

**Data Dictionary for:** Location by bean variety interactions on seed elemental concentrations

**Available at:** <https://datashare.iastate.edu>

**File name:**

Location\_beanvariety\_interaction\_grain\_elemental\_concentrations\_cropsoildata.csv

**Corresponding author:** Andrew Lenssen ([alenssen@iastate.edu](mailto:alenssen@iastate.edu))

## REFERENCES

These data support the following publications:

Bulyaba, R. "Limestone application on a Ferralsol soil and genotype by environment effects on yield and grain nutrient composition in common bean" (2019). *Iowa State University, Graduate Theses and Dissertations*. <https://lib.dr.iastate.edu/etd/17651>

Bulyaba, R., D.M. Winham, A.W. Lenssen, K.J. Moore, J.D. Kelly, M.A. Brick, E.M. Wright, and J.B. Ogg. 2020. Genotype by Location Effects on Yield and Seed Nutrient Composition of Common Bean. *Agronomy* 10(3), 347; <https://doi.org/10.3390/agronomy10030347>

## DESCRIPTION

Four common bean varieties were produced in two years at four locations, Colorado (USA), Iowa (USA), and Michigan (USA), and Masaka (Uganda). Using the databases, we report common bean stand density, grain yield, and seed weight; seed concentrations of phosphorus, potassium, magnesium, sodium, zinc, aluminum, iron, sulfur, manganese, nitrogen, and crude protein; and soil pH, organic matter, and extractable phosphorus, potassium, sodium, magnesium, manganese, iron, aluminum, zinc, nitrogen, sulfate-sulfur, calcium, copper, and boron.

Usage of this dataset has no copyright or propriety restrictions other than citation of the appropriate manuscript(s) and data.

## FUNDING

United States Agency for International Development (USAID), as part of Feed the Future, the U.S. Government's global hunger and food security initiative, under the terms of Cooperative Agreement No. EDH-A-00-07-00005.

USAID Feed the Future Legume Innovation Laboratory for Collaborative Research on Grain Legumes – project on 'Farmer Decision Making Strategies for Improved Soil Fertility Management in Maize-Bean Production Systems' (SO2.1) and Legume Scholars Program.

## TIMELINE

Creation/Collection – November 2017

Last Update – 11 Dec 2019

Temporal Start – 1 November 2017

Temporal End – 1 September 2018

Embargo Request – six months

## KEYWORDS

Common bean; *Phaseolus vulgaris*; bean varieties; grain legume yield; soil extractable elemental concentrations; seed elemental concentrations

## CODEBOOK

The data table contains 33 columns and 97 rows of information.

Name	Label	Type
e01	Location	Discrete
e02	Replicate	Discrete
e03	Common bean ( <i>Phaseolus vulgaris</i> ) variety	Discrete
e04	Year planted	Discrete
e05	Stand density (at harvest, no./m <sup>2</sup> )	Continuous
e06	Grain yield (kg/ha <sup>1</sup> )	Continuous
e07	Seed weight (mg/seed)	Continuous
e08	Soil pH	Continuous
e09	Soil organic matter (%)	Continuous
e10	Soil P (phosphorus, Mehlich-3 extraction, ppm)	Continuous
e11	Soil K (potassium, Mehlich-3 extraction, ppm)	Continuous
e12	Soil Na (sodium, Mehlich-3 extraction, ppm)	Continuous
e13	Soil Mg (magnesium, Mehlich-3 extraction, ppm)	Continuous
e14	Soil Mn (manganese, Mehlich-3 extraction, ppm)	Continuous
e15	Soil Fe (iron, Mehlich-3 extraction, ppm)	Continuous
e16	Soil Al (aluminum, Mehlich-3 extraction, ppm)	Continuous
e17	Soil Zn (zinc, Mehlich-3 extraction, ppm)	Continuous
e18	Soil total N (nitrogen, Mehlich-3 extraction, ppm)	Continuous
e19	Soil sulfate-S (sulfate-sulfur,	Continuous
e20	Soil Ca (calcium, Mehlich-3 extraction, ppm)	Continuous
e21	Soil Cu (copper, Mehlich-3 extraction, ppm)	Continuous
e22	Soil B (boron, Mehlich-3 extraction, ppm)	Continuous
e23	Grain P (phosphorus, ppm)	Continuous
e24	Grain K (potassium, ppm)	Continuous
e25	Grain Mg (magnesium, ppm)	Continuous
e26	Grain Na (sodium, ppm)	Continuous
e27	Grain Zn (zinc, ppm)	Continuous
e28	Grain Al (aluminum, ppm)	Continuous
e29	Grain Fe (iron, ppm)	Continuous
e30	Grain S (sulfur, ppm)	Continuous
e31	Grain Mn (manganese, ppm)	Continuous
e32	Grain total N (total nitrogen, ppm)	Continuous
e33	Grain CP (crude protein, %)	Continuous