

## PERFORMANCE OF CINNAMON (*CINNAMOMUM VERUM* J. PRES.) INTERCROPPED AT DIFFERENT SPACINGS OF RUBBER (*HEVEA BRASILIENSIS* MEULL. ARG.)

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The suitability of interrow spacing wider than the standard 8.1 m for rubber in rubber / cinnamon intercropping was investigated. Eleven spacings ranging from 7.2 to 18.0 m were tested. The experimental design used was convenient and reduced the land requirement. Closure of rubber canopies in the 7.2 m and 8.4 m spacings by the sixth year limited the available light to 12 per cent even in the middle of the interrow. When the interrow spacing was 12 m or more, the middle of the interrow had more than 80 per cent light. The length density of fine roots of rubber (RLD) was high close to rubber trees and in treatments with narrow interrow spacings, whereas it significantly decreased with the increase in distance from rubber trees. Bark yield of cinnamon was highest in the first harvest compared to the next two. Reduction in yield in subsequent harvests was observed in treatments with narrow interrows. The yield in the third harvest was about 19 per cent of the first harvest in the 7.2 m interrow spacing. The cumulative bark yield for the three harvests increased with the increase of the interrow space. The interrow spacings of 12 m or more was found suitable for a sustainable rubber / cinnamon intercropping. Growth of rubber was not affected significantly by the spacing treatments.

**Key words:** Cinnamon, *Cinnamomum verum*, *Hevea brasiliensis*, Intercropping, Light availability, Root length density, Rubber, Yield components.

### INTRODUCTION

Rubber (*Hevea brasiliensis*) is an important plantation crop that generates employment, supports local industry and earns foreign exchange. Yet this industry suffers from problems such as price fluctuations and high cost of production. The first five years of rubber cultivation without any income is a problem, particularly for small growers. Intercropping during the first few years is considered to be one of the promising solutions for this problem, and is practised by many rubber growers (Jayasena and Herath, 1986). During this period, intercrops are

not affected by competition from rubber. Crops, including shade tolerant perennials, planted in the conventional interrow space face competition from rubber from the fourth year (Pathiratna and Perera, 2002). The shade of rubber is very intense and the roots completely invade the interrow space in about eight years (Pathiratna and Perera, 2003a & b).

Cinnamon (*Cinnamomum verum*) is a very important export-oriented agricultural commodity grown in Sri Lanka as a mono crop. Possibilities exist for growing it as an intercrop under rubber (Pathiratna and Perera,