

**Setting Effect of Plant Spacing and Doses of NPK Fertilizer on Growth and Yields of Sorghum (*Sorghum bicolor* L.)**

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***ABSTRACT***

*The main food needs in Indonesia tend to continue to grow in line with the increase in population. It is necessary to look for types of carbohydrate-producing plants as alternative food. Sorghum is a cereal crop that is profitable and can be developed because in addition to its high productivity, this crop also has wide adaptability, and is relatively resistant to pests and diseases. The purpose of this study was to analyze the response of sorghum to several spacing treatments and to reduce the dose of NPK fertilizer from the recommended dose. The experimental design used factorial RAK with 4 replications. The first factor is the spacing which consists of 50 cm x 25 cm, 75 cm x 15 cm and 70 cm x 40 cm. The second factor is the dose of fertilizer which consists of decreasing the dose of fertilizer from the recommended dose to 100%, 75% and 60%. Planting distance of 70 cm x 40 cm gave the highest yield on the number of leaves (11.22 leaves), fresh weight of plant crown (867.33 g), dry weight of plant crown (609.04 g), and seed weight per sample (96.47 g) while the spacing of 75 cm x 15 cm showed the highest seed weight per plot (1987.09 g) and was not significantly different with a distance of 50 cm x 25 cm (1825.67 g) on a land area of 3 m<sup>2</sup>. In the same land conditions as the land in the Central Agricultural Training Center, it is recommended that sorghum cultivation use a spacing of 75 cm x 15 cm. Sorghum plants are still able to provide maximum yields until the fertilizer dose is reduced to 60% of the recommended dose.*

***Keyword :*** Sorghum, Plant Spacing, Fertilizer