

SUPPLEMENTARY DATA

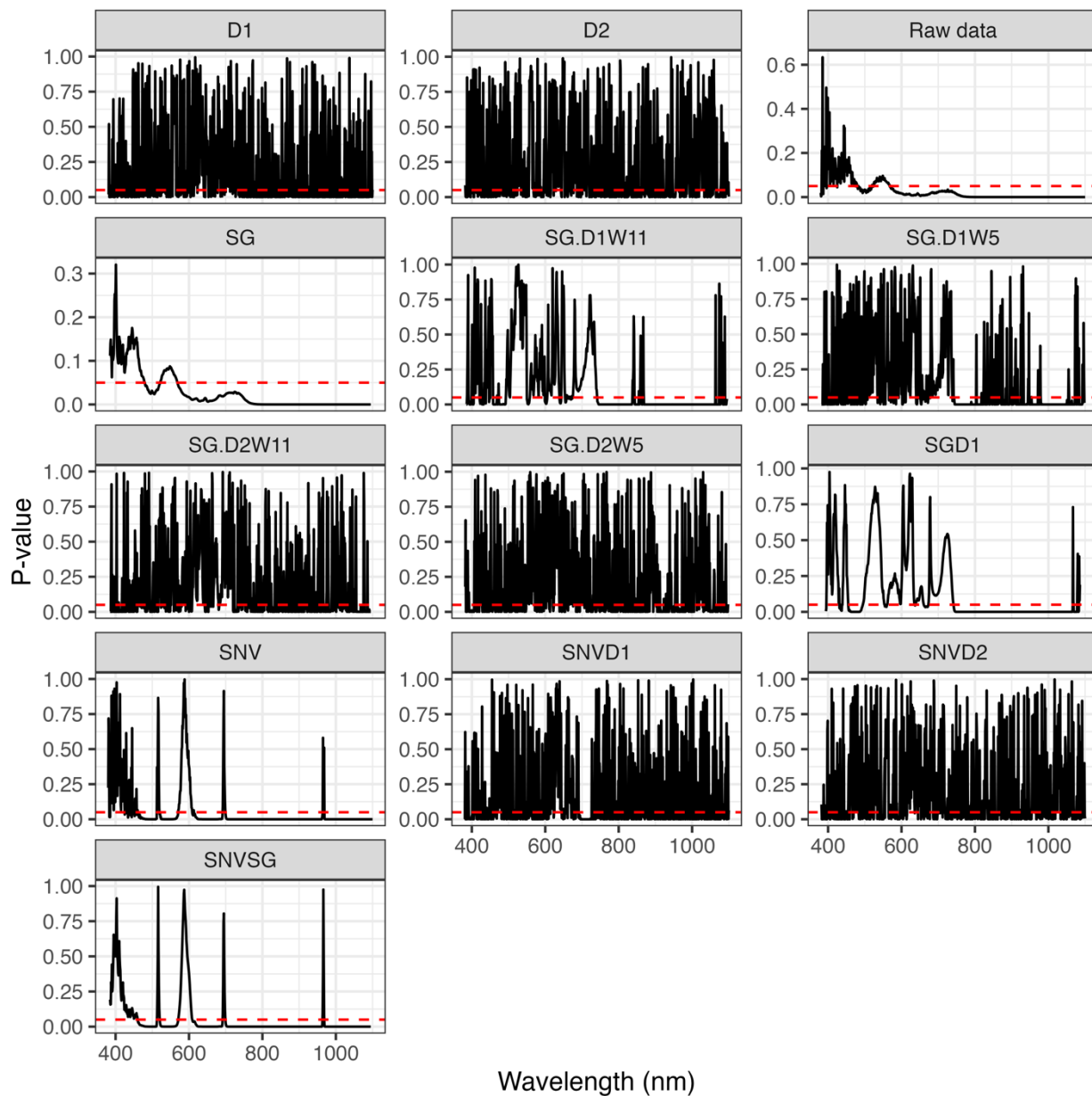


Figure S1. *p*-values obtained from one-way ANOVAs comparing spectral reflectance among different boron (B) treatments for each wavelength across the measured spectrum.

Each panel represents a different spectral data transformation method performed using the R waves package. The horizontal dashed line ($p = 0.05$) indicates the threshold for statistical significance. Wavelengths with *p*-values below this threshold (highlighted regions) were considered significantly influenced by B treatments and were selected for subsequent predictive modeling analyses.

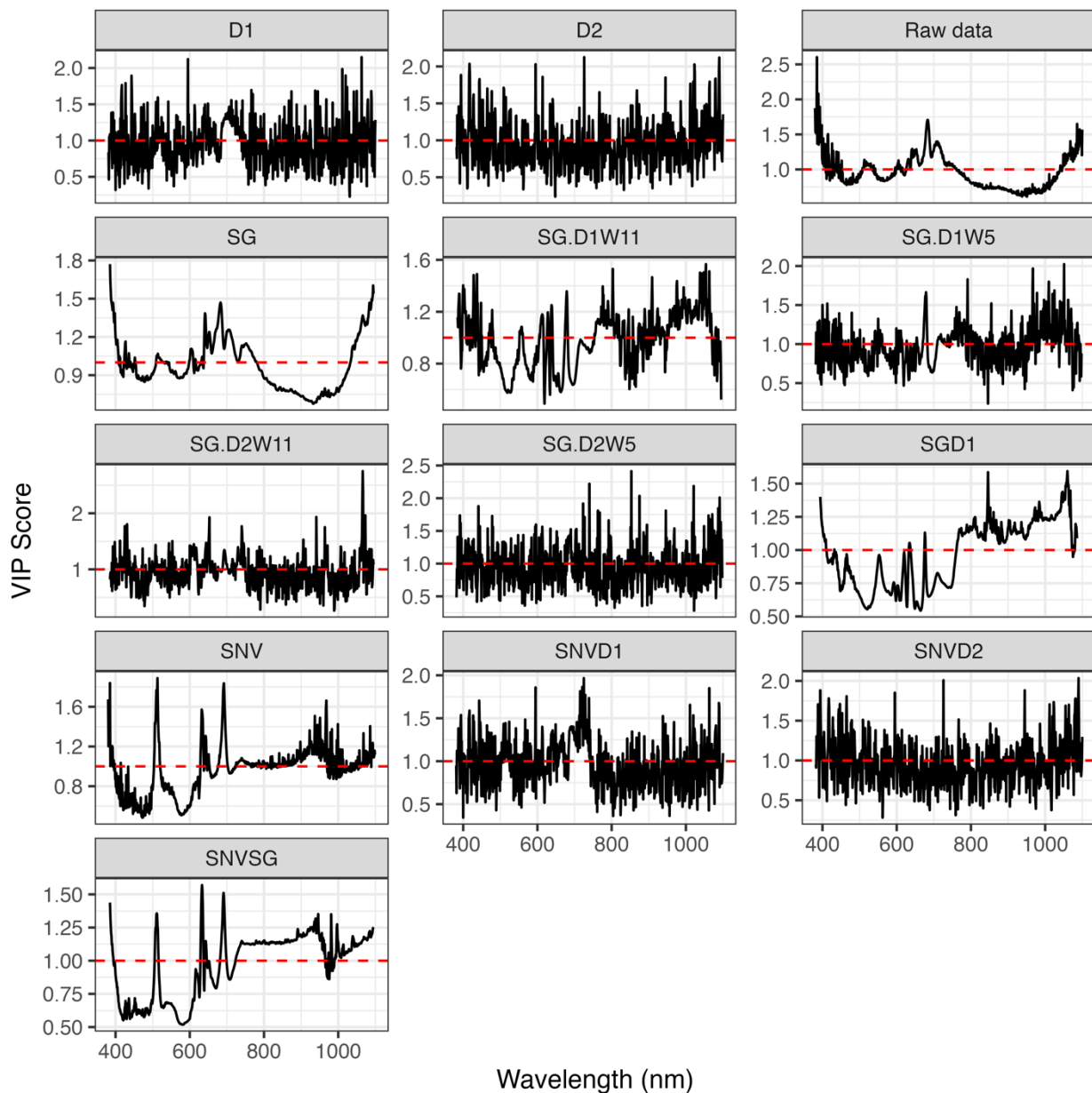


Figure S2. Variable importance projection (VIP) scores derived from a partial least squares regression (PLS-R) relating spectral reflectance to leaf boron (B) concentrations.

Each panel represents a different spectral data transformation method performed using the R waves package. VIP scores quantify the relative contribution of each wavelength to predicting B levels. The dashed horizontal line (VIP = 1) indicates the threshold for high predictive relevance; wavelengths exceeding this threshold significantly contribute to the model’s predictive power and were selected for further analysis.

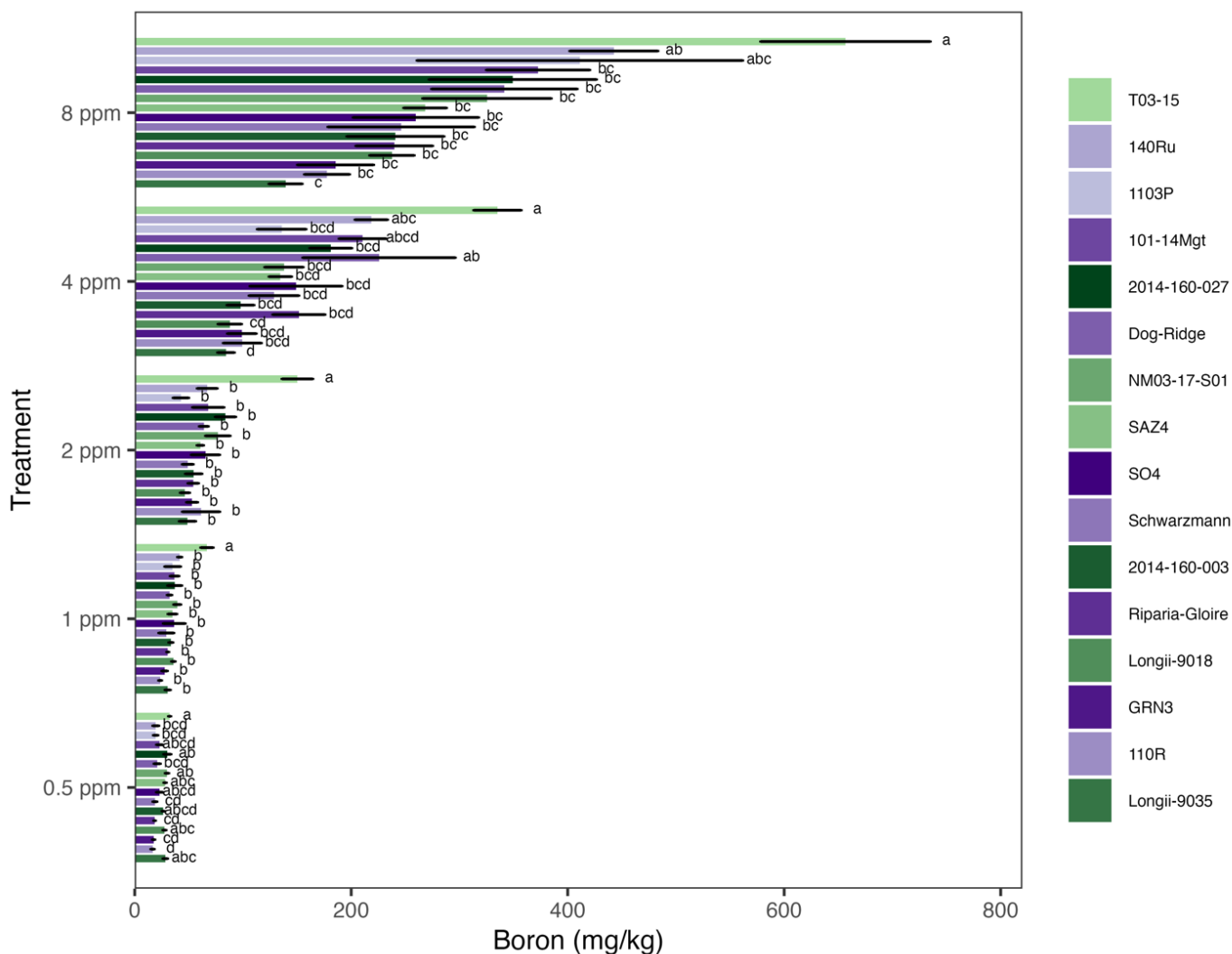


Figure S3. Leaf boron (B) content across genotypes.

Bars represent mean \pm standard error ($n = 6$). Different letters denote significant differences among genotypes within each B treatment (one-way ANOVA, $p < 0.05$). Green bars represent commercial rootstocks, while purple bars represent breeding materials.

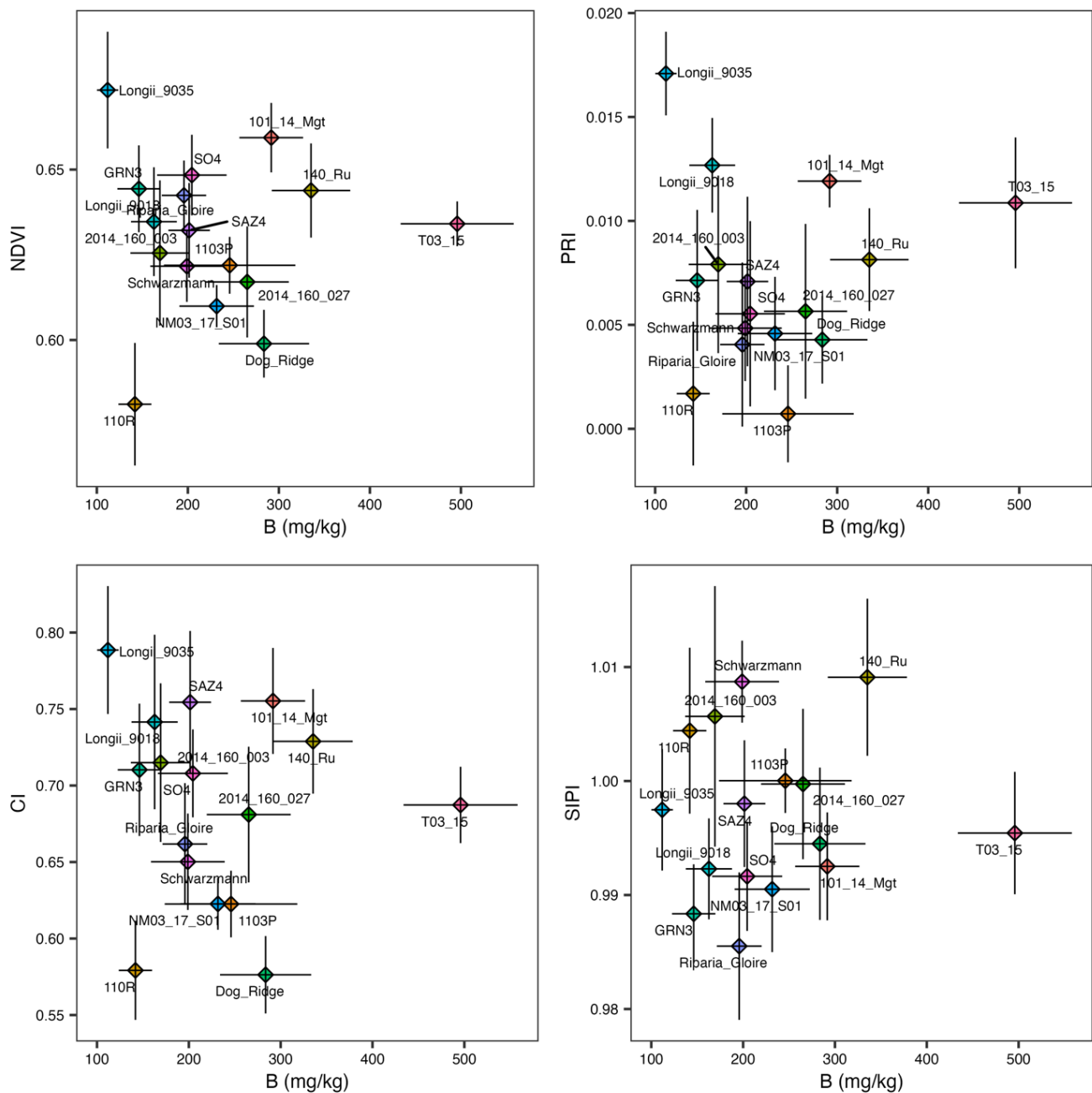


Figure S4. Leaf boron (B) content vs different vegetation indices derived from hyperspectral measurements.

(A) B vs Normalized Difference Vegetation Index (NDVI). (B) B vs Photochemical Reflectance Index (PRI). (C) B vs Structure Insensitive Pigment Index (SIPI). (D) B vs Chlorophyll Index (CI). Measurements were taken on June 5, 2024. Points represent the mean B and index values with corresponding standard errors. The 4 and 8 ppm treatments were used in this analysis.

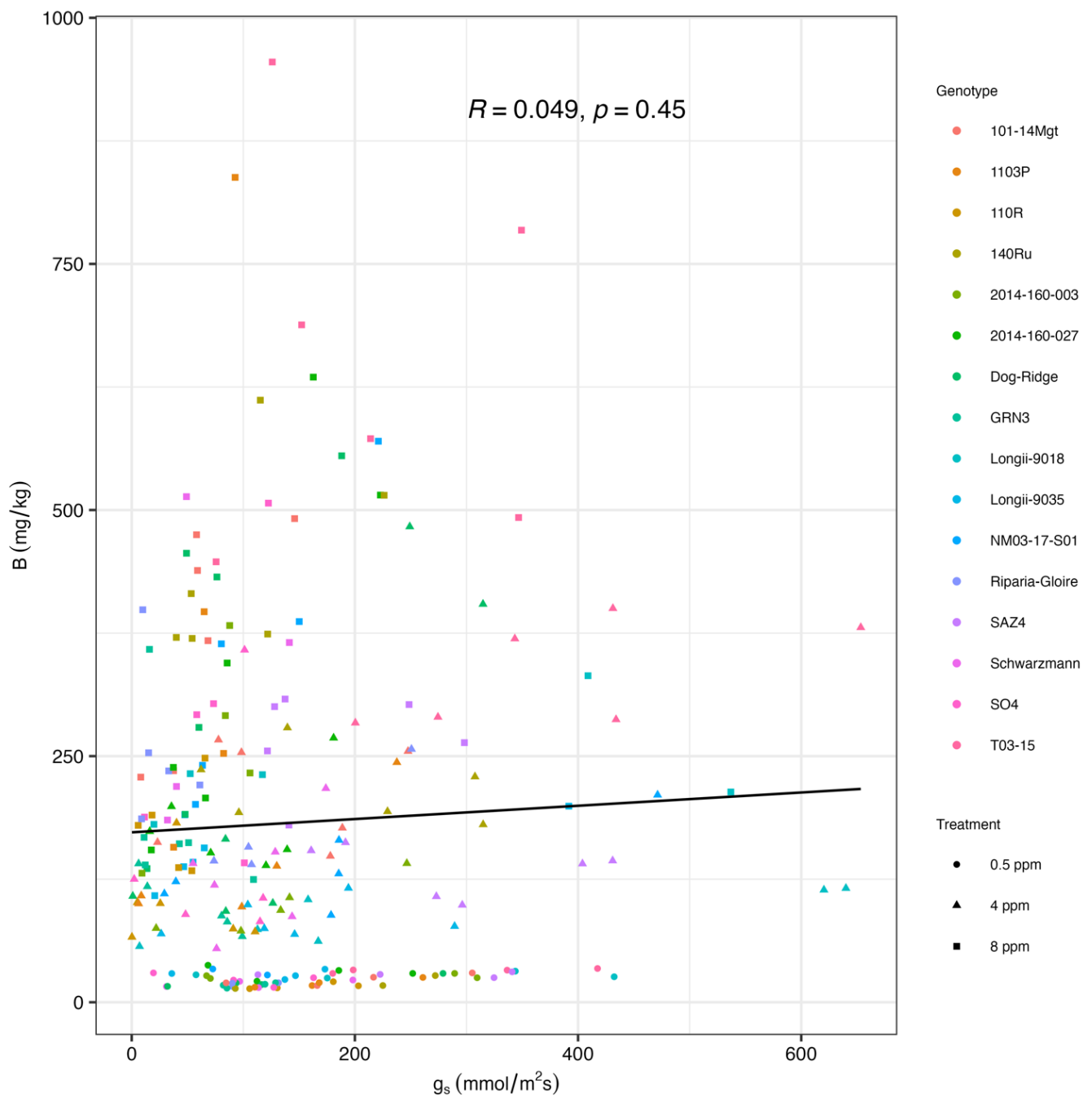


Figure S5. Scatter plot illustrating the relationship between leaf boron (B) concentration and stomatal conductance (g_s).

Colors indicating genotypes and shapes indicating treatments. A fitted linear regression line is shown to highlight the overall correlation between leaf B concentration and g_s .