

PA-80

## Comparison of Triticale (x *Triticosecale* Wittmack) Growth Characteristics according to Seeding date and Seeding rate in Mountainous Areas in Gangwon-do

Seung Bin Ki<sup>1</sup>, Hyung Gyu Park<sup>1</sup>, Bo Hwan Kim<sup>1</sup>, Yi Kyeoung Kim<sup>1</sup>, Hyeok Kwon<sup>2</sup>, Si Ju Kim<sup>3</sup>, Wook Kim<sup>1\*</sup>

<sup>1</sup>BK21 FOUR R&E Center for Plant Biotechnology, Korea University, Seoul 02841, Republic of Korea

<sup>2</sup>Institute of Life Science and Natural Resources, Korea University, Seoul 02841, Korea

<sup>3</sup>Agriculture & Rural Society Research Institute

### [Introduction]

Most of self-sufficient roughages in south Korea are rice straws, and the proportion of high-quality roughages such as grass and feed crops continues to decrease. Triticale (x *Triticosecale* Wittmack) is a suitable self-sufficient roughage that grows even in barren environments and has vital cold resistance. This experiment attempts to identify the growth characteristics of the triticale through seeding in fall and spring each. To preparing for unified agriculture, appropriate seeding period and seeding rate are determined in a Gangwon-do which climate similar to that of the North Korean region.

### [Materials and Methods]

The triticale seeds used in the experiment received from the Central Crop Department of the Rural Development Administration, Gwangyoung(GY), Minpung(MP), and Seyoung(SY). Bongpyeong in Gangwon-do, was selected as the experimental site. The seeding were conducted two times in fall of 2021 (first seeding and second seeding), and also two times in spring of 2022 (third seeding and fourth seeding). The seeding rates were set to three levels: 15kg/10a(X1), 22.5 kg/10a(X1.5), and 30kg/10a(X2). The wintering rate, head length, culm length, total length, fresh weight, and dry weight were investigated on July, 2022. To measure characteristics, 30 cm were randomly selected three times per plot for weight and 20 samples were three times selected for height.

### [Results and Discussion]

When comparing the total length values, GY second seeding X1.5 showed the highest value (average 134.5cm), but there was no statistical significance difference among the seeding date and the seeding rate in GY. In fresh weight, GY and SY were not affected by the date of seeding and the rates of seeding. However, the second seeding (491.0g) was significantly higher than the first (328.6g) during the fall seeding of MP, and did not change significantly from the rates of seeding. There was no statistical significance difference according to the seeding date and the seeding rate in all varieties, but among spring seeding dry weight, the third MP X2 showed the highest value with an average of 128.7g.

### [Acknowledgment]

This work was supported by “Cooperative Research Program for Agriculture Science & Technology Development (Project Number: PJ015339)” Rural development administration, Republic of Korea and the BK21 FOUR program (Grant No. 4299991014324) funded by National Research Foundation of Korea (NRF)

\*Corresponding author: E-mail, kwook@korea.ac.kr Tel. +82-2-3290-3046