

BUDGRAFTING OF *HEVEA BRASILIENSIS* UNDER THE SUB-TROPICAL CLIMATE OF MEGHALAYA

In Meghalaya, brown budgrafting is the usual practice of commercial propagation of *Hevea* clones. This region is known to have climatic constraints and their effect on budgrafting is not known. Normally, seedling beds are established in the nursery during June-July and the seedlings are ready for brown budgrafting after 12 months. No reports are available from the region on success of budgrafting during different periods in a year. The experiment was conducted to find out the suitable period for brown budgrafting under the climatic conditions prevailing in Meghalaya.

The experiment was conducted during 1997 and 1998 in the nursery of the District Development Centre of the Rubber Board at Jenkichagre, in the Garo Hills of Meghalaya. Brown budgrafting was carried out at ten-day intervals from July to December. Bud patches from the budwood of clone RRIM 600 were used for budgrafting following standard procedure. Budding success was assessed after 21 days. Green bud patches were counted as successful (Marattukalam and Saraswathyamma 1992). Agrometeorological parameters such as temperature, humidity, rainfall, evaporation and bright sunshine hours during the experimental period were recorded. Budding success was statistically analyzed and correlations between budding success and the agrometeorological parameters were worked out following Rangaswamy (1995).

Maximum success of budgrafting was recorded in July (88.3%) closely followed by August (86.2%) and September (80.4%). Thereafter, there was a steady decrease in success, with 32.5 % being recorded in November and the minimum, 17.8 % in December (Table 1). The agrometeorological parameters recorded during the study are presented in Table 2. It was found that the mean

Table 1. Success (%) of budgrafting in Meghalaya

Month	Year		
	1997	1998	Mean
July	88	88.5	88.3
August	90.3	82	86.2
September	82.8	78	80.4
October	73.3	65	69.2
November	35	30	32.5
December	25.5	10	17.8
General mean	65.8	58.9	62.4
Standard error	11.6	13	12.2

monthly budding success exhibited a highly significant positive correlation with minimum temperature indicating its influence on success of budgrafting in the region. Significant positive correlation between success of budding and maximum temperature, relative humidity and rainfall was also observed indicating that these climatic factors also influence success of budgrafting. However, correlation between success of budding and bright sunshine hours was negative and significant showing that long bright sunshine hours adversely affect success of budgrafting. It is reported from the traditional region that success was very high for brown budding during November, June and October with a budding success of over 70 % (Marattukalam and Premakumari, 1981). It is also reported that climatic factors such as rainfall, relative humidity and maximum temperature influence budgrafting, with a more pronounced impact on brown budgrafting. The present study shows that in the non-traditional region of Meghalaya, budding success is high during July, August and September.

During November and December budding success was found to be extremely low. Grafted bud patches and developing buds dried, probably due to the stressful environment. During the beginning of the winter season, environmental factors become ad-