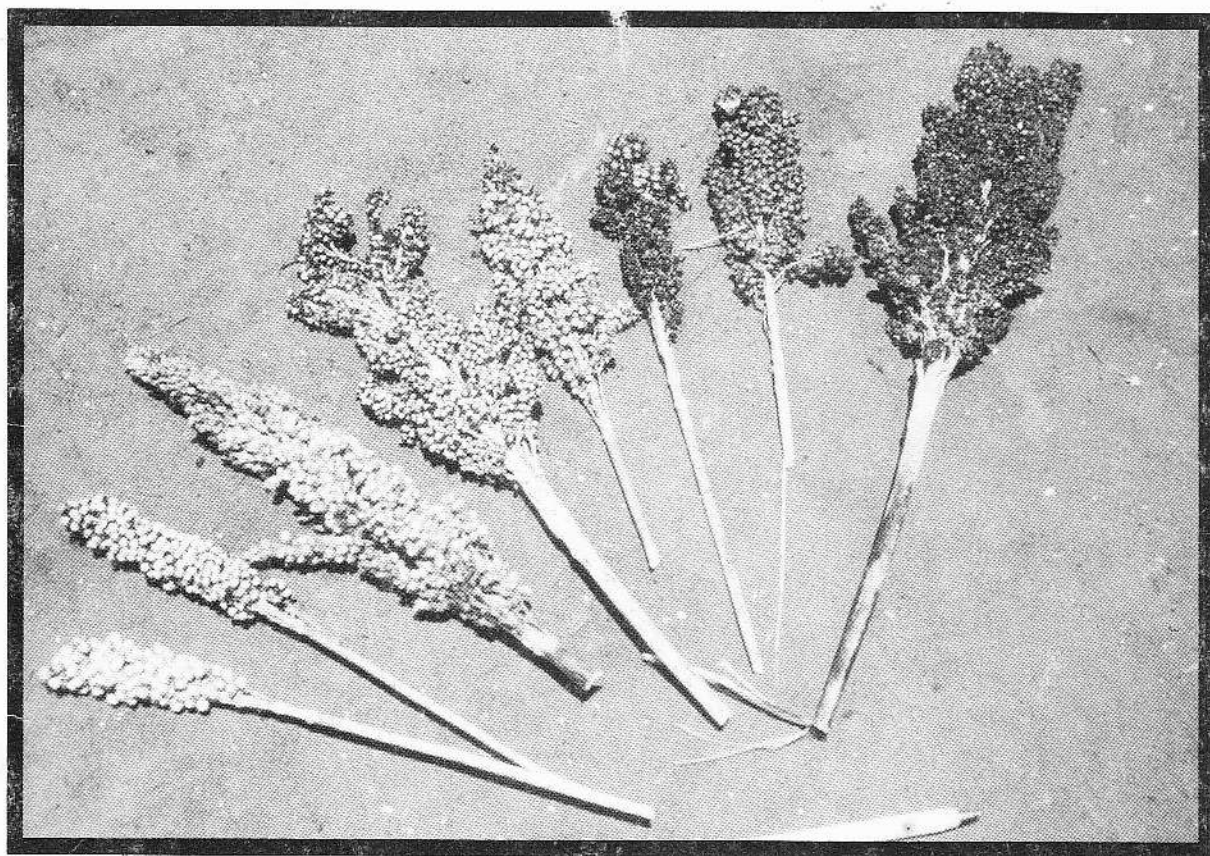




REVISED SORGHUM



DESCRIPTORS

160
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AGPG:IBPGR/84/142
October 1984
Replacing
AGP:IBPGR/80/1

INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES
(IBPGR)

and

INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS
(ICRISAT)

REVISED SORGHUM DESCRIPTORS

IBPGR SECRETARIAT
Rome, 1984

The International Board for Plant Genetic Resources (IBPGR) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) are autonomous, international, scientific organizations under the aegis of the Consultative Group on International Agricultural Research (CGIAR).

The basic function of the IBPGR, as defined by the Consultative Group, 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.

The objectives of ICRISAT are to develop improved farming practices and better varieties of major food crops in order to improve the welfare of the poorest population of the semi-arid tropics, estimated to number about 500 million. ICRISAT reaches the target groups through cooperation with national programmes that are, at present, predominantly in India, but which, increasingly, are elsewhere in the semi-arid tropics.

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and International Crops Research Institute for
the Semi-Arid Tropics, 1984

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PREFACE

In 1980, the IBPGR published a descriptor list for sorghum (Sorghum spp.) based upon the work of the IBPGR Advisory Committee on Sorghum and Millets Germplasm which was co-sponsored by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) (see AGP:IBPGR/80/1). In preparing to reprint the Sorghum Descriptor List, the IBPGR has revised the list to fit the standard format for descriptor lists.

This revised descriptor list for sorghum supersedes the earlier list (AGP:IBPGR/80/1). Descriptor numbers and descriptor state codes from the earlier list are cross referenced by enclosing them in brackets following the appropriate descriptor or descriptor state in this revised list. For example:

4.1.2 Plant colour (3.4)

At harvest

1	Pigmented	(P)
2	Tan	(T)

Explanation: The descriptor numbered 4.1.2 on the revised list was numbered 3.4 on the 1980 list. Descriptor states 1 and 2 on the revised list were P and T respectively on the 1980 list.

This descriptor list has been prepared in an IBPGR standard format following advice on descriptors and descriptor states from the crop experts throughout the world. 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 resource 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 this 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 the IBPGR Secretariat, Rome.

REVISED DESCRIPTOR LIST FOR SORGHUM

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 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 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 extension of the codes given or by interpolation between them - e.g. in 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, a 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).

Je oia

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. IS indicates the International Sorghum number assigned by ICRISAT, MG indicates an accession comes from the genebank at Bari, Italy, PI indicates an accession within the USA system).

1.2 DONOR NAME

[1.5]^{1/}

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 [1.2,1.3,1.4]
(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 Inventory number (not collection number, see 2.1)

1.4.1 Other number 1

1.4.2 Other number 2

^{1/} Numbers in brackets in the right margin cross reference descriptor numbers and descriptor state codes from the 1980 Sorghum Descriptor List (AGP:IBPGR/80/1).

1.5 SCIENTIFIC NAME

1.5.1 Genus

1.5.2 Species

1.5.3 Subspecies

1.5.4 Race

[3.1]

- | | | |
|----|---|------|
| 1 | Bicolor | [B] |
| 2 | Guinea | [G] |
| 3 | Caudatum | [C] |
| 4 | Kafir | [K] |
| 5 | Durra | [D] |
| 6 | Guinea Bicolor | [GB] |
| 7 | Caudatum Bicolor | [CB] |
| 8 | Kafir Bicolor | [KB] |
| 9 | Durra Bicolor | [DB] |
| 10 | Guinea Caudatum | [GC] |
| 11 | Guinea Kafir | [GK] |
| 12 | Guinea Durra | [GD] |
| 13 | Kafir Caudatum | [KC] |
| 14 | Durra Caudatum | [DC] |
| 15 | Kafir Durra | [KD] |
| 16 | <u>arundinaceum</u> | [AR] |
| 17 | <u>virgatum</u> | [VG] |
| 18 | <u>verticilliflorum</u> | [VE] |
| 19 | <u>aethiopicum</u> | [AE] |
| 20 | Anomalous | [AN] |
| 21 | Other (specify in the NOTES descriptor, 11) | |

1.5.5 Group name

[3.2]

1	Roxburghii	[Rx]
2	Shallu	[Sh]
3	Conspicuum	[Co]
4	Guineense	[Gi]
5	Margaritiferum	[Mg]
6	Nervosum	[Nr]
7	Dochna	[Do]
8	Kaoliang	[Ka]
9	Broom Corn	[Br]
10	Feterita	[Ft]
11	Nigricans	[Ng]
12	Dobbs	[Db]
13	Kaura	[Kr]
14	Zera-Zera	[Zr]
15	Nandyal	[Nd]
16	Maldandi	[Md]
17	Milo	[ML]
18	Sudan grass	[Sg]
19	Membranaceum	[Mb]
20	Kafir	[Kf]
21	Hegari	[Hg]
22	Durra	[Dr]
23	Subglabrescens	[Sb]
24	Wani	[Wn]
25	Cane	[Ca]
26	Grain grass	[Gg]
27	Patcha jonna (yellow pericarp jowars)	[Pg]
28	Fara-Fara	[Fr]
29	Other (specify in the NOTES descriptor, 11)	

1.6 PEDIGREE/CULTIVAR NAME

[1.9]

Nomenclature and designations assigned to breeder's material

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 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

1.9 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 *sub-titulos*

2.1 COLLECTOR'S NUMBER

[2.1]

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

[2.2]

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

2.3.1 Month

2.3.2 Year

2.4 COUNTRY OF COLLECTION OR COUNTRY WHERE CULTIVAR/
VARIETY BRED

[2.3]

Use the three 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 Plant Genetic Resources Newsletter number 49.

2.5 PROVINCE/STATE

[2.4]

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

2.6 LOCATION OF COLLECTION SITE

[2.5]

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

- 2.7 LATITUDE OF COLLECTION SITE [2.6]
Degrees and minutes followed by N (north) or S (south),
e.g. 1030S
- 2.8 LONGITUDE OF COLLECTION SITE [2.7]
Degrees and minutes followed by E (east) or W (west),
e.g. 7625W
- 2.9 ALTITUDE OF COLLECTION SITE [2.8]
Elevation above sea level in metres
- 2.10 COLLECTION SOURCE [2.11]
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 [1.7]
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 LOCAL/VERNACULAR NAME [1.8]
Name given by farmer to cultivar/landrace/weed
- 2.13 NUMBER OF PLANTS SAMPLED
Approximate number of plants collected in the field
to produce this accession

2.14 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

2.15 TYPE OF SAMPLE

- 1 Vegetative
- 2 Seed
- 3 Both

2.16 HERBARIUM SPECIMEN

Was a herbarium specimen collected? If so, provide any identification number in the NOTES descriptor, 11

- 0 No
- + Yes

2.17 CULTURAL PRACTICE

[2.10]

Method of farming if under cultivation

- | | |
|---------------------|-----|
| 1 Dryland (rainfed) | [D] |
| 2 Irrigated | [I] |
| 3 Flooded | [F] |
| 4 Transplanted | [T] |

2.18 CLIMATE

[2.9]

Climate of the locality from where the particular germplasm accession was collected. Troll's 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 rainy season of 9.5 to 12 humid months and without short interruptions. Ever-green tropical rain-forests and half-deciduous transition woods [V1]
- 2 Tropical humid-summer climates with 7 to 9.5 humid months; rain-green forests and humid grass savannahs [V2]
- 3 Tropical winter-humid climates with 7 to 9.5 humid months; half deciduous transition woods [V2a]
- 4 Wet-dry tropical climates with 4.5 to 7 humid months; rain green dry wood and dry savannah [V3]
- 5 Tropical dry climates with 2 to 4.5 humid months; tropical thorn-succulent wood and savannah [V4]
- 6 Tropical dry climates with humid months in winter [V4a]
- 7 Tropical semi-desert and desert climates with less than 2 humid months; tropical semi-desert and deserts [V5]

2.19 RAINFALL AMOUNT [2.9.1]

- 3 Low (380-480 mm/yr) [1.2]
- 5 Intermediate (600-710 mm/yr) [2.3]
- 7 High (840-950 mm/yr) [3.4]

2.20 RAINFALL DISTRIBUTION [2.9.2]

- 1 Uniform [1]
- 2 Unimodel [2]
- 3 Bimodel [3]

2.21 RAINFALL DEPENDABILITY [2.9.3]

- 0 Not dependent (erratic) [E]
- + Dependent (assured) [A]

2.22 OTHER NOTES FROM COLLECTOR

Collectors will record ecological information. For cultivated crops, cultivation practices such as irrigation, season of sowing, etc. will be recorded

CHARACTERIZATION AND PRELIMINARY EVALUATION DATA

3. SITE DATA

3.1 COUNTRY OF CHARACTERIZATION AND PRELIMINARY EVALUATION

3.2 SITE (RESEARCH INSTITUTE) [4.1]

3.3 NAME OF PERSON IN CHARGE OF CHARACTERIZATION

3.4 SOWING DATE

[4.2]

3.4.1 Day

3.4.2 Month

3.4.3 Year

3.5 HARVEST DATE

3.5.1 Day

3.5.2 Month

3.5.3 Year

4. PLANT DATA

4.1 VEGETATIVE

4.1.1 Plant height

[4.4]

Height in centimetres of main stalk at 50% flowering. Mean of ten randomly selected plants. See Figure 1

4.1.2 Plant colour

[3.4]

At harvest

1 Pigmented

[P]

2 Tan

[T]

4.1.3 Stalk juiciness

[3.5]

0 Not juicy (dry)

[D]

+ Juicy

[J]

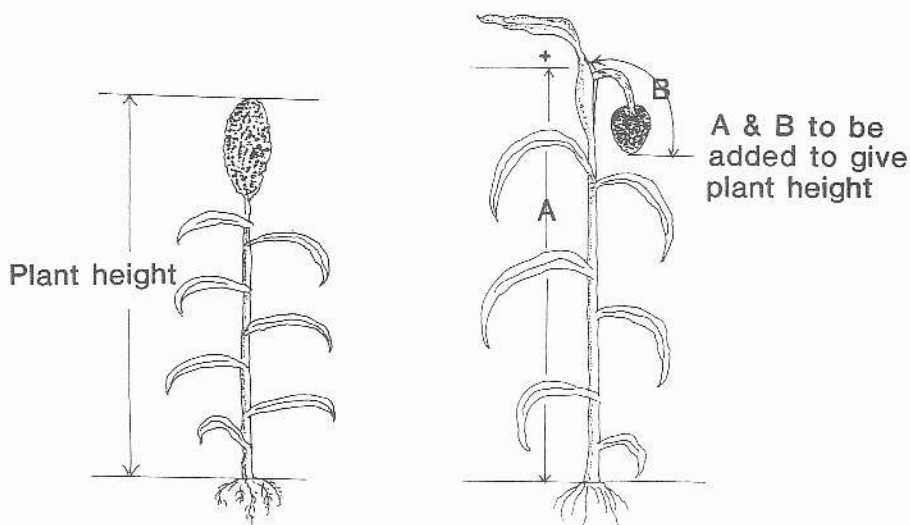


Figure 1. Plant height

4.1.4 Juice flavour

[3.6]

0 Stalk not juicy

[-]

1 Sweet

[S]

2 Insipid

[I]

4.1.5 Leaf midrib colour

[3.7]

1 White (colourless)

[C]

2 Dull green

[D]

3 Yellow

[Y]

4 Brown

[B]

5 Purple

[P]

6 Other (specify in the NOTES
descriptor, 11)

[-]

4.1.6 Waxybloom

- 0 No waxy bloom
- 3 Slightly present
- 5 Medium
- 7 Mostly bloomy
- 9 Completely bloomy

4.2 INFLORESCENCE AND FRUIT

4.2.1 Days to flowering

[4.5]

From mean emergence date to the date when 30%
of the plants have started flowering

4.2.2 Inflorescence compactness and shape

[3.8]

See Figure 2

- 1 Very lax panicle (typical of wild sorghums) [1]
- 2 Very loose erect primary branches [2E]
- 3 Very loose drooping primary branches [2D]
- 4 Loose erect primary branches [3E]
- 5 Loose drooping primary branches [3D]
- 6 Semi-loose erect primary branches [4E]
- 7 Semi-loose drooping primary branches [4D]
- 8 Semi-compact elliptic [5]
- 9 Compact elliptic [6]
- 10 Compact oval [7]
- 11 Half broom corn [8]
- 12 Broom corn [9]
- 13 Other (specify in the NOTES descriptor, 11)

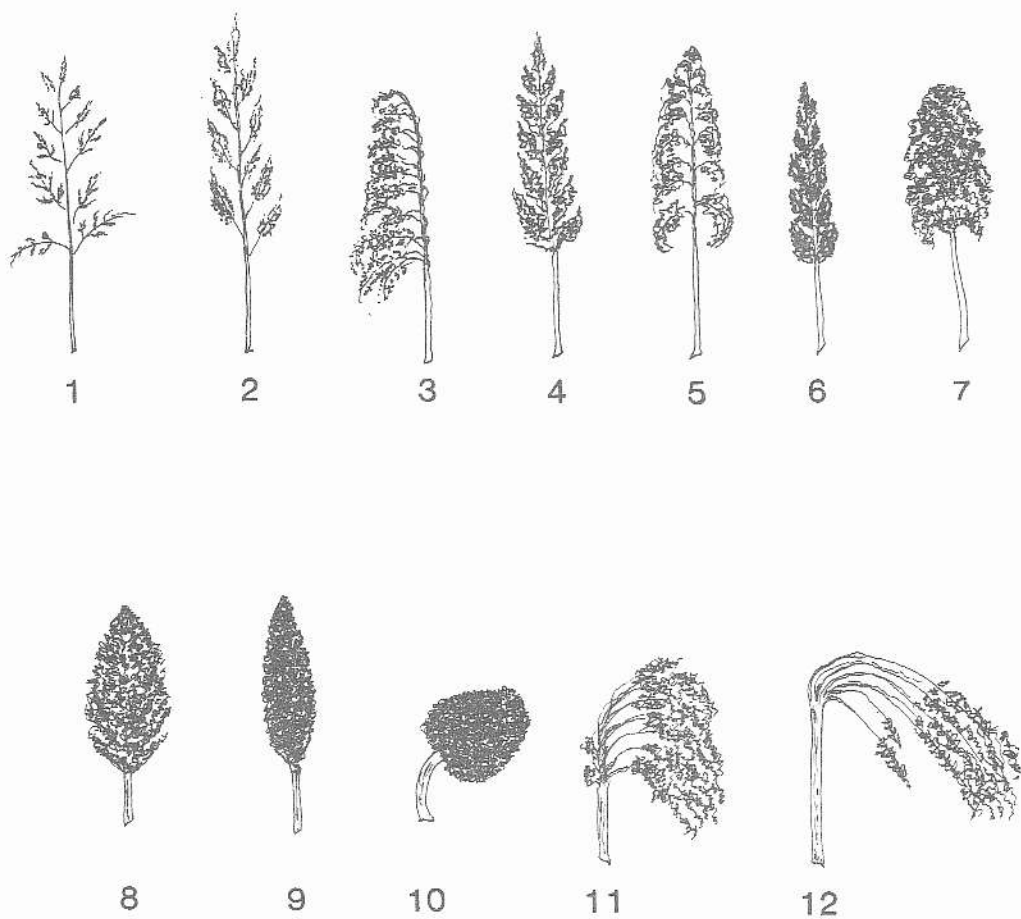


Figure 2. Inflorescence compactness and shape

4.2.3 Glume colour

[3.9]

At maturity

1	White	[W]
2	Sienna (yellow)	[S]
3	Mahogany (brown)	[M]
4	Red	[R]
5	Purple	[P]
6	Black	[B]
7	Grey	[G]
8	Other (specify in the NOTES descriptor, 11)	

4.2.4 Grain covering

[3.10]

Amount of grain covered by glumes. At maturity.
See Figure 3

0	Grain uncovered	[1]
1	0.25 grain covered	[2]
3	0.50 grain covered	[3]
5	0.75 grain covered	[4]
7	Grain fully covered	[5]
9	Glumes longer than grain	[6]

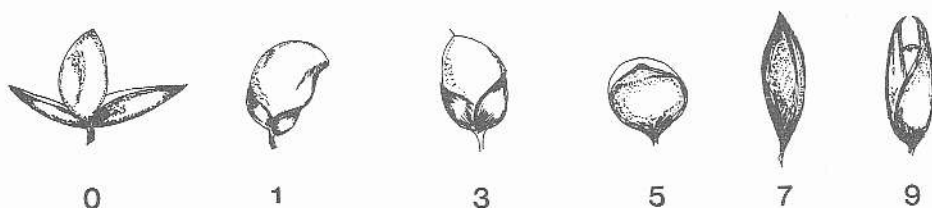


Figure 3. Grain covering

4.2.5 Awns [3.11]

At maturity

- | | | |
|---|---------|-----|
| 0 | Awnless | [L] |
| + | Awned | [A] |

4.2.6 Shattering [3.3]

- | | | |
|---|----------------|-----|
| 0 | Not shattering | [1] |
| 1 | Very low | [-] |
| 3 | Low | [-] |
| 5 | Intermediate | [2] |
| 7 | High | [-] |
| 9 | Complete | [3] |

4.3 SEED (GRAIN)

4.3.1 Grain colour [3.12]

- | | | |
|---|--|-----|
| 1 | White | [1] |
| 2 | Yellow | [2] |
| 3 | Red | [3] |
| 4 | Brown | [4] |
| 5 | Buff | [5] |
| 6 | Other (specify in the NOTES
descriptor, 11) | |

4.3.2 Grain lustre [3.17]

- | | | |
|---|--------------|-----|
| 0 | Not lustrous | [N] |
| + | Lustrous | [L] |

4.3.3 Grain weight [3.13]

Weight of 100 grains in grams at moisture
content of 12%

4.3.4 Grain number per panicle

Actual number of grains per panicle; average of
5 panicles in the plot

4.3.5 Grain sub-coat

[3.18]

0 Absent
+ Present

[A]

[P]

4.3.6 Grain plumpness

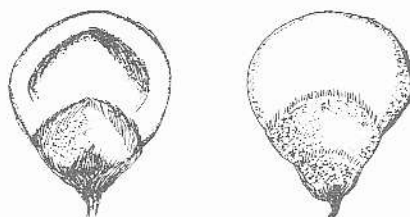
[3.19]

See Figure 4

3 Dimple
7 Plump

[D]

[P]



3 Dimple

7 Plump

Figure 4. Grain plumpness

4.3.7 Grain form

[3.20]

See Figure 5

1 Single

[S]

2 Twin

[T]



1 Single



2 Twin

Figure 5. Grain form

4.3.8 Endosperm texture

[3.14]

See Figure 6

1 Completely corneous

[1]

3 Mostly corneous

[2]

5 Intermediate

[3]

7 Mostly starchy

[4]

9 Completely starchy

[5]

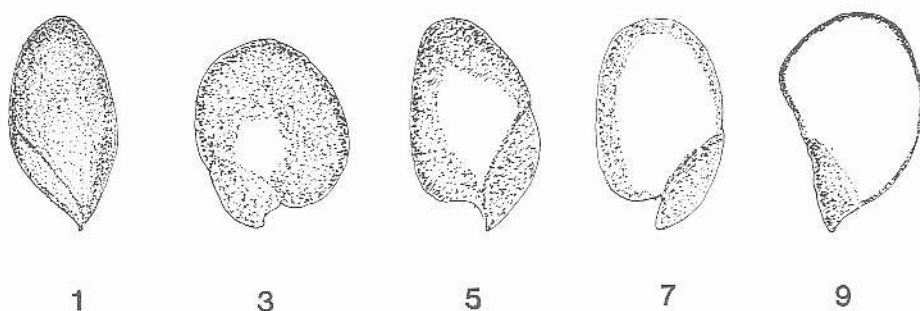


Figure 6. Endosperm texture

4.3.9 Endosperm colour

[3.15]

- 1 White
- 2 Yellow

[W]

[Y]

4.3.10 Endosperm type

[3.16]

- 1 Normal
- 2 Waxy
- 3 Sugary

[N]

[W]

[S]

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 SOWING DATE

5.4.1 Day

5.4.2 Month

5.4.3 Year

5.5 HARVEST DATE

5.5.1 Day

5.5.2 Month

5.5.3 Year

6. PLANT DATA

6.1 VEGETATIVE

6.1.1 Seedling vigour [4.3]

Observed 15 days after emergence

3	Poor	[5]
5	Medium	[3]
7	Good	[2]

6.1.2 Lodging suceptibility [4.14]

3	Low	[2]
5	Medium	[3]
7	High	[4]

6.1.3 Senescence

[7.7]

Death of leaves and stalk at time of grain maturity

0	Not senescent (no death of leaves)	[1]
1	Very slightly senescent	[-]
3	Slightly senescent	[2]
5	Intermediate (about half of leaves dead)	[3]
7	Mostly senescent	[4]
9	Completely senescent (leaves and stalk dead)	[5]

6.1.4 Over-all plant aspect

[4.16]

Over-all agronomic desirability of the accession as observed visually

3	Poor	[5]
5	Medium	[3]
7	Good	[2]

6.2 INFLORESCENCE AND FRUIT

6.2.1 Photosensitivity

[4.6]

Recorded on the basis of kharif/rabi^{1/} ratios of plant height (4.1.1) and days to flowering (4.2.1)

0	Insensitive	[I]
3	Slight	[-]
5	Medium	[M]
7	High	[S]

6.2.2 Number of flowering stems per plant

[4.7]

Mean number of flowering stems from 10 randomly selected plants. Main stem considered as one

^{1/} Kharif = Rainy season with longer day lengths

Rabi = Post-rainy season with shorter day lengths

6.2.3 Synchrony of flowering [4.8]

- 0 Not synchronous [N]
- + Synchronous (main stem and tillers at same time) [S]

6.2.4 Inflorescence exertion [4.9]

See Figure 7

- 0 Not exerted (inflorescence covered by leaf sheath) [5]
- 1 Slightly exerted (less than 2 cm but ligule of flag leaf definitely below inflorescence base) [3]
- 2 Exserted (2-10 cm between ligule and inflorescence base) [2]
- 3 Well-exserted (more than 10 cm between ligule and inflorescence base) [1]
- 4 Peduncle recurved (inflorescence below ligule and clearly exposed splitting the leaf sheath) [4]

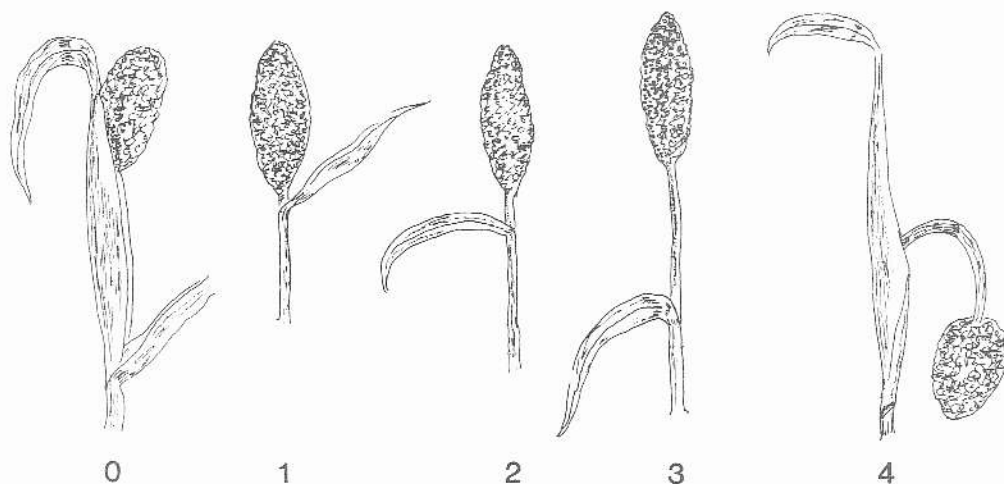


Figure 7. Inflorescence exertion

6.2.5 Inflorescence length [4.10]

In centimetres. From base of inflorescence (head) to tip. Mean from five randomly selected plants

6.2.6 Inflorescence width [4.11]

In centimetres. Width of inflorescence (head) in natural position at the widest part. Mean from five randomly selected plants

6.2.7 Restoration response [7.8]

Milo source

0	Non-restorer	[B]
3	Partial restorer	[P]
7	Restorer	[R]

6.2.8 Male sterile cytoplasm system [7.9]

1	Milo	[1]
2	Texas	[2]
3	Maldandi	[3]

6.3 SEED (GRAIN)

6.3.1 Grain hardness [4.13]

Weight in kilograms required to crack the grain

6.3.2 Threshability [4.12]

1	Very difficult (less than 50% threshed)	[5]
3	Difficult (60-69% threshed)	[4]
5	Intermediate (80-84% threshed)	[3]
7	Good (90-94% threshed)	[2]
9	Excellent (99-100% threshed)	[1]

6.3.3 Grain weathering susceptibility [4.15]

3	Low (good resistance)	[2]
5	Medium	[3]
7	High (poor resistance)	[5]

6.3.4 Protein content [7.11]

3	Low	[L]
7	High	[H]

6.3.5 Lysine content [7.12]

3	Low	[L]
7	High	[H]

6.3.6 Tannin in grain [7.13]

1	Testa brown	[T]
2	Testa and pericarp brown	[P]

Notes

7. STRESS SUSCEPTIBILITY

Scored on a 1-9 scale, where

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

7.1 LOW TEMPERATURE

7.1.1 Seedling susceptibility [7.5]

Measured as reduction in seed germination at low temperatures (10° to 15°C)

7.1.2 Reproductive susceptibility [7.6]

Measured as reduction in seed set at low temperatures (10° to 15°C)

7.2 HIGH TEMPERATURE

7.3 DROUGHT [7.3]

7.4 HIGH SOIL MOISTURE

7.5 SALINITY [7.4]

7.6 SOIL ACIDITY [7.10]

8. PEST AND DISEASE SUSCEPTIBILITY

Pest and disease susceptibility scores should only be made in designated trials with relevant check varieties. Indicate date of sowing, date of scoring and whether the infestation or infection was natural or artificial.

Scored on a 1-9 scale, where

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

8.1 PESTS

8.1.1 Atherigona soccata Rond. (Sorghum shoot fly) [5.4]

Dead hearts at 28 days

8.1.2 Chilo spp. (Stem borers) [5.5.1]

Leaf damage at 5 weeks

8.1.3 Chilo spp. (Stem borers) [5.5.2]

Dead hearts at 7 weeks)

8.1.4 Chilo spp. (Stem borers) [5.5.3]

Tunnelling at harvest

8.1.5 Busseola spp. (Stem borers) [5.6.1]

Leaf damage at 5 weeks

8.1.6 Busseola spp. (Stem borers) [5.6.2]

Dead hearts at 7 weeks

8.1.7 Busseola spp. (Stem borers) [5.6.3]

Tunnelling at harvest

8.1.8 Sesamia spp. (Stem borers) [5.7.1]

Leaf damage at 5 weeks

8.1.9 Sesamia spp. (Stem borers) [5.7.2]

Dead hearts at 7 weeks

8.1.10 Sesamia spp. (Stem borers) [5.7.3]

Tunnelling at harvest

- | | | |
|--------|---|-------------|
| 8.1.11 | <u>Diatraea saccharalis</u> (Fabr.) (Stem borer) | [5.8.1] |
| | Leaf damage at 5 weeks | |
| 8.1.12 | <u>Diatraea saccharalis</u> (Fabr.) (Stem borer) | [5.8.2] |
| | Dead hearts at 7 weeks | |
| 8.1.13 | <u>Diatraea saccharalis</u> (Fabr.) (Stem borer) | [5.8.3] |
| | Tunnelling at harvest | |
| 8.1.14 | <u>Contarinia sorghicola</u> (Coq.) (Sorghum midge) | [5.9] |
| | Grain damage | |
| 8.1.15 | <u>Calocoris angustatus</u> Leth. (Earhead bug) | [5.10] |
| | Shrivelled grain | |
| 8.1.16 | <u>Heliothis armigera</u> (Hub.) (African bollworm) | [5.11] |
| | Grain damage | |
| 8.1.17 | <u>Heliothis zea</u> (Boddie) (Corn earworm) | [5.12] |
| | Grain damage | |
| 8.1.18 | <u>Spodoptera</u> spp. (Armyworms) | [5.13,5.14] |
| | Leaf damage | |
| 8.1.19 | <u>Mythimna</u> spp. (Rice armyworms) | [5.15] |
| | Leaf damage | |
| 8.1.20 | <u>Schizaphis graminum</u> (Rond.) (Greenbug) | [5.16] |
| | Leaf damage | |
| 8.1.21 | <u>Rhopalosiphum maidis</u> (Fitch) (Corn Leaf aphid) | [5.17] |
| | Leaf damage | |

- 8.1.22 Aphis sacchari (Zehnt.) (Sugarcane aphid) [5.18]
Leaf damage
- 8.1.23 Blissus leucopterus (Say) (Chinch bug) [5.19]
Leaf damage
- 8.1.24 Phyllophaga spp. (White grubs) [5.20]
Plants damaged
- 8.1.25 Schizonycha spp. (White grubs) [5.21]
Plants damaged
- 8.1.26 Holotrichia spp. (White grubs) [5.22]
Plants damaged
- 8.1.27 Celama sorghiella Riley (Sorghum web worm) [5.23]
Head damage
- 8.1.28 Stenachroia elongella Hamps. (Web worm) [5.24]
Head damage
- 8.1.29 Eublemma spp. (Web worms) [5.25]
Head damage
- 8.1.30 Oligonychus indicus Hirst (Cholam mite) [5.26]
Leaf damage
- 8.1.31 Oligonychus pratensis (Banks) (Banks grass mite) [5.27]
Leaf damage
- 8.1.32 Grasshoppers

8.1.33 Locusts

8.1.34 Birds

8.1.35 Others (specify in the NOTES descriptor, 11)

8.2 FUNGI

8.2.1 Ascochyta sorghina Sacc. (Rough leaf spot) [6.8]

Leaf damage

8.2.2 Cercospora sorghi Ell. & Ev. (Grey leaf spot) [6.9]

Leaf damage

8.2.3 Colletotrichum graminicola (Ces.) Wilson [6.7.1]
(Anthracnose)

Leaf damage

8.2.4 Colletotrichum graminicola (Ces.) Wilson [6.7.2]
(Anthracnose)

Head damage

8.2.5 Curvularia lunata (Wakk.) Boed- (Grain moulds) [6.16]
Fusarium spp.

Head damage

8.2.6 Drechslera turcicum (Pass.) Subram. & Jain [6.6]
(Leaf blight)
(Setosphaeria turcica (Luttr.) Leo & Suggs
(=Helminthosporium turcicum Pass.)
(=Exserohilum turcicum (Pass.) Leo & Suggs

Leaf damage

- 8.2.7 Gloeocercospora Bain & Edgar (Zonate leaf spot) [6.12]
Leaf damage
- 8.2.8 Macrophomina phaseolina (Tassi) Goid (Charcoal rot) [6.4]
Plants damaged
- 8.2.9 Peronosclerospora sorghi West. & Upp.) C.G. Shaw [6.5]
(Downy mildew)
Plants damaged
- 8.2.10 Phoma insidiosa Tassi (Black dot grain mould) [6.17]
Head damage
- 8.2.11 Puccinea purpurea Cooke (Rust) [6.11]
Leaf damage
- 8.2.12 Ramulispora sorghi (Ell. & Ev.) Olive & Lefeb. [6.10]
(Sooty stripe)
Leaf damage
- 8.2.13 Sphacelia sorghi McRae (Ergot) [6.18]
Head damage
- 8.2.14 Sphacelotheca cruenta (Kühn) Potter (Loose smut) [6.22]
Head damage
- 8.2.15 Sphacelotheca reiliana (Kühn) Clinton (Head smut) [6.21]
Head damage
- 8.2.16 Sphacelotheca sorghi (Link) Clinton (Grain smut) [6.19]
Head damage

8.2.17 Tolyposporium ehrenbergii (Kühn) Pat. (Long smut) [6.20]

Head damage

8.2.18 Others (specify in the NOTES descriptor, 11)

8.3 BACTERIA

8.3.1 Pseudomonas andropogoni (E.F.Sm.) Stapp. [6.13]
(Bacterial stripe)

Leaf damage

8.3.2 Pseudomonas syringae van Hall (Bacterial leaf spot) [6.14]

Leaf damage

8.3.3 Others (specify in the NOTES descriptor, 11)

8.4 VIRUS

8.4.1 Maize dwarf mosaic virus [6.15]

Leaf damage

8.4.2 Sugarcane mosaic virus [6.15]

Leaf damage

8.4.3 Others (specify in the NOTES descriptor, 11)

8.5 PLANTS

8.5.1 Striga asiatica (L.) O. Kuntze (Witchweed) [7.1]

Plants damaged

8.5.2 Striga densiflora Benth. (Witchweed) [-]

Plants damaged

8.5.3 Striga hermonthica Benth. (Witchweed) [7.2]

Plants damaged

8.5.4 Others (specify in the NOTES descriptor, 11)

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 the descriptor state is noted as 'Other' as, for example, in descriptors 2.10, 4.1.5, etc. Also include here any further relevant information.

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