

EFFECTS OF GRADED NITROGEN LEVELS ON THE GROWTH AND QUALITY OF *Cordyline fruticosa* var. ‘Purple Compacta’ IN BATTICALOA DISTRICT

By

K. Abirami

Department of Crop Science, Faculty of Agriculture, Eastern University, Sri Lanka

ABSTRACT

The government of Sri Lanka has identified cordyline (*Cordyline fruticosa* var. ‘purple compacta’) as one of the priority crop in the floriculture sector, targeting the export market. Cordyline is a popular foliage plant with high demand in the export markets as cut decorative foliage. ‘Purple compacta’ is a stunning variety of *Cordyline fruticosa* with a compact and miniature growing habit. There are several factors affecting vegetative growth and quality of cordyline plants. Nitrogen has significant effects on vegetative growth and quality of foliage plants. A shade house (50%) experiment was conducted to determine the effects of graded nitrogen levels on vegetative growth and quality of cordyline (*Cordyline fruticosa* var. ‘purple compacta’) plants in the Crop Farm, Eastern University, Sri Lanka from July 2017 to November 2017. The experiment was arranged in a completely randomized design with twenty replications. Five treatments were defined viz. 0.5(T1), 1.0 (T2), 1.5 (T3), 2.0 (T4) and 2.5 (T5) g nitrogen/plant/month (g/p/m). Phosphorous and Potassium levels were kept constant throughout the experiment. Urea was used as nitrogen source in this experiment. Urea was applied at monthly interval as a split application. Recommended agronomic practices were followed uniformly for all treatments. Parameters viz. plant height, leaf area, plant biomass and leaf nitrogen content were measured at monthly interval and quality of cuttings was assessed at the end of experiment. Analysis of Variance was performed to determine significant difference among treatments ($p < 0.05$). Results revealed that plants belong to T1 (nitrogen level 0.5g/p/m) showed significantly ($p < 0.05$) better performance in the measured growth parameters viz. plant height, leaf area, plant biomass and leaf nitrogen content, while the lowest performance was observed in T5 at 3 MAT. In quality assessment, plants grown at T1 received significantly highest score. From this study, it could be concluded that, plants grown at nitrogen level of 0.5g/p/m (T1) would have been the suitable amount of nitrogen as the growth

and quality of plants was higher. A commercial scale evaluation is needed to recommend these findings to floricultural industries.

Keywords: Plant biomass, Leaf area, Leaf nitrogen content, Biomass partitioning.

Supervisor: Mr. S. Srikrishnah
Department of Crop Science
Faculty of Agriculture
Eastern University, Sri Lanka