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RESPONSE OF NINE RUBBER CLONES TO YIELD STIMULATION USING ETHEPHON

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The response to ethephon stimulation in nine selections of RRII 200 series clones of rubber was studied. Three methods of stimulant application (bark, groove and panel) were imposed. Ethephon at 5% (v/v) concentration was applied on the renewed panel of trees tapped under 1/2S d/2 6d/7 system. Monthly yield and dry rubber content (DRC) were recorded for two consecutive years. Results showed considerable clonal variability in yield during the period of study due to stimulation. In general, panel application of the stimulant gave higher yield than the bark and groove methods. DRC was not significantly affected under yield stimulation. Response to stimulation was low in high yielding clones (RRII 208, RRII 203) and high in low yielding clones (RRII 201, RRII 205).

Keywords: Clonal variation, Ethephon, *Hevea brasiliensis*, RRII 200 series, Stimulation.

INTRODUCTION

The para rubber tree, *Hevea brasiliensis* (Wild. ex Adr. de Juss) Muell. Arg. is the major source of natural rubber. Sustainable latex productivity of the rubber tree has always been an objective for planters. Systematic breeding and selection has led to development of modern hybrid clones of *H. brasiliensis* with considerably high yield (Licy *et al.*, 1997; Saraswathyamma, 2002). Apart from the exploitation of genetic potential, judicious yield stimulation can also be employed for high productivity of natural rubber (Vijayakumar *et al.*, 2001). Ever since the domestication of *Hevea*, search for methods to optimize production also began. The report on yield stimulating effect of ethephon on rubber (Abraham *et al.*, 1968) revolutionized the stimulation techniques. The use of chemical stimulants to increase yield has become an established commercial practice (Moir, 1970). Even now ethephon remains the most widely used latex yield stimulant (Pardekooper, 1989; Nugawela, 1996; Karunaichamy *et al.*, 2001). Judicious yield stimulation offers sustainable yield and productivity through reducing the frequency of tapping and the length of tapping cut (Sivakumaran and Chong, 1994; Vijayakumar 2001; Thomas *et al.*, 2002) and labour input (Zarin *et al.*, 1991; Vijayakumar *et al.*, 2002). The response to stimulation relies on several factors (Sulochanamma and Thomas, 2000). Ho *et al.* (1973) reported different yield classes based on the absolute yield increase. Generally low yielding clones responded to stimulation better than the high yielding ones. Different techniques of stimulations on renewed bark has been attempted (George *et al.*, 1974;

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