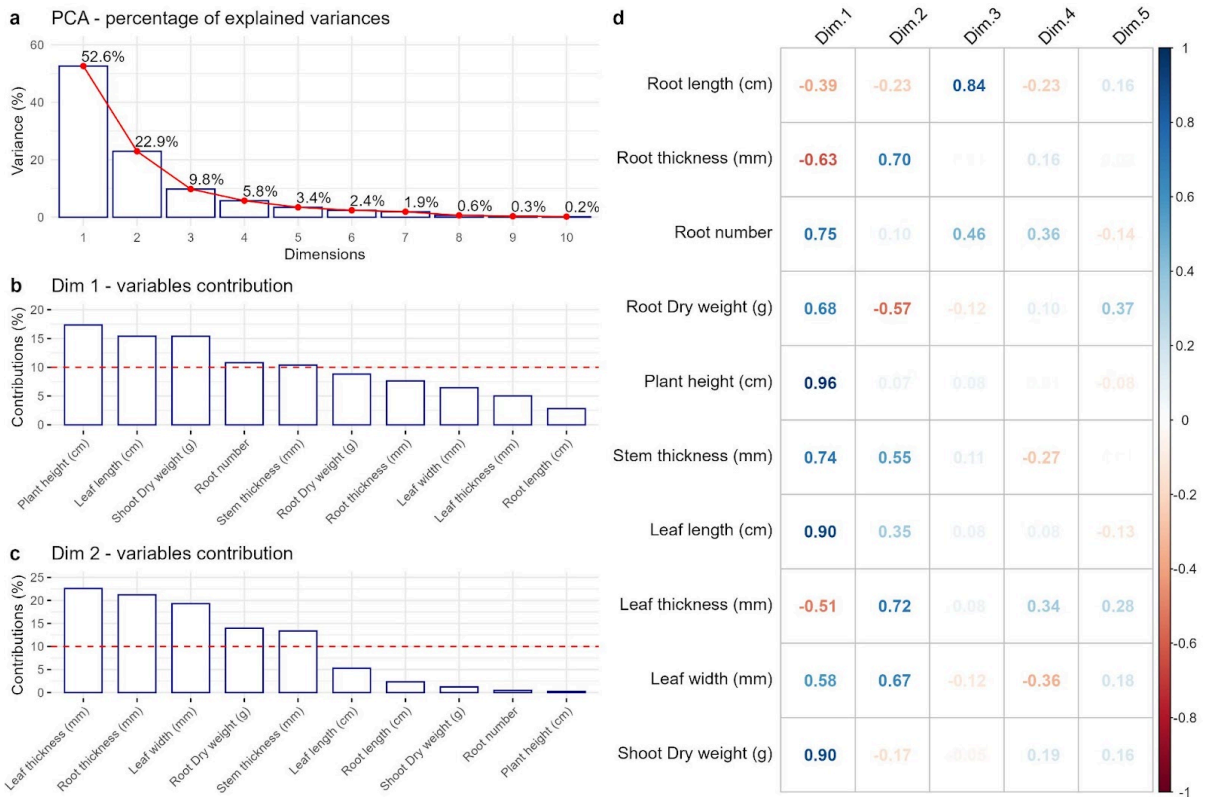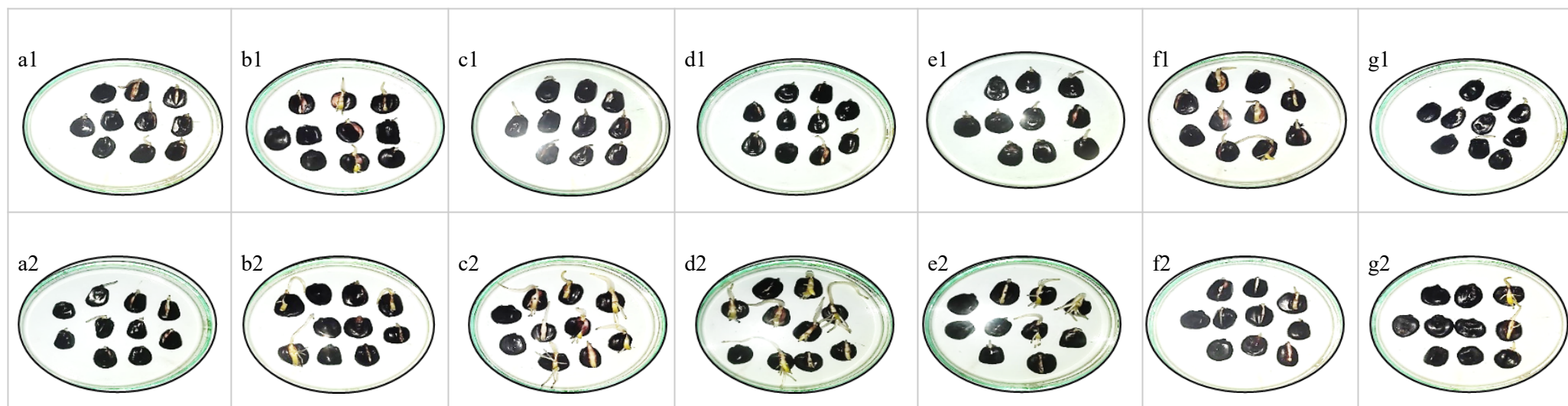**SUPPLEMENTARY MATERIAL**

Supplementary Figure 1. Principal component analysis (PCA) of the biometric traits of purple maize seedlings from two varieties, the creole and the hybrid PMV 581. Results of the contributions and correlation of the variables in the analysis: (a) percentage of variance explained by each dimension, (b) contribution of the studied variables to dimension 1, (c) contribution of the studied variables to dimension 2, (d) correlation between the studied variables and the dimensions that most contribute to the explanation of the variance.

Supplementary Figure 2. Evolution of seed germination for purple corn, variety Criollo, and hybrid PMV 581, after five days of being subjected to different treatments. Seeds of Criollo variety: (a1) Distilled water, (b1) Seaweed 1 L/200 L, (c1) Seaweed 1.5 L/200 L, (d1) Sulfur 100 g/200 L, (e1) Sulfur 150 g/200 L, (f1) Milk Whey 10% - 10 mL/90 mL, (g1) Milk whey 30% 30 mL/70 mL. Seeds of hybrid variety: (a2) Distilled water, (b2) Seaweed at1 L/200 L, (c2) Seaweed at 1.5 L/200 L, (d2) Sulfur at 100 g/200 L, (e2) Sulfur at 150 g/200 L, (f2) Milk whey 10% 10 mL/90 mL, (g2) Milk whey at 30% - 30 mL/70 mL. The seeds of the hybrid variety presented greater germination and greater root development.

Supplementary Figure 3. The purple maize seedlings of the creole variety and hybrid PMV 581 were observed at 15 days after germination. Visual monitoring of seedlings development was conducted, with a focus on roots, vigor, and size across different treatments. Seedlings of the creole variety: (a1) Distilled water, (b1) Seaweed at 1 L/200 L, (c1) Seaweed at 1.5 L/200 L, (d1) Sulfur at 100 g/200 L, (e1) Sulfur at 150 g/200 L, (f1) Milk whey at 10% - 10 mL/90 mL, (g1) Milk whey at 30% - 30 mL/70 mL. Seedlings of the hybrid variety: (a2) Distilled water, (b2) Seaweed at 1 L/200 L, (c2) Seaweed at 1.5 L/200 L, (d2) Sulfur at 100 g/200 L, (e2) Sulfur at 150 g/200 L, (f2) Milk whey at 10% - 10 mL/90 mL, (g2) Milk whey at 30% - 30 mL/70 mL.