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An Optimum Sowing Date of Summer Cultivation for Seed Production of Oats (*Avena sativa* L.)

Jin-Cheon Park¹, Yang-Kil Kim¹, Kyungyoon Ra², Yul Ho Kim², Jisuk Kim², Tae-Il Park^{1*}

¹National Institute of Crop Science, RDA, Wanju 55365, Korea

²Department of Central Area Crop Science, National Institute of Crop Science, RDA, Suwon, 16429, Korea

[Introduction]

Oats are an important forage crop that can be year-round cultivation. However, there is no study on seed production for summer cultivation for forage oats. So, this study was conducted to determine the optimal sowing date for seed yield of summer oat (*Avena sativa* L.).

[Materials and Methods]

Summer oat cultivars “Darkhorse (DH)” and “Highspeed (HS)” were sown at upland field by drill seeding in Wanju region between 2017 and 2018. Fertilizer levels was 150-140-60kg(N-P₂O₅-K₂O) per hectare. We investigated seed yield from 4 sowing dates: Jul 15th(1st), Jul 30th(2nd), Aug 15th(3rd) and Aug 30th(4th). We evaluated the agronomic characteristics and germination rate of summer oats.

[Results and Discussions]

Delayed sowing resulted in significantly increased plant height for both years and cultivars. There was no significant difference in spike length of DH and HS which ranged from 12.8 to 17.8 cm. The sowing date of Jul 30th produced a higher number of grains per spike, but this yield differed significantly by year and cultivars. In 2017, the 1st sowing resulted in the lowest DH yield at 132 kg per 10a, while the 2nd sowing had the highest yield at 227 kg. HS yield was the lowest in the 1st sowing at 126 kg and the highest in the 3rd sowing at 219 kg. In 2018, DH had the lowest yield from the 1st sowing at 184 kg per 10a, and the highest from the 2nd sowing at 240 kg, but there was no significant difference between these yields. The first sowing for HS gave the lowest yield at 160 kg, and the 2nd sowing produced the highest at 258 kg. The germination rate of harvested seeds from each sowing date in 2017 and 2018 was found to be higher than 85% and there was no significant difference between the two cultivars in the 2018 germination rate test. Thus, we found the optimal sowing date for summer cultivation of oats for the highest seed yield to be between July 30 (2nd) and August 15 (3rd).

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*Corresponding author: E-mail, parktl@korea.kr Tel. +82-63-238-5223