

ABSTRACT

Inoculation of legumes had not been practised in Jamaica. Studies were therefore conducted to determine physical and chemical characteristics, indigenous *Rhizobial phaseoli* populations and the effect of inoculating Kidney beans (*Phaseolus vulgaris*) (Miss Kelly, Portland Red, RAB 256, RAB 96) with commercial inoculants. Local isolates of *R. phaseoli* were isolated, characterised and screened for their effectiveness under greenhouse conditions. All except one of the soils tested proved to be non-acidic but there was a low nitrogen content in all cases. Indigenous *R. phaseoli* population ranged from 1.0 to 10^5 cells per gram soil. Inoculation proved effective only in soil where indigenous population was low resulting in significant increases in accumulated shoot dry weight in these soils. This was also observed in the field trial conducted although only one foreign cultivar of *vulgaris* showed significant grain yield over the uninoculated control. Four local strains showed significant nodulation and shoot dry weight accumulation and could be further researched for their inoculant potential.

Local *R. phaseoli* strains proved to be sensitive to low concentrations of range of antibiotics but was resistant to penicillin at 500 $\mu\text{g/ml}$. Protein profiles showed homogeneity with most strains of *R. phaseoli*.