

INTERCROPPING OF BANANA AND PINEAPPLE IN RUBBER PLANTATIONS IN TRIPURA

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The effect of two cropping systems involving two intercrops, banana and pineapple, on soil chemical properties, growth of rubber, biomass production, nutrient recycling, productivity and returns was investigated during the first four years (1996-97 to 1999-2000) growth period of rubber in North-Eastern India, Agartala, Tripura. In the first system (Model I), intercrop strip consisting of five rows of pineapple and two rows of banana was planted in between four strips of rubber with a stand of 550 rubber plants per ha and in the second system (Model II), one row of banana and two rows of pineapple were planted in alternate gaps with 470 rubber plants per ha. Continued fertilizer use under these two systems showed increase in available phosphorus and calcium. The growth of rubber was better and biomass production as well as nutrient recycling was higher in Model I. High yield and benefit: cost ratio of banana and pineapple established the economic feasibility of growing these intercrops. The maximization of yield and returns from the intercrops was possible by increasing the plant density (as in Model I) without adversely affecting the soil properties.

Key words : Banana, Benefit-cost ratio, *Hevea brasiliensis*, India, Intercropping, Non-traditional region, Pineapple, Tripura.

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INTRODUCTION

Rubber (*Hevea brasiliensis*) is a perennial tree that has economic and social importance in many tropical and subtropical countries. In India it has been grown traditionally in Kerala and Kanyakumari district of Tamil Nadu. Of late, cultivation of rubber is becoming a very popular means of livelihood for the people of Tripura in North East India. Rubber takes approximately 7-8 years to attain maturity (Sethuraj *et al.*, 1989; Vinod *et al.*, 1996). It is possible to utilize the inter-row spaces in rubber plantations for growing suitable intercrops to provide remuneration to the growers until the trees are brought to tapping.

Banana and pineapple, being popular fruits in North East India, could serve as good intercrops. Information on the economic feasibility of growing pineapple

and banana as intercrop with rubber in this region is not available. This investigation was carried out to evaluate the effect of these intercrops on the growth of rubber, soil chemical status, biomass production, yield and returns.

MATERIALS AND METHODS

The experiment was conducted at Taranagar Farm of Rubber Research Institute of India, Regional Research Station, Agartala (23° 53'N, 91° 15'E) in North-East India over four cropping seasons in 1996-97, 1997-98,

Table 1. Weather parameters

Year	Annual rainfall (mm)	Mean temperature (°C)	
		Maximum	Minimum
1996	1729	31	20
1997	1826	30	20
1998	1901	30	21
1999	1753	31	21
2000	2008	30	20