Response of Two Rice Varieties (Oryza sativa L.) to Close Planting Distance

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ABSTRACT

Rice plants (Oryza sativa L.) play an important role as a major food source to meet the needs of densely populated communities. The use of superior varieties and planting at the right distance can significantly increase production, thereby supporting optimal growth and maximum yields. This study was conducted between July and October 2023. The method used was a randomized block design (RBD) with a factorial approach, involving two main factors: the first factor included dense planting distances for rice, namely 40 cm × 25 cm × 25 cm, 30 cm × 25 cm × 25 cm, and 20 cm × 25 cm × 25 cm; while the second factor was rice varieties, namely Ciherang and Situbagendit. The analysis of the results showed that the interaction between planting distance and variety did not have a significant effect on the various parameters measured. However, the 30 cm × 25 cm × 25 cm planting distance produced superior performance in most growth and production indicators, such as plant height reaching 92.31 cm, number of tillers 22.64, number of panicles 16.72, and grain weight per plot 413.50 g. The Situbagendit variety also stood out with optimal results compared to Ciherang, as seen in plant height of 94.95 cm, dry weight of 67.88 g, and weight of 1,000 grains of 278.46 g. The absence of significant interaction indicates that the effect of planting distance is more due to competition between individual plants, while variety differences are more dependent on genetic characteristics. Therefore, the combination of a 30 cm × 25 cm × 25 cm planting distance with the Situbagendit variety is recommended as the optimal choice for increasing rice plant productivity.

Keywords: *planting distance, plant population, rice productivity*