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Characteristics of Whole-seed Potato Production and Dormancy According to Potato Harvesting Period for Chip Processing

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[Introduction]

As the demand for processing potatoes increases, imports of raw potatoes and processed potatoes are increasing. It is necessary to research cultivation technology for stable production of potatoes as raw materials for processing. So, this study investigated the productivity and dormancy characteristics of whole seed potatoes according to the harvest time after potato cultivation.

[Materials and Methods]

As the test varieties, the second-generation chip processing varieties “Saebong”, “Eunsun”, and “Geumnaru” were used, and the potato cultivation site was the Gangneung Test field (Sacheon Jinri 747) of the Highland Agricultural Research Institute. The test treatment was at harvest time after spring cultivation, and the potatoes were harvested at 70, 80, 90, and 100 days after sowing based on the sowing time. The investigation items were whole potato productivity (total yield, whole potato yield, whole potato ratio, number of whole potatoes, and tuber yield distribution) and dormancy characteristics (dormant breakout rate, number of sprouts, sprout rate, and shoot length).

[Results and Discussion]

During the spring cultivation period, the average temperature was 15.6 °C, the amount of solar radiation (wat·m^{2-1}) was 197.7, and the average humidity was 50.8%. As a result of examining the production characteristics of whole potatoes according to the harvesting period, statistical significance was high in the total quantity (ton·ha^{-1}), percentage of whole potatoes and dormancy break rate (%). The total yield (ton·ha^{-1}) was the highest at 30.9 at 100 days after sowing, while the percentage of whole potatoes was high at 56.1~56.6% at 70 and 80 days after sowing. The yield distribution of whole potatoes (30-80 g) was as follows; At 70 days after sowing, the proportion of small whole potatoes of 30 g or less was high, and the proportion of potatoes of 80 g or more increased as the harvesting time was delayed. The harvest treatment 70 days after sowing had a high dormancy breaking rate (%) of 99.9%, whereas the late harvest treatment lowered it to 62.3%. The number of sprouts and the rate of sprouts also tended to increase with earlier harvest. Therefore, for the production of whole-seed potatoes, when the harvesting period is 80 days after sowing, the productivity of whole-seed potatoes is high and dormancy is broken quickly.

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