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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

DRAFT**MEDICS**

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(excluding: MEDIC_SAT)

*(Medicago L. (excluding M. sativa L. &
Medicago x varia Martyn))*

GUIDELINES**FOR THE CONDUCT OF TESTS****FOR DISTINCTNESS, UNIFORMITY AND STABILITY**

prepared by an expert from South Africa

*to be considered by the
Technical Committee at its forty-second session
to be held in Geneva, Switzerland, from April 3 to 5, 2006*

Alternative Names: *

<i>Botanical name</i>	<i>English</i>	<i>French</i>	<i>German</i>	<i>Spanish</i>
<i>Medicago L. (excluding M. sativa L. & Medicago x varia Martyn)</i>	Medics

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.

Other associated UPOV documents: TG/6/5 Lucerne (*Medicago sativa L.* and *Medicago x varia Martyn*)

* 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* L. excluding *Medicago sativa* L. & *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:

500 g

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 seed should meet the minimum requirements for germination, species and analytical purity, health and moisture content, specified by the competent authority.

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 *Number of Growing Cycles*

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

3.2 *Testing Place*

Tests are normally conducted at one place. In the case of tests conducted at more than one place, guidance is provided in TGP/9 "Examining Distinctness".

3.3 *Conditions for Conducting the Examination*

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

3.3.2 The 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 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

3.4 *Test Design*

3.4.1 Each test should be designed to result in a total of at least 60 spaced and 10 meters of row plot. The spaced plants should be arranged in 3, 4, 5 or 6 replicates, i.e. plots of 20, 15, 12 or 10 plants. The row plots should be arranged with at least 3 replicates and the density of sowing should be such that approximately 200 plants per meter can be expected.

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*

Unless otherwise indicated, all observations 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*

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.

4.2 *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 are aided by the use of grouping characteristics.

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

5.3 The following have been agreed as useful grouping characteristics:

- (a) Leaflet: presence of marks (characteristic 1)
- (b) Leaflet: type of marks on upper side (characteristic 2)
- (c) Time of flowering (characteristic 6)
- (d) Leaflet: pubescence on upper side (characteristic 16)
- (e) Leaflet: pubescence on lower side (characteristic 18)
- (f) Pod: shape (characteristic 29)
- (g) Pod: texture of whorl edges (characteristic 33)

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 species of the example varieties are indicated as follows:

(M.f.): *Medicago falcata*

(M.l.): *Medicago littoralis*

(M.p.): *Medicago polymorpha*

(M.s.): *Medicago scutellata*

(M.to.): *Medicago tornata*

(M.tr.): *Medicago truncatula*

6.5 Legend

(*) Asterisked characteristic – see Chapter 6.1.2

QL Qualitative characteristic – see Chapter 6.3

QN Quantitative characteristic – see Chapter 6.3

PQ Pseudo-qualitative characteristic – see Chapter 6.3

MG Single measurement of a group of plants or parts of plants – see Chapter 3.3.2

MS Measurement of a number of individual plants or parts of plants – see Chapter 3.3.2

VG Visual assessment by a single observation of a group of plants or parts of plants
– see Chapter 3.3.2

VS Visual assessment by observation of individual plants or parts of plants
– see Chapter 3.3.2

(a) – (f) See Explanations on the Table of Characteristics in Chapter 8.1

(+) See Explanations on the Table of Characteristics in Chapter 8.2

(M.f.): *Medicago falcata* See Chapter 6.4

(M.l.): *Medicago littoralis* See Chapter 6.4

(M.p.): *Medicago polymorpha* See Chapter 6.4

(M.s.): *Medicago scutellata* See Chapter 6.4

(M.to.): *Medicago tornata* See Chapter 6.4

(M.tr.): *Medicago truncatula* See Chapter 6.4

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

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
1.	VS	Leaflet: presence of					
(*)	A	marks					
QL	(a)	absent on both sides				Serena (M.p.); Toreador (M.l.) Tornafeld (M.to.)	1
		present on upper side only				Santiago (M.p.) Jester (M.tr.) Kelson (M.s.)	2
		present on lower side only				Cyprus (M.tr.)	3
		present on both sides				Bokveld (M.p.) Mogul (M.tr.) Herald (M.l.) Rivoli (M.to.)	4
2.	VS	Leaflet: type of					
(*)	A	marks on upper side					
(+)							
PQ	(a)	faded blotch				Parabinga (M.tr.)	1
		clear blotch				Polyanna (M.p.) Jester (M.tr.) Herald (M.to.)	2
		spot					3
		fleck				Bokveld (M.p.) Borung (M.tr.)	4
		crescent				Santiago (M.p.)	5

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
3.	VS	Leaflet: position of marks on upper side					
(*)	A						
(+)							
PQ	(a)	at base			Polyanna (M.p.)	1	
		towards base			Santiago (M.p.)	2	
		central			Sephi (M.tr.) Herald (M.l.)	3	
		towards apex			Parabinga (M.tr.)	4	
		at apex				5	
		over whole surface			Bokveld (M.p.) Borong (M.tr.)	6	
4.	VS	<u>Only varieties with spot or fleck type of marks on upper side (Char. 2): Leaflet: number of marks on upper side</u>					
	A						
QN	(a)	few			Bokveld (M.p.) Paraggio (M.tr.)	3	
		medium			Borong (M.tr.)	5	
		many				7	
5.	VS	<u>Only varieties with marks on lower side (Char. 1): Leaflet: number of marks on lower side</u>					
	A						
QN	(a)	few			Sephi (M.tr.) Rivoli (M.to.)	3	
		medium			Parabinga (M.tr.)	5	
		many			Bokveld (M.p.) Borong (M.tr.)	7	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
6.	MG					
(*)	B					
(+)	MS					
	A					
QN	very early				Serena (M.p.) Caliph (M.tr.)	1
	early				Santiago (M.p.) Borong (M.tr.) Toreador (M.l.)	3
	medium				Cavalier (M.p.) Rivoli (M.to.)	5
	late				Circle Valley (M.p.) Jemalong (M.tr.)	7
	very late					9
7.	MS					
	A					
	Plant: length of longest stem					
QN	(b) short				Scimitar (M.p.) Jester (M.tr.) Harbinger (M.l.)	3
	medium				Circle Valley (M.p.) Borong (M.tr.)	5
	long				Cavalier (M.p.) Paraggio (M.tr.) Tornafeld (M.to.)	7
8.	MS					
	A					
	Plant: length of internode					
QN	(b) short				Santiago (M.p.) Sephi (M.tr.) Harbinger (M.l.)	3
	medium				Parabinga (M.tr.) Rivoli (M.to.)	5
	long				Paraggio (M.tr.) Tornafeld (M.to.)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
9.	VS	Runner: pubescence					
	A						
QN	(b)	absent or very sparse			Santiago (M.p.) Paraggio (M.tr.)	1	
		sparse			Jester (M.tr.)	3	
		medium			Parabinga (M.tr.)	5	
		dense			Sephi (M.tr.)	7	
10.	MS	Leaflet: length					
	A						
QN	(c)	very short			Sephi (M.tr.) Herald (M.l.)	1	
		short			Santiago (M.p.) Jemalong (M.tr.) Toreador (M.l.)	3	
		medium			Cavalier (M.p.) Cyprus (M.tr.) Kelson (M.s.)	5	
		long			Paraggio (M.tr.)	7	
		very long			Jester (M.tr.) Tornafeld (M.to.)	9	
11.	MS	Leaflet: width					
	A						
QN	(c)	very narrow			Sephi (M.tr.) Toreador (M.l.)	1	
		narrow			Santiago (M.p.) Jemalong (M.tr.) Rivoli (M.to.)	3	
		medium			Cavalier (M.p.) Cyprus (M.tr.) Kelson (M.s.)	5	
		broad			Jester (M.tr.)	7	
		very broad			Mogul (M.tr.) Tornafeld (M.to.)	9	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
12.	MS	Leaflet: ratio					
	A	length/width					
QN	(c)	small			Mogul (M.tr.), Tornafield (M.to.)	3	
		medium			Cyprus (M.tr.), Cavalier (M.p.)	5	
		large			Jester (M.tr.), Rivoli (M.to.), Toreador (M.l.)	7	
13.	VS	Leaflet: shape of					
	A	base					
(+)							
PQ	(c)	narrow acute			Paraggio (M.tr.) Harbinger (M.l.)	1	
		broad acute			Cavalier (M.p.) Mogul (M.tr.)	2	
		obtuse			Pavlovskaya 7 (M.f.)	3	
14.	VS	Leaflet: shape of					
	A	apex					
(+)							
PQ	(c)	acute			Tornafield (M.to.)	1	
		obtuse			Herald (M.l.)	2	
		rounded			Polyanna (M.p.) Borong (M.tr.) Pavlovskaya 7 (M.f.)	3	
		truncate				4	
		obcordate			Scimitar (M.p.)	5	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
15.	VS					
A	Leaflet: serration of margin					
QN	(c)					
	absent or very fine				Scimitar (M.p.) Pavlovskaya 7 (M.f.)	1
	fine				Cavalier (M.p.)	3
	medium				Sephi (M.tr.)	5
	coarse				Parabinga (M.tr.) Herald (M.l.) Rivoli (M.to.) Kelson (M.s.)	7
16.	VS					
(*)	A					
	Leaflet: pubescence on <u>upper</u> side					
QL	(c)					
	absent				Circle Valley (M.p.) Pavlovskaya 7 (M.f.) Rivoli (M.to.)	1
	present				Mogul (M.tr.) Harbinger (M.l.) Kelson (M.s.)	9
17.	VS					
A	Leaflet: density of pubescence on <u>upper</u> side					
QN	(c)					
	sparse				Kelson (M.s.)	3
	medium				Paraggio (M.tr.)	5
	dense				Caliph (M.tr.)	7
18.	VS					
(*)	A					
	Leaflet: pubescence on <u>lower</u> side					
QL	(c)					
	absent				Circle Valley (M.p.) Pavlovskaya 7 (M.f.)	1
	present				Mogul (M.tr.) Harbinger (M.l.) Kelson (M.s.) Rivoli (M.to.)	9

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
19.	VS	Leaflet: density of pubescence on <u>lower</u> side					
	A						
QN	(c)	sparse			Rivoli (M.to.) Kelson (M.s.)	3	
		medium			Paraggio (M.tr.)	5	
		dense			Caliph (M.tr.)	7	
20.	MS	Petiole: length					
	A						
QN	(c)	short			Circle Valley (M.p.) Borong (M.tr.) Herald (M.l.) Rivoli (M.to.) Kelson (M.s.)	3	
		medium			Paraggio (M.tr.)	5	
		long			Tornafeld (M.to.)	7	
21.	VS	Petiole: thickness					
	A						
QN	(c)	thin			Herald (M.l.) Pavlovskaya 7 (M.f.)	3	
		medium			Santiago (M.p.) Paraggio (M.tr.) Kelson (M.s.)	5	
		thick			Cavalier (M.p.) Mogul (M.tr.)	7	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
22.	VS					
	A					
QN	(b)	small			Serena (M.p.) Harbinger (M.l.)	3
		medium			Polyanna (M.p.) Paraggio (M.tr.)	5
		large			Bokveld (M.p.) Kelson (M.s.)	7
23.	VS					
	A					
QN	(b)	short			Kelson (M.s.)	3
		medium			Serena (M.p.) Paraggio (M.tr.)	5
		long			Santiago (M.p.) Jester (M.tr.)	7
24.	VS					
	A					
QN	(d)	two			Sephi (M.tr.)	1
		three			Parabinga (M.tr.) Santiago (M.p.)	2
		four			Harbinger (M.l.), Scimitar (M.p.)	3
		five			Toreador (M.l.)	4
		six or more			Rivoli (M.to.), Pavlovskaya 7 (M.f)	5
25.	VS					
	A					
(+)						
QN	(d)	light				3
		medium			Santiago (M.p.) Mogul (M.tr.)	5
		dark			Rivoli (M.to.)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota
26.	VS					
(+)	A					
	Flower: marks on calyx					
QL	(d)	absent			Santiago (M.p.) Borong (M.tr.) Kelson (M.s.)	1
		present			Bokveld (M.p.) Rivoli (M.to.)	9
27.	VG					
(+)	B					
	VS					
	A					
		Time of physiological ripening of pods				
QN		early			Caliph (M.tr.), Santiago (M.p.)	3
		medium			Paraggio (M.tr.), Cavalier (M.p.), Toreador (M.l.)	5
		late			Jester (M.tr.), Herald (M.l.)	7
28.	MS					
	A					
		Pod: length				
QN	(e)	short			Harbinger (M.l.), Circle Valley (M.p.), Tornafeld (M.to.), Borong (M.tr.)	3
		medium			Toreador (M.l.), Scimitar (M.p.), Caliph (M.tr.)	5
		long			Herald (M.l.), Cavalier (M.p.), Rivoli (M.to.), Jemalong (M.tr.)	7

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
29.	VS	Pod: shape					
(*)	A						
(+)							
PQ	(e)	disk-shaped			Toreador (M.l.), Tornafield (M.to.)	1	
		globular			Herald (M.l.), Kelson (M.s.), Rivoli (M.to.), Sephi (M.tr.)	2	
		ovoid			Harbinger (M.l.), Cyprus (M.tr.)	3	
		cylindrical			Paraggio (M.tr.)	4	
		sickle-shaped			ZA: waiting for the example variety from Russian Federation to flower and to produce pods to illustrate state Sickle-shaped (5)	5	
30.	VS	Pod: compactness of whorls					
	A						
QN	(e)	loose			Toreador (M.l.), Circle Valley (M.p.), Jester (M.tr.)	3	
		medium			Herald (M.l.), Santiago (M.p.), Tornafield (M.to.)	5	
		compact			Harbinger (M.l.), Scimitar (M.p.), Rivoli (M.to.), Paraggio (M.tr.)	7	
31.	VS	Pod: direction of whorls					
	A						
(+)							
QL	(e)	anti-clockwise			Cavalier (M.p.), Kelson (M.s.), Tornafield (M.to.), Jemalong (M.tr.)	1	
		clockwise			Herald (M.l.), Rivoli (M.to.), Cyprus (M.tr.)	2	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
32.	VS	Pod: number of					
(+)	A	whorls					
PQ	(e)	less than three			Tornafield (M.to.)	1	
		three to five			Harbinger (M.l.), Cavalier (M.p.), Paraggio (M.tr.)	2	
		more than five			Kelson (M.s.), Rivoli (M.to.), Jemalong (M.tr.)	3	
33.	VS	Pod: texture of					
(*)	A	whorl edges					
(+)							
QL	(e)	smooth			Toreador (M.l.), Kelson (M.s.), Tornafield (M.to.)	1	
		tubercled			Herald (M.l.)	2	
		spined			Harbinger (M.l.), Paraggio (M.tr.)	3	
34.	VS	<u>Only varieties with</u>					
	A	<u>spined texture of</u>					
		<u>whorl edges: Pod:</u>					
		<u>length of spines</u>					
QN	(e)	short			Herald (M.l.), Paraggio (M.tr.)	3	
		medium			Jester (M.tr.)	5	
		long			Sephi (M.tr.)	7	
35.	VS	<u>Only varieties with</u>					
(+)	A	<u>spined texture of</u>					
		<u>whorl edges: Pod:</u>					
		<u>attitude of spines</u>					
QN	(e)	erect				1	
		oblique			Paraggio (M.tr.)	2	
		adpressed			Herald (M.l.), Sephi (M.tr.)	3	

	English	français	deutsch	español	Example Varieties/ Exemples/ Beispielssorten/ Variedades ejemplo	Note/ Nota	
36.	VS	<u>Only varieties with</u>					
(+)	A	<u>spined texture of</u>					
		<u>whorl edges: Pod:</u>					
		presence of apical					
		hook on spines					
QL	(e)	absent			Herald (M.l.), Paraggio (M.tr.)	1	
		present				9	
37.	MG	Seed: 1000 seed					
		weight					
QN		low			Bokveld (M.p.), Caliph (M.tr.)	3	
		medium			Polyanna (M.p.), Sephi (M.tr.)	5	
		high			Santiago (M.p.), Paraggio (M.tr.)	7	

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) Observations on leaf marks should be made on the 3rd leaf from the growth point at the time of beginning of flowering (10% of plants with at least one flower) of the earliest variety in the trial. Most of the marks tend to fade or disappear after flowering when temperatures rise.

(b) Observations to be made at the time of flowering on the middle third of the longest stem.

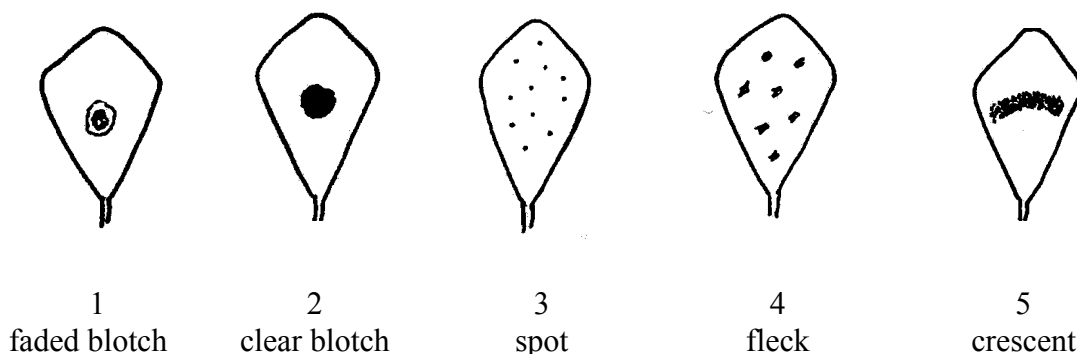
(c) Unless otherwise indicated, observations on the leaflet and petiole should be made on the central leaflet of fully developed leaves on the middle third of the longest stem at the time of flowering (when 50% of the plants have at least 3 open flowers).

(d) Observations on the flower should be made at the time of flowering.

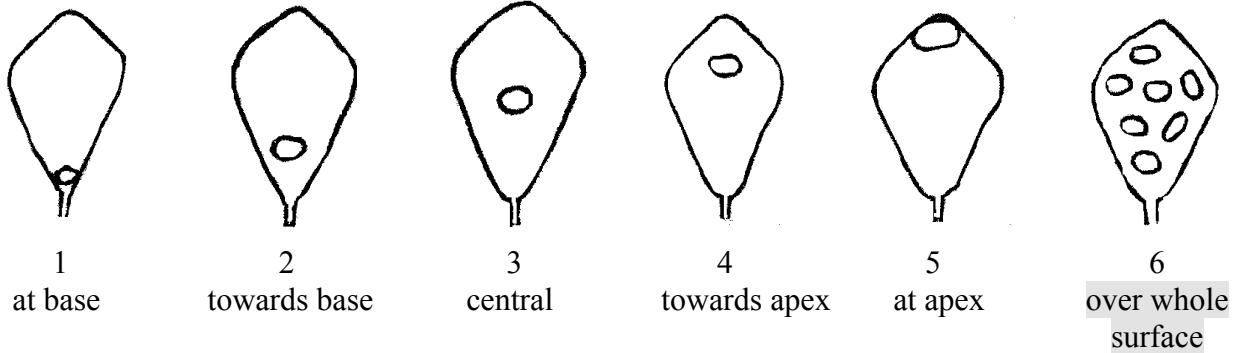
(e) Observations on the pod which should be made on fully mature senesced plants.

8.2 *Explanations for individual characteristics*

Ad. 2: Leaflet: type of marks on upper side



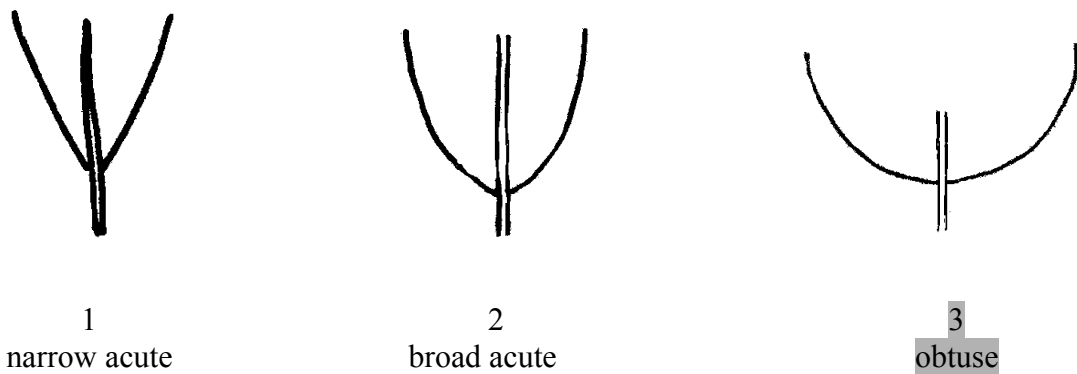
Ad. 3. Leaflet: position of marks on upper side



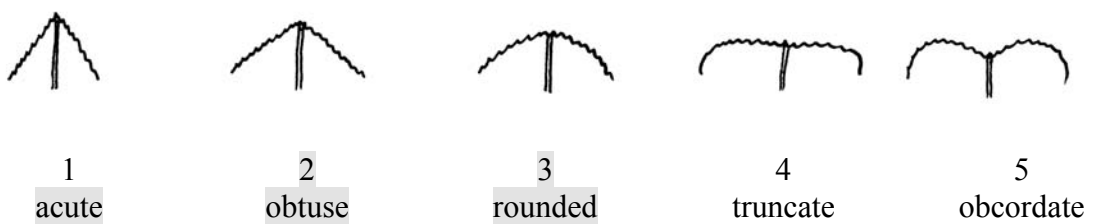
Ad. 6: Time of flowering

Time of flowering is reached when 50% of the plants have at least 3 open flowers.

Ad. 13: Leaflet: shape of base



Ad. 14: Leaflet: shape of apex



Ad. 26: Flower: marks on calyx



1
absent



9
present



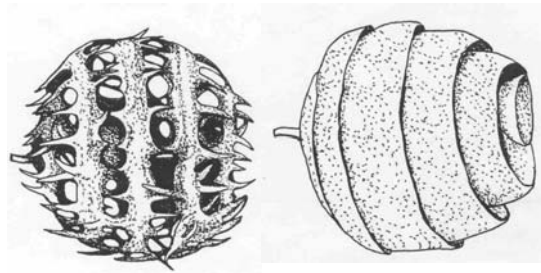
Ad. 27: Time of physiological ripening of pods

Time of physiological ripening is when pods have reached full maturity and 50% of the plant has started to dry.

Ad. 29: Pod: shape



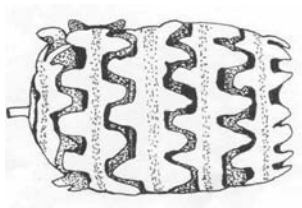
1
disk-shaped



2
globular



3
ovoid



4
cylindrical

EXAMPLE
VARIETIES TO BE
OBSERVED

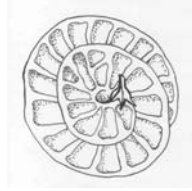
5
sickle-shaped

Ad. 31: Pod: direction of whorls

Pods should be viewed from the proximal end

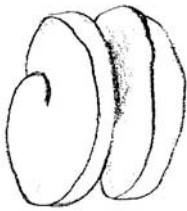


1
anti-clockwise

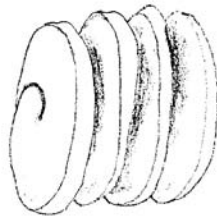


2
clockwise

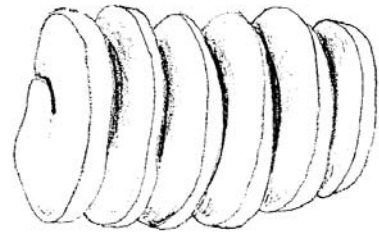
Ad. 32: Pod: number of whorls



1
less than three

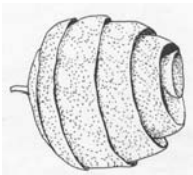


2
three to five

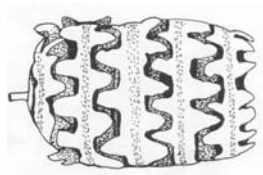


3
more than five

Ad. 33: Pod: texture of whorl edges



1
smooth

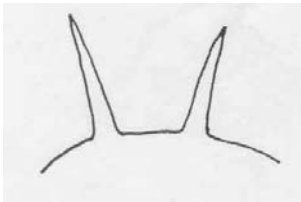


2
tubercled

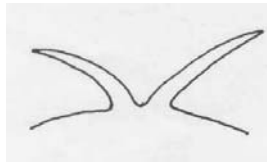


3
spined

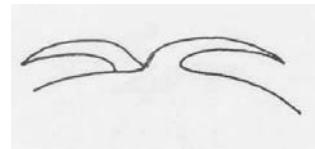
Ad. 35: Only varieties with spined texture of whorl edges: Pod: attitude of spines



1
erect



2
oblique



3
adpressed

Ad. 36: Only varieties with spined texture of whorl edges: Pod: presence of apical hook on spines



1
absent



9
present

9. Literature

IBPGR. Rome. 1991. Descriptors for annual *Medicago*.

Lesins, K.A. & Lesins, I. 1979. Genus *Medicago* (Leguminosae) A Taxogenetic study.

Small, E.; Jomphe, M. 1989. A synopsis of the Genus *Medicago* (Leguminosae). Canadian Journal of Botany 67: 3260-3294

Stirton, C.H. 1982. The genus *Medicago* (Leguminosae) in southern Africa. Bothalia 14(1): 27-35.

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. Subject of the Technical Questionnaire		
1.1.1 Botanical name	<input type="text" value="Medicago L. (excluding M. sativa L. & Medicago x varia Martyn)"/>	
1.1.2 Common Name	<input type="text" value="Medics"/>	
1.2 Species (please complete)	<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:
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#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) unknown cross []

4.1.2 Discovery and development []
(please state where and when discovered
and how developed)

4.1.3 Other []
(please provide details)

4.2 Method of propagating the variety

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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 Leaflet: presence of marks (1)		
absent on both sides	Serena (M.p.); Toreador (M.l.) Tornafeld (M.to.)	1
present on upper side only	Santiago (M.p.) Jester (M.tr.) Kelson (M.s.)	2
present on lower side only	Cyprus (M.tr.)	3
present on both sides	Bokveld (M.p.) Mogul (M.tr.) Herald (M.l.) Rivoli (M.to.)	4
5.2 Leaflet: type of marks on upper side (2)		
faded blotch	Parabinga (M.tr.)	1
clear blotch	Polyanna (M.p.) Jester (M.tr.) Herald (M.to.)	2
spot		3
fleck	Bokveld (M.p.) Borung (M.tr.)	4
crescent	Santiago (M.p.)	5

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.3 Time of flowering (6)		
very early	Serena (M.p.) Caliph (M.tr.)	1
early	Santiago (M.p.) Borong (M.tr.) Toreador (M.l.)	3
medium	Cavalier (M.p.) Rivoli (M.to.)	5
late	Circle Valley (M.p.) Jemalong (M.tr.)	7
very late		9
5.4 Leaflet: pubescence on <u>upper</u> side (16)		
■ absent	Circle Valley (M.p.) Pavlovskaya 7 (M.f.) Rivoli (M.to.)	1
■ present	Mogul (M.tr.) Harbinger (M.l.) Kelson (M.s.)	9
5.5 Leaflet: pubescence on <u>lower</u> side (18)		
■ absent	Circle Valley (M.p.) Pavlovskaya 7 (M.f.)	1
■ present	Mogul (M.tr.) Harbinger (M.l.) Kelson (M.s.) Rivoli (M.to.)	9

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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Characteristics	Example Varieties	Note
5.6 Pod: shape (29)		
disk-shaped	Toreador (M.l.), Tornafeld (M.to.)	1
globular	Herald (M.l.), Kelson (M.s.), Rivoli (M.to.), Sephi (M.tr.)	2
ovoid	Harbinger (M.l.), Cyprus (M.tr.)	3
cylindrical	Paraggio (M.tr.)	4
sickle-shaped	■	5
5.7 Pod: texture of whorl edges (33)		
smooth	Toreador (M.l.), Kelson (M.s.), Tornafeld (M.to.)	1
tubercled	Herald (M.l.)	2
spined	Harbinger (M.l.), Paraggio (M.tr.)	3

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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6. Similar varieties and differences from these varieties

Please use the following table and box for comments to provide information on how your candidate variety differs from the variety (or varieties) which, to the best of your knowledge, is (or are) most similar. This information may help the examination authority to conduct its examination of distinctness in a more efficient way.

Denomination(s) of variety(ies) similar to your candidate variety	Characteristic(s) in which your candidate variety differs from the similar variety(ies)	Describe the expression of the characteristic(s) for the similar variety(ies)	Describe the expression of the characteristic(s) for your candidate variety
<i>Example</i>	<i>Pod: shape</i>	<i>globular</i>	<i>ovoid</i>

Comments:

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

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.

Authorities may allow certain of this information to be provided in a confidential section of the Technical Questionnaire.

TECHNICAL QUESTIONNAIRE	Page {x} of {y}	Reference Number:
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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]