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EFFECT OF DIFFERENT PLANTING METHODS ON GROWTH AND YIELD PERFORMANCE OF RICE VARIETY BG 366

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ABSTRACT

Rice is the staple food for Sri Lankan people. Annual production of rice in Sri Lanka needs to be increased to feed the growing population and to maintain the self-sufficiency. Expanding the area under rice cultivation will not be possible in near future. Therefore, additional rice production has to come from increasing the productivity of grains. Choosing the best rice establishment method for higher yield and higher economic return is one of the ways to increase the productivity of land. A study was conducted at farmers' field in 1.7 ha of land during *Yala* season 2024, to evaluate the effect of different planting methods (Dry seeding, Wet seeding, Seedlings broadcasting and Machine transplanting) on growth and yield performance of rice variety Bg 366. The experiment was laid out in RCBD with three replicates, and data were analyzed by using ANCOVA to enhance the accuracy of results due to large size experimental units. Data on plant growth and yield parameters were collected as plant height, flag leaf area, chlorophyll content of flag leaf, days taken to maturity, number of productive tillers m⁻², weight of panicle, number of filled grains panicle⁻¹, 1000 grain weight and grain yield. Cost of production and net income also were calculated for each planting method. Considering the growth parameters, higher plant height, higher chlorophyll content, higher flag leaf area were observed in both machine transplanting and seedlings broadcasting compared to direct seeding methods. Results showed that grain yield and net income were significantly higher in seedlings broadcasting method (6.84 t ha⁻¹, Rs.241 700 ha⁻¹ respectively) followed by Machine transplanting (5.81 t ha⁻¹, Rs.194 400 ha⁻¹ respectively). This may be due to the quick establishment of seedlings with soil ball and production of the highest number of effective tillers in seedlings broadcasting method. Findings suggest that both seedlings broadcasting and machine transplanting were found to be most productive and economically viable methods of rice establishment than direct seeding.

Keywords: rice, direct sowing, transplanting, seedling broadcast, net income, productivity