

Summary

The effect of several doses of phosphorus (P) (0, 22, 44, 66, 88, 110, and 132 kg/ha) on dry-matter (DM) production, nodulation, and chemical composition of *Centrosema pubescens* CIAT-438, *C. brasilianum* CIAT-5234, and *C. acutifolium* CIAT-5112 and 5277 was evaluated in a greenhouse of the Unidade de Execução de Pesquisa de Âmbito Estadual (UEPAE/EMBRAPA), Porto Velho, Brazil. Those accessions were planted in pots containing 2.5 kg of an Oxisol and were harvested 70 days after planting.

Response to P application in DM production of all the accessions was significant ($P < 0.05$), especially that of *C. pubescens* CIAT-438. However, *C. acutifolium* CIAT-5112 and 5277 were the least demanding of P. The number of nodules/plant and their dry weight, as well as P content in plant tissue, were related to the P dose applied. No relationship was observed between crude protein and Ca contents in each accession and the levels of applied P.