | | late to very late | | |  | | --- | |  | | |  | | --- | | 8 [   ] | |
|  | |  | | --- | | very late | | |  | | --- | | Teseo | | |  | | --- | | 9 [   ] | |
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| |  | | --- | | **5.22** |  |  | | --- | | **(54)** | | |  | | --- | | **Resistance to Tobamovirus - *Tobacco mosaic virus* - Group 0 (TMV: 0)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Lamu, Pepita, Piquillo | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Fehérözön, Ultron, Yolo Wonder | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.23** |  |  | | --- | | **(55)** | | |  | | --- | | **Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 2 (PMMoV: 1.2)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Fehérözön, Lamu, Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Achille, Candela, Ferrari, Fudji, Novi 3 | | |  | | --- | | 9 [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.24** |  |  | | --- | | **(56)** | | |  | | --- | | **Resistance to Tobamovirus - *Pepper mild mottle virus* - Group 3 (PMMoV: 1.2.3)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Candela, Ferrari, Oida, Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Ettore, Friendly, Tom4 | | |  | | --- | | 9 [   ] | |
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| |  | | --- | | **5.25** |  |  | | --- | | **(57)** | | |  | | --- | | **Resistance to *Potato Y virus* (PVY) - Pathotype 0 (PVY: 0)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Ferrari, Murillo, Piquillo, Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Andalus, Goleador, Vidi, Yolo Y | | |  | | --- | | 9 [   ] | |
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| |  | | --- | | **5.26** |  |  | | --- | | **(58)** | | |  | | --- | | **Resistance to *Potato Y virus* (PVY) - Pathotype 1 (PVY: 1)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder, Yolo Y | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Florida VR2, Ribatejo | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.27** |  |  | | --- | | **(59)** | | |  | | --- | | **Resistance to *Potato Y virus* (PVY) - Pathotype 1.2 (PVY: 1.2)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Florida VR2, Yolo Wonder, Yolo Y | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Chouca, Serrano Criollo de Morelos 334 | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.28** |  |  | | --- | | **(60)** | | |  | | --- | | **Resistance to *Phytophthora capsici* (Pc)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Chistera, Favolor, Phyo 636, Solario | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.29** |  |  | | --- | | **(61)** | | |  | | --- | | **Resistance to *Cucumber mosaic virus*(CMV)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Alby, Ducato, Favolor | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.30** |  |  | | --- | | **(62)** | | |  | | --- | | **Resistance to *Tomato spotted wilt virus* Pathotype 0 (TSWV: 0)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Galileo, Jackal, Jackpot, Piamonte | | |  | | --- | | 9 [   ] | |

|  | Characteristics | Example Varieties | Note |
| --- | --- | --- | --- |
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| |  | | --- | | **5.31** |  |  | | --- | | **(63)** | | |  | | --- | | **Resistance to *Xanthomonas* spp (ex *Xanthomonas campestris* pv. *vesicatoria*)  (X spp (ex Xcv)) - Pathotype 1** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Filidor, San Marco | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.32** |  |  | | --- | | **(64)** | | |  | | --- | | **Resistance to *Xanthomonas spp* (ex *Xanthomonas campestris* pv. *vesicatoria*) (X spp (ex Xcv)) - Pathotype 2** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Filidor, San Marco | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  | | --- | | **5.33** |  |  | | --- | | **(65)** | | |  | | --- | | **Resistance to *Xanthomonas spp* (ex *Xanthomonas campestris* pv. *vesicatoria*) (X spp (ex Xcv)) - Pathotype 3** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Filidor, San Marco | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
|  |  |  |  |
|  |  |  |  |
| |  | | --- | | **5.34** |  |  | | --- | | **(66)** | | |  | | --- | | **Resistance to *Meloidogyne incognita*(Mi)** | |  |  |
|  | |  | | --- | | absent | | |  | | --- | | Tom4, Yolo Wonder | | |  | | --- | | 1 [   ] | |
|  | |  | | --- | | present | | |  | | --- | | Bastion, Capital, Kation, W4 | | |  | | --- | | 9 [   ] | |
|  | |  | | --- | | not tested | | |  | | --- | |  | | |  | | --- | | [   ] | |
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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
|  |
| |  |  | | --- | --- | | 6. | Similar varieties and differences from these varieties | | |  | | --- | | *Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.* | | | | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | |  | | --- | | Denomination(s) of variety(ies) similar to your candidate variety | | |  | | --- | | Characteristic(s) in which your candidate variety differs from the similar variety(ies) | | |  | | --- | | Describe the expression of the characteristic(s) for the **similar** variety(ies) | | |  | | --- | | Describe the expression of the characteristic(s) for **your** candidate variety | | | | | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | *Example* | |  | | --- | | *Fruit: length* | | |  | | --- | | *long* | | |  | | --- | | *very long* | | |  |  |  |  | |  |  |  |  | |  |  |  |  | | | |  | Comments: | |

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| |  |  |  | | --- | --- | --- | | TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: | |
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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | |  | | --- | | #7. | | Additional information which may help in the examination of the variety | | | | |  |  |  | | | | 7.1 | In addition to the information provided in sections 5 and 6, are there any additional characteristics which may help to distinguish the variety? | | | | |  | Yes | [ ] | No | [ ] | |  | (If yes, please provide details) | | | | | 7.2 | Are there any special conditions for growing the variety or conducting the examination? | | | | |  | Yes | [ ] | No | [ ] | |  | (If yes, please provide details) | | | | | 7.3 | Other information | | | | | |  | | --- | | Special conditions for the examination of the variety                Main use                - Strictly ornamental use [   ]                - Vegetable use [   ]                - Rootstock [   ]  Type of culture:              - protected (greenhouse, tunnel, etc.) [  ]              - in the open [  ]  It is highly recommended that a representative color photograph of the variety accompany the TQ. | | | | | | |  |  |  |  |  | |

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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 |  |  | |  |  |  | |  |  | |  |  |  |  |  |  | |
| [End of document] |

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9. GEVES; matref@geves.fr [↑](#footnote-ref-9)