Effect of Arbuscular Mycorrhizal Fungi and Rock Phosphate on The Mineral Content Improvement of Some Tropical Legumes

Lukiwati, D.R.¹, S. Hardjosoewignjo², Y. Fakuara³ and I. Anas⁴

Greenhouse experiment was carried out to study the effect of arbuscular mycorrhizal fungi (AMF) inoculation and rock phosphate fertilization on Ca and P content of flemingia (Flemingia congesta), puero (Pueraria phaseoloides) and stylo (Stylosanthes guianensis) forages in the Latosolic soil.

Split in time completely randomized design was applied in three replicates. The main plot consisted of three combination treatments which were: (1) Legume species (flemingia, puero and stylo), (2) AMF inoculation (without and with inoculation), (3) Rock phosphate fertilizer (0, 100, 200 and 300 kg/P2Os/ha). The sub plot was the cutting period (twice).

The result showed that the P content of flemingia was higher than puero and stylo. However, Ca content of stylo was higher than flemingia and puero. The Ca and P contents of mycorrhizal legume were higher than non-mycorrhizal legume. The Ca and P contents of both mycorrhizal and non-mycorrhizal legumes were increased by rock phosphate fertilization. The Ca content of flemingia, puero and stylo decreased at the second cutting period.

¹Faculty of Animal Science UNDIP, Kampus Tembalang Semarang, Indonesia.

²Faculty of Animal Science IPB, Bogor, Indonesia.

³Faculty of Forestry IPB, Bogor, Indonesia.

⁴Faculty of Agriculture IPB, Bogor, Indonesia.