

# Summary

A trial was carried out at Porto Velho, Brazil, to evaluate the effect of the vesicular-arbuscular mycorrhizae (VAM) *Glomus macrocarpum*, *G. etunicatum*, and *Gigaspora margarita* alone and associated with phosphorus (P) (22 kg/ha) on DM yield and N fixation of *Desmodium ovalifolium* CIAT-350. The experimental soil is a Latosol (pH = 4.2, P = 2 ppm, K = 75 ppm, Al = 2.8 mE%, and Ca + Mg = 1.2 mE%).

Results showed a significant effect of VAM x P interaction on DM yields and on the concentration of P by *D. ovalifolium*. The greater DM and N yields were achieved with *G. margarita*; however, the greater concentration of N and P in the tissue of *D. ovalifolium* was found under inoculation with *G. macrocarpum*. Results showed that *D. ovalifolium* CIAT-350 has a greater relative dependency on the mycorrhiza *G. margarita* than on *G. macrocarpum* and *G. etunicatum*.