Natural Rubber Research, 22 (1&2): 27-35, 2009

SEASONAL AND CLONAL VARIATIONS IN PROPERTIES OF RUBBER PRODUCED IN NORTH EAST INDIA

Joy Joseph, K. Mariamma George*, Sushil Kumar Dey and K.T. Thomas*

Regional Research Station, Rubber Research Institute of India,
Kunjaban - 799 006, Agartala, Tripura, India
*Rubber Research Institute of India, Kottayam - 686 009, Kerala, India

Joseph, J., George, K.M., Dey, S.K. and Thomas, K.T. (2009). Seasonal and clonal variations in properties of rubber produced in North East India. *Natural Rubber Research*, 22(1&2):27-35.

The properties of rubber produced are influenced by the climatic conditions of North East India where these variations are more pronounced than in the traditional regions. The seasonal effect on the properties of rubber from seven clones was studied. The impact of season and clone on different physical and technological parameters of rubber is discussed. Season was found to have a strong influence on dry rubber content (DRC) and total solids content (TSC) in North East India. The DRC and TSC levels decreased from summer to winter. Most of the clones under study gave medium to hard rubbers in terms of plasticity, Mooney viscosity and gel content. The lowest initial Wallace plasticity (P_o) and Mooney viscosity were shown by RRII 430 and the highest by RRII 417. All the clones under study produced relatively low viscosity rubber with low P_o during winter season. The best processing properties in terms of Mooney viscosity (in the range of 60-70 units) and low P_o were obtained in winter season. Good correlation was observed between Mooney viscosity and P_o for all the clones. Correlation between P_o and accelerated storage hardening test (ASHT) was also significant. The study revealed that in North East India, low winter temperature had profound influence on the properties of latex.

Keywords: Clonal variation, Dry rubber properties, *Hevea brasiliensis*, Latex properties, North East India, Seasonal variation.

INTRODUCTION

Rubber (*Hevea brasiliensis*) is predominantly cultivated in India in the hinterlands of the South West coast comprising Kerala State and adjoining districts of Tamil Nadu. The agroclimatic conditions of North East India are unique but, they are also suitable for rubber cultivation. Among the north-eastern states, Tripura ranks first with 37846 ha of plantation and 18705 t rubber production as on 2006-07 (Rubber Board, 2009). North East India experiences very severe winter unlike traditional rubber growing region in the South.

Natural Rubber (NR) is harvested from the tree in the form of latex and the dry rubber content (DRC) in the latex varies from 30-45 per cent. Rubber breeders are aiming to produce high yielding clones with vigorous growth and resistance to biotic and abiotic stresses. A high yielding clone with vigorous

Correspondence: Joy Joseph (Email: joyrubber@yahoo.com)