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# BIOCHEMICAL CHARACTERISATION OF RRII 400 SERIES CLONES OF *HEVEA BRASILIENSIS*

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Five newly evolved RRII 400 series clones were biochemically characterised and compared with the popular clone RRII 105. Characterisation was done based on biochemical parameters associated with latex flow, flow cessation and latex regeneration. During the peak yielding season, clones RRII 422 and RRII 430 recorded significantly higher dry rubber yield than RRII 105. Biochemical parameters such as latex ATP content, amount of thiols in C-serum and lutoid membrane ATPase were significantly higher in these clones than in RRII 105 while SOD levels were on par in these three clones. The highest ATP content was observed in clone RRII 429 followed by clones RRII 414, 422 and 430. Clones RRII 417 and 429 were characterised by low SOD in C-serum, and low ATPase and pyrophosphatase activities in the lutoid membrane. Sucrose, glutathione reductase activity, protein profiles of C-serum, hevein content and N-acetyl glucosaminidase activity in lutoids of all the 400 series clones were comparable to RRII 105. The significance of these biochemical parameters is discussed in relation to general metabolic activity of these clones.

**Keywords:** Antioxidant enzymes, C-serum, Latex regeneration, Rubber yield.

## INTRODUCTION

Characterisation of *Hevea brasiliensis* clones based on physiological parameters and laticifer functioning has been well established by several researchers (Eschbach *et al.*, 1984; Serres *et al.*, 1988 ; Jacob *et al.*, 1985; Gohet *et al.*, 2003; Nair, 2003; Thanh and Thuy, 2003). RRII 105, the most popular clone was characterised as a metabolically active clone (Nair *et al.*, 2001) and the biochemical mechanism associated with its low yield during summer was also reported (Sreelatha *et al.*, 2007). The RRII 400 series clones are of recent development and some of them are now recommended for cultivation. Studies on the general metabolism of these newly developed clones are important to understand their response to different environmental conditions, tapping frequency, stimulation *etc.* Performance of these clones for yield and their morphological, molecular and physiological characterisation have already been reported (Licy *et al.*, 2003; Saraswathyamma *et al.*, 2006, Nair and Mydin, 2006; Mydin and Mercykutty, 2007). The present paper reports the characterisation of RRII 400 series clones based on their biochemical parameters and enzymes associated with latex regeneration, flow and cessation of latex flow.

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