## DRAFT

WHITE CLOVER
(Trifolium repens L.)

## GUIDELINES

## FOR THE CONDUCT OF TESTS

## FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names:*

| Latin | English | French | German | Spanish |
| :--- | :--- | :--- | :--- | :--- |
| Trifolium repens L. | White clover | Trèfle blanc | Weissklee | Trébol blanco |

## 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.

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## 1. Subject of these Guidelines

These Test Guidelines apply to all varieties of Trifolium repens L.

## 2. Material Required

2.1 The competent authorities decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered. Applicants submitting material from a State other than that in which the testing takes place must ensure that all customs formalities and phytosanitary requirements are complied with.
2.2 The material is to be supplied in the form of seed.
2.3 The minimum quantity of plant material, to be supplied by the applicant, should be:

$$
1.0 \mathrm{~kg} .
$$

2.4 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.
2.5 The plant material supplied should be visibly healthy, not lacking in vigor, nor affected by any important pest or disease.
2.6 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 seen at that place, the variety may be tested at an additional place.

### 3.3 Conditions for Conducting the Examination

3.3.1 The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination.

### 3.3.2 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 General

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.

### 3.4.2 Plot design

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

Plots with single spaced plants: Each test should consist of 60 single spaced plants per variety arranged in $3,4,5$ or 6 replicates, i.e. plots of $20,15,12$ or 10 plants.

Row plots: Each test which includes row plots should consist of at least 10 meters of row arranged in two replicates, each of 5 meters. The density of sowing should be such that about 200 plants per meter should be obtained.

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

Unless otherwise indicated, all observations determined by measuring or counting should be made on 60 plants or parts taken from each of 60 plants.

### 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

4.1.1.1 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.
4.1.1.2 Characteristics should be measured so that a mean value per plot can be obtained: from these data a standard deviation per variety can be derived and the data submitted to a 'two-way' analysis of variance. The significance of measured differences should be taken into account for assessing distinctness and the preparation of descriptions.

### 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 for cross-pollinated varieties should be according to the recommendations in the General Introduction.
4.2.3 For the assessment of uniformity of a variety, the standard deviation of the mean value for each characteristic should be compared with the mean of the standard deviations of comparable varieties using a recognized statistical technique.

### 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.

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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 or plant 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:
(a) Plant: prominence of white leaf marks (characteristic 5);
(b) Leaf: size of median leaflet (characteristic 16).
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)-(b) 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.
MG
MS
$\left.\begin{array}{l}\text { VG } \\ \text { VS }\end{array}\right\}$ Type of observation - see Section 3.3.2
$\left.\begin{array}{l}\text { A } \\ \text { B } \\ \text { C }\end{array}\right\}$ Type of plot for observation - see Section 3.3.3

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

|  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| English | français | deutsch | español | Example Varieties |
|  |  |  | Beispielssorten | Note/ |
|  |  | Variedades ejemplo |  |  |
|  |  |  |  |  |


| 1. $(+)$ | A VS | Plant: tendency to form inflorescences before vernalization | Plante: tendance à former des inflorescences avant la vernalisation | Pflanze: Neigung zur Bildung von Blütenständen vor der Vernalisation | Planta: tendencia a formar inflorescencias antes de la vernalización |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| QN |  | absent or very weak | nulle ou très faible | fehlend oder sehr gering | ausente o muy débil | Barbian | 1 |
|  |  | weak | faible | gering | débil | Aran | 3 |
|  |  | medium | moyenne | mittel | media | Milkanova | 5 |
|  |  | strong | forte | stark | fuerte | Lune de Mai | 7 |
|  |  | very strong | très forte | sehr stark | muy fuerte | Tivoli | 9 |
|  | A - VS | Plant: intensity of green color | Plante: intensité de la couleur verte | Pflanze: Intensität der Grünfärbung | Planta: intensidad del color verde |  |  |
| QN |  | light | claire | hell | claro | Avoca | 3 |
|  |  | medium | moyenne | mittel | medio | Milkanova | 5 |
|  |  | dark | foncée | dunkel | obscuro | Brindisi | 7 |
|  | $\begin{aligned} & \text { A - VS } \\ & \text { B - VG } \end{aligned}$ | Plant: density of foliage | Plante: densité du feuillage | Pflanze: Dichte des Laubes | Planta: densidad del follaje |  |  |
| QN |  | low | faible | gering | baja | Makuri | 3 |
|  |  | medium | moyenne | mittel | media | Barblanca | 5 |
|  |  | high | élevée | hoch | alta | Grasslands Tahora | 7 |
| 4. $(+)$ | C | Plant: proportion of plants with cyanid glucoside | Plante: proportion de plantes à glucosides cyanogènes | Pflanze: Anteil der Pflanzen mit Cyanglukosid | Planta: proporción de plantas con glucosidos cianogenéticos |  |  |
| QN |  | absent or very low | absente ou très faible | fehlend oder sehr gering | ausente o muy baja | Pertina | 1 |
|  |  | low | faible | gering | baja | Barbian | 3 |
|  |  | medium | moyenne | mittel | media | Grasslands Tahora | 5 |
|  |  | high | élevée | hoch | alta | Avoca | 7 |
|  |  | very high | très élevée | sehr stark | muy alta | Grasslands Pitau | 9 |


|  |  | English | français | deutsch | español | Example Varieties <br> Exemples <br> Beispielssorten <br> Variedades ejemplo | Note/ Nota |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5. <br> (*) <br> (+) | $\begin{aligned} & \text { A - VS } \\ & \text { B - VG } \end{aligned}$ | Plant: prominence of white leaf marks | Plante: proéminence des marques foliaires blanches | Pflanze: <br> Ausprägung der weißen Blattzeichnung | Planta: prominencia de las marcas foliares blancas |  |  |
| QN |  | absent or very weak | nulle ou très faible | fehlend oder sehr gering | ausente o muy débil | Steinacher Weißklee | 1 |
|  |  | weak | faible | gering | débil |  | 3 |
|  |  | medium | moyenne | mittel | media | Asterix | 5 |
|  |  | strong | forte | stark | fuerte |  | 7 |
|  |  | very strong | très forte | sehr stark | muy fuerte | Haifa | 9 |
| $\begin{gathered} 6 . \\ (*) \\ (+) \end{gathered}$ | $\begin{gathered} \text { A - MS } \\ \text { B - MG } \end{gathered}$ | Plant: time of flowering | Plante: époque de floraison | Pflanze: Zeitpunkt der Blüte | Planta: época de la floración |  |  |
| QN |  | very early | très précoce | sehr früh | muy precoz | Haifa | 1 |
|  |  | early | précoce | früh | precoz | Chieftain | 3 |
|  |  | medium | moyenne | mittel | media | Grasslands Huia | 5 |
|  |  | late | tardive | spät | tardía | Tivoli | 7 |
|  |  | very late | très tardive | sehr spät | muy tardía | Regal | 9 |
| 7. | $\begin{aligned} & \text { A - MS } \\ & \text { B - MG } \end{aligned}$ | Plant: natural height | Plante: hauteur naturelle | Pflanze: natürliche Höhe | Planta: altura |  |  |
| QN | (a) | short | courte | niedrig | corta | Kent Wild White | 3 |
|  |  | medium | moyenne | mittel | media | Pertina | 5 |
|  |  | tall | longue | hoch | larga | Milkanova | 7 |
| 8. | A | Plant: width | Plante: largeur | Pflanze: Breite | Planta: anchura |  |  |
|  | MS |  |  |  |  |  |  |
|  | (a) | narrow | étroite | schmal | estrecha | Asterix | 3 |
|  |  | medium | moyenne | mittel | media | Regal | 5 |
|  |  | broad | large | breit | ancha | Aran | 7 |

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|  |  | English | français | deutsch | español | Example Varieties <br> Exemples <br> Beispielssorten <br> Variedades ejemplo | Note/ Nota |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9. | A -VS | Plant: growth habit | Plante: port | Pflanze: Wuchsform | Planta: porte |  |  |
| B - VG |  |  |  |  |  |  |  |
| QN | (a) | semi-erect | demi dressé | halbaufrecht | semierecto |  | 3 |
|  |  | intermediate | demí dressé à demi étalé | mittel | intermedio | Makuri | 5 |
|  |  | semi-postrate | demi étalé | halbliegend | semipostrado | Grasslands Tahora | 7 |
| 10. <br> (+) | A <br> MS | Stem: internode length of stolon | Tige: longueur de l'entrenœud du stolon | Stengel: <br> Internodienlänge des Ausläufers | Tallo: longitud del entrenudo del estolón |  |  |
| QN | (b) | short | court | kurz | corta | Grasslands Tahora | 3 |
|  |  | medium | moyen | mittel | media | Aran | 5 |
|  |  | long | long | lang | larga | Barblanca | 7 |
| 11. (+) | A <br> MS | Stem: thickness of stolon | Tige: grosseur du stolon | Stengel: Dicke des Ausläufers | Tallo: grosor del estolón |  |  |
| QN | (b) | very thin | très fin | sehr dünn | muy delgado | Kent Wild White | 1 |
|  |  | thin | fin | dünn | delgado | Barbian | 3 |
|  |  | medium | moyen | mittel | medio | Grasslands Huia | 5 |
|  |  | thick | gros | dick | grueso | Kersey | 7 |
|  |  | very thick | très gros | sehr dick | muy grueso | Aran | 9 |
| 12. <br> (+) | A MS | Leaf: length of petiole | Feuille: longueur du pétiole | Blatt: Länge des Blattstiels | Hoja: longitud del pecíolo |  |  |
| QN | (b) | short | court | kurz | corta | Asterix | 3 |
|  |  | medium | moyen | mittel | media | Grasslands Huia | 5 |
|  |  | long | long | lang | larga | Chieftain | 7 |

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|  |  | English | français | deutsch | español | Example Varieties <br> Exemples <br> Beispielssorten <br> Variedades ejemplo | Note/ Nota |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 13. $(+)$ | A MS | Leaf: thickness of petiole | Feuille: grosseur du pétiole | Blatt: Dicke des Blattstiels | Hoja: grosor del pecíolo |  |  |
| QN | (b) | very thin | très fin | sehr dünn | muy delgado | Kent Wild White | 1 |
|  |  | thin | fin | dünn | delgado | Barbian | 3 |
|  |  | medium | moyen | mittel | medio | Avoca | 5 |
|  |  | thick | gros | dick | grueso | Milkanova | 7 |
|  |  | very thick | très gros | sehr dick | muy grueso | Regal | 9 |
| 14. <br> (*) <br> (+) | A MS | Leaf: length of median leaflet | Feuille: longueur de la foliole médiane | Blatt: Länge des mittleren Fiederblattes | Hoja: longitud del folíolo central |  |  |
| QN | (b) | very short | très courte | sehr kurz | muy corta | Kent Wild White | 1 |
|  |  | short | courte | kurz | corta | Barbian | 3 |
|  |  | medium | moyenne | mittel | media | Avoca | 5 |
|  |  | long | longue | lang | larga | Grasslands Pitau | 7 |
|  |  | very long | très longue | sehr lang | muy larga | Aran | 9 |
| 15. <br> (*) <br> (+) | A MS | Leaf: width of median leaflet | Feuille: largeur de la foliole médiane | Blatt: Breite des mittleren Fiederblattes | Hoja: anchura del folíolo central |  |  |
| QN | (b) | very narrow | très étroite | sehr schmal | muy estrecha | Kent Wild White | 1 |
|  |  | narrow | étroite | schmal | estrecha | Barbian | 3 |
|  |  | medium | moyenne | mittel | media | Grasslands Huia | 5 |
|  |  | broad | large | breit | ancha | Grasslands Pitau | 7 |
|  |  | very broad | très large | sehr breit | muy ancha | Aran | 9 |

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|  |  | English | français | deutsch | español | Example Varieties <br> Exemples <br> Beispielssorten <br> Variedades ejemplo | Note/ <br> Nota |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & 16 . \\ & (*) \\ & (+) \\ & (+) \end{aligned}$ | A MS | Leaf: size of median leaflet | Feuille: taille de la foliole médiane | Blatt: Größe des mittleren Fiederblattes | Hoja: tamaño del folíolo central |  |  |
| QN | (b) | very small | très petite | sehr klein | muy pequeño | Kent Wild White | 1 |
|  |  | small | petite | klein | pequeño | Rivendel | 3 |
|  |  | medium | moyenne | mittel | medio | Pertina | 5 |
|  |  | large | grande | groß | grande | Grasslands Pitau | 7 |
|  |  | very large | très grande | sehr groß | muy grande | Aran | 9 |
| 17. <br> (*) <br> (+) | A MS | Leaf: ratio of length to width of median leaflet | Feuille: rapport longueur/largeur de la foliole latérale | Blatt: Verhältnis Länge/Breite des mittleren Fiederblattes | Hoja: relación longitud/anchura del folíolo central |  |  |
| QN |  | small | petit | klein | pequeño | Donna | 3 |
|  |  | medium | moyen | mittel | medio | Barbian | 5 |
|  |  | large | grand | groß | grande | Rivendel | 7 |
| $\begin{aligned} & 18 . \\ & (+) \end{aligned}$ | A <br> MS | Inflorescence: length of peduncle | Inflorescence: longueur du pédoncule | Blütenstand: <br> Länge des <br> Blütenstandsstiels | Inflorescencia: longitud del pedúnculo |  |  |
| QN |  | short | court | kurz | corto | Kent Wild White | 3 |
|  |  | medium | moyen | mittel | medio | Grasslands Huia | 5 |
|  |  | long | long | lang | alto | Aran | 7 |
| 19. $(+)$ | A <br> MS | Inflorescence: thickness of peduncle | Inflorescence: grosseur du pédoncule | Blütenstand: <br> Dicke des <br> Blütenstandsstiels | Inflorescencia: grosor del pedúnculo |  |  |
| QN |  | thin | fin | dünn | delgado | Grasslands Demand | 3 |
|  |  | medium | moyen | mittel | medio | Grasslands Pitau | 5 |
|  |  | thick | gros | dick | grueso | Aran | 7 |


|  |  | English | français | deutsch | español | Example Varieties <br> Exemples <br> Beispielssorten <br> Variedades ejemplo | Note/ Nota |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 20. $(+)$ | A VS | Plant: number of inflorescences | Plante: nombre d'inflorescences | Pflanze: Anzahl Blütenstände | Planta: número de inflorescencias |  |  |
| QN |  | small | petit | klein | pequeño | Regal | 3 |
|  |  | medium | moyen | mittel | medio | Avoca | 5 |
|  |  | large | grand | groß | grande | Milkanova | 7 |
| 21. $(+)$ | A VS | Inflorescence: diameter | Inflorescence: diamètre | Blütenstand: Durchmesser | Inflorescencia: diámetro |  |  |
| QN |  | small | petit | klein | pequeño | Grasslands Demand | 3 |
|  |  | medium | moyen | mittel | medio | Beaumont | 5 |
|  |  | large | grand | groß | grande | Crusader | 7 |

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## 8. Explanations on the Table of Characteristics

### 8.1 Explanations covering several characteristics

Characteristics containing the following key in the second column of the Table of Characteristics should be examined as indicated below:
(a) To be assessed on plants at the time of flowering (a variety is considered as flowering when $50 \%$ of the plants have flowered).
(b) Stem and leaf: Observations on the stem and on the leaf should be made after all the plants of each variety in a replicate have flowered, and within $1-2$ weeks after flowering. The longest healthily growing stolon should be selected from each plant for measurement.

### 8.2 Explanations for individual characteristics

## Ad. 1: Plant: tendency to form inflorescences before vernalization

The observation should be made before the period of vernalization. The number of flower heads produced on each plant should be assessed and scored.

## Ad. 2: Plant: intensity of green color

The observation should be made in the vegetative phase by examination and scoring of the overall green color of the plant.

## Ad. 3: Plant: density of foliage

The observation should be made in the vegetative phase by examination and scoring of the overall ground cover of the foliage of the plant.

## Ad. 4: Plant: proportion of plants with cyanid glucoside (HCN)

Preparation of picro-sodic paper (indicator paper):
1.0 g of picric acid is dissolved in 100 ml of distilled water.
(Heat is normally required.)
10 g of sodium carbonate is dissolved in 100 ml of distilled water.
When the picric acid solution has cooled, the sodium carbonate solution is added, mixed and stored in an amber reagent bottle.

Strips of Whatmann No. 1 filter paper are dipped in this solution and can be stored dry in a desiccator.
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## Tet Procedure:

1. Healthy leaves (preferably folded) are selected from each of the sixty plants and put into separate eppendorf tubes (one trifoliate leaf per tube).
2. The tubes are closed and placed in a freezer at $-18^{\circ} \mathrm{C}$ for a minimum of two hours.
3. After freezing, a strip of indicator paper is placed across the opening of the eppendorf tubes and the lid closed. This is sufficient to hold the paper in place.
4. The tubes are placed in darkness in a water bath at $50^{\circ} \mathrm{C}$ for two hours.
5. If there is HCN present the paper will change from yellow to red. The colour reaction is recorded as presence/absence of red colour for each of the sixty plants.

## Ad. 5: Plant: prominence of white leaf marks

The observation should be made before flowering by examination and scoring of the plant as a whole. The presence of any type of white mark or the complete absence of marks is recorded.

## Ad. 6: Plant: time of flowering

In single spaced plants, a plant is considered as flowering when three inflorescences per plant are showing colour. Observations should be made at least twice weekly. The time of flowering for all plants in a variety is observed and the time of flowering of the variety is determined as the time when $50 \%$ of the plants had flowered.

In row plots, a plant is considered as flowering when three inflorescences per plant are showing colour. Observations should be made at least twice weekly. The time of flowering for all plants in a variety is observed and the time of flowering of the variety is determined as the time when $80 \%$ of the plants had flowered.

## Ad. 10, 11: Stem: internode length (10) and thickness (11) of stolon

The internode length of the stolon should be measured between the third and fourth node counted from the growing tip.

The thickness (diameter) of the stolon should be measured at a point midway between the third and the fourth node counted from the growing tip.

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## Ad. 12, 13: Leaf: length (12), and thickness (13) of petiole

The petiole of the third expanded leaf, counted from the growing tip of the stolon, should be selected for measurement.

The length of the petiole should be measured from the base of the medium trifoliate leaflet to the stolon.

The thickness should be measured at the widest point of the petiole.

## Ad. 14, 15: Leaf: length (14) and width (15) of median leaflet

The median trifoliate leaflet of the third expanded leaf from the growing tip of the stolon should be selected for measurement of its length and width.

## Ad. 16: Leaf: size of median leaflet

Calculated from the measurements of leaf length (14) x leaf width (15).

## Ad. 17: Leaf: ratio of length to width of median leaflet

Calculated from the ratio of leaf length (14) $\div$ leaf width (15).

## Ad. 18, 19: Inflorescence: length (18) and thickness (19) of peduncle

A mature inflorescence taken from close to center of the plant is selected for measurement of its peduncle length and peduncle thickness.

The length of the peduncle should be measured from the base of the inflorescence to the stolon.

The thickness of the peduncle should be measured at a point midway between the base of the inflorescence and the stolon.

## Ad. 20: Plant: number of inflorescences

The number of inflorescences per plant is assessed on each of the 60 plants of a variety at maturity, normally 30 days after the mean date of flowering of the variety.

## Ad. 21: Inflorescence: diameter

Time of measurement as for characteristic 20. The size of the inflorescences on the plant should be estimated on each of the sixty plants of a variety on a 1-9 scale on the plant taken as a whole.
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9. Literature

No specific literature.

## 10. Technical Questionnaire

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

### 4.1 Breeding Scheme

### 4.2 Method of Propagating the Variety

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
5.1 Plant: prominence of white leaf marks
(5)

| absent or very weak | Steinacher Weißklee | 1 [ ] |
| :---: | :---: | :---: |
| weak |  | 3 [ ] |
| medium | Asterix | 5 [ ] |
| strong |  | 7 [ ] |
| very strong | Haifa | 9 [ ] |


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|  | Characteristics | Example Varieties | Note |
| :---: | :---: | :---: | :---: |
|  | Plant: time of flowering |  |  |
|  | very early | Haifa | 1 [ ] |
|  | early | Chieftain | 3 [ ] |
|  | medium | Grasslands Huia | 5 [ ] |
|  | late | Tivoli | 7 [ ] |
|  | very late | Regal | 9 [ ] |
| $\begin{gathered} 5.3 \\ (14) \end{gathered}$ | Leaf: length of median leaflet |  |  |
|  | very short | Kent Wild White | 1 [ ] |
|  | short | Barbian | 3 [ ] |
|  | medium | Avoca | 5 [ ] |
|  | long | Grasslands Pitau | 7 [ ] |
|  | very long | Aran | 9 [ ] |
| $\begin{gathered} 5.4 \\ (15) \end{gathered}$ | Leaf: width of median leaflet |  |  |
|  | very narrow | Kent Wild White | 1 [ ] |
|  | narrow | Barbian | 3 [ ] |
|  | medium | Grasslands Huia | 5 [ ] |
|  | broad | Grasslands Pitau | 7 [ ] |
|  | very broad | Aran | 9 [ ] |
| $\begin{gathered} 5.5 \\ (16) \end{gathered}$ | Leaf: size of median leaflet |  |  |
|  | very small | Kent Wild White | 1 [ ] |
|  | small | Rivendel | 3 [ ] |
|  | medium | Pertina | 5 [ ] |
|  | large | Grasslands Pitau | 7 [ ] |
|  | very large | Aran | 9 [ ] |


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6. Similar varieties and differences from these varieties

| 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 <br> of the characteristic(s) Describe the expression <br> of the characteristic(s) <br> for the similar for your candidate <br> variety(ies) variety |
| :---: | :---: | :---: |
| (Example) | Plant: time of flowering | very early early |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
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7. Additional informatio 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.
9. I hereby declare that, to the best of my knowledge, the information provided in this form is correct:
Applicant's name

Signature


[^0]:    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.]

