

POLYHOUSE TECHNOLOGY FOR PRODUCTION OF HEALTHY PLANTING MATERIALS OF RUBBER

V.C. Mercykutty, Kavitha K. Mydin, Shammi Raj, C. Bindu Roy and P.M. Priyadarshan*

Rubber Research Institute of India, Kottayam - 686 009, Kerala, India

*Central Experiment Station, Rubber Board, Chethackal, Ranni-689 676, Kerala, India

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Two polybag nursery experiments were conducted at the Central Experiment Station of the Rubber Research Institute of India, Chethackal to compare sprouting and growth of green and brown-budded stumps of rubber (*Hevea brasiliensis*) planted in polybags kept in polyhouse and outdoors. Budded stumps generated from both green and brown budding techniques recorded early emergence of buds and better and uniform growth of scion in polyhouse conditions. Plants raised in polyhouse were better in terms of height of scion, diameter of stem, number of whorls, number of lateral roots and total biomass content. The study showed that the quality of plants improved when grown inside a polyhouse.

Growing plants in polyhouse enabled to overcome intra-clonal variability in growth of bud-grafted plants to certain extent. It protected the grafts from diseases, reduced mortality due to adverse weather conditions and ensured production of healthy plants. The environmental conditions in the polyhouse had no adverse effect on further growth and development in the field and thereby ensuring rapid production of healthy planting materials in large-scale cultivation. In addition to saving manpower, this modern technology is an eco- friendly approach by limiting the use of fungicides inside the polyhouse condition.

Keywords: Budgrafted plants, *Hevea*, Polyhouse, Polyvinyl sheets

INTRODUCTION

Bud-grafted plants in the rubber nursery need extreme care during the early stages of their development. During adverse climatic conditions like heavy rainfall and high/low temperature, nursery plants are affected by diseases and pests resulting in low and delayed bud break followed by uneven growth of scion that leads to shortage of planting materials in rubber nurseries.

It is worthwhile to examine the growth and development of bud-grafted plants

under controlled conditions, especially in polyhouse, that can be reused year after year. A polyhouse is a framed structure of UV-stabilized rigid transparent polythene sheets (200 micron thickness) covered from all sides in which plants can be grown under sufficiently controlled environmental conditions. The sheet is inserted 8-10 cm under soil for proper sealing of the polyhouse. The structure is supported with vertical iron rods and the use of HDPE pipes helps to form a semi-circular design. The covering of nursery areas with polyvinyl