**Online Resource 2**

See Table 9

**Table 9** Mean values for grain yield (grams) and yield attributing traits of F2 progenies and their parents evaluated under moisture stressed and non-stressed conditions across two locations in Zimbabwe

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genotype |  | PH (cm) | |  | DFW (days) | |  | DPM (days) | |  | DSF (days) | |  | NPPP | |
|  |  | DS | NS |  | DS | NS |  | DS | NS |  | DS | NS | DS | NS |
| *Parent* | | | | | | | | | | | | | | | |
| G1 |  | 65.00 | 62.25a-e |  | 75.25n | 77.75p |  | 103.50i | 110.00p |  | 28.25a-e | 32.25a |  | 21.00a-f | 27.75b-h |
| G2 |  | 63.00 | 81.50d-f |  | 60.75b-j | 65.25f-m |  | 95.50c-i | 100.00h-I |  | 34.75c-e | 34.75a-e |  | 14.25a-f | 11.00a |
| G3 |  | 54.20 | 66.00a-f |  | 56.50a-d | 57.75a-e |  | 85.75ab | 92.25a-e |  | 29.25a-e | 34.50a-d |  | 9.50a-d | 27.00a-h |
| G4 |  | 68.20 | 78.25c-f |  | 58.75a-g | 59.00a-g |  | 86.00ab | 93.75a-g |  | 27.25a-e | 34.75a-e |  | 11.50a-e | 2012a-f |
| G5 |  | 45.20 | 48.50ab |  | 66.00g-m | 64.75f-m |  | 90.25a-f | 100.25h-I |  | 24.25a | 35.50b-e |  | 7.50a-c | 18.25a-e |
| G6 |  | 50.00 | 82.75d-f |  | 70.75I-n | 75.00n-p |  | 103.00hi | 109.00n-p |  | 32.25a-e | 34.00a-d |  | 6.00a | 23.12a-h |
| G7 |  | 50.20 | 64.50a-f |  | 67.00i-m | 68.75j-n |  | 94.50b-g | 103.75k-o |  | 27.50a-e | 35.00a-e |  | 31.50d-f | 20.12a-f |
| G8 |  | 39.50 | 70.25b-f |  | 58.25a-f | 53.25ab |  | 84.25a | 89.50a |  | 26.00a-c | 36.25de |  | 15.00a-f | 22.38a-g |
| *F2 Progenies* | | | | | | | | | | | | | | | |
| G1 X G2 |  | 57.20 | 75.50b-f |  | 72.75m-n | 70.75I-o |  | 97.00e-i | 105.00I-p |  | 24.25a | 34.25a-d |  | 26.50a-f | 25.62a-h |
| G1 X G3 |  | 62.00 | 75.46b-f |  | 63.92d-I | 70.21k-o |  | 92.42a-g | 104.17k-o |  | 28.50a-e | 33.96a-d |  | 22.00a-f | 25.94a-h |
| G1 X G4 |  | 56.00 | 75.25b-f |  | 64.00d-I | 65.25g-m |  | 88.50a-e | 97.75e-j |  | 24.50a | 32.50ab |  | 15.75a-f | 20.50a-f |
| G1 X G5 |  | 66.70 | 81.50d-f |  | 66.50h-m | 68.00i-m |  | 97.00e-i | 103.50j-n |  | 30.50a-e | 35.50b-e |  | 37.00f | 32.62e-h |
| G1 X G6 |  | 67.70 | 77.50c-f |  | 68.00j-m | 75.25op |  | 101.00g-1 | 109.25op |  | 33.00a-e | 34.00a-d |  | 30.50c-f | 26.12a-h |
| G1 X G7 |  | 40.00 | 42.00a |  | 62.50c-k | 63.00e-j |  | 87.50a-d | 96.75d-i |  | 25.00ab | 33.75a-d |  | 6.50ab | 26.12a-h |
| G1 X G8 |  | 53.00 | 64.00a-f |  | 64.50e-I | 63.25e-j |  | 88.75a-e | 98.50f-k |  | 24.25a | 35.25a-e |  | 16.50a-f | 26.12a-h |
| G2 X G3 |  | 49.50 | 76.00b-f |  | 57.50a-e | 60.50c-h |  | 88.75a-e | 93.00a-f |  | 31.25a-e | 32.50ab |  | 18.00a-f | 37.88gh |
| G2 X G4 |  | 45.20 | 61.75a-e |  | 62.50c-k | 61.75d-i |  | 93.50b-g | 96.25b-i |  | 31.00a-e | 34.50a-d |  | 14.00a-f | 25.00a-h |
| G2 X G5 |  | 48.50 | 87.25ef |  | 66.50h-m | 71.25m-o |  | 98.50f-1 | 104.25k-o |  | 32.00a-e | 33.00a-c |  | 7.00ab | 15.62a-d |
| Mean |  | 54.3 | 70.00 |  | 62.67 | 64.33 |  | 92.33 | 98.78 |  | 29.68 | 34.48 |  | 18.80 | 24.45 |
| SED |  | 17.52 | 11.44 |  | 3.11 | 2.79 |  | 3.56 | 2.44 |  | 3.64 | 1.28 |  | 9.34 | 6.57 |
| LSD0.05 |  | ns | 22.68 |  | 6.17 | 5.52 |  | 7.05 | 4.83 |  | 7.22 | 2.53 |  | 18.52 | 13.02 |

**Table 8** continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genotype |  | PH (cm) | |  | DFW (days) | |  | DPM (days) | |  | DSF (days) | |  | NPPP | |
|  |  | DS | NS |  | DS | NS | DS | NS |  | DS | NS |  | DS | NS |
| *F2 Progenies* | | | | | | | | | | | | |  | | |
| G2 X G6 |  | 56.00 | 78.00c-f |  | 61.25b-j | 66.25h-m |  | 96.25d-i | 99.00g-k |  | 35.00c-e | 32.75a-c |  | 8.00a-c | 18.50a-e |
| G2 X G7 |  | 49.70 | 71.25b-f |  | 62.00c-k | 64.25e-I |  | 90.50a-f | 97.75e-j |  | 28.50a-e | 33.50a-d |  | 9.50a-d | 20.62a-f |
| G2 X G8 |  | 59.00 | 56.25a-d |  | 63.75d-I | 65.50g-m |  | 89.75a-e | 98.50f-k |  | 26.00a-c | 33.00a-c |  | 24.00a-f | 31.38d-h |
| G3 X G4 |  | 43.00 | 59.50a-e |  | 56.75a-d | 58.50a-f |  | 88.25a-e | 91.75a-d |  | 31.50a-e | 33.25a-d |  | 8.00a-c | 14.50a-c |
| G3 X G5 |  | 79.20 | 82.75d-f |  | 65.75f-m | 69.00j-o |  | 95.50c-i | 102.75j-m |  | 29.75a-e | 33.75a-d |  | 33.00ef | 28.50c-h |
| G3 X G6 |  | 51.20 | 60.17a-e |  | 61.92c-k | 61.50d-i |  | 92.33a-f | 95.08a-h |  | 30.67a-e | 34.08a-d |  | 10.50a-e | 19.83a-f |
| G3 X G7 |  | 49.20 | 56.25a-d |  | 62.25c-k | 64.75f-m |  | 92.75a-g | 100.50h-I |  | 30.50a-e | 35.75c-e |  | 36.00f | 30.00c-h |
| G3 X G8 |  | 50.50 | 53.00a-c |  | 55.00a-c | 52.75a |  | 86.75a-c | 90.50ab |  | 31.75a-e | 37.75e |  | 31.50d-f | 29.25c-h |
| G4 X G5 |  | 48.20 | 64.25a-f |  | 60.75b-j | 62.75e-j |  | 93.25b-g | 96.50c-i |  | 32.50a-e | 33.75a-d |  | 12.75a-e | 39.12h |
| G4 X G6 |  | 54.70 | 72.08b-f |  | 60.17a-i | 60.08c-h |  | 88.42a-e | 95.17a-h |  | 28.50a-e | 35.58b-e |  | 23.92a-f | 27.87b-h |
| G4 X G7 |  | 40.50 | 71.00b-f |  | 57.50a-e | 63.75e-k |  | 93.75b-g | 98.50f-k |  | 36.25e | 34.75a-e |  | 14.50a-f | 15.25a-d |
| G4 X G8 |  | 64.00 | 84.50d-f |  | 53.25a | 54.50a-c |  | 88.50a-e | 90.75a-c |  | 35.25d-e | 36.25de |  | 36.25f | 36.12f-h |
| G5 X G6 |  | 31.70 | 63.25a-f |  | 69.00k-n | 70.25k-o |  | 96.75e-i | 106.50m-p |  | 27.75a-e | 36.25de |  | 28.00a-f | 22.12a-g |
| G5 X G7 |  | 74.50 | 73.75b-f |  | 59.00a-h | 59.25b-g |  | 87.50a-d | 94.00a-g |  | 28.50a-e | 34.75a-e |  | 7.00ab | 23.00a-h |
| G5 X G8 |  | 50.70 | 84.25d-f |  | 66.00g-m | 67.50i-m |  | 95.00c-h | 101.50i-m |  | 29.00a-e | 34.00a-d |  | 7.75a-c | 11.62ab |
| G6 X G7 |  | 48.50 | 91.25f |  | 63.00d-k | 66.25h-m |  | 96.75e-i | 101.75i-m |  | 33.75b-e | 35.50b-e |  | 22.25a-f | 30.12c-h |
| G6 X G8 |  | 61.50 | 62.50a-e |  | 54.25ab | 55.50a-d |  | 86.75a-c | 91.00a-d |  | 32.50a-e | 35.50b-e |  | 29.50b-f | 24.88a-h |
| G7 X G8 |  | 62.70 | 66.25a-f |  | 62.50c-k | 62.75e-j |  | 89.50a-e | 97.75e-j |  | 27.00a-d | 35.00a-e |  | 24.00a-f | 26.25a-h |
| Mean |  | 54.30 | 70.00 |  | 62.67 | 64.33 |  | 92.33 | 98.78 |  | 29.68 | 34.48 |  | 18.80 | 24.45 |
| SED |  | 17.52 | 11.44 |  | 3.11 | 2.79 |  | 3.56 | 2.44 |  | 3.64 | 1.28 |  | 9.34 | 6.57 |
| LSD(5%) |  | ns | 22.68 |  | 6.17 | 5.52 |  | 7.05 | 4.83 |  | 7.22 | 2.53 |  | 18.52 | 13.02 |

**Table 8** continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genotype |  | NSP | |  | NSPP | |  | GYD (g) | |  | SW (g) | |  | % GYR |  | DTI |
|  |  | DS | NS |  | DS | NS |  | DS | NS |  | DS | NS |  |  |  |  |
| *Parent* | | | | | | | | | | | | | | |  | |
| G1 |  | 5.25ab | 5.75a-c |  | 54.50a-d | 66.30 |  | 1081.00a-h | 2160.00a-e |  | 18.50a-e | 28.00b-g |  | 49.94 |  | 0.25 |
| G2 |  | 5.00ab | 5.25ab |  | 54.75a-d | 36.00 |  | 1000.00a-e | 1958.00a-c |  | 16.25a-c | 33.75f-h |  | 48.90 |  | 0.24 |
| G3 |  | 7.00b-d | 7.50a-d |  | 48.00a-d | 74.50 |  | 1153.00b-j | 2010.00a-d |  | 15.75a-c | 25.50a-f |  | 42.62 |  | 0.31 |
| G4 |  | 6.00a-c | 7.25a-d |  | 40.00a-d | 50.00 |  | 1071.00a-g | 2051.00a-d |  | 26.50d-h | 41.00h |  | 47.79 |  | 0.26 |
| G5 |  | 5.50a-c | 6.00a-c |  | 17.75a | 30.80 |  | 958.00a-c | 1879.00a |  | 21.25a-g | 15.50ab |  | 49.02 |  | 0.23 |
| G6 |  | 6.00a-c | 5.50 |  | 49.50a-d | 62.50 |  | 1317.00h-k | 1965.00a-c |  | 24.00c-h | 22.75a-f |  | 32.98 |  | 0.42 |
| G7 |  | 6.75a-d | 7.25a-d |  | 81.75a-e | 71.00 |  | 1091.00a-i | 2218.00a-f |  | 15.50a-c | 21.00a-f |  | 50.82 |  | 0.25 |
| G8 |  | 6.25a-c | 6.50a-d |  | 57.75a-d | 42.30 |  | 1188.00c-j | 2362.00b-f |  | 28.00e-h | 30.25d-h |  | 49.71 |  | 0.28 |
| *F2 Progenies* | | | | | | | | | | | | | | | | |
| G1 X G2 |  | 6.25a-c | 5.50a-c |  | 108.75de | 48.30 |  | 979.00a-d | 2259.00a-f |  | 15.25a-c | 14.00a |  | 56.65 |  | 0.20 |
| G1 X G3 |  | 6.46a-c | 6.42a-d |  | 75.21a-e | 67.00 |  | 1040.00a-f | 2129.00a-e |  | 14.83a-c | 21.00a-f |  | 51.16 |  | 0.24 |
| G1 X G4 |  | 6.75a-d | 6.75a-d |  | 64.25a-d | 60.50 |  | 956.00a-c | 2116.00a-d |  | 15.50a-c | 17.25a-d |  | 54.79 |  | 0.20 |
| G1 X G5 |  | 7.25b-d | 7.25a-d |  | 83.50a-e | 83.50 |  | 1050.00a-f | 2206.00a-f |  | 17.75a-d | 22.50a-f |  | 52.39 |  | 0.24 |
| G1 X G6 |  | 6.00a-c | 6.25a-d |  | 87.00a-e | 66.80 |  | 1118.00a-i | 2189.00a-f |  | 13.50ab | 24.50a-f |  | 48.91 |  | 0.27 |
| G1 X G7 |  | 7.25b-d | 7.00a-d |  | 50.25a-d | 72.50 |  | 1086.00a-i | 1918.00a-c |  | 14.25a-c | 21.50a-f |  | 43.40 |  | 0.29 |
| G1 X G8 |  | 6.75a-d | 6.75a-d |  | 54.75a-d | 62.00 |  | 1243.00e-k | 2122.00a-e |  | 20.75a-g | 25.75a-f |  | 41.45 |  | 0.34 |
| G2 X G3 |  | 9.25d | 11.25e |  | 68.00a-d | 58.50 |  | 1300.00g-k | 2018.00a-d |  | 18.50a-e | 23.50a-f |  | 35.56 |  | 0.39 |
| G2 X G4 |  | 6.50a-c | 7.25a-d |  | 64.00a-d | 72.50 |  | 1241.00e-k | 2060.00a-d |  | 18.75a-e | 20.75a-f |  | 39.73 |  | 0.35 |
| G2 X G5 |  | 5.25ab | 5.50a-c |  | 36.75a-c | 33.00 |  | 893.00a | 1902.00ab |  | 16.25a-c | 21.75a-f |  | 53.04 |  | 0.20 |
| G2 X G6 |  | 7.25b-d | 9.00de |  | 49.00a-d | 53.80 |  | 896.00a | 1922.00a-c |  | 11.75a | 17.25a-d |  | 53.41 |  | 0.20 |
| G2 X G7 |  | 6.25a-c | 5.25ab |  | 48.00a-d | 51.00 |  | 1210.00d-k | 1932.00a-c |  | 19.00a-e | 19.25a-e |  | 37.37 |  | 0.36 |
| Mean |  | 6.41 | 6.79 |  | 59.90 | 60.00 |  | 1116.00 | 2125.00 |  | 21.64 | 23.98 |  | 47.32 |  |  |
| SED |  | 1.09 | 1.19 |  | 27.80 | 32.03 |  | 99.50 | 189.00 |  | 3.97 | 5.61 |  |  |  |  |
| LSD(5%) |  | 2.16 | 2.36 |  | 55.11 | ns |  | 197.30 | 374.70 |  | 7.87 | 11.13 |  |  |  |  |

**Table 8** continued

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Genotype |  | NSP | |  | NSPP | |  | GYD (g) | |  | SW (g) | |  | % GYR |  | DTI |
|  |  | DS | NS | DS | NS |  | DS | NS |  | DS | NS |  |  |  |  |
| *F2 Progenies* | | | | | | | | | | | | |  | |  |  |
| G2 X G8 |  | 7.00b-d | 6.75a-d |  | 61.25a-d | 77.00 |  | 1373.00j-k | 2240.00a-f |  | 23.50c-h | 23.50a-f |  | 38.71 |  | 0.40 |
| G3 X G4 |  | 6.00a-c | 7.00a-d |  | 37.00a-c | 47.00 |  | 1082.00a-h | 1982.00a-c |  | 22.25b-h | 21.50a-f |  | 45.42 |  | 0.28 |
| G3 X G5 |  | 8.00cd | 8.00b-d |  | 51.00a-d | 64.20 |  | 1024.00a-f | 2115.00a-d |  | 19.50a-f | 18.50a-d |  | 51.60 |  | 0.23 |
| G3 X G6 |  | 6.83a-d | 7.67a-d |  | 44.00a-d | 54.90 |  | 1092.00a-i | 2000.00a-d |  | 22.08b-h | 19.83a-e |  | 45.44 |  | 0.28 |
| G3 X G7 |  | 7.25b-d | 7.75a-d |  | 89.50b-e | 102.30 |  | 1117a-i | 2293.00a-f |  | 17.75a-d | 16.00ab |  | 51.29 |  | 0.26 |
| G3 X G8 |  | 5.75a-c | 6.25a-d |  | 42.50a-d | 55.00 |  | 1187.00c-j | 2375.00c-f |  | 28.75f-h | 41.50h |  | 50.04 |  | 0.28 |
| G4 X G5 |  | 6.50a-c | 6.50a-d |  | 56.25a-d | 60.00 |  | 1326.00i-k | 1930.00a-c |  | 19.50a-f | 17.50a-d |  | 31.29 |  | 0.43 |
| G4 X G6 |  | 7.08b-d | 8.25cd |  | 53.42a-d | 65.90 |  | 1170.00c-j | 2236.00a-f |  | 30.83h | 28.08b-g |  | 47.68 |  | 0.29 |
| G4 X G7 |  | 6.50a-c | 7.50a-d |  | 30.50a-c | 41.00 |  | 994.00a-d | 2062.00a-d |  | 29.25gh | 22.00a-f |  | 51.83 |  | 0.23 |
| G4 X G8 |  | 6.50a-c | 7.25a-d |  | 87.75b-e | 88.50 |  | 1256.00f-k | 2580.00ef |  | 48.25i | 40.25gh |  | 51.31 |  | 0.29 |
| G5 X G6 |  | 6.00a-c | 6.25a-d |  | 93.75c-e | 46.50 |  | 1104a-i | 2228.00a-f |  | 17.75a-d | 16.25a-c |  | 50.44 |  | 0.26 |
| G5 X G7 |  | 4.25a | 5.50a-c |  | 34.25a-c | 47.50 |  | 988.00a-d | 1912.00a-c |  | 26.75d-h | 30.00c-h |  | 48.34 |  | 0.24 |
| G5 X G8 |  | 5.00ab | 5.50a-c |  | 22.50ab | 14.00 |  | 924.00ab | 1892.00ab |  | 14.45a-c | 20.50a-f |  | 51.15 |  | 0.21 |
| G6 X G7 |  | 6.75a-d | 6.75a-d |  | 139.25e | 102.80 |  | 1162.00b-j | 2212.00a-f |  | 24.00c-h | 19.25a-e |  | 47.47 |  | 0.29 |
| G6 X G8 |  | 5.00ab | 5.00a |  | 61.50a-d | 60.30 |  | 1428.00k | 2616.00f |  | 50.25i | 32.75e-h |  | 45.43 |  | 0.37 |
| G7 X G8 |  | 7.50b-d | 7.50a-d |  | 57.50a-d | 72.00 |  | 1077.00a-h | 2462.00d-f |  | 22.50b-h | 26.00a-f |  | 56.26 |  | 0.22 |
| Mean |  | 6.41 | 6.79 |  | 59.90 | 60.00 |  | 1116.00 | 2125.00 |  | 21.64 | 23.98 |  | 47.32 |  |  |
| SED |  | 1.09 | 1.19 |  | 27.80 | 32.03 |  | 99.50 | 189.00 |  | 3.97 | 5.61 |  |  |  |  |
| LSD(5%) |  | 2.16 | 2.36 |  | 55.11 | ns |  | 197.30 | 374.70 |  | 7.87 | 11.13 |  |  |  |  |

See footnote in Table 1 for genotype codes. *PH* plant height, *DFW* days to flowering, *DPM* days to physiological maturity, *DSF* days to seed fill, *NPPP* number of pods per plant, *NSP* number of seeds per pod, *NSPP* number of seeds per plant, *GYD* grain yield, *SW* 100 seed weight, *DS* moisture stressed environments, *NS* non-moisture stressed environments, *GYR* percentage grain yield reduction, *DTI* drought tolerance index, *SED* standard error of differences, *LSD* least significant difference at 0.05, \* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Means in a column followed by the same letter(s) are not significantly different at *p* ≥ 0.05 under DS and NS conditions