EVALUATION OF HYBRID AND POLYCROSS PROGENY POPULATIONS OF *HEVEA BRASILIENSIS* MUELL. ARG. FOR EVOLVING SUPERIOR CLONES IN KANYAKUMARI DISTRICT

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One set of four hybrid progeny families and four sets of polycross progenies were evaluated for girth and yield in terms of test tap at the age of three years. Wide range of values was observed for girth and yield among both types of the population studied. However, the hybrid progenies exhibited greater mean values for both growth and yield than polycross progenies. Higher CV for girth and yield in both types of populations indicated greater variability among the progenies of the populations, thereby revealing greater extent of heterozygosity and heterogeneity in the constituent progenies of both types of population. The number of superior progenies identified was less in both the type of populations. Hence, it could be observed that in general, lesser the strength of the population, lower would be the chances of recovering superior progenies. However, the number of selections recovered from the hybrid population was relatively more than that of the polycross progeny population. This might be due to the fact that controlled mating was exercised in case of hybrid population, whereas, random mating was allowed for generation of polycross progeny population. Hence, the study suggested strengthening of the breeding gardens and polyclonal seed gardens by incorporating more pre-potent and divergent parents for the generation of promising hybrids and polycross progenies to realize considerable improvement in primary traits.

Keywords: Girth, *Hevea*, Hybrid progenies, Polycross progenies, Variability, Yield

INTRODUCTION

Hevea brasiliensis (Willd. ex A. Juss.) Müll. Arg. commonly referred to as "Para rubber" is an important industrial tree crop, cultivated chiefly in the tropical countries which have active plant breeding programs. In India, though originally confined to South India, rubber cultivation in the recent decades has been extended to non-traditional zones including Central and North East India. This necessitated gearing up of crop improvement efforts to evolve indigenous *Hevea* clones to meet the planting requirement of each agro climatic zone where the crop is cultivated (Mydin *et al*., 2017).

Crop improvement in *Hevea* started with unselected seedlings and made critical examination of the population. Subsequently, intensive breeding through various techniques like ortet selection, recombination and polycross breeding led

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