

# EFFECT OF TREE DENSITY ON GROWTH OF RUBBER IN NORTH EASTERN REGION OF INDIA

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A trial on planting density was conducted in clone RR11 429 with six densities *viz.* 408, 445, 489, 544, 613 and 699 in rectangular planting. Growth of the plants was significantly influenced by the different densities sixth years after planting. The density up to 544 trees ha<sup>-1</sup> attained required tappable girth by the end of seventh year. The percentage of tappable trees was low in the denser plantings. Plants at the lower density showed high girth increment in all the years. Seasonal variation in growth was observed. Highest girth increment was observed in monsoon season followed by post monsoon and lowest in winter season. Lower planting density produced higher tree girth and thick virgin bark.

**Key words:** Planting density, *Hevea brasiliensis*, Growth, North-East India

## INTRODUCTION

Natural rubber (*Hevea brasiliensis*) cultivation is being extended to north eastern regions of India to meet the increasing demand. The north eastern states have great potential for natural rubber (NR) cultivation. The crop has gained popularity due to its easy acceptability of native people and high return. About 1,79,850 ha area is under NR cultivation in this region in 2015-16 (Rubber Board, 2017), of which more than 80 per cent of area is in the small holding sector with an average holding size of one hectare. Since loss of trees due to high velocity wind is prevalent in this region, small holders always tend to adopt high density planting to improve the productivity of his land. Plant density is one of the major factors in rubber production and varies depending upon other

parameters. The growing space largely influences tree growth and yield of a stand as a whole. In rubber, the girth of the tree is the most important parameter based on which the degree of maturity of plantation is decided for harvesting of latex (Sethuraj and George, 1980). In general, the plantation considered mature and tappable if 50-70 per cent of trees have attained a girth of 50 cm at height of 125 cm from bud union (Sethuraj and George, 1980) and latex harvested subsequently. Experiment on high density planting of rubber was conducted with clone RR11 429 to study the effect of tree density on immature growth and other associated parameters.

## MATERIALS AND METHODS

The experiment was conducted at the experimental farm of Rubber Research