



PRELIMINARY YIELD PERFORMANCE AND LATEX PHYSIOLOGICAL PARAMETERS OF RUBBER (*HEVEA BRASILIENSIS*) PLANTED IN INTERMEDIATE ZONE OF SRI LANKA

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Rubber had mostly been limited to Wet zone (WZ) of island since beginning of its cultivation. In recent past it has gradually expanded to the Intermediate zone (IZ), due to decline of available land for further cultivation in wet zone. Mature rubber fields cultivated by a smallholder farmer in the Eastern Province (IL2) and in Polgahawela substation of Rubber Research Institute of Sri Lanka (IL1a) were used to assess the yield performance and latex physiological parameters. For comparison, a rainguarded rubber field in Kuruwita substation of Rubber Research Institute of Sri Lanka was also used (WL1). Latex volume and dry rubber content in latex were measured for a period of one year and with the knowledge on number of tapping days, yield per tree per year (YPT) was estimated. In latex, sucrose, thiol and inorganic phosphorous content were assessed and also the plugging index.

In Kuruwita, Polgahawela and Padiythalawa tapping days recorded were 160, 133 and 140, respectively. In all three sites, dry rubber content of latex was above 38% and showed no significant variation among the agro ecological zones. Daily latex yield per tree recorded in Kuruwita, Polgahawela and Padiyathalawa were 41.31g, 25.99g and 20.2g, respectively. Latex sucrose content was higher in IZ where rubber yield was low. Comparatively higher sucrose content observed in both IZ sites revealed that consumption of sucrose for latex regeneration is low leading to low daily latex yield. Average latex thiol content at Kuruwita trees was 0.38mM whilst that in Polgahawela and Padiyathalawa resulted in 0.58mM and 0.64mM, respectively. Comparatively higher thiol content of latex in trees in IZ indicates a low level of toxic oxygen specie in latex due to low rate of regeneration of latex. In organic phosphorous content of trees in Kuruwita was 6.17mM whilst it was 38.96mM and 41.45mM in Polgahawela and Padiyathalawa. Although, the laticifers of trees in IZ appears to be more metabolically active with a higher yield potential, low dripping time and higher plugging index limited the latex output in harvesting.

Keywords: *Hevea, Intermediate zone, Latex physiology, Latex sucrose content, Yield*