

Abstract

The rhizobial populations and nodulation status of both indigenous (mainly *Acacia* species) and some introduced woody legume species were assessed under glasshouse conditions in soils collected from 12 sites located in different ecological zones of Kenya. The populations among the sites, as estimated by the MPN technique, varied from <3.6 to $>2.3 \times 10^5$ cells g^{-1} of soil. There were some intrasite variations in population estimates depending on the trap host species, date of soil collection and the method used in sampling the soils. Nodulation in whole soil also varied across the sites with test species frequently showing higher nodulation ability in native soils. *Sesbania sesban* (L.) Merr. was the most prolific nodulating species while *Acacia tortilis* (Forsskal) Hayne was very erratic in nodulation. Nodulation of most species showed interplant and intraspecific variability within a single soil source.