Data Dictionary for: Uganda Nutrient Omission Study

This data dictionary refers to the files:

- NOS number of leaves per plant data.csv
- NOS aboveground biomass.csv
- NOS deficiency symptoms.csv

These data can obtained from: http://dx.doi.org/10.25380/iastate.8214428

These data support a published article in African Crop Science Journal.

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ABOUT

A nutrient omission study was conducted on the three primary soils used for common bean in Masaka District, Uganda. The data were compiled to test whether omission of N, P, K, Ca, Mg, Fe, Zn, would result in decreased plant growth, biomass accumulation, or produce deficiency symptoms on black, red, and black-stony soils from Masaka, Uganda. Using the database, we report how N and P omission influenced plant growth, aboveground biomass accumulation, and leaf deficiency symptoms of common bean on three soils. Usage of this dataset has no copyright or propriety restrictions other than citation of the appropriate manuscript.

FUNDING

TIMELINE

Creation/Collection – August 2014
Last Update – 11 Dec 2017
Temporal Start – 1 July 2014
Temporal End – 30 June 2015

REFERENCES

http://www.bioline.org.br/pdf?cs18038

KEYWORDS

Common bean; Phaseolus vulgaris; bean leaf number; nutrient deficiency symptoms; nutrient omission;

NOS number of leaves per plant data.csv

The data table contains 5 columns and 199 rows of information.

Name	Label	Type
c01	Phase	Continuous
c02	Replication	Continuous
c03	Soil type	Discrete
c04	Treatment, see separate table for definitions	Continuous
c05	Number of leaves	Discrete

NOS aboveground biomass.csv

The data table contains 5 columns and 199 rows of information.

Name	Label	Type
c01	Phase	Continuous
c02	Replication	Continuous
c03	Soil type	Discrete
c04	Treatment, see separate table for definitions	Continuous
d01	Above ground biomass (g/plant)	Discrete

NOS deficiency symptoms.csv

The data table contains 6 columns and 10 rows of information.

Name	Label	Type
c03	Soil Type	Discrete
e01	Treatment, see separate table for definitions	Discrete
e02	Visual nutrient deficiency symptoms	Discrete
e03	Number of plants with visual nutrient deficiency symptoms	Discrete
e04	Overall number of plants	Discrete
e05	Percent of plants with visual nutrient deficiency symptoms	Discrete

Treatments under e01 defined as:

Treatment	Treatment name	Nutrients added
1	Control[1]	no nutrients added
2	All nutrients added	N, P, K, Mg, Ca, S, Micronutrients[2]
3	All nutrients + Rhizobium	N, P, K, Mg, Ca, S, Micronutrients[2] + Rhizobia
4	- N + Rhizobium	P, K, Mg, Ca, S, Micronutrients[2] + Rhizobia
5	– N	P, K, Mg, Ca, S, Micronutrients[2]
6	– P	N, K, Mg, Ca, S, Micronutrients[2]
7	– K	N, P, Mg, Ca, S, Micronutrients[2]
8	– Mg	N, P, K, Ca, S, Micronutrients[2]
9	– S	N, P, K, Mg, Ca, Micronutrients[2]

| 10 | – Ca | N, P, K, Mg, S, Micronutrients[2] |
| 11 | – Micronutrients | N, P, K, Mg, Ca, S |

Nutrient concentration rates for e01. [2] from table above defining treatments.

Element	Application rate (kg ha^{-1})	Compound
N	100	Urea
P	100	$NaH_2PO_4.2H_2O$
K	100	KCl
Mg	35	$MgCl_2.6H_2O$
Ca	30	$CaCl_2$
S	25	Na_2SO_4
Fe	5	FeNaEDTA
B	2	H_3BO_3
Mn	5	$MnCl_2.4H_2O$
Zn	4	$ZnCl_2$
Mo	3	$[NH_4]_6Mo_7O_{24}.4H_2O$
Cu	0.4	$CuCl_2.2H_2O$
Co	0.1	$CoCl_2.6H_2O$
Ni	0.1	$NiCl_2.6H_2O$

The data included in columns were used in one journal publication

Example	Source Type	Description
Kyomuhendo et al. 2018	A published journal article	Kyomuhendo, P, MM Tenywa, O Semalulu, AW Lenssen, RS Yost, RE Mazur, S Kyebogola, LH Goettsch. 2018. Limiting nutrients for bean production on contrasting soil types of Lake Victoria Crescent of Uganda. African Crop Science Journal, Vol. 26(4), pp. 543-54. Doi: https://dx.doi.org/10.4314/acsj.v26i4.8