

Effect of Polybag Size on Growth and Physiological Attributes of Rubber (*Hevea brasiliensis*) Seedlings

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The annual requirement of budded rubber plants [*Hevea brasiliensis* (Willd. Ex A. Juss.) Mull. Arg.] has increased. Currently, finding top soil for filling polybags has become an issue in raising rubber plants. Therefore, it is essential to find ways to minimize the amount of soil usage. The present study examined the effect of the size of polybag on growth attributes of rubber seedlings for an eight-week period. The experiments were conducted in the government rubber nurseries at Egaloya (Wet Zone, *LW*) and Monaragala (Intermediate Zone, *IL*). Six bag sizes with reduced volume (3" x 15", 4" x 15", 5" x 15", 4" x 13", 5" x 13" and 6" x 13") as compared to the standard size (6" x 15"-control) were used for *LW* whereas five bag sizes (6" x 15", 6" x 16", 6" x 17", 7" x 16" and 7" x 17") as compared to control (7" x 18") were used for *IL*. Germinated seeds were transplanted into each polybag filled with top soil and arranged in a nursery according to a randomized complete block design (RCBD). There were 60 replicate plants for each treatment. Growth and physiological attributes of seedling viz., stem height (cm), stem diameter (mm), number of leaves, chlorophyll content (SPAD value), leaf area (cm²), stomatal conductance (g_s), tap root length (cm), tap root dry weight (g), total root dry weight (g) and shoot dry weight (g) were recorded after 8 weeks from transplanting. There was no significant ($P > 0.05$) difference in growth and physiological attributes of seedlings raised in reduced sizes of polybags when compared to those raised in the standard sized polybags in both agro-climatic zones during the experimental period. Therefore, there is a potential to use reduced sizes of polybags to raise rootstocks of rubber while reducing the amount of soil usage.

Keywords: Growth, Intermediate Zone, Polybag size, Rubber seedlings, Wet Zone