

## B-44 : IMPROVEMENT OF BUD-GRAFTING IN CACAO

(*Theobroma cacao* L.)

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Total national production of cocoa has been alarmingly decreasing over the past 25 years. This drop may be attributed partly to the fact that existing plantations are purely seedling progenies. Nevertheless, available technology on bud-grafting techniques for cacao at local level is not adequate. This study was conducted to find out a reliable set of practices for a bud-grafter at nursery level.

Preliminary work revealed the high stock-scion failures and low sprouting of scions during the subsequent growth period, after the opening of wrapping tapes. Therefore, two growth inducement methods, namely stumping of stock plants at 7.5cm above the bud union and bending of stock plants above the bud union both on the 28th day after grafting, with 3 different bud grafting techniques ie. "patch", "H" and "I" were studied. Six combinations were tested in 2x3 factorial Randomized Complete Block Design with three replicates. One year old seedlings of Millawana selection were used as root-stocks and NA32XICS<sub>1</sub> shoots as scions.

It revealed that the effect of growth inducement treatment is significant (P) and 90.74% success could be achieved with bent treatment compared to 66.6% with stumped treatment, at 10 weeks after bud-grafting. Furthermore, neither the effect of bud-grafting technique nor interaction effect was significant on the percentage success. General growth and vigor of scion shoots were prominent with bent treatment when compared to the stumped plants. Furthermore, yellowing and dying of new sprouts from scion were observed with stumped plants.

These results suggest bending of stock plants above the stock-scion union at 4 weeks after bud-grafting is adequate to induce scion for sprouting and further growth. The bud-grafted and bent plants can be field planted after 10 weeks.