# SUPPLEMENTARY MATERIALS

# Table S1. Results of permutational multivariate analysis of variance (perMANOVA) implemented on all varieties.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | DF | SumsOfSqs | MeanSqs | F.Model | R2 | Pr(>F) | . |
| Ethnic Grps | 2 | 0.234 | 0.1172 | 4.6816 | 0.016 | 0.001 | \*\*\* |
| Variety | 6 | 7.034 | 1.1723 | 46.8377 | 0.492 | 0.001 | \*\*\* |
| Ethnic Grps:Variety | 8 | 0.585 | 0.0731 | 2.9216 | 0.041 | 0.001 | \*\*\* |
| Residuals | 258 | 6.458 | 0.025 |  | 0.451 |  |  |
| Total | 274 | 14.311 |  |  | 1.000 |  |  |

# Table S2. Differences of dispersion (left side) and morphological differentiation (right side) for each named variety among the three ethnolinguistic groups.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Variety | F.Model | DF | P-value | . | F.Model | P-value | R2 |
| Gadam | 0.05 | 2 | 0.956 | | | 1.60 | 0.169 | NS |
| Kaguru | 5.09 | 2 | 0.009 | | | 1.10 | 0.406 | NS |
| Mbura imwe | 0.56 | 2 | 0.459 | | | 3.60 | 0.022 | 10.8 % |
| Mugeta | 0.38 | 2 | 0.544 | | | 6.50 | < 0.001 | 17.3 % |
| Muruge mbura ciiri | 7.46 | 2 | 0.015 | | | 2.02 | 0.123 | NS |
| Muruge mbura imwe | 4.53 | 2 | 0.043 | | | 0.34 | 0.827 | NS |
| Ngirigacha | 1.47 | 2 | 0.238 | | | 2.46 | 0.044 | 8.7 % |
| All Varieties | 1.10 | 2 | 0.330 | | | 4.70 | < 0.001 | 2 % |

# Figure S1. Evolution of the BIC as a function of the number of categories ranging from 1 to 100. The optimal number of categories selected is indicated by a red line.



# Figure S2. Contribution of morphological traits to the four DAPC axis



# Figure S3. Distribution of the modalities of seed colors across morphological categories.



# Figure S4. Distribution of the modalities of glume colors across morphological categories.



# Figure S5. Distribution of the modalities of panicle shapes across morphological categories.



# Figure S6. Distribution of farmers’ variety names across the seven morphological categories.

