

## Materials and Methods

### Plant Material and Growth Conditions

Ten accessions of *Teramnus labialis* (L.) Spreng. (Fabaceae) were obtained from the USDA germplasm collection (USDA/ARS Plant Genetic Resources Conservation Unit, Griffin, Georgia, USA).

Plants were grown in 5-liter black plastic pots filled with a 2:1 (vol:vol) mixture of synthetic soil (Metro-Mix 360; Scotts-Sierra Horticultural Products Co., Marysville, Ohio, USA) and vermiculite (Strong-Lite Medium Vermiculite, Sun Gro Horticulture Co, Seneca, Illinois, USA). Plants of each accession were grown in two pots, with plants thinned to three seedlings per pot, 4 d after emergence. Pots were randomly assigned positions in a greenhouse. An automated drip irrigation system was used to deliver nutrient solution to each pot, three times a day. Sufficient solution was delivered to ensure soil saturation; excess solution was allowed to drain from the pots. The nutrient solution contained the following concentrations of mineral salts: 1.0 mM KNO<sub>3</sub>, 0.4 mM Ca(NO<sub>3</sub>)<sub>2</sub>, 0.1 mM MgSO<sub>4</sub>, 0.15 mM KH<sub>2</sub>PO<sub>4</sub>, 25 μM CaCl<sub>2</sub>, 25 μM H<sub>3</sub>BO<sub>3</sub>, 2 μM MnSO<sub>4</sub>, 2 μM ZnSO<sub>4</sub>, 0.5 μM CuSO<sub>4</sub>, 0.5 μM H<sub>2</sub>MoO<sub>4</sub>, 0.1 μM NiSO<sub>4</sub>, and 1 μM Fe(III)-N, *N'*-ethylenebis[2-(2-hydroxyphenyl)-glycine] (Sprint 138; Becker-Underwood, Inc., Ames, Iowa, USA).

The environmental conditions within the greenhouse were a temperature regime of 22 ± 3 °C day and 20 ± 3 °C night, with relative humidity ranging from 45% to 65% throughout the day/night cycle. Sunlight was supplemented with metal halide lamps set to a 15-h day, 9-h night photoperiod (lights on at 700 h), and a minimum intensity (i.e., lamps only) of photosynthetically active radiation of 200 μmol photons m<sup>-2</sup> s<sup>-1</sup> at the top of the plants.

### Seed Harvest and Tissue Analysis

Plants were maintained for up to 15 months, in order to reach reproductive stage and adequate pod production for seed collection. Seeds were harvested as mature pods, combining material from all six plants of each accession. Seeds were removed from pods, extraneous material was removed, and seeds were dried for a minimum of three days in a 60 °C, forced-air drying oven. Average seed weights were calculated by averaging the weight of three sets of 100 random seeds for each accession.

For seed mineral analysis, a minimum of 3 grams of dried seeds for each accession was homogenized. Three aliquots (0.25 g each) of each accession were digested at 125 °C (3 h) and 200 °C (digestate taken to dryness) using trace-metal grade hydrogen peroxide and nitric acid. Digestates were resuspended in 2% ultra-pure nitric acid and analyzed for Ca, Mg, K, P, Fe, Zn, Mn, Cu, and Na concentrations. Elemental analysis was performed using inductively coupled plasma—optical emission spectrometry (CIROS ICP Model FCE12; Spectro, Kleve, Germany). Certified rice flour standards (SRM 1568A; National Institute of Standards and Technology, Gaithersburg, MD, USA) were digested and analyzed along with samples to verify the reliability of the procedures and analytical measurements.