Diverse Components of Resistance to *Fusarium verticillioides* Infection and Fumonisin Contamination in Four Maize Recombinant Inbred Line Families

**Laura Morales, Charles T. Zila, Danilo E. Moreta Mejía, Melissa Montoya Arbelaez, Peter J. Balint-Kurti, James B. Hollandand Rebecca J. Nelson**

**Table 1.** Genotype-means correlations among kernel bulk density (BDENinoc), Fusarium ear rot (FER), fumonisin concentration (FUM), and the ratio of FUM to FER (FUM:FER) under *F. verticillioides* inoculation, and kernel bulk density (BDENuninoc) and cob density (CobDen), diameter (CobDiame), length (CobLen), mass (CobMass), and volume (CobVol) under uninoculated conditions within four maize RIL families.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Trait 1** | **Trait 2** | **B73 ×**  **CML333** | **B73 ×**  **CML52** | **B73 ×**  **CML69** | **B73 ×**  **NC358** |
| BDENuninoc | BDENinoc | 0.38\*\*\* | 0.42\*\*\* | 0.39\*\*\* | 0.37\*\*\* |
| BDENuninoc | FER | −0.09 | −0.32\*\*\* | −0.27\*\* | −0.09 |
| BDENuninoc | FUM | 0.10 | 0.003 | −0.11 | −0.03 |
| BDENuninoc | FUM:FER | 0.14ms | 0.23\*\* | 0.05 | 0.02 |
| CobDen | BDENinoc | −0.02 | 0.08 | 0.12 | −0.03 |
| CobDen | BDENuninoc | 0.19\*\* | 0.08 | 0.14ms | 0.04 |
| CobDen | FER | 0.06 | −0.26\*\* | −0.07 | −0.03 |
| CobDen | FUM | 0.05 | 0.01 | 0.05 | 0.09 |
| CobDen | FUM:FER | 0.01 | 0.16\* | 0.10 | 0.13ms |
| CobDiam | BDENinoc | −0.03 | −0.28\*\* | −0.14ms | −0.22\*\* |
| CobDiam | BDENuninoc | −0.22\*\* | −0.16\* | −0.24\*\* | −0.21\*\* |
| CobDiam | CobDen | −0.13ms | −0.16\* | −0.40\*\*\* | −0.06 |
| CobDiam | FER | 0.01 | 0.28\*\* | 0.16\* | 0.20\*\* |
| CobDiam | FUM | −0.01 | 0.08 | 0.03 | −0.11 |
| CobDiam | FUM:FER | −0.01 | −0.08 | −0.04 | −0.20\*\* |
| CobLen | BDENinoc | 0.19\* | 0.06 | −0.01 | −0.14ms |
| CobLen | BDENuninoc | 0.01 | 0.12 | −0.11 | −0.07 |
| CobLen | CobDen | −0.15ms | −0.18\* | 0.04 | −0.17\* |
| CobLen | CobDiam | 0.27\*\* | 0.27\*\* | 0.13ms | 0.02 |
| CobLen | FER | −0.06 | 0.05 | 0.03 | 0.10 |
| CobLen | FUM | −0.07 | 0.08 | −0.004 | 0.08 |
| CobLen | FUM:FER | −0.05 | 0.03 | −0.006 | 0.004 |
| CobMass | BDENinoc | 0.06 | −0.13ms | −0.07 | −0.30\*\* |
| CobMass | BDENuninoc | −0.01 | −0.05 | −0.17\* | −0.14ms |
| CobMass | CobDen | 0.38\*\*\* | 0.33\*\*\* | 0.23\*\* | 0.35\*\*\* |
| CobMass | CobDiam | 0.71\*\*\* | 0.69\*\*\* | 0.62\*\*\* | 0.72\*\*\* |
| CobMass | CobLen | 0.55\*\*\* | 0.53\*\*\* | 0.59\*\*\* | 0.38\*\*\* |
| CobMass | FER | 0.04 | 0.10 | 0.09 | 0.23\*\* |
| CobMass | FUM | −0.002 | 0.13ms | 0.03 | −0.01 |
| CobMass | FUM:FER | −0.04 | 0.07 | 0.004 | −0.13ms |
| CobVol | BDENinoc | 0.09 | −0.18\* | −0.15ms | −0.31\*\* |
| CobVol | BDENuninoc | −0.11 | −0.09 | −0.23\*\* | −0.17\* |
| CobVol | CobDen | −0.20\*\* | −0.30\*\*\* | −0.36\*\*\* | −0.19\* |
| CobVol | CobDiam | 0.82\*\*\* | 0.79\*\*\* | 0.82\*\*\* | 0.78\*\*\* |
| CobVol | CobLen | 0.68\*\*\* | 0.66\*\*\* | 0.54\*\*\* | 0.51\*\*\* |
| CobVol | CobMass | 0.82\*\*\* | 0.79\*\*\* | 0.82\*\*\* | 0.84\*\*\* |
| CobVol | FER | −0.003 | 0.25\*\* | 0.11 | 0.25\*\* |
| CobVol | FUM | −0.03 | 0.11 | 0.01 | −0.06 |
| CobVol | FUM:FER | −0.04 | −0.04 | −0.04 | −0.21\*\* |
| FER | BDENinoc | −0.53\*\*\* | −0.48\*\*\* | −0.53\*\*\* | −0.58\*\*\* |
| FUM | BDENinoc | −0.31\*\* | −0.18\* | −0.27\*\* | −0.25\*\* |
| FUM | FER | 0.28\*\*\* | 0.19\*\* | 0.21\*\* | 0.12 |
| FUM:FER | BDENinoc | 0.02 | 0.15\* | 0.06 | 0.15ms |
| FUM:FER | FER | −0.33\*\*\* | −0.46\*\*\* | −0.39\*\*\* | −0.46\*\*\* |
| FUM:FER | FUM | 0.80\*\*\* | 0.75\*\*\* | 0.81\*\*\* | 0.79\*\*\* |

Pearson correlation coefficients are reported in each cell, and significance is denoted as ms0.1 > *p* ≥ 0.05 (marginally significant); \*0.05 > *p* ≥ 0.01; \*\*0.01 > *p* ≥ 0.0001; \*\*\**p* < 0.0001.