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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

DRAFT

LUCERNE *

*(Medicago sativa L. and
Medicago x varia Martyn)*

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

*to be considered by the
Technical Working Party for Agricultural Crops at its thirty-second session
to be held in Tsukuba, Japan, from September 8 to 12, 2003*

Alternative Names: *

| <i>Latin</i> | <i>English</i> | <i>French</i> | <i>German</i> | <i>Spanish</i> |
|-----------------------------------|----------------|---------------|---------------|----------------|
| <i>Medicago sativa</i> L. | Lucerne | Luzerne | Luzerne | Alfalfa |
| <i>Medicago x varia</i> Martyn | | | | |

ASSOCIATED DOCUMENTS

These guidelines should be read in conjunction with document TG/1/3, “General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants” (hereinafter referred to as the “General Introduction”) and its associated “TGP” documents.

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

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1. Subject of these Test Guidelines

These Test Guidelines apply to all varieties of *Medicago sativa* L. and of *Medicago x varia* Martyn.

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.

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

1 kilogram

The seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority. In cases where the seed is to be stored, the germination capacity should be as high as possible and should, be stated by the applicant.

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

2.5 The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

3. Method of Examination

3.1 *Duration of Tests*

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

3.2 *Testing Place*

The tests should normally be conducted at one place. If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at that place, the variety may be tested at an additional place.

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.

3.3.1 Stage of development for the assessment

The optimum stage of development for the assessment of each characteristic is indicated in the second column of the Table of Characteristics.

3.3.2 Type of observation – visual or measurement

The recommended method of observing the characteristic is indicated by the following key in the second column of the Table 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

3.3.3 Type of plot for observation

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

A: spaced plants

B: row plot

C: special test

3.4 Test Design

3.4.1 Each test should be designed to result in a total of at least 60 spaced plants and 10 meters of row plot which should be divided between 3 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.

3.5 *Number of Plants / Parts of Plants to be Examined*

3.5.1 Unless otherwise indicated, all observations should be made on 60 plants or parts taken from each of 60 plants in the spaced plants trial.

3.5.2 Unless otherwise indicated, all measurements should be made on 18 plants or parts taken from each of the row plot in the row plot trial.

3.6 *Additional Tests*

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

4. Assessment of Distinctness, Uniformity and Stability

4.1 *Distinctness*

4.1.1 General Recommendations

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

4.1.2 Consistent Differences

The minimum duration of tests recommended in section 3.1 reflects, in general, the need to ensure that any differences in a characteristic are sufficiently consistent.

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.

4.2 *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 The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction.

4.3 *Stability*

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

4.3.2 Where appropriate, or in cases of doubt, stability may be tested, either by growing a further generation, or by testing a new seed stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.

5. Grouping of Varieties and Organization of the Growing Trial

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

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

5.3 The following have been agreed as useful grouping characteristics:

Char. No.15: Plant: tendency to grow during winter (fall dormancy)

5.4 Guidance for the use of grouping characteristics, in the process of examining distinctness, is provided through the General Introduction.

6. Introduction to the Table of Characteristics

6.1 *Categories of Characteristics*

6.1.1 Standard Test Guidelines Characteristics

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

6.1.2 Asterisked Characteristics

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

6.2 *States of Expression and Corresponding Notes*

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.

6.3 *Types of Expression*

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

6.4 *Example Varieties*

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

6.5 *Legend*

- (*) Asterisked characteristic – see Section 6.1.2
- (QL) Qualitative characteristic – see Section 6.3
- (QN) Quantitative characteristic – see Section 6.3
- (PQ) Pseudo-qualitative characteristic – see Section 6.3

- (a) See Explanations on the Table of Characteristics in Chapter 8, Section 8.1

- (+) See Explanations on the Table of Characteristics in Chapter 8, Section 8.2

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

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota | |
|------------|-----------------------|--|----------|-----------------|---------|---|------------------|---|
| 1. (*) | MS A | Plant: natural height 2 weeks after equinox the year of sowing (cut 2 weeks before equinox) | | | | | | |
| | | | | | | | | |
| | MG B | | QN | very short | | | | 1 |
| | | | | short | | | Likarlu, Luzelle | 3 |
| | | | | medium | | | Andela, Fauna | 5 |
| | | | | tall | | | Magali | 7 |
| | very tall | | | | 9 | | | |
| 2. (*) | MG B | Plant: natural height 6 weeks after equinox the year of sowing (cut 2 weeks after equinox) | | | | | | |
| | | | | | | | | |
| | QN | | short | | | Boja | 3 | |
| | | | medium | | | Diane | 5 | |
| | tall | | | Medalfa | 7 | | | |
| 3. (+) | MS A | Plant: natural height in spring (1 month after beginning of growing the year after sowing) | | | | | | |
| | | | | | | | | |
| | MG B | | QN | short | | | Likarlu, Vertus | 3 |
| | | | | medium | | | Diane, Rival | 5 |
| | tall | | | Letizia, Magali | 7 | | | |

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota | | |
|-------------------|--------------------------|--|------------|--------------------|---------|---|---------------|----------------------|---|
| 4. (*) | MS A | Time of beginning of flowering | | | | | | | |
| | | | | | | | | | |
| | QN | MG B | very early | | | | | 1 | |
| | | | early | | | | Alize | 3 | |
| | | | medium | | | | Luzelle | 5 | |
| | | | late | | | | Likarlu | 7 | |
| | | very late | | | | 9 | | | |
| 5. (*) | VS A | Flower:frequency of plants with very dark blue violet flowers | | | | | | | |
| | | QN | (a) | absent or very low | | | | Diane | 1 |
| | | | | low | | | | Sanditi | 3 |
| | | | | medium | | | | Andela | 5 |
| | | | | high | | | | Orca | 7 |
| | | | | very high | | | | | 9 |
| | | | | | | | | | |
| 6. (*) | VS A | Flower:frequency of plants with variegated flowers | | | | | | | |
| | | QN | (a) | absent or very low | | | | Symphonie | 1 |
| | | | | low | | | | Luzelle, Letizia | 3 |
| | | | | medium | | | | Franken Neu, Likarlu | 5 |
| | | | | high | | | | | 7 |
| | | | | very high | | | | | 9 |
| | | | | | | | | | |

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|-------------------|--|--|----------|---------|---------|---|---------------|
| 7. (*) | VS A | Flower: frequency of plants with cream, white or yellow flowers | | | | | |
| QN | (a) | absent or very low | | | | Europe | 1 |
| | | low | | | | | 3 |
| | | medium | | | | Likarlu | 5 |
| | | high | | | | | 7 |
| | | very high | | | | | 9 |
| 8. (*) | MS A | Stem: length of longest stem at full flowering (head included; when fully expanded) | | | | | |
| QN | | very short | | | | | 1 |
| | | short | | | | Likarlu | 3 |
| | | medium | | | | Franken Neu, Carmen | 5 |
| | | long | | | | Fauna | 7 |
| | | very long | | | | | 9 |
| 9. (+) | MS A MG B | Plant: natural height 3 weeks after 1st cut | | | | | |
| QN | | very short | | | | | 1 |
| | | short | | | | Likarlu | 3 |
| | | medium | | | | Andela, Symphonie | 5 |
| | | tall | | | | Zenith | 7 |
| | | very tall | | | | | 9 |

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota | |
|--------------|--------------------------|---|----------|---------|---------|---|---------------|--|
| 10. | MS A | Plant: natural height 3 weeks after 2nd cut | | | | | | |
| | MG B | | | | | | | |
| | QN | very short | | | | | 1 | |
| | | short | | | | Likarlu | 3 | |
| | | medium | | | | Franken Neu, Andela | 5 | |
| | | tall | | | | Zenith | 7 | |
| | very tall | | | | | 9 | | |
| 11. | MS A | Plant: natural height 3 weeks after 3rd cut | | | | | | |
| | MG B | | | | | | | |
| | QN | very short | | | | | 1 | |
| | | short | | | | Likarlu | 3 | |
| | | medium | | | | Timbale | 5 | |
| | | tall | | | | Letizia, Zenith | 7 | |
| | very tall | | | | | 9 | | |
| 12. | MS A | Plant: natural height 3 weeks after 4th cut | | | | | | |
| | QN | very short | | | | | 1 | |
| | | short | | | | Likarlu | 3 | |
| | | medium | | | | Symphonie, Andela | 5 | |
| | | tall | | | | Carmen, Zenith | 7 | |
| | | very tall | | | | | 9 | |

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota | |
|--------------|--------------------------|--|-----------------------|---------|---------|---|------------------|---|
| 13. | MG B | Plant: natural height 2 weeks after equinox in the second year (cut 2 weeks before equinox) | | | | | | |
| | | QN | very short | | | | | 1 |
| | | | short | | | | Gibraltar | 3 |
| | | | medium | | | | Fauna | 5 |
| | | | tall | | | | Zenith | 7 |
| | | | very tall | | | | | 9 |
| 14. | MG B | Plant: natural height 6 weeks after equinox in the second year (cut 2 weeks after equinox) | | | | | | |
| | | QN | very short | | | | | 1 |
| | | | short | | | | Boja | 3 |
| | | | medium | | | | Europe | 5 |
| | | | tall | | | | Zenith | 7 |
| | | | very tall | | | | | 9 |
| 15. | MG C (+) | Plant: tendency to grow during winter (fall dormancy) | | | | | | |
| | | QN | very weak | | | | | 1 |
| | | | very weak to weak | | | | Vernal | 2 |
| | | | weak | | | | Boja, Ranger | 3 |
| | | | weak to medium | | | | Legend, Mercedes | 4 |
| | | | medium | | | | Archer, Europe | 5 |
| | | | medium to strong | | | | Abi 700, Dorine | 6 |
| | | | strong | | | | Sutter Oro | 7 |
| | | | strong to very strong | | | | Maricopa, Carmen | 8 |
| | | | very strong | | | | CUF 101, Medina | 9 |

| Char. No. | Method of Examination | English | français | deutsch | español | Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo | Note/ Nota |
|--------------|---|---|----------|---------|---------|---|---------------|
| 16. | VS C | Resistance to <i>Verticillium albo-</i> <i>atrum</i> | | | | | |
| (+) | | | | | | | |
| QN | | low | | | | Medalfa | 3 |
| | | medium | | | | Europe, Derby | 5 |
| | | high | | | | Vertus | 7 |
| 17. | 2 three foliated leaves VS C | Resistance to <i>Ditylenchus dipsaci</i> | | | | | |
| (+) | | | | | | | |
| QN | | very low | | | | | 1 |
| | | low | | | | Europe | 3 |
| | | medium | | | | | 5 |
| | | high | | | | Vertus | 7 |
| | | very high | | | | | 9 |

8. Explanations on the Table of Characteristics

8.1 *Explanations covering several characteristics*

(a) Observations on flower color should be made at the beginning of flowering. The frequency should be assessed on spaced plants (VS). The states of expression cover the whole range from 1% to 100% although example varieties are so far not yet known for the whole range. Variegation is defined by the presence of yellow and violet pigments within the same flower. This combination may lead to the appearance of green color.

8.2 *Explanations for individual characteristics*

Ad. 3: Plant: natural height in spring (1 month after beginning of growing the year after sowing)

The measurement should be done one month after the earliest varieties start to grow and reach about 15 cm. height.

Ad. 9: Plant: natural height 3 weeks after 1st cut

The first cut should be done just after full flowering, when Characteristic 8: “Stem: Length of longest stem at full flowering (head included; when fully expanded)” has been assessed.

Ad. 15: Plant: tendency to grow during winter (fall dormancy)

This characteristic is consistent with the fall dormancy ratings, used to characterize Lucerne varieties. The notes could be compared to those already used for the fall dormancy rate. All varieties do not respond equally in the autumn to changes in photoperiod and temperature and this is a strongly expressed genetic trait.

Growth should occur during the autumn period, but before a severe frost and/or in the beginning of spring. Local experience will provide information on which cut date provides the greatest separation among varieties for fall dormancy (Teuber *et al.*, 1998; Montegano *et al.*, 2002).

The tendency to grow during winter is assessed by several measurements of the height of a group of plants (MG). The following characteristics are used:

Char. No.1: Plant: natural height 2 weeks after equinox the year of sowing (cut 2 weeks before equinox)

Char. No.2: Plant: natural height 6 weeks after equinox the year of sowing (cut 3 weeks after equinox)

Char. No.3: Plant: natural height in spring (1 month after beginning of growing the year after sowing)

Char. No.13: Plant: natural height 2 weeks after equinox the second year (cut 2 weeks before equinox)

Char. No.14: Plant: natural height 6 weeks after equinox the second year (cut 3 weeks after equinox)

It is recommended that the following varieties have always the same notes to ensure that descriptions are consistent:

| | | |
|------------------|-----------------------|---|
| | very weak | 1 |
| Vernal | very weak to weak | 2 |
| Boja, Ranger | weak | 3 |
| Legend, Mercedes | weak to medium | 4 |
| Archer, Europe | medium | 5 |
| Abi 700, Dorine | medium to strong | 6 |
| Sutter Oro | strong | 7 |
| Maricopa, Carmen | strong to very strong | 8 |
| CUF 101, Medina | very strong | 9 |

Ad. 16: Resistance to *Verticillium albo-atrum*

- (1) The seeds are pre-germinated by sowing them on wet blotting paper in Petri dishes.
- (2) When the germs are 4 to 5 mm long, they should be transplanted to pots. (For example, 50 germs can be transplanted to a pot of 30 cm. x 30 cm.). It is recommended that 150 plants per variety be observed.
- (3) The pots should be put in a greenhouse at 20°C for three months. During one month, the plants should be grown with a nutritive KNOP solution.
- (4) The plants are cut between 2 to 3 cm. and are inoculated one month later.
- (5) The inoculum should be obtained after three weeks of culture made on the following substrate:

| | |
|-------------------------------------|--------------------|
| Saccharose | 20 g |
| Extract of crystallizable malt | 5 g |
| Citric acid | 25 mg |
| Malic acid | 25 mg |
| Iron chelate | 20 mg |
| SO ₄ Mn2H ₂ O | 3 mg |
| SO ₄ Cu5H ₂ O | 3 mg |
| H ₃ BO ₃ | 4 mg |
| SO ₄ ZN7H ₂ O | 3 mg |
| KNOP solution | made up to 1000 ml |

After the inoculum has been ground with a mixer, the suspension should contain 10⁵ spores by mm³.

(6) Contamination is by clipping the plants down to between 4 and 5 cm. with scissors that have previously been dipped into the suspension.

(7) The pots are immediately transferred to a chamber with a high relative humidity between 80 and 100%. The temperature should be 17°C. and the light intensity between 10000 and 15000 Lux.

(8) The observations should be made 45 days later. To each plant one of the following notes is attributed:

- 4 dried plant
- 3 one stunted stem on the plant
- 2 dried leaf
- 1 enlightened veins
- 0 absence of symptoms

For each variety, the mean is calculated from the total of the notes divided by the number of plants observed.

(9) It is recommended that the following varieties have always the same notes to ensure that the descriptions are consistent:

| | | |
|---------------|--------|---|
| Medalfa | | 3 |
| Europe, Derby | medium | 5 |
| Vertus | high | 7 |

Ad. 17: Resistance to *Ditylenchus dipsaci*

(1) Seeds are abraded, disinfected (15 minutes in Metalaxyl 1g/L) and pregerminated by sowing them in vermiculite (2000 seeds are sown to have 300 seeds germinated). It is recommended that 150 plants per variety be observed.

(2) After 4.5 days at 19°C, 14 hours of photoperiod, the seedling (the length of the root is nearly 1 cm) should be lain on soaked blotting paper of 240g (2 strips of 40 x10 cm). The seedlings are deposited on the 1/3 median of the part superior of the strip, only the cotyledons must not be on the paper. The two extremities of the superior strip are folded on the roots. The second strip of blotting paper is beginning the roll up. For each variety 16 rolls of 20 seedlings are done. The rolls are deposited in pots of 30 x 30cm, with water (1 cm. deep) one variety per pot.

(3) The pots should be put in a climatic chamber at 19°C, 12 hours of photoperiod and 80% of humidity.

(4) Two days after, when the cotyledons are well opened, the inoculation is done with a micro pipette. On each seedling, deposit a drop of 20 micro litres containing 50 nematodes between the two cotyledons and mix with carbomethylcellulose at 40%. 15 rollers per genotype are inoculated.

The humidity is set is at 100% for 4 days and reduced progressively to 80% over the 2 following days.

(5) Observations should be made between 14 and 21 days after the inoculation. To each plant one of the following expressions is attributed:

- puffed seedling (sensitive seedling)
- stopped growth seedling (resistant seedling)
- seedlings without symptoms
- dead seedling
- indeterminate seedling.

For each variety, the percentage is calculated from the total of the number of puffed seedlings divided by the sum of puffed seedling + stopped growth seedling + seedlings without symptoms.

(6) It is recommended that the following varieties have always the same notes to ensure that the descriptions are consistent:

| | | |
|--------|------|---|
| Europe | low | 3 |
| Vertus | high | 7 |

9. Literature

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10. Technical Questionnaire

| | | |
|--|--|---|
| TECHNICAL QUESTIONNAIRE | Page {x} of {y} | Reference Number: |
| | | Application date: (not to be filled in by the applicant) |
| TECHNICAL QUESTIONNAIRE to be completed in connection with an application for plant breeders' rights | | |
| 1.1.1 <i>Latin Name</i> | <input type="text" value="Medicago Sativa L."/> | |
| 1.1.2 Common Name | <input type="text" value="Lucerne"/> | [] |
| 1.2.1 <i>Latin Name</i> | <input type="text" value="Medicago x varia Martyn"/> | |
| 1.2.2 Common Name | <input type="text"/> | [] |
| 2. Applicant | | |
| Name | <input type="text"/> | |
| Address | <input type="text"/> | |
| Telephone No. | <input type="text"/> | |
| Fax No. | <input type="text"/> | |
| E-mail address | <input type="text"/> | |
| Breeder (if different from applicant) | <input type="text"/> | |
| 3. Proposed denomination and breeder's reference | | |
| Proposed denomination (if available) | <input type="text"/> | |
| Breeder's reference | <input type="text"/> | |

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

4. Information on the breeding scheme and propagation of the variety

4.1 Breeding scheme

Variety resulting from:

4.1.1 Crossing

- (a) controlled cross []
(please state parent varieties)
- (b) partially known cross []
(please state known parent variety(ies))
- (c) totally unknown cross []

4.1.2 Mutation []
(please state parent variety)

4.1.3 Discovery []
(please state where, when and how developed)

4.1.4 Other []
(please provide details)

4.2 Method of propagating the variety

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

| Characteristics | Example Varieties | Note |
|--|----------------------|------|
| 5.1 Flower:frequency of plants with very dark blue violet flowers (5) | | |
| absent or very low | Diane | 1 |
| low | Sanditi | 3 |
| medium | Andela | 5 |
| high | Orca | 7 |
| very high | | 9 |
| 5.2 Flower:frequency of plants with variegated flowers (6) | | |
| absent or very low | Symphonie | 1 |
| low | Luzelle, Letizia | 3 |
| medium | Franken Neu, Likarlu | 5 |
| high | | 7 |
| very high | | 9 |
| 5.3 Flower:frequency of plants with cream, white or yellow flowers (7) | | |
| absent or very low | Europe | 1 |
| low | | 3 |
| medium | Likarlu | 5 |
| high | | 7 |
| very high | | 9 |
| 5.4 Plant: tendency to grow during winter (fall dormancy) (15) | | |
| very weak | | 1 |
| very weak to weak | Vernal | 2 |
| weak | Boja, Ranger | 3 |
| weak to medium | Legend, Mercedes | 4 |
| medium | Archer, Europe | 5 |
| medium to strong | Abi 700, Dorine | 6 |
| strong | Sutter Oro | 7 |
| strong to very strong | Maricopa, Carmen | 8 |
| very strong | CUF 101, Medina | 9 |

| | | |
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6. Similar varieties and differences from these varieties

Please use the table, and space provided for comments, below 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 |
|---|---|--|--|
| <i>Example</i> | | <i>(example to be inserted)</i> | <i>(example to be inserted)</i> |
| | | | |
| | | | |
| Comments: | | | |

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

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

Yes [] No []

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

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

Yes [] No []

7.2.2 If yes, please give details:

7.3 Other information

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.

| | | |
|-------------------------|-----------------|-------------------|
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9. Information on plant material to be examined.

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 or pesticide) | Yes [] | No [] |
| (c) Tissue culture | Yes [] | No [] |
| (d) Other factors | Yes [] | No [] |

Please provide details of 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]