

UTILIZATION OF WILD *HEVEA* GERMPLASM IN INDIA: LONG-TERM YIELD AND GROWTH OF CERTAIN W X A HYBRIDS

M.J. Reju, Kavitha K. Mydin and Thomson Abraham

Rubber Research Institute of India, Rubber Board, Kottayam – 686009, Kerala, India

Received: 25 August 2014 Accepted: 05 October 2014

Reju, M.J., Mydin, K.K. and Abraham, T. (2014). Utilization of wild *Hevea* germplasm in India: Long-term yield and growth of certain W x A hybrids. *Rubber Science*, 27(2): 215-224.

One batch of 17 hybrids of Wickham (W) and Amazonian (A) parentage from six cross combinations were evaluated at the Central Experiment Station of the Rubber Research Institute of India. Yield of the clones in the BO-1 and BO-2 panels, combined yield from the two panels, summer yield, girth of the clones, biomass production and bole volume were evaluated. Heritability was moderate to high for both growth and yield parameters indicating scope for selection for the characters studied. Phenotypic variance and phenotypic coefficient of variation (PCV) showed values higher than the corresponding values for genotypic variance and genotypic coefficient of variation (GCV) for all the characters studied indicating the influence of environment on the characters. Secondary attributes like bole volume, biomass production and girth showed significant improvement in some of the hybrids (90/55, 90/109, 90/129 and 90/274) over the most popular and high yielding clone, RRII 105. Yield performance of these hybrids was on par with that of RRII 105. The hybrids which showed significantly improved bole volume and rubber yield comparable to RRII 105 may be designated as latex timber clones which could be utilized for further crop improvement programmes. Thus, without compromising on rubber yield it was possible to successfully develop W x A hybrids from divergent crosses in *Hevea brasiliensis*.

Keywords: *Hevea* breeding, Small-scale evaluation, Variability, W x A hybrids, Wild germplasm, Yield

INTRODUCTION

Hevea brasiliensis (Willd.ex A.D. de Juss.) Muell. Arg., is the major source of natural rubber (NR) of economic importance. In India, *Hevea* breeding assumes significance in the face of increasing demand of NR for the industrial sector. The demand for NR invariably resulted in the expansion of the rubber plantation sector into areas away from the traditional rubber growing regions of India which are sub-optimal for the commercial cultivation. Apart from NR,

rubber wood also is in demand for commercial purposes. Breeding for clones adaptable to hot and cold weather conditions and biological stress conditions like incidence of various diseases are also priority areas in *Hevea* breeding. Both the demand for more NR and the challenges faced in the extension of rubber cultivation warrant intensive breeding programmes to meet the evolving scenarios in the rubber plantation industry.

The existing genetic base of the commercially cultivated *Hevea* clones in