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EFFECTS OF SOME

SOIL MANAGEMENT PRACTICES AND MOISTURE REGIMES ON THE PERFORMANCE OF HEVEA

Thesis

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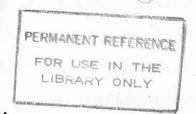
DOCTOR OF PHILOSOPHY

by

M.L.A. SAMARAPPULI

439856

Department of Botany
Faculty of Science
University of Peradeniya.



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ABSTRACT

with In field experiments immature Hevea brasiliensis, mulching with paddy straw was found to be a better agronomic practice than growing leguminous cover crops such as Pueraria phaseoloides and Desmodium ovalifolium or allowing natural vegetation to grow in the inter-row area. Girthing had been much higher with mulching which resulted in the reduction of the immature, unproductive period by approximately 18 and 12 months in comparison with naturals and creeping legumes respectively. In addition to early tapping, yield of latex was also higher during the early stages, increases in the region of 33% and 40% in comparison with creeping legumes and naturals respectively. Mulching improved the physico-chemical characteristics and water storage capacity of the soils and the nutritional status of the plants. Among the mulching materials, legumes mulches such as from Pueraria, Tephrosia etc. were superior to paddy straw as they contributed more nutrients and their C/N ratio was also low.

Under moisture stress situations, increasing the level of K application improved the performance of young rubber plants. Root growth was increased by higher levels of moisture as well as potassium.

Clone RRIC 102 performed better than clones RRIC 100, 110, 121 and PB 86 under low moisture situations and its leaf diffusive resistance was also high. Among the establishment practices, plants raised by brown budding in poly bags performed well under low moisture situations.