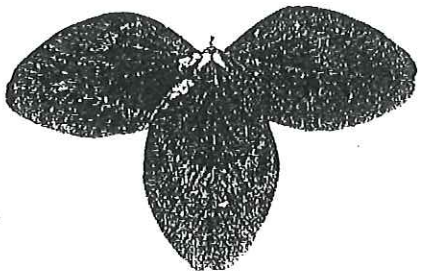
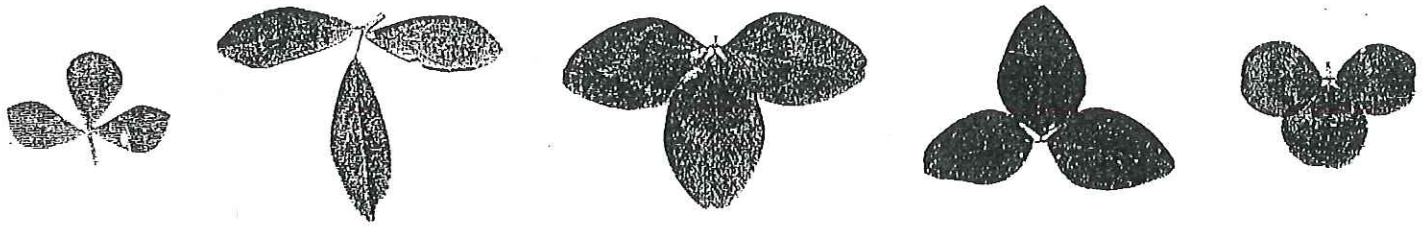
3





FORAGE LEGUME DESCRIPTORS

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INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES

COMMISSION OF EUROPEAN COMMUNITIES: COMMITTEE ON DISEASE RESISTANCE BREEDING AND USE OF GENEBANKS

DESCRIPTOR LIST FOR FORAGE LEGUMES

Editors

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CEC Secretariat, Brussels, 1984

IBPGR SECRETARIAT, Rome, 1984

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D E S C R I P T O R S

FOR

GRASSLAND LEGUMES

WHITE CLOVER	*TRIFOLIUM REPENS*
RED CLOVER	*TRIFOLIUM PRATENSE*
LUCERNE	*MEDICAGO SATIVA*
ALSIKE CLOVER	*TRIFOLIUM HYBRIDUM*
BIRDSFOOT-TREFOIL	*MEDICAGO LUPULINA*

In 1974 the Council of Ministers of the European Communities established a Standing Committee on Agricultural Research to advise the Commission on a programme of Agricultural Research.

The first programme started in 1975, while a second programme was launched in 1979 for the five year period 1979-1983.

The Standing Committee on Agricultural Research has advised the Commission on both programmes. Within this framework a programme on resistance breeding and use of genebanks has been set up as one of 10 subjects. This programme (with a limited budget) is managed by a programme committee in which the ten member countries are represented by their nominees, one per country. The programme committee started work in 1978 by selecting priorities for crops and subjects. Several working groups have been set up to prepare descriptor lists as a basis for future work.

CEC-Programme Committee on Disease Resistance Breeding and Use of Genebanks
Second Programme on Agricultural Research of the CEC

rue de la Loi 200
1040 Brussels, Belgium

The International Board for Plant Genetic Resources (IBPGR) is an autonomous, international, scientific organization under the aegis of the Consultative Group on International Agricultural Research (CGIAR). The IBPGR, which was established by the CGIAR in 1974, is composed of its Chairman and 16 members; its Executive Secretariat is provided by the Food and Agriculture Organization of the United Nations. The basic function of the IBPGR, as defined by the Consultative Group, is to promote an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. The Consultative Group mobilizes financial support from its members to meet the budgetary requirements of the Board.

IBPGR Executive Secretariat
Crop Genetic Resources Centre
Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Via delle Terme di Caracalla, 00100 Rome, Italy

CONTENTS

	Page
PREFACE	6
DESCRIPTOR LIST FOR FORAGE LEGUMES	7
Passport data	8
Accession data	10
Collection data	
Characterization/preliminary data	15
Further characterization/evaluation data	20
APPENDIX I - SUMMARY OF BASIC FORAGE LEGUME DESCRIPTORS	23
APPENDIX II - EXAMPLES OF DESCRIPTORS IN USE	25
APPENDIX III - LIST OF THOSE CONSULTED	28

Preface

The Forage Legume Descriptors list was developed by a sub-committee, from the Commission of the European Communities' (CEC) Programme Committee for Plant Disease Resistance Breeding and the use of Genebanks. The final list combines experience from National List Descriptors, UPOV Descriptor Lists and was produced with advice and according to the standard format of the International Board for Plant Genetic Resources (IBPGR).

The sub-committee under the chairmanship of Dr.S. Andersen carried out its deliberations, mainly by correspondence over the period 1979-83. A list of the experts consulted is included in Appendix III.

The IBPGR encourages the collection of data on the first four categories of the list: 1. Accession; 2. Collection; 3. and 4. Characterization and preliminary evaluation. The IBPGR endorses the information in categories 1-4 as the minimum that ideally should be available for any one accession. Other descriptors are given in categories 5 onwards that will enable the simple encoding of furhter characterization and evaluation data and which can serve as examples for the creation of additional descriptors in the IBPGR form by any user.

The suggested coding should not be regarded as the definitive scheme, although this format has the full backing of the IBPGR and is promoted worldwide. The descriptor list given here provides an international format and thereby produces a universally understood "language" for all plant genetic resources data. The adoption of this scheme for all data encoding, or at least the production of a transformation method to convert other schemes to the IBPGR format, will produce a rapid reliable and efficient means for information storage, retrieval and communication. This will greatly assist the utilization of network. It is recommended, therefore, that information should be produced by closely following this descriptor list with regard to : ordering and numbering descriptors; using the descriptors specified; using the descriptor states recommended.

Errors and omissions are the responsibility of the editors. Any suggestions for modifications will be welcomed by the IBPGR Secretariat, Rome, especially before encoding new descriptors.

December 1984

DESCRIPTOR LIST FOR FORAGE LEGUMES

The IBPGR now uses the following definitions in genetic resources documentation:

i) passport data (accession identifiers and information recorded by collectors);

ii) characterization (consists of recording those characters which are highly heritable, can be easily seen by the eye and are expressed in all environments);

iii) preliminary evaluation (consists of recording a limited number of additional traits thought desirable by a consensus of users of the particular crop)

Characterization and preliminary evaluation will normally be the responsibility of the curators, while further characterization and evaluation should normally by carried out by the plant breeder. Data from further evaluation should be fed back to he crop coordinator who will maintain a data file.

The internationally accepted standards for the scoring or coding of descriptor states should be followed as indicated below:

a) measurements are made in metric units;

b) many descriptors which are continuously variable are recorded on a 1-9 scale. The authors of this list have sometimes described only a selection of the states, e.g. 3, 5 and 7 for such descriptors. Where this has occurred the full range of codes is available for use by interpolation between them - e.g. in 8 (Pest and disease susceptibility) 1 = extremely low susceptibility and 9 = high to extremely high susceptibility;

c) presence/absence characters are scored as "+" (present) and "0" (absent);

d) for descriptors which are not generally uniform throughout the accession (e.g. mixed collection, genetic segregation) mean and standard deviation could be reported where the descriptor is continuous, or mean and "x" where the descriptor is discontinuous (frequencies can be recorded in NOTES descriptor, II);

e) when the descriptor is inapplicable, "0" is used as the descriptor value. For example, if an accession does not form flowers, a "0" would be scored for the following descriptor.

Colour of Flower

3. Light red
7. Dark red

f) blanks are used for information not yet available;

g) standard colour charts e.g. Royal Horticultural Society Colour Chart, Methuen Handbook of Colour, Munsell Colour Charts for Plant Tissues, Seguy Code Universel des Couleurs, are strongly recommended for all ungraded colour characters. The precise chart used should be specified in the NOTES descriptor, 9.

DESCRIPTORS FOR FORAGE LEGUMES

PASSPORT DATA

1. ACCESSION DATA

1.1 ACCESSION NUMBER

This number serves as a unique identifier for accessions and is assigned by the curator when an accession is entered into his collection. Once assigned this number should never be reassigned to another in the collection Even when an accession is lost, its assigned number is still not available for re-use. Letters should occur before the number to identify the genebank or national system (e.g. MG indicates an accession comes from the genebank at Bari, Italy, PI indicates an accession within the USA system).

1.2 DONOR NAME

Name of institution of individual responsible for donating the germplasm.

1.3 DONOR IDENTIFICATION NUMBER

Number assigned to the accession by the donor.

1.4 OTHER NUMBERS ASSOCIATED WITH THE ACCESSION

Any other identification number known to exist in other collections for this accession, e.g. USDA Plant Introduction number (Not collection number see 2.1).

1.4.1. Other number 1

1.4.2. Other number 2

1.5 SCIENTIFIC NAME

1.5.1. Genus

1.5.2. Species

1.5.3. Sub-taxa

1.6 PEDIGREE/CULTIVAR NAME

Nomenclature and designations assigned to breeders material.

1.6.1. Pedigree/cultivar name /breeder's line number.

1.6.2. Breeding institute

1.6.3. Breeding method

1. Primitive cultivar
2. Mutation
3. Backcross
4. F1 Hybrid
5. Mass selection
6. Synthetic variety

7. Population
8. Breeders line
9. Others

1.6.4. Male parent

1.6.5. Female parent

1.6.6. Ploidy level (Red clover and alsike clover).
2. Diploid
4. Tetraploid

1.6.7. Country of variety approval

Use three letter abbreviations (see 2.4)

1.6.8. Year of variety approval

1.7 ACQUISITION DATE

The month and year in which the accession entered the collection, expressed numerically, e.g. June = 06, 1981 = 81.

1.7.1. Month

1.7.2. Year

1.8 DATE AND LOCATION OF LAST REGENERATION OR MULTIPLICATION

The month and year expressed numerically, e.g. October = 10, 1978 = 78.

1.8.1. Month

1.8.2. Year

1.8.3. Location of regeneration (country code see 2.4)

1.9 ACCESSION SIZE

1.9.1. Weight of seeds (g)

1.9.2. Number of plants

1.10 NUMBER OF TIMES ACCESSION REGENERATED

Number of regenerations or multiplications since orginial collection.

1.11 TYPE OF MAINTENANCE

1. Vegetative
2. Seeds
3. Both
4. Tissue culture

2. COLLECTION DATA

Data to be recorded on accessions collected in the field

It is essential that items 2.1-2.15 (except those marked with *) are completed in full as basic collection information, and desirable that 2.16 onwards are also completed.

2.1. COLLECTOR'S NUMBER

Original number assigned by collector of the sample normally composed of the name or initials of the collector(s) followed by a number. This item is essential for identifying duplicates held in different collections and should alsways accompany sub-samples wherever they are sent.

2.2. COLLECTION INSTITUTE (OR SPONSOR)

Institute or person collecting/sponsoring the original sample.

2.3. DATE OF COLLECTION OF ORIGINAL SAMPLE

Expressed numerically, e.g. March = 03, 1980 = 80.

2.3.1. Day

2.3.2. Month

2.3.3. Year

2.4. COUNTRY OF COLLECTION

2.4.1. Country

Use the letter abbreviations supported by the Statistical Office of the United Nations. Copies of these abbreviations are available from the IBPGR Secretariat and have been published in the FAO/IBPGR Newsletter number 49 (1982).

2.4.2. Geographical sub-region*

Distinct geographical areas, e.g. Pyrenees, Hungarian Plain, Alps etc.

2.4.3. Geographical region*

Large geographical groups, e.g. Scandinavia, Central Europe, Mediterranean Basin etc, as defined in Flora Europea.

2.5. PROVINCE/STATE

Name of the administrative subdivision of the country in which the sample was collected.

2.6. LOCATION OF COLLECTION SITE

2.6.1. Location

Number of kilometres and direction from nearest town or village or map grid reference (e.g. TIMBUKTU7S means 7 km South of Timbuktu).

* See first alinea under 2.

2.6.2. Atlas

Name of atlas or map sheet used to specify 2.6.1.

2.7. LATITUDE OF COLLECTION SITE

Degrees and minutes suffixed by N or S, e.g. 1030 S.

2.8. LONGITUDE OF COLLECTION SITE

Degrees and minutes suffixed by E or W, e.g. 7625 W.

2.9. ALTITUDE OF COLLECTION SITE

2.9.1. Altitude

Elevation above or below sea level in metres.

2.9.2. Aspect

Compass degrees 1-360°

2.9.3. Slope

Clinometer degrees

2.10. COLLECTION SOURCE

1. Wild
2. Farm Land
3. Farm store
4. Backyard
5. Village market
6. Commercial market
7. Intsitute
8. Other (specify in the NOTES descriptor, 2.27)

2.11. STATUS OF SAMPLE

1. Wild
2. Weedy
3. Breeders line
4. Primitive cultivar/landrace
5. Advanced cultivar (bred)
6. Other (specify in the NOTES descriptor, 2.27)

2.12. LOCAL/VERNACULAR NAME

Name given by farmer to cultivar/landrace/weed

2.13. DETAILS

2.13.1. Number of plants sampled

Approximate number of plants collected in the field to produce this accession.

2.13.2. Size of area sampled

Estimated area of site actually sampled m^2.

2.13.3. Size of site

Estimated area of site, ha

2.13.4. Weight of seed sample collected (g)

2.14. PHOTOGRAPH HERBARIUM AND RHIZOBIUM

2.14.1. Photograph

Was a photograph taken of the accession or environment at collection?

0 = No
+ = Yes

2.14.2. Photograph Number

2.14.3. Herbarium sample

Was an herbarium specimen collected?

0 = No
+ = Yes

2.14.4. Rhizobium nodule sample

Were nodules collected?

0 = No
+ = Yes

2.15. TYPE OF SAMPLE

1. Vegetative
2. Seed

(If vegetative samples and seed are collected at the same time they should be regarded as two separate collections and given different accession numbers).

2.16. BOTANICAL DETAILS OF SITE

2.16.1. Abundance

1. Few individual plants only
2. Very scarce, less than 1% cover
3. Scarce 1-5% cover
4. Present 5-25% cover
5. High, more than 25%

2.16.2. Spatical distribution

1. Patchy
2. Uniform

2.17. FLORISTIC STRUCTURE

2.17.1. Dominant species (specify)

2.17.2. Dominant grass species (specify)

2.17.3. Dominant legume species (specify)

2.17.4. Indicator species (specify)

2.18. SITE PHYSIOGRAPHY

1. Plain
2. Valley bottom
3. Valley slope
4. Terrace
5. Summit
6. Other (specify in 2.27)

2.19. HABITAT

2.19.1. General habitat of site

1. Forest deciduous
2. Forest evergreen
3. Forest mixed
4. Scrub
5. Parkland
6. Orchard
7. Grassland
8. Moorland
9. Heath
10. Arable
11. Wasteland
12. Other (specify in 2.27)

2.19.2. Specific habitat

1. Hedgerow
2. Clearing
3. Path
4. Alongside water, i.e. river, lake etc.
5. Alongside building
6. Alongside path, road, track etc.
7. Other (specify in 2.27)

2.19.3. Grassland habitat

1. Abandoned
2. Grazed only (specify intensity in 2.27)
3. Conservation only (specify in 2.27)
4. Mainly grazed (specify in 2.27)
5. Mainly conservation (specify in 2.27)
6. Zero grazed
7. Lawn
8. Sports turf
9. Others (specify in 2.27)

2.20. AGE OF GRASSLAND

Give approximate age from local information (years)

4. PLANT DATA

Some descriptors may be used for several species, whereas others are special for one species only. + indicates that the descriptor could be used for this species. 0 indicates that the descriptor is not recommended. Suggestions for example varieties are included.

4.1. VEGETATIVE LEAF

	White clover	Red clover	Lucerne	Alsike clover	Birdsfoot-trefoil
4.1.1 Lenght of central leaflet at flowering 1(=very short) to 9(=very long)	+	+	+	+	+
4.1.2 Width of central leaflet at flowering 1(=very narrow)to 9(=very broad)	+	+	+	+	+
4.1.3 Shape of leaf 3(=elongated), 5(=ovate) and 7(=round)	0	+	+	0	0
4.1.4 Leaf marks percentage of plant showing V-leaf marks	+	+	0	0	0
4.1.5 Length of petiole 1(=very short) to 9(=very long)	+	0	0	0	0
4.1.6 Thickness of petiole 1(=very thin) to 9(=very thick)	+	0	0	0	0
4.1.7 Percent cyanogenic plants (Percentage positive plants to HCN picrate paper test. It is recommended to test 60 individual plants)	+	0	0	0	0

4.2. VEGETATIVE-STEM

4.2.1 Vegetative growth habit Expressed as a mean angle of the shoots from vertical scale. 1(=very erect) to 9(=very prostrate)	0	+	+	0	0
4.2.2 Length at flowering 1(=very short) to 9(=very long)	0	+	+	+	0

Suggested example varieties of white clover.

4.1.1

1. Very short	Kent wild white
3. Short	S.184
5. Medium	Milkanova
7. Long	Gigant
9. Very long	Ladino

4.1.2

1. Very narrow	Kent wild white
3. Narrow	S.184
5. Medium	Milkanova
7. Broad	Gigant
9. Very broad	Ladino

4.1.5

3. Short	S.184
5. Medium	Milkanova
7. Long	Gigant

4.1.6

3. Thin	Nora
5. Medium	Cultura
7. Thick	Crau

	White clover	Red clover	Lucerne	Alsike clover	Birdsfoot-trefoil
4.2.3 Thickness of stolon 3(= thin), 5(= medium) and 9(= thick)	+	0	0	0	0
4.2.4 Internode length 1(= very short)to 9(= very long)	+	0	0	0	0
4.3. INFLORESCENCE AND FRUIT					
4.3.1 Tendency to form inflorescences in sowing year To be assessed on plants not exposed to short day and/or low temperature vernalisation 1(= very low) to 9(= very high)	+	+	+	+	+
4.3.2 Date of flowering Date when 50% of plants first show petal colour development on an inflorescence 1(= very early)to 9(= very late)	+	+	+	+	+
4.3.3 Colour of flower 3. Light red 7. Dark red	0	+	0	0	0
4.3.4 Percentage of each colour 4.3.4.1 White 4.3.4.2 Yellow 4.3.4.3 Light blue-violet 4.3.4.4 Dark blue-violet 4.3.4.5 Red-violet	0	0	+	0	0
4.3.5 Variegation Percentage of plants with variegated flowers	0	0	+	0	0
4.3.6 Colour of seed coat 1. Yellow 2. Bi-colour 3. Violet					

Suggested example varieties of white clover

4.2.3.

3. Thin	Nora
5. Medium	Blanca
7. Thick	Crau

4.3.2.

1. Very early	Podkova
3. Early	Milkanova 1)
5. Medium	S.184 2)
7. Kate	Gigant
9. Very late	Ladino

1) Milkanova & von Kamekes
2) S. 184 & Huia

	White clover	Red clover	Lucerne	Alsike clover	Birdsfoot-trefoil
4.4 PRELIMINARY EVALUATION					
4.4.1 Winter damage - first winter	+	+	+	+	+
Percent of plant damaged - adjusted to control 1 =very little or no damage 9 =very much damage-plant dead					
4.4.2 Yields of individual assessments	+	+	+	+	+
Spring yield-eye scores-4 weeks after end of winter period					
4.4.2.1 Control variety name					
4.4.2.2 Estimated yield relative to adjusted designated control 1(= very low) to 9(= very high)					
4.4.2.3 Summer yields - eye scores at time of flowering. Yield relative to adjusted designated control 1(= very low) to 9(= very high)					
4.4.2.4 Autumn yields - eye scores scores as for 4.4.2.3					
4.4.3 Profuseness of flowering	+	+	+	+	+
Scored at full bloom 1(= sparse) to 9(= very profuse)					

8. PEST AND DISEASE SUSCEPTIBILITY

Based on a 1-9 scale where

1 = very low susceptibility (very high resistance)
3 = low susceptibility
5 = medium susceptibility
7 = high susceptibility
9 = very high susceptibility (very low resistance)

	White clover	Red clover	Lucerne	Alsike clover	Birdsfoot-trefoil
8.1. SCLEROTINIA TRIFOLIORUM	+	+	0	0	+
8.2. DITYLENCHUS DIPSACI	+	+	+	0	0
8.3. VERTICILLIUM ALBO-ATRUM	0	0	+	0	0
8.4. ERYSHIPHE POLYGONI	0	+	0	0	0

Suggested example varieties for disease susceptibility scores*)

Scores	Sclerotinia	Ditylenchus	Sclerotinia	Verticillium	Ditylenchus
	Red clover	Red clover	White clover	Lucerne	Lucerne
1	-	Quin	-	Vela	-
2	-	-	-	-	-
3	Redhead	Norseman	-	Vertus	Vertus
4	-	-	Blanca, Milkanova	-	-
5	Merkur, Kuhn	Merkur	-	-	-
6	Norseman, Quin	-	Olwen	-	Europe
7	-	Kuhn	-	Europe	-
8	Drewitts's	Redhead, Drewitt's	S.100	-	-
9	-	-	-	-	-

*) Classification according to Herbage Legumes 1981/82 (NIAB Farmers leaflets no 4) and List of varieties of Agricultural Crop (DK) 1981/82.

9. NOTES

APPENDIX I

SUMMARY OF BASIC CEC FORAGE LEGUME DESCRIPTORS

PASSPORT

	Page
1. ACCESSION DATA	
1.4. OTHER NUMBERS associated with the accession (USDA Plant introduction number)	8
1.5. SCIENTIFIC NAME	8
1.5.1. Genus	
1.5.2. Species	
1.5.3. Sub-taxa	
1.6. PEDIGREE/CULTIVAR NAME.	8
1.6.1. Pedigree/cultivar name/breeder's line numbers	
1.6.4. Male parent	
1.6.5. Female parent	
1.8. DATE AND LOCATION OF LAST REGENERATION OR MULTIPLICATION	9
1.8.3. Location of regeneration (country code see 2.4)	
2. COLLECTING DATA	10
2.4. Country of Collection	
2.6. Location of Collection site	13
2.20. Age of Grassland	14
2.23. Fertilizer use	
2.24. Soil type	
2.25. Drainage	

CHARACTERIZATION AND PRELIMINARY EVALUATION DATA

3. SITE DATA	15
4. PLANT DATA	16
4.1. Vegetative-leaf	
4.2. Vegetative stem	18
4.3. Inflorescence and fruit	18
4.3.1. Tendency to form inflorescences in sowing year	19
4.4. Preliminary evaluation	
4.4.1. Winter damage - first winter	
4.4.2. Yields of individual assessments	
4.4.3. Profuseness of flowering	
5. SITE DATA	20
5.4. Sowing date	
5.5. Planting date	
5.11. Date of harvest	

Page

6. PLANT DATA 21

6.1. Vegetative
6.1.1. Perenniality-number of years
6.1.2. Yield of dry matter
6.1.3. Crude protein content
6.1.5. Control variety

7. STRESS SUSCEPTIBILITY 21

8. PEST AND DISEASE SUSCEPTIBILITY 22

APPENDIX II

FORAGE LEGUMES - PASSPORT DATA
(illustrated by an example for a commercial variety)

1. ACCESSION DATA

1.1 Accession no.....*NNN 22222*
1.2 Donor name.....*A/S Dansk Planteforaedling 4660 DNK,*
1.3 Donor identification no.....*Pre-basic seed AB 1234*
1.4.1 Other no. 1.....
1.4.2 Other no. 2.....
1.5.1 Genus.....*Medicago*
1.5.2 Species.....*s ativa*
1.5.3 Sub-taxa.....
1.6.1 Pedigree/cultivar name.....*Vela*
1.6.2 Breeding institute.....*Agricultural University 1871 DNK*
1.6.3 Breeding method (1-9).....*6*
1.6.4 Male parent.....*Du Puits*
1.6.5 Female parent.....*Du Puits*
1.6.6 Ploidi level.....*2*
1.6.7 Country of variety approval.....*DNK*
1.6.8 Year of variety approval.....*78*
1.7 Acquisition date.....*23*
1.7.1 Acquisition month.....*11*
1.7.2 Acquisition year.....*78*
1.8.1 Regeneration month.....*09*
1.8.2 Regeneration year.....*78*
1.8.3 Location of regeneration.....*DNK*
1.9.1 Weight of seeds (g).....*50*
1.9.2 Number of plants.....
1.10 Number of times accession regenerated..*0*
1.11 Type of maintenance (1-4).....*2*

3. SITE DATA

3.1 Country of preliminary evaluation.....*DNK*
3.2 Site (e.g. research station).....*Statens Planteavlsforsøg*
3.3 Name of person in charge.....*Aksel Jensen*
3.4.1 Sowing date. Day.....
3.4.2 Sowing date. Month.....*04*
3.4.3 Sowing date. Year.....*72 and 73*
3.5.1 Planting date. Day.....
3.5.2 Planting date. Month.....*05*
3.5.3 Planting date. Year.....*72 and 73*
3.6 Evaluation environment (1-4).....*1*
3.7 Type of planting (1-4).....*1*
3.8 Control of variety (Varieties).....*Isis and Vertus*
3.9 Number of replications.....*3*
3.10 Total number of plants under observation.....*60*

4. PLANT DATA

4.1.1 Length of central leaflet (1-9).....*7*
4.1.2 Width of central leaflet (1-9).....*7*
4.1.3 Shape of leaf (3-7).....*3*
4.1.4 Leaf marks (percentage of plants).....
4.1.5 Length of petiole (1-9).....

4.1.6 Thickness of petiole (1-9).....
4.1.7 Percent cyanogenic plants.....
4.2.1 Vegetative growth habit (1-9).....*3*
4.2.2 Length at flowering (1-9).....
4.2.3 Thickness of stolon (3-7).....
4.2.4 Internode length (1-9).....
4.3.1 Tendency to form inflorescences (1-9).....*1*
4.3.2 Date of flowering (1-9).....*1*
4.3.3 Colour of flower (3 or 7).....
4.3.4.1 White (percentage).....
4.3.4.2 Yellow (percentage).....
4.3.4.3 Light blue-violet (percentage).....*45*
4.3.4.4 Dark blue-violet (percentage).....*30*
4.3.4.5 Red-violet (percentage).....*10*
4.3.5. Variegation.....
4.3.6 Colour of seed coat (1-3).....*2*

5. SITE DATA

5.1 Country of preliminary evaluation.....*DNK*
5.2 Site (e.g. Research station).....*Statens Planteavlsforsøg*
5.3 Name of person in charge.....*Aksel Jensen*
5.4.1 Sowing date. Day.....
5.4.2 Sowing date. Month.....*04*
5.4.3 Sowing date. Year.....*72-74*
5.5.1 Planting date. Day.....
5.5.2 Planting date. Month.....
5.5.3 Planting date. Year.....
5.6 Evaluation environment (1-4).....*1*
5.7 Type of planting (1-4).....
5.8 Control variety (Varieties).....*Isis (and Vertus)*
5.9 Number of replications.....*4*
5.10 Size of field plots m² *20*
5.11 Date of harvest.....*3 cuts each year*
5.12 Other tested varieties.....

6. PLANT DATA Field plots

6.1.1 Perenniality - Number of years.....*3*
6.1.2.1 Yield. First harvest year.....*104*
6.1.2.2 Yield. Second harvest year.....*125*
6.1.2.3 Yield. Third harvest year.....*118*
6.1.2.4 Yield. Average of years.....*115*
6.1.3 Crude protein content (percentage).....*21.2 (all cuts)*
6.1.4 Crude fibre content (percentage).....*27.0 (all cuts)*
6.1.5.1 Control variety. Yield.....*113*
6.1.5.2 Control variety. Crude protein.....*20.8*
6.1.5.3 Control variety. Crude fiber.....*26.2*

7. STRESS SUSCEPTIBILITY

7.1 Low temperature (1-9).....

8. PEST AND DISEASE SUSCEPTIBILITY

8.1 Sclerotinia trifolium (1-9).....
8.2 Dithylenchus dipsaci (1-9).....

8.3 Verticillium (1-9).....*1*
8.4 Erysiphe polygoni (1-9).....

9. NOTES

SITE DATA 5.1 to 5.12 from yield trials at 5 experimental stations

GRASSLAND LEGUMES - COLLECTION DATA
(illustrated by an example for an accession of white clover, collected in a field).

2.1 Collector's no.....*NNN 33333*
2.2 Collection institute.....*Agricultural University DNK*
2.3.1 Date of collection, day.....*23*
2.3.2 Date of collection, month.....*09*
2.3.3 Date of collection, year.....*83*
2.4.1 Country.....*DNK*
2.4.2 Geographical sub-region.....
2.4.3 Geographical region.....
2.5 Province/state.....*Jylland*
2.6.1 Location.....*Aarhus7W*
2.6.2 Atlas.....*GI Generalstabskort*
2.7 Latitude of collection site.....*5610 N*
2.8 Longitude of collection site.....*1009 E*
2.9.1 Altitude.....*55*
2.9.2 Aspect (Compas degrees 1-360°).....*10°*
2.9.3 Slope (Clinometer degrees).....*0*
2.10 Collection source (1-9).....*1*
2.11 Status of sample (1-6).....*1*
2.12 Local/vernacular name.....
2.13.1 Number of plants sampled.....*20*
2.13.2 Size of area sampled (m^2).....*500*
2.13.3 Size of site (ha).....*0.05*
2.13.4 Weight of seed sample collected (g).....*0.8*
2.14.1 Photograph (No - Yes).....*No*
2.14.2 Photograph no.....
2.14.3 Herbarium sample (No - Yes).....*No*
2.15 Type of sample (1=veg., 2=seed).....*2*
2.16.1 Abundance (1-5).....*3*
2.16.2 Distribution (1=patchy, 2=uniform).....*1*
2.17.1 Dominant species (specify).....*Poa trivialis*
2.17.2 Dominant grass species (specify).....*Poa trivialis*
2.17.3 Indicator species (specify).....
2.18 Site physiography (1-6).....*2*
2.19.1 General habit of site (1-12).....*8*
2.19.2 Specific habitat (1-9).....
2.19.3 Grassland habitat (1-9).....*2*
2.20 Age of grassland.....*100*
2.21 Irrigation (0 or +).....*0*
2.22 Flooding (0 or +).....*0*
2.23 Fertilizer use (1-6).....*1*
2.24 Soil type (1-6).....*1*
2.25 Drainage (1-3).....*2*
2.26.1 pH.....*6.0 (KCl)*
2.26.2 P ppm.....
2.26.3 K ppm.....
2.26.4 Ca ppm.....

APPENDIX III

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