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Analysis of Growth Characteristics and Yield of Hulless Oat According to Sowing Time in the Central Region of Korea

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[Introduction]

Oats, which are rich in fat, protein, and β -glucan, have been approved for health claim for coronary heart disease risk reduction in the United States, Canada and Europe. Due to this influence, domestic consumption and cultivation have been expanding in recent years. However, it is known that cultivation limit area of hulless oats where the average temperature in January does not drop below zero or the minimum average temperature in January does not fall below -4°C . Despite the recent warming in winter season, hulless oats are damaged during the winter due to a sudden cold wave, so spring-planted oat is preferred. And it is known that mid-March is the optimal sowing time in the central region of Korea.

[Materials and Methods]

This study was conducted in the field of Department of Central Area Crop Science of National Institute of Crop Science (NICS), Suwon, Gyeonggi province, Korea. Two hulless oats cultivars(Choyang:CY, Daeyang: DY) were sown five times at 10-day intervals from February 25, 2022, and the change in growth and yield characteristics according to the sowing time were evaluated. The oat cultivars were sown with a ridge width of 25cm using a barley drill seeder. Cultivation management was performed according to the Rural Development Administration standard cultivation methods.

[Results and Discussion]

There was no difference of seedling emergence between varieties. The number of days from sowing to emergence were 24 days in the first sowing and 10 days in the fifth sowing. The number of days from sowing to heading(DSH) decreased as the sowing time was delayed and the range of DSH of CY and DY were 75.0~52.3 days and 77.7~56.0 days, respectively. The number of days from sowing to maturity(DSM) CY was 108.0 days in the first sowing, but was shortened to 84.0 days in the last sowing by 24 days, and it was possible to harvest until the end of June. However, DSM of DY was 114.3 days in the 1st sowing, but full ripening was not achieved in the 4th and 5th sowings. The grain yield DY was the highest at 301kg/10a in the 3rd sowing. But the yield of CY was the highest at 327kg/10a in the 1st sowing, and decreased as the sowing period was delayed.

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