**Screening identified germplasm lines with drought tolerance under natural *kharif* condition (2nd year)**

Nine germplasm lines with known drought tolerance in previous experiments along with checks (48-1, DCH-519) were grown as rainfed crop during *kharif*, 2015 with three replications in RBD. Data on crop growth, TDM at harvest, seed yield of different spike orders were recorded. Crop duration was reduced and all genotypes matured by 128 days. Total rainfall received during the crop growth period was 298.8mm. The genotypes RG 82, RG 298 showed early vigor with >0.7 g/pl. dry weight followed by RG 1437 which is on par with checks (Table 1). Genotypes RG 298, RG 1826 and RG 1437 are dwarf with a height of up to 84 cm and with low node number. RG 89, EG 2797 grew >130 cm. Stem girth is more in RG 2797 and lowest in RG 1826.

Table 1. Data on early vigor, morphological characters of genotypes

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S.No. | Genotypes | **Early vigor (g/pl.)** | **Plant**  **Height (cm)** | **Primary node**  **no.** | **Secondary**  **branch no.** | **Secondary**  **node**  **no.** | **Tertiary.**  **branch no.** | **Tert. node**  **no.** | **stem girth**  **(mm)** |
| 1 | RG 82 | 0.76 | 129.8 | 15 | 3 | 6 | 4 | 6 | 27.9 |
| 2 | RG 89 | 0.56 | 164.3 | 15 | 3 | 9 | 4 | 7 | 24.1 |
| 3 | RG 111 | 0.58 | 111.9 | 16 | 3 | 6 | 4 | 5 | 25.6 |
| 4 | RG 298 | 0.74 | 61.4 | 12 | 3 | 5 | 4 | 5 | 23.7 |
| 5 | RG 1437 | 0.64 | 83.9 | 11 | 2 | 4 | 3 | 3 | 24.8 |
| 6 | RG 1494 | 0.35 | 111.3 | 13 | 2 | 5 | 3 | 5 | 26.6 |
| 7 | RG 1826 | 0.49 | 73.3 | 11 | 2 | 4 | 3 | 5 | 22.3 |
| 8 | RG 1941 | 0.55 | 96.0 | 13 | 3 | 7 | 3 | 6 | 26.0 |
| 9 | RG 2797 | 0.57 | 138.7 | 18 | 2 | 11 | 2 | 6 | 32.1 |
| 10 | 48-1 © | 0.69 | 111.9 | 15 | 2 | 6 | 4 | 5 | 26.3 |
| 11 | DCH-519© | 0.62 | 103.7 | 14 | 2 | 5 | 3 | 11 | 24.3 |
|  | **Mean** | **0.6** | **107.8** | **14** | **3** | **6** | **3** | **6** | **25.8** |
|  | **SEm(±)** | **0.05** | **5.65** | **0.45** | **0.24** | **0.67** | **0.41** | **1.21** | **0.91** |
|  | **CD(0.05)** | **0.1** | **16.7** | **1.3** | **0.7** | **2.0** | **1.2** | **3.6** | **2.7** |
|  | **CV(%)** | **13.4** | **9.1** | **5.6** | **16.2** | **18.7** | **21** | **35.3** | **6.1** |
|  |  |  |  |  |  |  |  |  |  |

Though there was tertiary branch production, spikes were produced only in RG 111, RG 298, RG 1437, RG 1494 and RG 1826. Stem girth is significantly higher in RG 2797. TDM at harvest is significantly higher inRG 1494, RG 2797 (Table 2).Stem weight is significantly higher and on

Table 2. Total dry matter (TDM), seed yield and harvest index (HI) of genotypes

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S.No.** | **Genotype** | **TDM at harvest (g/pl.)** | **Seed yield of different orders (g/pl.)** | | | **Total seed yield (g/pl.)** | **HI (%)** |
| **Primaries** | **Secondaries** | **Tertiaries** |
| 1 | RG 82 | 227.4 | 29.8 | 35.6 | 0.0 | 65.5 | 28.9 |
| 2 | RG 89 | 259.5 | 21.0 | 23.8 | 0.0 | 44.9 | 17.1 |
| 3 | RG 111 | 276.9 | 20.3 | 29.8 | 30.5 | 80.6 | 29.3 |
| 4 | RG 298 | 244.3 | 14.2 | 31.5 | 20.5 | 66.2 | 27.1 |
| 5 | RG 1437 | 285.8 | 28.9 | 48.5 | 33.3 | 110.8 | 38.7 |
| 6 | RG 1494 | 419.1 | 51.8 | 37.1 | 36.6 | 125.6 | 30.0 |
| 7 | RG 1826 | 203.8 | 25.1 | 30.6 | 23.7 | 79.4 | 39.0 |
| 8 | RG 1941 | 266.5 | 32.5 | 20.8 | 0.0 | 53.3 | 19.9 |
| 9 | RG 2797 | 417.0 | 48.0 | 44.4 | 0.0 | 92.4 | 22.2 |
| 10 | 48-1 | 226.3 | 32.5 | 31.4 | 0.0 | 63.9 | 28.2 |
| 11 | DCH-519 | 275.5 | 38.4 | 40.5 | 0.0 | 78.8 | 28.5 |
|  | **Mean** | **282** | **31.1** | **34.0** | **13.4** | **78.3** | **28.1** |
|  | **SEm(±)** | **12.67** | **2.14** | **3.52** | **1.98** | **5.51** | **1.42** |
|  | **CD(0.05)** | **37.3** | **6.3** | **10.4** | **5.8** | **16.3** | **4.2** |
|  | **CV(%)** | **7.8** | **11.9** | **17.9** | **26.1** | **12.2** | **8.7** |

par in RG 89, RG 1494, RG 2797. RG 1494 recorded significantly higher leaf weight also at harvest and is on par with RG 2797, RG 1941 (data not presented). RG 2797 and RG 1494 recorded significantly higher primary seed yield. Secondary seed yield was higher in RG 1437 which is on par with RG 2797, DCH-519.Tertiary seed yield of RG 1494 is higher followed by RG 1437, RG 111. RG 1494, RG 1437 recorded significantly higher total seed yield and were on par. Among other genotypes, RG 111, RG 1826 and RG 2797 recorded more seed yield than the check DCH-519. RG 1437, RG 1826 recorded high HI of 38.7, 39.0% respectively. Genotypes with high stem weight at harvest recorded low HI values which shows less partitioning efficiency of these genotypes i.e RG 89, RG 1941, RG 2797. Though stem weight, leaf weight at harvest is more in RG 1494, it has recorded high seed yield and HI of 30.0%.