Table S1. Frequency distribution (%) for different qualitative traits of sorghum germplasm from South Asia at ICRISAT genebank, India.

|  |  |  |
| --- | --- | --- |
| Character | No. of accessions characterized | Frequency distribution (%) |
| Plant pigmentation | 5322 | Pigmented (98.3), Tan (1.7) |
| Midrib color | 5322 | Dull green (30.1), White (69.8), Yellow (0.1) |
| Panicle compactness | 5321 | Compact elliptic (29.5), Compact oval (5.8), Loose drooping branches (4.4), Loose stiff branches (9.1), Semi-compact elliptic (31.5), Semi-compact oval (2.9), Semi-loose drooping branches (0.8), Semi-loose stiff branches (14.3), Very loose drooping branches (1.4), Very loose stiff branches (0.4), No information (0.02),  |
| Glume color | 5321 | Black (7.7), Brown (6.1), Grey (0.02), Light brown (2.5), Light red (8.4), Partly straw and brown (1.3), Partly straw and purple (3.6), Purple 6.5), Red (4.0), Reddish brown (1.5), Straw (58.1), White (0.1), Yellow (0.2), No information (0.02) |
| Glume covering | 5321 | Grain fully covered (6.1), Grain uncovered (5.8), Half grain covered (52.5), One-fourth grain covered (19.7), Three-fourth grain covered (15.9), No information (0.02) |
| Seed color | 5318 | Brown (4.6), Chalky white (0.7), Grey (0.7), Light brown (2.0), Light red (4.7), Purple (0.1), Red (1.6), Reddish brown (2.2), Straw (45.4), White (31.5), Yellow (6.5), No information (0.1) |
| Seed lustre | 5319 | Lustrous (89.6), Non-Lustrous (10.3), No information (0.1) |
| Seed subcoat | 5319 | Absent (91.4), Present (8.5), No information (0.1) |
| Endosperm texture | 5315 | Completely corneous (4.5), Completely starchy (2.7), Mostly corneous (15.2), Mostly starchy (28.4), Partly corneous (49.0), No information (0.1) |
| Threshability | 5315 | Difficult to thresh (5.4), Freely threshable (61.7), Partly threshable (32.8), No information (0.1) |

Table S2. Range of variation for different agronomic traits of sorghum germplasm from South Asia conserved at ICRISAT genebank, India.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Race/country | No. of accs. | Days to 50% flowering-rainy | Days to 50% flowering-postrainy | Plant height (cm)-rainy |  Plant height (cm)-postrainy | No. of basal tillers per plant |  Panicle exsertion (cm) | Panicle length (cm) | Panicle width (cm) |  Seed size (mm) | 100 Seed weight (g) |
| *Bicolor* | 274 | 45-140 | 42-128 | 165-550 | 115-350 | 1-5 | 0-57 | 9-59 | 1-30 | 0.8-3.7 | 0.5-3.8 |
| *Guinea* | 717 | 53-157 | 51-139 | 135-655 | 105-360 | 1-5 | 0-38.5 | 8-57 | 5-51 | 1.5-4.5 | 1.1-4.2 |
| *Caudatum* | 96 | 33-148 | 44-100 | 120-500 | 100-290 | 1-4 | 0-36.5 | 8-32 | 4-16 | 1.8-4 | 0.9-5.8 |
| *Kafir* | 3 | 58-67 | 61-69 | 160-250 | 140-200 | 1-2 | 4-17 | 14.5-28 | 4.5-8 | 1.8-4 | 2.3-3.0 |
| *Durra* | 3240 | 48-156 | 45-114 | 95-520 | 68-370 | 1-5 | 0-53 | 4.5-90 | 1-34 | 1.5-5 | 0.9-7.3 |
| **All basic races** | 4330 | 33-157 | 42-139 | 95-655 | 68-370 | 1-5 | 0-57 | 4.5-90 | 1-51 | 0.8-5 | 0.5-7.3 |
| *Guinea-bicolor* | 19 | 53-144 | 57-92 | 210-530 | 160-260 | 1-3 | 4-37 | 16.5-34 | 5-30 | 2-3.5 | 1.7-4.2 |
| *Caudatum-bicolor* | 67 | 50-139 | 49-104 | 135-540 | 115-360 | 1-4 | 0-40 | 8-31 | 4-21 | 1-4 | 0.6-3.7 |
| *Kafir-bicolor* | 1 | 56-56 | 66-66 | 185-185 | 140-140 | 2-2 | 4.6-4.6 | 26.7-26.7 | 8.5-8.5 | 3.5-3.5 | 2.9-2.9 |
| *Durra-bicolor* | 467 | 47-144 | 45-102 | 80-500 | 75-365 | 1-6 | 0-55 | 7-39 | 3.5-24.5 | 1-5 | 0.9-5.7 |
| *Guinea-caudatum* | 93 | 56-155 | 45-132 | 130-520 | 115-295 | 1-5 | 0-30 | 9-38 | 3.5-26 | 1.5-4.5 | 1.6-4.3 |
| *Guinea-durra* | 36 | 69-180 | 57-89 | 235-505 | 160-275 | 1-2 | 0-32 | 12.5-32 | 6.5-27 | 2-4.5 | 1.4-5.5 |
| *Kafir-caudatum* | 1 | 54-54 | 53-53 | 265-265 | 245-245 | 1-1 | 34.5-34.5 | 21.5-21.5 | 4.8-4.8 | 3.5-3.5 | 2.6-2.6 |
| *Durra-caudatum* | 281 | 47-140 | 46-126 | 120-540 | 105-320 | 1-4 | 0-43 | 9-34 | 4-23 | 1.8-4.5 | 1.0-5.8 |
| *Kafir-durra* | 24 | 56-144 | 57-97 | 80-480 | 80-295 | 1-3 | 0-35 | 9-25.5 | 4.5-18 | 2-4 | 1.6-3.5 |
| **All intermediate races** | 989 | 47-180 | 45-132 | 80-540 | 75-365 | 1-6 | 0-55 | 7-39 | 3.5-30 | 1-5 | 0.6-5.8 |
| **Country** |   |   |   |   |  |  |  |  |  |  |  |
| Afghanistan | 1 | 77-77 | 81-81 | 230-230 | 200-200 | 2-2 | 15-15 | 37-37 | 21-21 | 2.5-2.5 | 2.3-2.3 |
| Bangladesh | 5 | 55-121 | 51-83 | 200-325 | 150-210 | 1-3 | 7-37 | 16-30 | 6-17 | 2.5-2.8 | 1.7-2.9 |
| India | 5241 | 33-180 | 42-139 | 80-655 | 68-370 | 1-10 | 0-57 | 4.5-90 | 1-51 | 0.8-5 | 0.3-7.3 |
| Pakistan | 52 | 45-67 | 45-74 | 160-330 | 145-260 | 1-4 | 0-30 | 8-33 | 5-14 | 2-4 | 1.5-4.3 |
| Sri Lanka | 23 | 71-138 | 61-101 | 165-420 | 125-290 | 2-4 | 0-34 | 8-57 | 6-30 | 2-3.5 | 0.9-3.2 |
| **All countries** | 5322 | 33-180 | 42-139 | 80-655 | 68-370 | 1-10 | 0-57 | 4.5-90 | 1-51 | 0.8-5 | 0.3-7.3 |

\* *Kafir, Kafir-bicolor, Kafir-caudatum* and the country Afghanistan representing less than five accessions were not considered for analysis.

Table S3. Mean values for different agronomic traits of sorghum germplasm from South Asia at ICRISAT genebank, India.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Race/country\*  |  Days to 50% flowering-rainy |  Days to 50% flowering-postrainy |  Plant height (cm)-rainy | Plant height (cm)-postrainy | Number of basal tillers per plant |  Panicle exsertion (cm) | Panicle length (cm) | Panicle width (cm) | Seed size (mm) | 100 Seed weight (g) |
| **Basic races** | *92.4a* | *70.5a* | *365.3a* | *214.8a* | *1.7b* | *12.3b* | *17.6b* | *9.1b* | *3.1a* | *2.9a* |
| *Bicolor* | 82.8cde | 65.4b | 381.2b | 235.9a | 2.3a | 24.5a | 25.7b | 10.8c | 2.5d | 1.8e |
| *Guinea* | 119.5a | 73.2a | 422.1a | 218.4bc | 2.1ab | 17.6bc | 28.6a | 17.0a | 2.7cd | 2.1d |
| *Caudatum* | 75.7e | 65.2b | 259.6d | 175.8d | 2.2ab | 15.9bcd | 20.5d | 8.0de | 2.9c | 2.6bc |
| *Kafir* | 61.7 | 65.0 | 195.0 | 163.3 | 1.7 | 11.3 | 23.5 | 6.8 | 2.9 | 2.7 |
| *Durra* | 87.7cd | 70.4ab | 354.7bc | 213.4bc | 1.6c | 10.0d | 14.4f | 7.2e | 3.3a | 3.2a |
| **Intermediate races** | *85.0b* | *68.6b* | *341.7b* | *213.4a* | *1.9a* | *15.1a* | *18.9a* | *9.3a* | *2.9b* | *2.7b* |
| *Guinea-bicolor* | 105.7b | 68.4ab | 368.7bc | 207.9bc | 1.3c | 18.7b | 25.5b | 15.8b | 3.0bc | 2.5bc |
| *Caudatum-bicolor* | 83.5cde | 68.9ab | 341.5c | 213.7bc | 2.1ab | 18.5b | 21.2cd | 9.4d | 2.7cd | 2.3cd |
| *Kafir-bicolor* | 56.0 | 66.0 | 185.0 | 140.0 | 2.0 | 4.6 | 26.7 | 8.5 | 3.5 | 2.9 |
| *Durra-bicolor* | 79.8de | 67.6ab | 334.8c | 218.8bc | 1.9b | 16.0bcd | 18.5e | 8.7d | 2.9c | 2.6bc |
| *Guinea-caudatum* | 109.9b | 72.7a | 352.6bc | 200.7c | 1.9b | 13.7cd | 22.9c | 12.1c | 2.7cd | 2.7b |
| *Guinea-durra* | 106.8b | 67.3ab | 386.8b | 221.7b | 1.4c | 14.3cd | 21.3cd | 12.1c | 3.3a | 3.1a |
| *Kafir-caudatum* | 54.0 | 53.0 | 265.0 | 245.0 | 1.0 | 34.5 | 21.5 | 4.8 | 3.5 | 2.6 |
| *Durra-caudatum* | 81.0de | 69.0ab | 341.4c | 207.9bc | 2.0ab | 13.0d | 17.0e | 8.6d | 2.9c | 2.8b |
| *Kafir-durra* | 91.3c | 69.4ab | 356.3bc | 213.1bc | 1.6c | 14.9bcd | 17.1e | 8.3de | 3.2ab | 2.6bc |
| **Country** |   |   |   |   |   |   |   |   |   |   |
| Afghanistan | 77.0 | 81.0 | 230.0 | 200.0 | 2.0 | 15.0 | 37.0 | 21.0 | 2.5 | 2.3 |
| Bangladesh | 93.0a | 68.4b | 262.0b | 183.0a | 2.2b | 16.4a | 23.2a | 10.8a | 2.6b | 2.2b |
| India | 91.3a | 70.2b | 362.6a | 214.8a | 1.8b | 12.9ab | 17.9b | 9.1a | 3.1a | 2.9a |
| Pakistan | 55.2b | 57.0c | 210.6b | 196.8a | 2.3b | 07.0b | 13.6b | 8.1a | 2.7ab | 2.3ab |
| Sri Lanka | 100.7a | 85.5a | 352.0a | 187.0a | 3.0a | 14.3ab | 16.2b | 10.0a | 2.5b | 1.9b |

\* *Kafir, Kafir-bicolor, Kafir-caudatum* and the country Afghanistan representing less than five accessions were not considered for analysis. Means were tested following the Newman-Keuls test. Means followed by the same letter are not significant at P=0.05.