**EFFECT OF DIFFERENT PLANT SPACING ON GROWTH AND YIELD OF POTATO (*Solanum tuberosum* L.) IN NUWARA-ELIYA**

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ABSTRACT

Potato is considered as a key annual crop in up-country, in Sri Lanka. In potato cultivation, “plant spacing” is highly important to consider as it impact for plant growth and yield. Therefore, a field trail was conducted at District Agriculture Training Center, Galpalama, Nuwara Eliya, during September to November 2022 to determine the effect of three plant spacing on growth and yield of potato. “Granoala G3” seed potatoes were used for the experiment. Three different plant spacing’s were used as treatments namely; T1-double row zig-zag method, (20cm\*20 cm), and T2- farmer practice method (45 cm\*25 cm) and, T3- DOA recommended spacing (60cm\*25 cm)/control respectively. Treatments were arranged in Randomized Compete Block Design (RCBD) with tri-replicates. As growth parameters number of leaves, above ground dry weight, crop growth rate, leaf area index was taken at three weeks’ interval. Total yield/plot, total number of tubers/plot, and tuber size were considered as yield parameters. Data were analyzed through ANOVA and Kruskal-wallis analysis. According to the results, there were no significant difference among treatments for the plant growth, tuber yield, and tuber quality. However, total number of potatoes/plot (1036) was slightly higher double raw zig-zag method. Thus, this study conclude that spacing is not highly impact on potato plant growth, tuber yield, and tuber quality.

**Keywords:** *Double row zig-zag system, plant density, potato cultivation, tuber yield, tuber quality*