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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**TECHNICAL WORKING PARTY
FOR
AGRICULTURAL CROPS**

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DRAFT TEST GUIDELINES FOR BIRD'S FOOT TREFOIL
DOCUMENT TG/193/1 (PROJ. 2)

Document prepared by experts from Uruguay

The attached document TG/193/1(proj.2) already incorporates the standard wording of document TGP/7.2, which was adopted by the Technical Committee at its thirty-eighth session in April 2002, and includes some additional standard wording from document TGP/7.1 Draft 1, also agreed at that session.

[Document TG/193/1(proj.2) follows]

UPOV

TG/193/1(proj.2)

ORIGINAL: English

DATE: September 9, 2002

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

BIRD'S FOOT TREFOIL *
(*Lotus corniculatus* L.)

LOTUS PEDUNCULATUS
(*Lotus pedunculatus* Cav.)

LOTUS TENUIS
(*Lotus tenuis* Waldst. et Kit. ex Willd.)

LOTUS SUBBIFLORUS
(*Lotus subbiflorus* spp. subbiflorus)

GUIDELINES

FOR THE CONDUCT OF TESTS

FOR DISTINCTNESS, UNIFORMITY AND STABILITY

Alternative Names: *

Latin	English	French	German	Spanish
<i>Lotus corniculatus</i> L.	Bird's Foot Trefoil	Lotier corniculé	Hornschotenklee	Lotodelosprados
<i>Lotus pedunculatus</i> Cav.				
<i>Lotus tenuis</i> Waldst. et Kit. ex Willd.	-	-	-	-
<i>Lotus subbiflorus</i>	-	-	-	-

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 Guidelines

1.1 These Test Guidelines apply to all varieties of *Lotus corniculatus* L., *Lotus pedunculatus* Cav., *Lotus tenuis* Waldstet Kit. ex Willd., & *Lotus subbiflorus* spp. subbiflorus. A single combined Table of Characteristics has been drawn up for the four species.

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:

0,5kg

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*

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.

In cases in which more than one seed submission is made, a comparison should be made between the initial seed sample and any further seed submission.

3.3.1 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:

M: actual measurement

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

3.3.2 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 plant

B: row plot

C: special test

3.4 Test Design

3.4.1 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 Each test should include a total of 60 spaced plants and may include row plots.

Plots with spaced plants (A): Each test should consist of 60 single spaced plants per variety arranged in 3 to 4 replicates, i.e. plots of 20 and 15 plants.

Row plots (B): Each test should consist of at least 10 meters of row arranged in 2 to 5 replicates. The density of the seed should be such that about 150 plants per meter can be expected.

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 on each plant in the trial 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 The variability within the variety should not exceed the variability of comparable varieties already known.

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 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 others 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 trials so that similar varieties are grouped together.

5.3 The following have been agreed as useful grouping characteristics:

- (a) Ploidy (characteristic 1)
- (b) Plant: time of inflorescence emergence (characteristic 12)
- (c) Leaf: length of central leaflet (characteristic 13)
- (d) Leaf: width of central leaflet (characteristic 14)

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

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

6.4.2 The name of each example variety is following by an abbreviation of its species:

Lc= *Lotus corniculatus* L.

Lp= *Lotus pedunculatus* Cav.

Lt= *Lotus tenuis* Waldstet Kit. ex Willd

Ls= *Lotus subbiflorus* spp. *subbiflorus*)

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

(+) See Explanations on the Table of Characteristics in Chapter 8.

M }
MS }
VG } Type of observation –see Section 3.3.1
VS }

A }
B } Type of plot for observation –see Section 3.3.2
C }

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

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
1. (*)	C	Ploidy	Ploïdie	Ploidie	Ploidía		
		diploid	diploïde	diploid	diploide		2
		tetraploid	tétraploïde	tetraploid	tetraploide		4
2.	C MS	Cotyledon:width (when fully expanded)	Cotylédon:largeur (à la fin de l'élongation)	Keimblatt:Breite (wenn voll ausgebildet)	Cotiledón:anchura (cuando está completamente expandido)		
		narrow	étroit	schmal	estrecho		3
		medium	moyen	mittel	medio		5
		broad	large	breit	ancho		7
3.	A VS	Leaf:density of hairs (at vegetative stage)	Feuille:densité de la pilosité (au stade végétatif)	Blatt:Dichte der Behaarung (im vegetativen Stadium)	Hoja:densidad de la vellosidad (en estado vegetativo)		
		absent or very sparse	nulle ou très faible	fehlend oder sehr locker	ausente o muy laxa		1
		sparse	faible	locker	laxa		3
		medium	moyenne	mittel	media		5
		dense	dense	dicht	densa		7
		very dense	très dense	sehr dicht	muy densa		9
4.	A B VG	Leaf:intensity of green color (as for 3)	Feuille:intensité de la couleur verte (comme pour 3)	Blatt:Intensität der Grünfärbung (wie unter 3)	Hoja:intensidad del color verde (como para 3)		
		light	claire	hell	claro		3
		medium	moyenne	mittel	medio		5
		dark	foncée	dunkel	oscuro		7

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
5.	A VS	Stem: density of hairs (as for 3)	Tige: densité de la pilosité (comme pour 3)	Stengel: Dichte der Behaarung (wie unter 3)	Tallo: densidad de la vellosidad (como para 3)		
		absent or very sparse	nulle ou très lâche	fehlend oder sehr locker	ausente o muy laxa	1	
		sparse	lâche	locker	laxa	3	
		medium	moyenne	mittel	media	5	
		dense	dense	dicht	densa	7	
		very dense	très dense	sehr dicht	muy densa	9	
6. (*)	A VG	Plant: growth habit (as for 3)	Plante: port (comme pour 3)	Pflanze: Wuchs - form (wie unter 3)	Planta: porte (como para 3)		
		erect	dressé	aufrecht	erecto	1	
		semi-erect	demi dressé	halbaufrecht	semi-erecto	3	
		medium	moyen	mittel	medio	5	
		semi-postrate	semi-rampant	halb liegend	semipostrado	7	
		postrate	rampant	liegend	postrado	9	
7. (*)	A MS	Plant: width (as for 3)	Plante: largeur (comme pour 3)	Pflanze: Breite (wie unter 3)	Planta: anchura (como para 3)		
		narrow	étroite	schmal	estrecha	3	
		medium	moyenne	mittel	media	5	
		broad	large	breit	ancha	7	
8.	A MS	Plant: natural height at inflorescence emergence	Plante : hauteur naturelle à l'épiaison	Pflanze: natürliche Höhe bei Erscheinender Blütenstände	Planta: altura natural <u>ala</u> <u>emergencia</u> de <u>inflorescencia</u>		
		very short	très basse	sehr niedrig	muy baja	1	
		short	basse	niedrig	baja	3	
		medium	moyenne	mittel	media	5	
		tall	haute	hoch	alta	7	
		very tall	très haute	sehr hoch	muy alta	9	

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
9.	A B VG	Plant: vigor of winter growth	Plante: vigueur de lacroissance en hiver	Pflanze: Wuchsstärke im Winter	Planta: vigor del crecimiento invernal		
		absent or very weak	nulle ou très faible	fehlend oder sehr gering	ausente o muy débil	1	
		weak	faible	gering	débil	3	
		medium	moyenne	mittel	medio	5	
		strong	forte	stark	fuerte	7	
10.	A S VS	Flower: bud color	Bourgeon floral: couleur	Blütenknospe: Farbe	Capullo floral: color		
		yellow	jaune	gelb	amarillo	1	
		orange	orange	orange	anaranjado	2	
		red	rouge	rot	rojo	3	
11.	A VS	Flower corolla: color	Fleur: couleur de la corolle	Blüte: Farbe der Blütenkrone	Flor: color de la corola		
		yellow	jaune	gelb	amarillo	1	
		orange	orange	orange	anaranjado	2	
12. (*)	A MS	Plant: time of inflorescence emergence (when 3 inflorescences show color in the floret)	Plante: époque d'épiaison (quand 3 inflorescences présentent une couleur dans le fleuron)	Pflanze: Zeitpunkt des Erscheinens der Blütenstände (wenn 3 Blütenstände die Blütenfarbe anzeigen)	Planta: época de emergencia de las inflorescencias (cuando 3 inflorescencias presentan color en la flor)		
		very early	très précoce	sehr früh	muy temprana	1	
		early	précoce	früh	temprana	3	
		medium	moyenne	mittel	media	5	
		late	tardive	spät	tarde	7	
		very late	très tardive	sehr spät	muy tarde	9	

Char. No.	Method of Examination	English	français	deutsch	español	Example Varieties Exemples Beispielssorten Variedades ejemplo	Note/ Nota
13. (*)	A MS	Leaf: length of central leaflet (3rd to 4th leaf from end tip of longest stem)	Feuille: longueur de la foliole médiane (3^e et 4^e feuilles à partir du sommet de la plus longue tige)	Blatt: Längedes mittleren Fiederblatts (3. bis 4. Blatt von der Spitzedes längsten Stengels)	Hoja: longitud del foliole central (3^{ra} y 4^a hoja a partir del ápice del tallo más largo)		
		short	courte	kurz	corta	3	
		medium	moyenne	mittel	media	5	
		long	longue	lang	larga	7	
14. (*)	A MS	Leaf: width of central leaflet (as for 13)	Feuille: largeur de la foliole médiane (comme pour 13)	Blatt: Breitedes mittleren Fiederblatts (wie unter 13)	Hoja: anchura del foliole central (como para 13)		
		narrow	étroite	schmal	estrecha	3	
		medium	moyenne	mittel	media	5	
		broad	large	breit	ancha	7	
15.	A MS	Stem: length of longest stem (when fully expanded)	Tige: longueur de la tige la plus longue (à la fin de l'élongation)	Halm: Längedes längsten Halms (wenn voll ausgebildet)	Tallo: longitud del tallo más largo (cuando está completamente expandido)		
		very short	très courte	sehr kurz	muy corto	1	
		short	courte	kurz	corto	3	
		medium	moyenne	mittel	medio	5	
		long	longue	lang	largo	7	
very long	très longue	sehr lang	muy largo	9			
16.	A B VS	Rhizomes	Rhizomes	Rhizome	Rizomas		
		absent	absents	fehlend	ausentes	1	
		present	présents	vorhanden	presentes	9	
17.	C M	Seed: weight of 1000 seeds	Semence: poids de 1000 grains	Samen: Tausend - korngewicht	Semilla: peso de 1000 semillas		
		low	faible	niedrig	bajo	3	
		medium	moyen	mittel	medio	5	
		high	élevé	hoch	alto	7	

8. ExplanationsontheTableofCharacteristics

9. Literature

10. TechnicalQuestionnaire

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
		Applicationdate: (nottobe filledinbytheapplicant)
TECHNICALQUESTIONNAIRE tobecompletedinconnectionwithanapplicationforplantbreeders'rights		
1. SubjectoftheTechnicalQuestionnaire		
1.1 LatinName	<input type="text" value="Lotuscorniculatus L."/>	
1.2 CommonName	<input type="text" value="BIRD'SFOOTT REFOIL"/>	
1.3 LatinName	<input type="text" value="Lotuspedunculatus Cav."/>	
1.4 CommonName	<input type="text" value="LOTUSPEDUNCULATUS"/>	
1.5 LatinName	<input type="text" value="Lotustenuis WaldstetKit.exWilld"/>	
1.6 CommonName	<input type="text" value="LOTUSTENUIS"/>	
1.7 LatinName	<input type="text" value="Lotussubbiflorus spp.subbiflorus"/>	
1.8 CommonName	<input type="text" value="LOTUSSUBBIFLORUS"/>	
2. Applicant		
Name	<input type="text"/>	
Address	<input type="text"/>	
TelephoneNo.	<input type="text"/>	
FaxNo.	<input type="text"/>	
E-mailaddress	<input type="text"/>	
Breeder(ifdifferentfromapplicant)	<input type="text"/>	

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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3. Proposeddenominationandbreeder'sreference

Proposeddenomination
(ifavailable)

Breeder'sreference

4. Informationonthebreedingschemeandpropagationofthevariety

4.1 BreedingScheme

4.2 MethodofPropagatingtheVariety

4.2.1 Seed-propagatedvarieties

(a) Cross-pollinated

(i) population

(ii) syntheticvariety

(b) Other

(pleaseprovidedetails)

TECHNICALQUESTIONNAIRE	Page {x} of {y}	ReferenceNumber:
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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 Ploidy (1)		
diploid		2[]
tetraploid		4[]
5.2 Plant: time of inflorescence emergence (when 3 inflorescences show color in the floret) (12)		
very early		1[]
early		3[]
medium		5[]
late		7[]
very late		9[]
5.3 Leaf: length of central leaflet (3rd to 4th leaf from end tip of longest stem) (13)		
short		3[]
medium		5[]
long		7[]
5.4 Leaf: width of central leaflet (3rd to 4th leaf from end tip of longest stem) (14)		
narrow		3[]
medium		5[]
broad		7[]

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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?

7.1.1 Resistanceto pest and diseases

Yes No

(If yes, please provide details)

7.1.2 Other

Yes No

(If yes, please provide details)

7.2 Special conditions for the examination of the variety

7.2.1 Duration

(i) annual
(ii) perennial

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

Yes No

7.2.3 If yes, please give details:

7.3 Other information

TECHNICALQUESTIONNAIRE	Page{x}of{y}	ReferenceNumber:
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8. Authorizationforrelease

(a) Doesthevarietyrequirepriorauthorizationforreleaseunderlegislationconcerning theprotectionoftheenvironment,humanandanimalhealth?

Yes No

(b) Hassuchauthorizationbeen obtained?

Yes No

Iftheanswerto(b)isyes,pleaseattachacopyoftheauthorization.

9. Iherebydeclarethat,tothebestofmyknowledge,theinformationprovidedinthisform iscorrect:

Applicant'sname

Signature

Date

[Endofdocument]