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INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE
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DEUTSCHE GESELLSCHAFT FÜR TECHNISCHE ZUSAMMENARBEIT
(GTZ)

DESCRIPTORS FOR BAMBARA GROUNDNUT

IBPGR
Rome, October 1987

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 was established by the CGIAR in 1974. The basic function of the IBPGR is to promote and coordinate 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. Financial support for the core programme is provided by the governments of Australia, Austria, Belgium, Canada, China, Denmark, France, Federal Republic of Germany, India, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and the USA as well as the World Bank. FAO of the United Nations provides the Headquarters.

The International Institute of Tropical Agriculture (IITA) undertakes research to improve the quantity and quality of food crop production in developing African countries. In the humid and subhumid tropics the Institute aims to develop alternative farming systems to shifting agriculture; to improve varieties of cowpeas, yams and sweet potato; to develop cassava, maize, rice, soybean, plantain and cocoyam; to transfer key skills and technology through training; and to collaborate with IBPGR in collecting food legumes, root and tuber crops, and rice.

The Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) is the agency for overseas technical cooperation of the government of the Federal Republic of Germany. Among other activities, it provides technical assistance to developing countries for their development and research in agriculture, and supports the protection of natural resources, including the conservation of crop germplasm. GTZ is a partner of the International Agricultural Research Centers and contributes to CGIAR centres for specific research that might otherwise not be carried out by their regular programmes.

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PREFACE

Bambara groundnut (Vigna subterranea (L.) Verdc. comb. nov.) is probably third in importance behind cowpea (Vigna unguiculata (L.) Walp.) and groundnut (Arachis hypogaea) as a principal pulse crop widely grown and consumed in Africa, where it is indigenous. This descriptor list was developed by Mr. F. Begemann and Dr. N. Q. Ng, research fellow and Head, respectively, of the Genetic Resources Unit of the International Institute of Tropical Agriculture, Ibadan, Nigeria.

The IBPGR encourages the collection of data on the first four categories of this 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 further characterization and evaluation data and which can serve as examples for the creation of additional descriptors in the IBPGR form by any user.

Although the suggested coding should not be regarded as the definitive scheme, 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 germplasm throughout the international plant genetic resources network. It is recommended, therefore, that information should be produced by closely following the descriptor list with regard to: ordering and numbering descriptors; using the descriptors specified; and using the descriptor states recommended.

Any suggestions for modifications will be welcomed by IBPGR Headquarters, Rome.

DESCRIPTOR LIST FOR BAMBARA GROUNDNUT

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

- (i) passport (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 be the responsibility of the curators, while further characterization and evaluation should be carried out by the plant breeder. The data from further evaluation should be fed back to the curator who will maintain a data file.

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

- (a) measurements are made according to the SI system. The units to be applied are given in brackets following the descriptor:
- (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 extension of the codes given or by interpolation between them - e.g. in Section 8 (Pest and disease susceptibility) 1 = extremely low susceptibility and 8 = high to extremely high susceptibility;
- (c) presence/absence of 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;

- (e) when the descriptor is inapplicable, '0' is used as the descriptor value, e.g. if an accession does not form flowers, 0 would be scored for the following descriptor

Flower colour

- 1 White
- 2 Yellow
- 3 Red
- 4 Purple

- (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 Color Charts for Plant Tissues, are strongly recommended for all ungraded colour characters (the precise chart used should be specified in the NOTES descriptor, 11);
- (h) dates should be expressed numerically in the format DDDMMYYYY, where

DD - 2 digits to represent the day
MM - 2 digits to represent the month
YYYY - 4 digits to represent the year

PASSPORT

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 accession in the collection. Even if 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. TVsu indicates the Tropical Vigna subterranea number assigned by IITA)

1.2 DONOR NAME

Name of institution or individual responsible for donating the germplasm

1.3 DONOR IDENTIFICATION NUMBER

Number assigned to accession by the donor

1.4 OTHER NUMBERS ASSOCIATED WITH THE ACCESSION (other numbers can be added as 1.4.3 etc.)

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

1.6 PEDIGREE/CULTIVAR NAME

Nomenclature and designations assigned to breeder's material

1.7 ACQUISITION DATE

The date in which the accession entered the collection

1.8 DATE OF LAST REGENERATION OR MULTIPLICATION

1.9 ACCESSION SIZE

Approximate number of seeds of accession in collection

1.10 NUMBER OF TIMES ACCESSION REGENERATED

Number of regenerations or multiplications since original collection

1.11 TYPE OF MAINTENANCE

- 1 Vegetative
- 2 Seed
- 3 Both
- 4 Tissue culture

2. COLLECTION DATA

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 always accompany sub-samples wherever they are sent

2.2 COLLECTING INSTITUTE

Institute or person collecting/sponsoring the original sample

2.3 DATE OF COLLECTION OF ORIGINAL SAMPLE

2.4 COUNTRY OF COLLECTION OR COUNTRY WHERE CULTIVAR/VARIETY BRED

Use the 3-letter abbreviations supported by the Statistical Office of the United Nations. Copies of these abbreviations are available from IBPGR Headquarters and have been published in the FAO/IBPGR Plant Genetic Resources Newsletter number 49

2.5 PROVINCE/STATE

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

2.6 LOCATION OF COLLECTION SITE

Number of kilometres and direction from nearest town, village or map grid reference (e.g. TIMBUKTU 7S means 7 km south of Timbuktu)

2.7 LATITUDE OF COLLECTION SITE

Degrees and minutes followed by N (north) or S (south), e.g. 1030S

2.8 LONGITUDE OF COLLECTION SITE

Degrees and minutes followed by E (east) or W (west), e.g. 7625W

2.9 ALTITUDE OF COLLECTION SITE [m]

Elevation above sea level

2.10 COLLECTION SOURCE

- 1 Wild
- 2 Farm land
- 3 Farm store
- 4 Backyard
- 5 Village market
- 6 Commercial market
- 7 Institute
- 8 Other (specify in the NOTES descriptor, 11)

2.11 STATUS OF SAMPLE

- 1 Wild
- 2 Weedy
- 3 Breeder's line
- 4 Primitive cultivar/landrace
- 5 Advanced cultivar (bred)
- 6 Other (specify in the NOTES descriptor, 11)

2.12 TYPE OF SAMPLE

- 1 Vegetative
- 2 Seed
- 3 Both

2.13 NUMBER/WEIGHT OF PLANTS SAMPLED

Approximate number of plants collected in the field to produce this accession. Number of plants is followed by number of collected seeds or weight of collected seeds in grams; e.g. 50 grams of 20 collected plants to be recorded as 20/50 g

2.14 LOCAL/VERNACULAR NAME

Name given by farmer to cultivar/landrace/weed

2.15 ETHNIC GROUP

Name of the tribe of the people living in the area of collection

2.16 PHOTOGRAPH

Was a photograph taken of the accession or environment at collection? If so, provide any identification number in the NOTES descriptor, 11

0 No
+ Yes

2.17 CLIMATE

Climate of the locality from where the particular germplasm accession was collected. Troll's ^{1/} classification system for world climates, based on broad rainfall groups in relation to potential evapotranspiration, will be used

(A humid month is defined as a month with mean rainfall exceeding potential evapotranspiration.)

- 1 Tropical rainy climates with or without short interruptions of the rainy season (12 to 9.5 humid months); evergreen tropical rainforests and half-deciduous transition woods
- 2 Tropical humid-summer climates with 9.5 to 7 humid and 2.5 to 5 arid months; rain-green humid forest and humid grass savannah

^{1/} Troll, C., World Maps of Climatology, pp. 27-28, Berlin, Heidelberg, New York, 1965.

- 3 Tropical winter-humid climates with 9.5 to 7 humid and 2.5 to 5 arid months; half deciduous transition wood
- 4 Wet and dry tropical climates with 7 to 4.5 humid and 5 to 7.5 arid months; rainy green dry wood and dry savannah
- 5 Tropical dry climates with 4.5 to 2 humid and 7.5 to 10 arid months; tropical thorn-succulent wood and savannah
- 6 Tropical dry climates with humid months in winter
- 7 Tropical semi-desert and desert climates with less than 2 humid and more than 10 arid months; tropical semi-desert and desert

2.18 ECOLOGICAL ZONE

2.19 RAINFALL AMOUNT

- 3 Low (380-480 mm/yr)
- 5 Intermediate (600-710 mm/yr)
- 7 High (840-950 mm/yr)

2.20 RAINFALL DISTRIBUTION

- 1 Uniform
- 2 Unimodal
- 3 Bimodal

2.21 TOPOGRAPHY OF COLLECTION SITE

- 1 Swamp
- 2 Flood plain
- 3 Plain level
- 4 Undulating
- 5 Hilly
- 6 Mountainous
- 7 Other (specify in the NOTES descriptor, 11)

2.22 LIGHT AT COLLECTION SITE

- 3 Shady
- 7 Sunny

2.23 SOIL TEXTURE

- 1 Sandy
- 2 Loamy
- 3 Clay
- 4 Organic
- 5 Rocky

2.24 FREQUENCY AT COLLECTION SITE

- 1 Rare
- 3 Occasional
- 5 Frequent
- 7 Abundant

2.25 GROWING SEASON FROM PLANTING TO HARVEST

2.26 CROPPING SYSTEM

2.27 CULTIVATION DENSITY/SPACING

2.28 CULTURAL PRACTICE

- 1 Dryland
- 2 Irrigated
- 3 Flooded
- 4 Transplanted

2.29 SUSCEPTIBILITY TO PESTS AND DISEASES AT COLLECTION SITE

Scored for natural infection or infestation on a 0-9 scale, where

- 0 No infection or infestation observed
- 3 Low susceptibility
- 5 Medium susceptibility
- 7 High susceptibility

2.30 ORGANS USED AS PRIMARY PRODUCT

- 1 Seed
- 2 Green fodder
- 3 Dry fodder

2.31 COMMON DISHES MADE FROM THIS CROP

2.32 OTHER NOTES FROM COLLECTOR

Collector will record associated wild and weedy species and crops

CHARACTERIZATION AND PRELIMINARY EVALUATION

3. SITE DATA

- 3.1 COUNTRY OF CHARACTERIZATION AND PRELIMINARY EVALUATION
- 3.2 SITE (RESEARCH INSTITUTE)
- 3.3 NAME OF PERSON(S) IN CHARGE OF CHARACTERIZATION
- 3.4 PLANTING DATE
- 3.5 HARVEST DATE

4. PLANT DATA

4.1 VEGETATIVE

4.1.1 Days to emergence

Number of days from planting to 50% emergence;
mean of 15 plants

4.1.2 Primary leaf colour

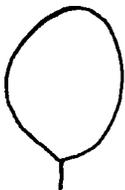
At emerging day

4.1.3 Terminal leaflet shape

10 weeks after planting

See Fig. 1

- 1 Round
- 2 Oval
- 3 Lanceolate
- 4 Other (specify in the NOTES descriptors, 11)



1 Round



2 Oval



3 Lanceolate

Fig. 1. Terminal leaflet shape

4.1.4 Growth habit

10 weeks after planting

- 1 Bunch type
- 2 Semibunch type
- 3 Spreading type

4.2 INFLORESCENCE AND FRUIT

4.2.1 Number of days from sowing to first flowering

4.2.2 Number of days from sowing to stage of 50% flowering

Number of days from sowing to stage when 50% of the plants have begun to flower

4.2.3 Pod shape

Within 2 months after harvest. To be described on the basis of 1 seed per pod

See Fig. 2

- 1 Without point
- 2 Ending in a point, round on the other side
- 3 Ending in a point, with nook on the other side
- 4 Ending in 2 points on each side

4.2.4 Pod colour

Within 2 months after harvest

- 1 Yellowish-brown
- 2 Medium-brown
- 3 Reddish-brown

4.2.5 Pod texture

Within 2 months after harvest

- 1 Smooth
- 3 Little grooves
- 7 Much grooved
- 9 Much folded

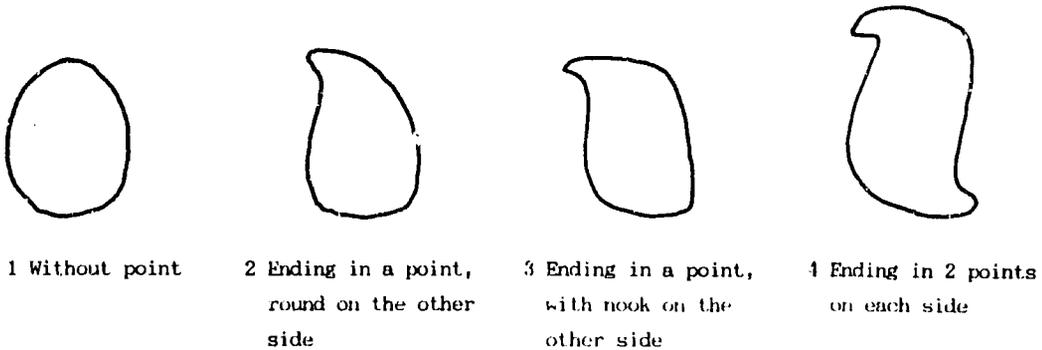


Fig. 2. Pod shapes

- 4.2.6 Shell thickness [1/100 mm]
Within 2 months after harvest; mean of 10 pods
- 4.2.7 Pod length [mm]
Within 2 months after harvest; mean of 10 pods
- 4.2.8 Pod width [mm]
Within 2 months after harvest; mean of 10 pods
- 4.2.9 Shelling percentage
Within 2 months after harvest; mean of 10 pods;
based on weight of mature seeds at 12% moisture

4.3 SEED

All descriptors in this section should be described within 2 months after harvest

The colours (see descriptors 4.3.2, 4.3.3, 4.3.5, 4.3.6 or 4.3.8) should be described in the following 20 groups (references are specified according to the Munsell Color Charts)

- | | | |
|---|--------------------|---|
| 1 | Light red | 2.5 R 8/4
2.5 R 7/6 to 7/8
2.5 R 6/6 to 6/10
2.5 R 5/6 to 5/10
5 R 8/4
5 R 7/6 to 7/8
5 R 6/6 to 6/10
5 R 5/6 to 5/10 |
| 2 | Dark red | 2.5 R 4/2 to 4/10
5. R 4/6 to 4/10
5 R 3/4 to 3/10 |
| 3 | Light brownish red | 5 R 4/4
10 R 7/4 to 7/8
10 R 6/4 to 6/10
10 R 5/4 to 5/10
2.5 YR 7/4 to 7/8
2.5 YR 6/4 to 6/8 |
| 4 | Light brown | 2.5 YR 5/4 to 5/8
5 YR 6/4 to 6/10
5 YR 5/4 to 5/10
7.5 YR 6/4 to 6/10
7.5 YR 5/4 to 5/10 |
| 5 | Dark brown | 5 R 3/2
10 R 4/4 to 4/10
10 R 3/2 to 3/6
2.5 YR 4/4 to 4/8
2.5 YR 3/4 to 3/6
5 YR 4/2 to 4/8
5 YR 3/2 to 3/4
7.5 YR 4/2 to 4/4 |
| 6 | Yellow | 2.5 Y 8/8 to 8/10
2.5 Y 7/10
5 Y 8/8 to 8/12 |

- 7 Cream
5 YR 8/4
5 YR 7/4 to 7/10
7.5 YR 8/4 to 8/6
7.5 YR 7/4 to 7/10
2.5 Y 8/4 to 8/6
2.5 Y 7/4 to 7/8
5 Y 8/4 to 8/6
5 Y 7/4
- 8 Light greyish green
5 Y 7/6 to 7/10
5 Y 6/4 to 6/8
- 9 Dark greyish green
2.5 Y 6/4 to 6/8
2.5 Y 5/4 to 5/6
5 Y 5/4 to 5/6
- 10 Light green
2.5 GY 8/4 to 8/12
2.5 GY 7/6 to 7/10
2.5 GY 6/8 to 6/10
5 GY 7/4 to 7/10
5 GY 6/4 to 6/10
5 GY 5/10
7.5 GY 8/4 to 8/8
7.5 GY 7/4 to 7/10
7.5 GY 6/4 to 6/10
7.5 GY 5/8
2.5 G 8/2 to 8/6
2.5 G 7/2 to 7/8
2.5 G 6/4 to 6/8
2.5 G 5/8
5 G 8/2 to 8/6
5 G 7/4 to 7/8
5 G 6/4 to 6/8
7.5 G 8/2 to 8/4
7.5 G 7/4 to 7/6
7.5 G 6/4 to 6/6
7.5 G 5/6
- 11 Dark green
2.5 GY 6/4 to 6/6
2.5 GY 5/4 to 5/8
5 GY 5/4 to 5/8
5 GY 4/4 to 4/8
5 GY 3/4
7.5 GY 5/4 to 5/6
7.5 GY 4/4 to 4/6
7.5 GY 3/2 to 3/4
2.5 G 5/4 to 5/6
2.5 G 4/4 to 4/6
2.5 G 3/2 to 3/4
5 G 5/4 to 5/8

11	Dark green (continued)	5 G 4/2 to 4/4 5 G 3/2 to 3/4 7.5 G 5/2 7.5 G 4/4 to 4/6 7.5 G 3/2 to 3/4
12	Light blue	5 BG 7/2 to 7/4 5 BG 6/4 to 6/6 5 BG 5/4 to 5/6 2.5 B 8/2 to 8/4 2.5 B 7/4 to 7/6 2.5 B 6/4 to 6/6
13	Dark blue	5 BG 4/4 to 4/6 5 BG 3/4 to 3/6 2.5 BG 5/4 to 5/6 2.5 BG 4/2 to 4/8 2.5 BG 3/2 to 3/6
14	Light purple	5 RP 8/2 to 8/6 5 RP 7/2 to 7/8 5 RP 6/2 to 6/10 5 RP 5/4 to 5/10
15	Dark purple	5 RP 4/2 to 4/12 5 RP 3/2 to 3/10
16	Light purplish red	2.5 R 8/2 2.5 R 7/2 to 7/4 2.5 R 6/4 5 R 8/2 5 R 7/2 to 7/4 5 R 6/2 to 6/4
17	Dark purplish red	2.5 R 5/4 5 R 5/4
18	Light grey	2.5 GY 8/2 2.5 GY 7/2 to 7/4 7.5 GY 8/2 7.5 GY 7/2 5.G 7/2 7.5 G 7/2 2.5 B 7/2 10 R 7/2 5 YR 8/2 5 YR 7/2 7.5 YR 8/2 7.5 YR 7/2 2.5 Y 7/2 5 Y 8/2 5 Y 7/2

19 Dark grey

2.5 GY 6/2
2.5 GY 5/2
7.5 GY 6/2
7.5 GY 5/2
7.5 GY 4/2
2.5 G 6/2
2.5 G 5/2
2.5 G 4/2
5 G 6/2
5 G 5/2
7.5 G 6/2
7.5 G 5/2
7.5 G 4/2
5 BG 6/2
5 BG 5/2
2.5 B 6/2
2.5 B 5/2
5 RP 5/2
2.5 R 6/2
2.5 R 5/2
5 R 5/2
5 R 4/2
10 R 6/2
10 R 5/2
10 R 4/2
5 YR 6/2
5 YR 5/2
7.5 YR 6/2
7.5 YR 5/2
2.5 Y 6/2
2.5 Y 5/2
5 Y 6/2
5 Y 5/2

20 Others (specify in the NOTES Descriptor, 11)

4.3.1 Testa pattern

Any combination with the following patterns is possible

See Fig. 3

- 0 No pattern
- 1 Mottled
- 2 Striped
- 3 Marbled
- 4 Dotted
- 5 Little rhomboid spotted on one side of hilum only
- 6 Little rhomboid spotted on both sides of hilum; spots are always beginning from micropyle
- 7 Much rhomboid spotted on both sides of hilum; spots are almost covering the whole seed
- 8 Holstein pattern

4.3.2 Ground colour of testa

Plain colour for seed with no pattern (state 0 in the descriptor 4.3.1) or background colour for seeds with pattern (states 1-8 in the descriptor 4.3.1)

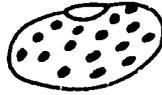
4.3.3 Cover colours of testa (or colour of pattern)

Cover colours of the testa for patterns 1-8 in the descriptor 4.3.1. For instance, for mottled seeds (pattern 1) - colour of mottling, for striped seed (pattern 2) - colour of stripes, etc.

State which colour for which pattern is described, if there are combinations with more than 1 pattern



0 No pattern



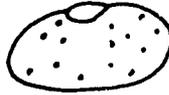
1 Entire line



2 Striped



3 Marbled



4 Dotted



5 Little rhomboid
spotting only on
one side of hilum



6 Little rhomboid
spotting on both
sides of hilum



7 Much rhomboid
spotting on both
sides of hilum



8 Holstein pattern

Fig. 3. Kind of testa pattern

4.3.4 Eye pattern

See Fig. 4

- 0 No eye
- 1 Eye as a thin circle around the hilum and a small, dark spot at the end of hilum
- 2 Eye as 2 thin lines on both sides of hilum
- 3 Eye as 2 thick lines on both sides of hilum
- 4 Eye, where 2 thick lines join together forming an almost triangle shape
- 5 Big eye, more or less shapeless, becoming frayed
- 6 Eye like butterfly
- 7 Mottled eye

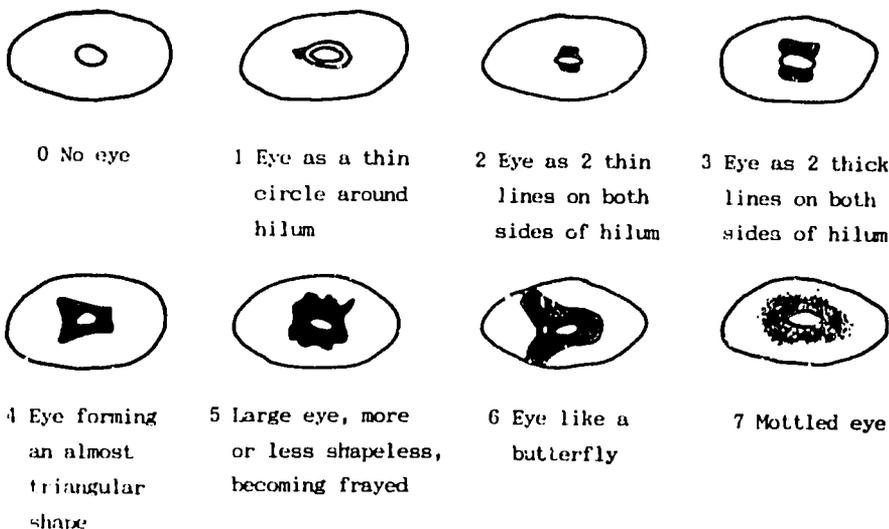


Fig. 4. Kind of eye pattern

4.3.5 Ground colour of eye

Record colour of eye for patterns 1-6 in the descriptor 4.3.4 or background colour for mottled eye (pattern 7 in the descriptor 4.3.4)

Please note that this is not the colour of pigmentation around eye (see descriptor 4.3.8)

4.3.6 Mottling colour of eye

This descriptor applies only to seeds with mottled eye (pattern 7 in the descriptor 4.3.4)

4.3.7 Pigmentation around eye

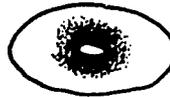
Presence of pigmentation 'eyelid' around eye

See Fig. 5

0 No pigmentation
+ With pigmentation



0 No pigmentation



+ With pigmentation

Fig. 5. Pigmentation around eye

4.3.8 Colour of pigmentation around eye

Colour of 'eyelid' around the eye (see descriptor 4.3.4)

FURTHER CHARACTERIZATION AND EVALUATION

5. SITE DATA

- 5.1 COUNTRY OF FURTHER CHARACTERIZATION AND EVALUATION
- 5.2 SITE (RESEARCH INSTITUTE)
- 5.3 NAME OF PERSON IN CHARGE OF EVALUATION
- 5.4 PLANTING DATE
- 5.5 HARVEST DATE

6. PLANT DATA

6.1 VEGETATIVE

Descriptors 6.1.1 - 6.1.12 should be recorded 10 weeks after planting, unless indicated otherwise

- 6.1.1 Leaf colour of fully expanded terminal leaflet
- 6.1.2 Terminal leaflet length [mm]
Mean of 3 leaves at the second node of 5 healthy plants
- 6.1.3 Terminal leaflet width [mm]
Mean of 3 leaves at the second node of 5 healthy plants
- 6.1.4 Petiole length [mm]
Mean of 3 leaves at the second node of 5 healthy plants
- 6.1.5 Number of leaves
Mean of 10 plants; 2 weeks after first flowering
- 6.1.6 Spread of plant [cm]
Widest area between 2 opposite points; mean of 5 plants
- 6.1.7 Height of plant [cm]
Mean of 5 plants

- 6.1.8 Internode length [mm]
Mean length of second internode of the 3 longest stems of 5 plants
- 6.1.9 Number of nodes per stem
After harvest; mean of 3 stems of 5 plants
- 6.1.10 Number of branches per stem
After harvest; mean of 3 stems of 5 plants
- 6.1.11 Number of stems per plant
After harvest; mean of 5 plants
- 6.1.12 Stem hairiness
After harvest
- 0 None
 - 3 Sparse
 - 7 Dense

6.2 INFLORESCENCE AND FRUIT

- 6.2.1 Colour of flower
- 6.2.2 Length of banner [mm]
Mean of 2 flowers of 5 plants
- 6.2.3 Dark pigmentation on wings and banner
0 Not present
+ Present
- 6.2.4 Peduncle length [mm]
Mean of 2 peduncles from 5 plants at the stage of open flower
- 6.2.5 Number of flowers per peduncle
Mean of the 10 peduncles used in 6.2.4
- 6.2.6 Number of pods per plant
Mean of 10 plants

6.2.7 Number of seeds per pod

Within 2 months after harvest; mean of 10 pods

6.2.8 100 seed weight [g]

Within 2 months after harvest

6.3 SEED

6.3.1 Seed shape

Within 2 months after harvest to be described on the basis of 1 seed per pod

1 Round

2 Oval

3 Other (specify in the NOTES descriptor, 11)

6.3.2 Seed length [mm]

Within 2 months after harvest; mean of 10 seeds

6.3.3 Seed width [mm]

Within 2 months after harvest; mean of 10 seeds

7. STRESS SUSCEPTIBILITY

Scored on a 1 - 9 scale, where

3 Low susceptibility

5 Medium susceptibility

7 High susceptibility

7.1 REACTION TO DROUGHT

8. PEST AND DISEASE SUSCEPTIBILITY

Scored for natural infection or infestation on a 1 - 9 scale, where

- 3 Low susceptibility
- 5 Medium susceptibility
- 7 High susceptibility

8.1 PESTS

8.2 FUNGI

8.3 BACTERIA

8.4 VIRUS AND MYCOPLASMA

8.4.1 Cowpea Mottle Virus (CMV)

9. ALLOENZYME COMPOSITION

This may prove to be a useful tool for identifying duplicate accessions

10. CYTOLOGICAL CHARACTERS AND IDENTIFIED GENES

11. NOTES

Give additional information where descriptor state is noted as 'Other' as, for example, in descriptors 2.10, 4.1.3, etc. Also include here any further relevant information