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EFFECTS OF SOME
SOIL MANAGEMENT PRACTICES AND MOISTURE REGIMES
ON THE PERFORMANCE OF *HEVEA*

Thesis

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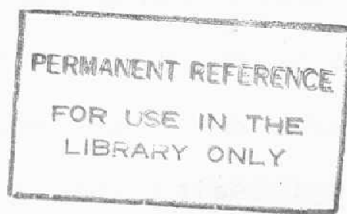
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ABSTRACT



In field experiments with 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. Girdling 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.