**Development of trait specific germplasm set for seed yield and oil content (oil yield)**

A field trial comprising of 50 germplasm accessions and 4 checks (A-1, PBNS-12, NARI-NH-1, NARI-6) was sown at IIOR-ICRISAT Farm on 20.10.2015 with plot size of 3 rows of 6m (9 sq m). Variability was recorded for different traits in accessions in comparision to checks for morpho-agronomic traits, oil content and fatty acid profile.

|  |  |  |
| --- | --- | --- |
| **Characteristics** | **Accessions** | **Checks**  |
| **Mean** | **Range** | **Mean** | **Range** |
| Plant height (cm) | 71.3 | 56.6-93.4 | 78.7 | 61.8-96.2 |
| No. of branches | 16 | 10-29 | 18 | 15-21 |
| No. of effective capitula/plant | 48 | 18-134 | 51 | 41-59 |
| No. of seeds/primary capitula | 18 | 3-42 | 15 | 7-18 |
| Diameter of pri. capitula (mm) | 21.8 | 17.2-31.1 | 20.7 | 19.84-21.74 |
| 100-seed weight (g) | 3.8 | 2.2-5.6 | 4.4 | 3.05-5.42 |
| Seed yield (g/plant) | 13.3 | 3.4-36.7 | 22.8 | 13.0-29.9 |
| Oil content (%) | 27.5 | 22.3-33 | 27.9 | 24.3-30.4 |
| Hull content (%) | 50.2 | 42.4-60 | 49 | 44-54 |
| Oil yield (g/plant) | 3.7 | 0.76-11.26 | 6.26 | 4-7.35 |
| **Phenological traits** |  |  |  |  |
| Days to 50% flowering  | 74 | 66-90 | 78 | 73-83 |
| Days to maturity | 123 | 115-131 | 126 | 120-129 |
| **Fatty acid profile**  |  |  |  |  |
| Palmitic | 6.1 | 4.9-7.5 | 6.3 | 5.7-7.3 |
| Stearic | 2.2 | 1.6-3.0 | 2.1 | 1.9-2.1 |
| Oleic | 15.6 | 9.72-25.8 | 14.2 | 13.5-15.1 |
| Linoleic | 76.1 | 66.2-81.7 | 77.5 | 76.7-78.7 |

Twenty eight trait specific accessions for oil yield and other yield related traits were identified which will be evaluated in replicated trial during *rabi* 2016-17.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.**  | **Accession no.** | **Plant height (cm)** | **No. of branches** | **No. of effective capitula/plant** | **No. of seeds/primary capitula** | **Diameter of pri. capitula** | **100-seed weight (g)** | **Seed yield (g/plant)** | **Oil content (%)** | **Hull content (%)** | **Oil yield (g/plant)** | **Days to 50% flowering** | **Days to maturity** |
|  | GMU-5229 | 61.6 | 19.8 | 68.2 | 20.0 | 21.3 | 5.04 | 20.81 | 30.7 | 47.6 | 6.39 | 72 | 120 |
|  | GMU-5338 | 56.8 | 19.4 | 56.0 | 14.6 | 18.67 | 3.63 | 36.67 | 30.71 | 49.6 | 11.26 | 76 | 125 |
|  | GMU-5613 | 63.2 | 21.8 | 60.4 | 10.6 | 19.16 | 3.04 | 11.90 | 32.02 | 45.8 | 3.81 | 73 | 120 |
|  | GMU-5702 | 59.0 | 16.4 | 46.4 | 11.6 | 19.23 | 3.83 | 9.87 | 29.74 | 47.4 | 2.93 | 73 | 120 |
|  | GMU-5774 | 65.0 | 18.2 | 65.6 | 13 | 22.03 | 4.45 | 19.91 | 29.7 | 46.6 | 5.91 | 75 | 127 |
|  | GMU-5815 | 68.0 | 18.4 | 71.8 | 15.8 | 21.27 | 3.5 | 22.40 | 25.15 | 56.2 | 5.63 | 72 | 125 |
|  | GMU-5865 | 71.8 | 29.2 | 73.0 | 23.2 | 22.23 | 4.9 | 31.07 | 28.74 | 50.2 | 8.93 | 75 | 130 |
|  | GMU-5867 | 67.8 | 14.6 | 52.4 | 18.8 | 22.09 | 4.65 | 12.92 | 25.93 | 51.8 | 3.35 | 66 | 127 |
|  | GMU-1869-1 | 64.0 | 13.8 | 43.8 | 3.6 | 18.69 | 4.07 | 6.61 | 29.19 | 45.6 | 1.93 | 73 | 120 |
|  | GMU-2139 | 67.0 | 17.2 | 47 | 17.8 | 21.61 | 3.11 | 13.46 | 29.16 | 50 | 3.92 | 73 | 120 |
|  | GMU-7493 | 66.4 | 27.4 | 124 | 3.2 | 17.16 | 4.8 | 13.05 | 25.64 | 52.4 | 3.35 | 86 | 129 |
|  | EC-739480 | 59.2 | 26.2 | 134.4 | 15.8 | 19.13 | 3.24 | 25.75 | 29.25 | 45.8 | 7.53 | 73 | 130 |
|  | GMU-472-1 | 68.2 | 16.4 | 37.2 | 39 | 28.71 | 3.86 | 11.16 | 23.43 | 53.8 | 2.62 | 73 | 120 |
|  | GMU-696 | 67.2 | 18.2 | 57 | 24.8 | 23.7 | 3.84 | 18.26 | 29.22 | 57 | 5.34 | 73 | 120 |
|  | GMU-734 | 66.6 | 15.4 | 34.6 | 10.8 | 23.8 | 3.5 | 4.58 | 30.24 | 48.2 | 1.38 | 73 | 115 |
|  | GMU-1407 | 73.2 | 20.0 | 37.8 | 15.4 | 18.48 | 3.56 | 6.82 | 28.93 | 44.6 | 1.97 | 69 | 115 |
|  | GMU-1756 | 74.0 | 21.0 | 64.6 | 17.6 | 19.67 | 3.73 | 26.75 | 25.27 | 51.4 | 6.76 | 80 | 125 |
|  | GMU-1814 | 71.8 | 18.4 | 61.4 | 21.6 | 20.62 | 2.26 | 7.32 | 29.07 | 46.4 | 2.13 | 73 | 118 |
|  | GMU-1923 | 83.2 | 10.8 | 24 | 42.4 | 26.53 | 2.7 | 10.56 | 25.89 | 51.8 | 2.73 | 77 | 120 |
|  | GMU-3420 | 93.4 | 15.0 | 32 | 39.8 | 31.08 | 3.89 | 16.26 | 27.74 | 44.6 | 4.51 | 83 | 129 |
|  | GMU-3966 | 71.0 | 19.2 | 39.2 | 22.6 | 19.74 | 3.79 | 17.34 | 29.46 | 46 | 5.11 | 72 | 120 |
|  | GMU-4907 | 68.2 | 16.0 | 40.8 | 18.2 | 22.71 | 3.56 | 12.23 | 32.98 | 42.4 | 4.03 | 66 | 118 |
|  | GMU-5593 | 86.6 | 13.2 | 49.6 | 27.6 | 21.19 | 3.19 | 21.20 | 32.32 | 45 | 6.85 | 72 | 120 |
|  | GMU-6028 | 77.4 | 13.4 | 36.2 | 5.8 | 21.59 | 5.11 | 11.98 | 23.95 | 58.4 | 2.87 | 66 | 119 |
|  | GMU-7465 | 78.4 | 12.2 | 25.2 | 17.4 | 25.43 | 3.81 | 9.92 | 29.2 | 45.2 | 2.90 | 73 | 120 |
|  | GMU-7386 | 75.4 | 10.2 | 40 | 23.6 | 23.48 | 2.9 | 4.80 | 29.28 | 44.8 | 1.40 | 73 | 120 |
|  | GMU-7388 | 64.8 | 16.0 | 32.4 | 30.6 | 22.52 | 2.23 | 8.02 | 30.78 | 50 | 2.47 | 73 | 118 |
|  | GMU-7465 | 78.4 | 12.2 | 25.2 | 17.4 | 25.43 | 3.81 | 9.92 | 29.2 | 45.2 | 2.90 | 73 | 120 |
| CHECKS | A-1 | 73.0 | 15.0 | 52.4 | 17.4 | 21.74 | 5.42 | 29.87 | 24.32 | 54 | 7.26 | 77 | 127 |
| PBNS-12 | 61.8 | 15.6 | 51.8 | 7.2 | 19.84 | 5.21 | 24.12 | 26.75 | 50.8 | 6.45 | 73 | 129 |
| NARI-NH-1 | 83.8 | 20.2 | 59 | 18.4 | 21.36 | 3.05 | 24.31 | 30.24 | 44 | 7.35 | 77 | 127 |
| NARI-6 | 96.2 | 20.8 | 41 | 17.4 | 19.97 | 3.77 | 13.05 | 30.44 | 47.2 | 3.97 | 83 | 120 |