

## RUBBER (*HEVEA BRASILIENSIS*) CINNAMON (*CINNAMOMUM VERUM*) INTERCROPPING SYSTEM: PERFORMANCE UNDER STANDARD INTER ROW SPACINGS OF RUBBER

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The possibility of intercropping cinnamon (*Cinnamomum verum*) with rubber (*Hevea brasiliensis*) planted with the standard inter row spacing of 8.1m was examined. Measurements of light availability and root length density of both the crops in the inter row space and the cinnamon bark yield and its components were recorded for eight years. PAR transmission from the rubber canopy into the middle of the inter row was reduced to 20.6 per cent by eighth year. The length density of fine roots (RLD in  $\text{cm}^3/1000 \text{ cm}^3$ ) of rubber in the inter row increased from 6.4 in the third year to 175.8 in the eighth year in intercropped plots while those of control plots increased from 77.7 to 138.5. RLD of cinnamon in intercropped plots decreased from 51.8 in the third year to 33.5 in the eighth year. Length per stick, weight and bark yield of cinnamon also declined. The reduction in bark yield of cinnamon per bush was 70.5 per cent by the eighth year. The dry matter content of bark was highest (9.36%) when the light level was about 60 per cent. Adverse effects of poor light availability and competition from rubber on cinnamon at this spacing by fifth year were evident.

**Key words :** *Cinnamomum verum*, *Hevea brasiliensis*, Intercropping, Root length density, Shade, Yield components.

### INTRODUCTION

Rubber is one of the most important plantation crops in Sri Lanka in terms of foreign exchange earnings and employment generation (Ministry of Plantation Industries, 2003). A new planting of rubber takes about five years to reach mature tappable stage. This is a period of investment with no returns to farmer. Occurrence of rain reduces the number of tapping days resulting in low annual yields. Price fluctuation of raw rubber also affects the industry. In order to tide over such adversities many farmers plant either short-term full-sunlight requiring crops such as banana, passion fruit and vegetables, or shade-tolerant perennial crops

such as coffee, cocoa, pepper and cardamom in the inter row space of rubber (Rodrigo, 2001).

Cinnamon is also a high-income export crop usually grown as a monocrop or under the shade of larger trees in home gardens in Sri Lanka. At each harvest, usually done annually, shoots with brown stem are removed and the bark peeled out. About five plants are grown in each planting point and due to continuous coppicing, the wild cinnamon trees are maintained as bushes with many shoots of different ages.

In intercropping cinnamon with rubber, the competition with rubber tree for light becomes a main concern. Though