

## Poultry manure as carrier for *Bacillus subtilis*: Effect on maize (*Zea mays*) growth and yield

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Maize (*Zea mays*) is one of the prominent grain crops grown in sub Saharan African countries. In order to facilitate good maize production, correct application of production materials that will sustain good environment as well as agricultural production must be embraced. Effect of biofertilizer addition on growth and yield of maize was examined using poultry manure (PM) as the carrier for *Bacillus subtilis* (biofertilizer). Two greenhouse repeat experiments were carried out in North-West University, South Africa to study growth and yield of maize as a result of biofertilization. Completely Randomized Design was adopted and it comprised five treatments of PM and soil at 5:95 (V:V) proportions inoculated with *Bacillus subtilis* at 0, 10<sup>2</sup>, 10<sup>4</sup>, 10<sup>6</sup> and 10<sup>8</sup> colony forming units (CFU) g<sup>-1</sup>soil where 0 was control I. Control II treatment had only *Bacillus subtilis* (was without poultry manure). Soil Physico-chemical, biochemical and microbiological properties were determined. Parameters measured were: plant height at maturity (cm), ear length (cm), number of grains per ear and harvest index (%). Significant (P<0.05) differences were observed among the treatments with biofertilizer and control I. Treatment with 10<sup>6</sup> CFU *Bacillus subtilis* inoculated poultry manure and control I had 216 and 175cm average heights at maturity respectively while number of grains per ear were averagely 698 and 367 respectively. Maize planted with 10<sup>6</sup> *Bacillus subtilis* inoculation and control I had 35.2 and 27.4% harvest index respectively. The use of *Bacillus subtilis* as biofertilizer using PM as carrier did improve maize performance and productivity.

### Biography

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