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Rice Quality of Ripening Period with Transplanting Time in Chungbuk Region

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[Introduction]

In the Chungbuk region, rice cultivation zones are divided into the central plains, the central northern mid-mountainous regions, and the southern mid-mountainous regions. In the Chungbuk region, the temperature increase was 0.6°C compared to the past, which was a larger increase than in the southern region, and the cultivation period was longer, but it is causing the production and quality deterioration due to high temperature ripening. Accordingly, in order to produce high-quality rice, it is necessary to change the cultivation period according to the cultivation area and the type of water source. This study was conducted to analyze the temperature change and quality characteristics of the ripening period through the control of the planting period.

[Materials and Methods]

This study was conducted at Chungcheongbuk-do Agricultural Research and Extension Services in 2021. For the test cultivars, Odae of early maturing cultivar, Cheongpum of mid-maturing cultivar, and Samgwang of mid-late maturing cultivar were used. The transplanting period was from May 20 to June 20, each of which was transplanted 4 times. The standard cultivation method for each region was followed, and the planting distance was 30×15cm. Using a slow-release fertilizer, the nitrogen application amount per 10a was applied at 9kg. The meteorological and microscopic characteristics of each region were investigated.

[Results and Discussion]

In the range of 21-23°C, which is the average ripening temperature for 40 days after seeding, early and mid maturing cultivars were transplanted on June 30 and mid-late maturing cultivar on June 20, which exceeded the heading limit. There was no difference in the protein content according to the transplanting time between the mid-late and mid-maturing varieties, and the late-early maturing varieties decreased as the transplanting time was delayed. The perfect grain ratio increased as the transplanting time of all three cultivars was delayed. Early-maturing varieties with a high average temperature during the ripening period had a higher rate of damaged grain as the transplanting period was earlier, and mid-maturing varieties and late-maturing varieties had a higher rate of chalky kernel.

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