PERFORMANCE OF DIFFERENT COMMERCIAL FERTILIZERS ON BETEL (*Piper betle* L.) GROWTH

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ABSTRACT

Betel (*Piper betle* L.) is one of the commercially valuable export crops in Sri Lanka. There is a lack of scientific evidence regarding the comparative effectiveness of different commercially available fertilizers on betel growth under local field conditions. Therefore, this study was carried out to evaluate the growth performance of betel vines subjected to five fertilizer treatments. There are Jiypeong, Cocoly, POLY4, Baurs and the Department of Export Agriculture-recommended mixture. The experiment was laid out in a Completely Randomized Design (CRD) at the Intercropping and Betel Research Station, Dampelessa, with eleven replicates per treatment. Plant height, number of kanda leaves, number of pidunu leaves, total number of leaves and number of side branches were recorded at three-week intervals. Results indicated that there was a significant variation among the treatments for all parameters except for number of pidunu leaves. Cocoly consistently produced the highest growth responses throughout the study. At the final data collection, Cocoly had the highest plant height (168.53 ± 2.70 cm), kanda leaves (31.91 ± 2.18), total number of leaves (36.27 ± 2.37) and side branches (1.27 ± 0.59) reflecting its strong ability to stimulate vigorous vine and leaf development. POLY4 ranked second in overall performance and was especially important for increasing plant height, while Jiypeong fertilizer resulted in moderate improvements for most of the parameters. On the other hand, the DEA-recommended mixture and Baurs fertilizer produced the lowest growth responses in plant height, leaf production and branching. These findings clearly show that the type of fertilizer used has significantly affected the vegetative performance of the betel vines. In summary, the study concludes that Cocoly and POLY4 fertilizers are the most effective in ensuring strong and healthy growth of *P. betle* under Sri Lankan agro-ecological conditions.

Keywords: Cocoly, Commercial fertilizers, CRD, DEA, Jiypeong, *Piper betle* L., POLY4, Vegetative growth

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