

ESTABLISHING PERENNIAL INTERCROPS IN RUBBER PLANTATIONS AFTER REMOVAL OF PINEAPPLE: EFFECT ON GROWTH AND YIELD OF RUBBER, SOIL MOISTURE AND NUTRIENT STATUS

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Received: 08 January 2015 Accepted: 10 May 2015

Jessy, M.D., Joseph, P. and George, S. (2015). Establishing perennial intercrops in rubber plantations after removal of pineapple: Effect on growth and yield of rubber, soil moisture and nutrient status. *Rubber Science*, 28(2): 138-146.

Though diverse food crops are cultivated with rubber as intercrops during the initial 3 to 4 years of the plantation cycle, in the later phase, other crops are seldom cultivated due to the limited light availability. Two varieties of coffee (Robusta and C x R) and cocoa were established in a three year old rubber plantation in Central Kerala after removal of pineapple. The experiment was laid out in RBD with three replications. Both coffee and cocoa established well after removal of pineapple. Growth and yield of rubber were not influenced by intercropping with these crops. Soil moisture status during summer was higher in the presence of intercrops and soil nutrient status was not influenced. There were other facilitative interactions in terms of higher earthworm castings and rhizosphere alkalization under mixed planting system. Yield of coffee was poor, but that of cocoa was comparatively better. Crop diversification in rubber plantations without adverse impact on the performance of rubber is important in the current scenario of price uncertainties, increasing environmental concerns about monoculture plantations and as a low input strategy to mitigate drought, which is also a growing concern.

Keywords: Cocoa, Coffee, Intercropping, Pineapple, Rubber plantations, Soil moisture, Soil nutrients

INTRODUCTION

In India, the planting system adopted for rubber allows sufficient sun light between rows for cultivation of a variety of annual and short term crops during the initial 3 to 4 years. As the rubber trees develop their canopy, the light availability within the plantation decreases and during the remaining period of the plantation cycle, rubber is predominantly grown as monoculture plantations. Apart from the

limited light availability, concern of negative effect of other perennial crops on the growth and yield of rubber is also a deterrent for integrating these crops with rubber.

There is growing concern about the biodiversity of monoculture plantations of Western Ghats, where agriculture is dominated by spices and plantation crops. By superimposing rubber distribution map over Ecologically Sensitive Zones (ESZ) of Western Ghats, Thomas and Jacob (2013) observed that about 2,78,000 ha of natural