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| **Supplemental Table 3.** Association analysis of important agronomic traits of 134 foxtail millet (*Setaria italica L*.) genotypes under normal and salt stress conditions based on the MLM model**.** \*\*Pvalue < 0.01 |
| **Normal conditions** | **Salt stress conditions** |
| **Trait** | **Marker** | **P** | **R2 (%)** | **Trait** | **Marker** | **P** | **R2 (%)** |
|  |  |  |  |  |  |  |  |
| **Seed germination percentage** | M4/E10-19 | 0.00001 | 14.24 | **Seed germination percentage** | M4/E10- 19 | 0.00002 | 13.04 |
| M14/E36-17 | 0.00002 | 13.46 | M14/E36-17 | 0.00004 | 12.47 |
| M14/E10-15 | 0.003 | 6.87 | M59/E10-17 | 0.002 | 7.30 |
| M3/E10-38 | 0.004 | 6.51 | M14/E10-15 | 0.003 | 6.82 |
| M59/E10-17 | 0.004 | 6.53 | M14/E11-14 | 0.004 | 6.35 |
| M14/E11-14 | 0.005 | 6.46 | M59/E10-15 | 0.005 | 6.21 |
| M59/E11-3 | 0.005 | 6.31 | M3/E10-38 | 0.006 | 5.92 |
| M14/E36-27 | 0.007 | 5.92 | M14/E36-27 | 0.007 | 5.68 |
| M59/E10-15  | 0.009 | 5.52 | M59/E36-4 | 0.009 | 5.41 |
|  |  |  |  |
| **Plant height**  | M4/E10- 9 | 0.00001 | 13.97 | **Plant height**  | M4/E10- 19 | 0.00001 | 14.10 |
| M14/E36-14 | 0.00002 | 13.60 | M14/E36-17 | 0.00002 | 13.32 |
| M14/E11-14 | 0.003 | 7.23 | M59/E10-17 | 0.002 | 7.24 |
| M59/E10-17 | 0.004 | 6.72 | M14/E11-14 | 0.003 | 7.02 |
| M59/E36-4 | 0.004 | 6.67 | M14/E10-15 | 0.004 | 6.63 |
| M59/E10-15 | 0.005 | 6.34 | M59/E36-4 | 0.005 | 6.39 |
| M14/E10-15 | 0.006 | 6.26 | M59/E10-15 | 0.005 | 6.30 |
| M3/E10-38 | 0.008 | 5.84 | M3/E10-38 | 0.006 | 6.03 |
|  |  |  |  | M14/E36-27 | 0.007 | 5.84 |
|  |  |  |  |  |  |  |  |
| **Number of leaves per plant** | M4/E10- 19 | 4.12 × 10-6 | 15.27 | **Number of leaves per plant** | M4/E10- 19 | 0.00001 | 15.28 |
| M14/E36-17 | 0.00006 | 11.93 | M14/E36-17 | 0.000006 | 11.93 |
| M59/E10-17 | 0.002 | 7.50 | M59/E10-17 | 0.002 | 7.50 |
| M14/E11-14 | 0.002 | 7.02 | M14/E11-14 | 0.002 | 7.03 |
| M59/E10-15 | 0.006 | 6.03 | M59/E10-15 | 0.006 | 6.04 |
| M3/E10-38 | 0.006 | 5.99 | M3/E10-38 | 0.006 | 6.00 |
| M59/E36-4 | 0.006 | 5.89 | M59/E36-4 | 0.006 | 5.89 |
| M14/E10-15 | 0.006 | 5.86 | M14/E10-15 | 0.006 | 5.87 |
| M14/E36-27 | 0.007 | 5.81 | M14/E36-27 | 0.007 | 5.81 |
| M59/E11-3  | 0.009 | 5.40 | M59/E11-3 | 0.009 | 5.40 |
|  |  |  |  |  |  |
| **Flag leaf length**  | M14/E36-17  | 0.00001 | 13.71 | **Flag leaf length**  | M14/E36-17 | 0.00005 | 13.03 |
| M14/E10-19 | 0.00008 | 11.83 | M4/E10-19 | 0.00008 | 12.37 |
| M59/E10-17 | 0.001 | 7.91 | M59/E10-17 | 0.0009 | 9.03 |
| M59/E36-4 | 0.001 | 7.91 | M59/E36-4 | 0.002 | 7.74 |
| M14/E10-15 | 0.004 | 6.51 | M14/E11-14 | 0.006 | 6.43 |
| M14/E11-14 | 0.004 | 6.41 | M59/E10-10 | 0.008 | 5.96 |
| M59/E10-10 | 0.008 | 5.64 | M14/E36-27 | 0.008 | 5.94 |
|  |  |  | M14/E10-15 | 0.009 | 5.82 |
|  |  |  |  |  |  |  |  |
| **Flag leaf width** | M3/E11- 13 | 0.002 | 8.98 | **Flag leaf width** | M3/E11-13 | 0.0007 | 10.57 |
| M59/E36-3 | 0.009 | 6.90 | M4/E10-5 | 0.009 | 6.43 |
|  |  |  |  |  |  |  |  |
| **Number of tillers** | M14/E36-9 | 0.004 | 7.14 | **Number of tillers** | M14/E36-9 | 0.002 | 7.56 |
| M4/E36-23 | 0.004 | 6.96 | M4/E36-23 | 0.003 | 7.19 |
| M14/E11-15 | 0.009 | 5.99 | M4/E10-23 | 0.006 | 6.27 |
|  |  |  |  |  |  |  |  |
|  **Panicle length** | M4/E10- 19 | 0.000008 | 15.38 | **Panicle length** | M4/E10- 19 | 9.46 × 10-6 | 15.54 |
| M14/E36-17 | 0.00002 | 13.93 | M14/E36-17 | 0.00005 | 13.34 |
| M14/E11-14 | 0.002 | 7.94 | M59/E10-15 | 0.003 | 7.30 |
| M3/E10-38 | 0.002 | 7.52 | M59/E10-17 | 0.004 | 7.19 |
| M59/E36-4 | 0.003 | 7.14 | M59/E36-4 | 0.005 | 6.77 |
| M59/E10-15 | 0.004 | 6.80 | M14/E11-14 | 0.005 | 6.66 |
| M59/E10-17 | 0.005 | 6.71 | M14/E10-15 | 0.009 | 5.84 |
| M14/E10-44 | 0.009 | 5.76 |  |  |  |
|  |  |  |  |  |  |
| **Seed yield** | M14/E36-14  | 0.0001 | 11.18 | **Seed yield** | M14/E36- 17 | 0.0004 | 9.82 |
| M4/E10-19 | 0.0003 | 9.90 | M4/E10-19 | 0.0005 | 9.51 |
| M59/E36-27 | 0.003 | 6.84 | M59/E36-25 | 0.002 | 7.25 |
| M59/E36-4 | 0.007 | 5.85 | M59/E36-4 | 0.006 | 6.06 |
|  |  |  | M59/E10-29 | 0.008 | 5.77 |
|  |  |  | M14/E11-25 | 0.009 | 5.60 |
|  |  |  |  |  |  |
| **Number of plant on the line** | M4/E10- 19 | 0.00001 | 14.18 | **Number of plant on the line** | M4/E10- 19 | 0.00002 | 14.18 |
| M14/E36-14 | 0.00005 | 12.87 | M14/E36-17 | 0.00006 | 12.68 |
| M14/E11-14 | 0.002 | 7.76 | M14/E11-14 | 0.002 | 7.52 |
| M59/E10-17 | 0.002 | 7.50 | M59/E10-17 | 0.003 | 7.37 |
| M14/E10-15 | 0.004 | 6.93 | M14/E10-15 | 0.003 | 7.08 |
| M59/E10-15 | 0.006 | 6.21 | M59/E36-4 | 0.006 | 6.34 |
| M59/E36-4 | 0.008 | 5.87 | M59/E10-15 | 0.006 | 6.32 |
|  |  |  |  |  |  |  |  |
| **Forage yield** | M14/E36-17  | 0.000009 | 14.37 | **Forage yield** | M14/E36- 17 | 0.00001 | 14.08 |
| M3/E10-38 | 0.00002 | 13.06 | M4/E10-19 | 0.00004 | 13.07 |
| M4/E10-19 | 0.00007 | 11.88 | M14/E11-14 | 0.0003 | 10.38 |
| M14/E11-14 | 0.00008 | 11.71 | M3/E10-38 | 0.004 | 6.82 |
| M59/E10-10 | 0.002 | 7.52 | M59/E10-10 | 0.005 | 6.38 |
| M59/E36-4 | 0.002 | 7.15 | M3/E10-3 | 0.009 | 5.72 |
| M59/E11-3 | 0.008 | 5.66 | M59/E36-4 | 0.009 | 5.62 |
| M14/E36-27 | 0.008 | 5.56 |  |  |  |
|  |  |  |  |  |  |  |  |
| **Main panicle seed weight** | M59/E10-3 | 0.002 | 9.14 | **Main panicle seed weight** | M59/E10-3 | 0.002 | 9.39 |
| M59/E36-25 | 0.005 | 8.10 | M59/E36-3 | 0.006 | 7.65 |
| M4/E11-3 | 0.005 | 8.04 |  |
|  |  |  |
| **1000-seed weight** | M14/E36-17  | 0.00004 | 12.28 | **1000-seed weight** | M14/E36-17  | 0.00001 | 12.72 |
| M4/E10-19 | 0.0001 | 10.64 | M4/E10-19 | 0.00004 | 12.21 |
| M59/E10-17 | 0.003 | 6.69 | M3/E10-38 | 0.002 | 6.72 |
| M14/E10-15 | 0.003 | 6.62 | M59/E10-17 | 0.002 | 6.66 |
| M59/E36-4 | 0.005 | 5.94 | M14/E11-14 | 0.004 | 6.21 |
| M14/E11-14 | 0.006 | 5.76 | M59/E10-10 | 0.006 | 5.55 |
| M3/E10-38 | 0.008 | 5.52 | M59/E36-4 | 0.007 | 5.49 |
|  | M59/E11-3 | 0.007 | 5.46 |
|  |  |  |
| **Harvest index** | M4/E10- 19 | 0.00002 | 13.95 | **Harvest index** | M4/E10-19  | 0.00002 | 14.11 |
| M14/E36-17 | 0.00004 | 12.92 | M14/E36-17 | 0.00005 | 12.81 |
| M14/E11-14 | 0.002 | 7.64 | M14/E11-14 | 0.002 | 7.44 |
| M59/E10-17 | 0.002 | 7.49 | M59/E10-17 | 0.003 | 7.39 |
| M14/E10-15 | 0.003 | 6.98 | M14/E10-15 | 0.004 | 6.93 |
| M59/E10-15 | 0.007 | 6.12 | M59/E36-4 | 0.006 | 6.32 |
| M59/E36-4 | 0.008 | 5.92 | M59/E10-15 | 0.006 | 6.19 |
|  |  |  |  |
|  |  |  |
|  |  |  |
| **Biological yield** | M4/E10- 19 | 0.00002 | 13.58 | **Biological yield** | M4/E10-19  | 0.00001 | 13.96 |
| M14/E36-17 | 0.00004 | 12.88 | M14/E36-17 | 0.00004 | 12.98 |
| M59/E10-17 | 0.002 | 7.50 | M59/E10-17 | 0.002 | 7.40 |
| M14/E11-14 | 0.002 | 7.39 | M14/E11-14 | 0.002 | 7.30 |
| M14/E10-15 | 0.003 | 7.04 | M14/E10-15 | 0.004 | 6.69 |
| M59/E36-4 | 0.007 | 5.99 | M59/E36-4 | 0.006 | 6.26 |
| M59/E10-15 | 0.007 | 5.96 | M59/E10-15 | 0.007 | 5.98 |
|  |  |  |  |