

## Effect of Rhizobium inoculation and nitrogen two garden pea genotypes fertilizer application on growth, nodulation and yield of two garden pea genotypes

Ngeno Jonah<sup>1</sup>, Chemining'wa Solomon I. <sup>2</sup>

<sup>1</sup>School of Agriculture and Biotechnology, K

<sup>2</sup>Department of Plant Science and Crop Protection, University of Nairobi, Kenya

Corresponding author's full address and email

and Crop Protection, University of Nairobi, P.O. Box 29053

[umchemin@hotmail.com](mailto:umchemin@hotmail.com)/[george.cheminingwa@uonbi.ac.ke](mailto:george.cheminingwa@uonbi.ac.ke)

### Abstract

Nitrogen is the most limiting nutrient in smallholder garden pea farms in Kenya and can be corrected by application of inorganic fertilizers and conducted to compare the effect application on nodulation and yield of two garden pea varieties Plum) and export (variety Ambassador) University of Nairobi's Field Station in 2007 short and long rains. Varieties Ambassador were either inoculated with a commercial strain of *bv. viciae*, supplied with 30 or 60 kg N ha fertilizer enhanced shoot dry matter, but had no effect on grain yield. N ha<sup>-1</sup> intercepted more photosynthetically active radiation than non Rhizobium inoculation increased number of active nodules and nodule dry matter. Plum variety accumulated more nodule and shoot biomass than Ambassador. had longer and more seeds per pod than Plum while the converse was the case in number of pods plant<sup>-1</sup>. Nodulation observed in control plots Kabete soils are compatible with Plum and Ambassador garden pea varieties. Rhizobia inoculation of garden pea can yield similar shoot biomass as nitrogen application. Nitrogen fertilizer increased shoot dry matter, leaf area index and PAR interception by Increases in above ground biomass and nodulation due to rhizobia inoculation and nitrogen fertilizer application were not translated into increased pod and grain yield. Growth and nodulation responses to inoculation and nitrogen fertilization pea genotype, hence the need to investigate the differential response Ambassador It is suggested inoculation and nitrogen fertilization on a broad range genotypes.

Key words: Rhizobia, ambassador, nodules, shoot dry matter, plum, photosynthetically active radiation