|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Days to 50% anthesis** | **Days to 50% silking** | **ASI** | **Plant Height** | **Ear Height** | **Ear Diameter** | **Ear Length** | **Kernels per row** | **Ear per Row** | **100 Seed weight** | **Grain Yield** |
| 𝜎2gca | 4.188\*\* | 3.252\*\* | 0.014\*\* | 1.695\*\* | 1.042\*\* | 0.098\*\* | 0.135\*\* | 0.024\*\* | 1.462\*\* | 2.519\*\* | 12.239\*\* |
| 𝜎2sca | 22.219\*\* | 18.165\*\* | 0.032\*\* | 16.519\*\* | 16.998\*\* | 5.487\*\* | 1.140\*\* | 1.336\*\* | 3.944\*\* | 14.032\*\* | 65.019\*\* |
| 𝜎2gca / 𝜎2sca | 0.188 | 0.179 | 0.438 | 0.103 | 0.061 | 0.018 | 0.118 | 0.018 | 0.371 | 0.180 | 0.188 |

**Supplementary Table 1- Estimates of GCA and SCA variance for grain yield and its component character in inbred lines.**

Note: \*\*\* = <0.01; \*\* = 0.01 to 0.05 and \* = <0.05

**Supplementary Table 2. Proportional contribution of lines, testers, and their interaction to total variance (%)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Days to 50% anthesis** | **Days to 50% silking** | **ASI** | **Plant Height** | **Ear Diameter** | **Ear Height** | **Ear Length** | **100 Seed weight** | **Kernels per row** | **Ear per Row** | **Grain Yield** |
| Lines | 11.72 | 11.61 | 31.44 | 53.79 | 12.77 | 39.94 | 45.36 | 57.71 | 56.8 | 21.32 | 46.12 |
| Tester | 19.21 | 15.31 | 32.51 | 4.13 | 7.11 | 12.92 | 28.68 | 14.07 | 10.46 | 3.73 | 3.56 |
| Line × Tester | 69.07 | 73.08 | 36.05 | 42.07 | 80.12 | 47.14 | 25.96 | 28.22 | 32.74 | 74.95 | 50.31 |

**Supplementary Table 3. Breeding efficiency for tester CML-286, LM-13 and LM-14**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Yield Group** | **Cross-type** | **SCA** | **HSGCA** | **HGCAMT** |
| 1 | Inter | 2 | 1 | 2 |
| 1 | Intra | 0 | 2 | 0 |
| 2 | Inter | 2 | 2 | 1 |
| 2 | Intra | 2 | 1 | 2 |
| 3 | Inter | 2 | 1 | 3 |
| 3 | Intra | 0 | 1 | 0 |
| Total Inter | | 6 | 4 | 6 |
| Total Intra | | 2 | 4 | 2 |
| Breeding Efficiency CML-286 | | 16.66% | 25% | 16.66% |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Yield Group** | **Cross-type** | **SCA** | **HSGCA** | **HGCAMT** |
| 1 | Inter | 2 | 0 | 2 |
| 1 | Intra | 2 | 3 | 0 |
| 2 | Inter | 0 | 1 | 1 |
| 2 | Intra | 2 | 2 | 2 |
| 3 | Inter | 2 | 0 | 1 |
| 3 | Intra | 0 | 2 | 2 |
| Total Inter | | 4 | 1 | 4 |
| Total Intra | | 4 | 7 | 4 |
| Breeding Efficiency LM-13 | | 25% | 14.28% | 50% |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Yield Group** | **Cross-type** | **SCA** | **HSGCA** | **HGCAMT** |
| 1 | Inter | 2 | 2 | 2 |
| 1 | Intra | 0 | 1 | 0 |
| 2 | Inter | 2 | 2 | 3 |
| 2 | Intra | 2 | 0 | 0 |
| 3 | Inter | 0 | 1 | 3 |
| 3 | Intra | 2 | 2 | 0 |
| Total Inter | | 4 | 5 | 8 |
| Total Intra | | 4 | 3 | 0 |
| Breeding Efficiency LM-14 | | 50% | 53.34% | 12.5% |