

ABSTRACT

Studies on the vegetative propagation of Cocoa

(Theobroma cacao L.)

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Three aspects of vegetative propagation of cocoa were investigated in seven experiments. The treatment of cocoa seeds with two growth regulators to reduce the time period required to produce rootstock suitable for budding did not yield the desired results of proportionate increase in the growth of the plant, but resulted in unwieldy increase in height with one chemical, Gibberellic acid, and sub-normal growth with the other, Benzylaminopurine. The chemicals were deemed unsuitable, at the concentrations used, as aids in rootstock production.

The type of rootstock used for budding was found to have an effect on the percentage bud take. A rootstock of high vigour (TSH clones) was more efficient than one of slow growth (M8). Application of a contact fungicide to the budwood before budding increased bud take while increased time in storage decreased it. Damp newspaper was found to be the more suitable of two materials tested for wrapping budwood for storage, which should be done at temperatures close to 25 C., since extremes of temperatures (4 C. and 35 C.) used in budwood storage affected budtake adversely.

The clone ICS 1 was confirmed as a slow rooter when compared to the TSH clones, and the rooting of the clone was worsened when

cuttings were subjected to the stress of being left unattended outside the bins for six hours before being set for rooting. The open spray bed proved to be the most efficient method for obtaining a high percentage of rooted cuttings.

Anatomical investigations revealed that root initiation takes place in the pericycle and is visible internally by day 15 after setting. Buds from a grafted patch can start bursting 3-4 days after the graft is untied. The mechanism of vascular connection of the bud was found to be that of callus differentiation and cambium proliferation.

I gratefully acknowledge the invaluable assistance of the staff of the Cocoa Research Unit at Centaro for their facilities and, with special thanks to Mr. Ivan Estrada and Mr. Sheriff Williams for their kind accommodation.

The technical advice offered by Miss M. Hollingsworth and Mr. P. Townsend on the histological preparations of samples is highly appreciated.

To Dr. Henry Baker, I offer my deepest gratitude and appreciation for his limitless help and support during this research, and for his assistance in field photography, development of photographs, proof reading of the manuscript, and printing of the thesis.