Supplementary Figures for:

Hyperspectral remote sensing for phenotyping the physiological drought response of common and tepary bean

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Figure S1. Genotype-specific relative soil moisture content at 20, 40, 80, 120, and 140 cm depths across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S2. Genotype-specific drought response of stomatal conductance from 8, 10, 12, and 14 h across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S3. Genotype-specific drought response of leaf water potential from predawn (6 h) and midday (13 h) across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S4. Genotype-specific drought response of midday drone-based normalized difference vegetation index across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S5. Genotype-specific drought response of midday drone-based canopy temperature across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S6. Genotype-specific drought response of midday drone-based canopy volume across three field campaigns. Campaigns represent pre-drought baseline (First), and 2 and 4 weeks after terminal drought application (Second and Third, respectively).



Figure S7. Variable importance in projection (VIP) of each PLSR model across data source: tower-based (left column), Ground<sub>VISNIR</sub> (middle column), Ground<sub>Fullrange</sub> models (right column); and predicted parameter: stomatal conductance (top row), predawn leaf water potential (middle row), and midday leaf water potential (bottom row). Gray region shows the 400 to 900 nm range covered by the tower and constrained Ground<sub>VISNIR</sub> range.



Figure S8. Comparison of the tower and handheld instrument PLSR model variable importance in projection (VIP) from Fig 4 for (a) stomatal conductance, (b) predawn water potential, and (c) midday water potential. Each point represents matching wavebands between scales from Ground<sub>VISNIR</sub> and tower-based models.