NITROGEN FIXATION BY LEGUMES UNDER OIL PALM PLANTATIONS IN PAPUA NEW GUINEA

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There are currently no published estimates for the amount of nitrogen that is fixed by tropical legume cover plants in oil palm plantations on the volcanic ash soils of PNG. Such estimates require knowledge of the proportional dependence of plants on N2 fixation (%Ndfa), as well as data for dry matter production. A field study is planned to measure these variables for legume cover plants (*Pueraria phaseoloides*, *Calopogonium caerulum,* and *Mucuna bracteata*) in plantations of different ages, since shading increases as the palms grow and legume cover changes in composition and growth rate. Two methods will be used for assessing %Ndfa, the 15N natural abundance and the xylem sap techniques. Initially a glasshouse experiment using 15N-labelled nutrient solutions will be undertaken to calibrate the xylem sap technique for estimating %Ndfa for each of the legume cover crops. Results from the glasshouse study and a preliminary field survey will be presented at the conference.