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Growth Characteristics and Rice Yield by Planting Density of Panicle Number Type and Panicle Weight Type

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[Introduction]

In order to solve the problems of labor shortage and quality deterioration due to the aging of the rural population, it is necessary to revitalize rice cultivation. Low density planting cultivation reduce the number of hills planted per unit area and reduce labor input time for seedling and transplanting. Rice is divided into panicle number type and panicle weight type. The two type varieties tiller pattern is different by planting density. so this study was conducted to investigate growth and yield characteristics of the two type varieties according to planting density.

[Materials and Methods]

This study was conducted in the Chungcheongbuk-do Agricultural Research and Extension Services from 2021 to 2022. Samgwang and Saechilbo were used and transplanted on May 30th. Planting densities were 80, 60, 50, 37 hills/3.3m² by rice transplanter. Fertilization per 10a was N:P:K=9:4.5:5.7kg, and the nitrogen splitting ratio was divided by 50-20-30% of basal fertilization-topdressing at tillering stage-ear manuring, and other cultivation management followed the Rural Development Administration standard cultivation method. The rice growth characteristics survey was conducted in accordance with the Rural Development Administration's Agricultural Science and Technology Research and Analysis criteria.

[Results and Discussion]

Plant length was shorter as planting density was low in the early stage of transplanting, but became longer as the number of growing days was elapsed when the planting density was low. Tillage increased up to 65 days after transplanting at 80, 60, and 50 hill/3.3m², and lasted until 80 days at 37hill/3.3m². The change in the number of tillers according to the number of growing days was increased by 3, 4, 6, and 11 at 80, 60, 50, and 37hill/3.3m² in both varieties, respectively, and there was no difference according to the tiller ecology. The number of spikelet increased as the planting density of both varieties decreased. There was no difference between the two varieties according to the planting density, and the ripening ratio decreased as the planting density decreased. The rice yield decreased as the planting density decreased, but there was no difference between 37 hill/3.3m² and 80hill/3.3m². In Samgwang, the lower the planting density, the higher the rice yield. As farring continues at 37hill/3.3m² until release, it is judged that additional investigations such as the effective cost ratio and the rate of maturation of late farling are necessary.

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