

## Abstract

A series of experiments were conducted at the Faculty of Agriculture, during 1985 to 1988 period to ascertain the effect of Rhizobium inoculation and nutrient application on nodulation, shoot dry weight and N,P and K contents of the shoot of Crotolaria anagyroides Stylosanthes guianensis and Vigna sequipedalis.

Inoculating the three crops with KUL-BH and RRIM-56 Rhizobium strains reduced the shoot dry weight of crops compared to plants inoculated with RU-SA Rhizobium strain. Further experiments with cowpea resulted in enhanced nodule fresh weights with RU-MA Rhizobium strain in sterile soil, but the said positive effect diminished in non sterile soil suggesting competition from natural Rhizobium populations.

Experiments on application of NP and K fertilizers indicated that addition of N inhibited nodulation, shoot dry weight and shoot N, P and K contents of Stylosanthes while no response to N additions were observed with Crotolaria and Vigna on nodulation. Positive response to phosphorous was more prominent in Mapalana soil with three crops studied. Nodulation was not affected by K in Crotolaria and Stylosanthes while shoot dry weight and shoot N,P and K contents were positively affected with K application. The reverse was true for Vigna with respect to the above mentioned, determined parameters.

Among the few significant nutrient interactions, N and P interactions were prominent in Crotolaria and Stylosanthes.