OA-07

Effect of Sowing Date on the Growth Characteristics of Corn (*Zea mays* L.) in the Northern Region of Korean peninsula

Kang Bo Shim[1]*, Min Tae Kim[1], Sung Gook Kim[1], Kun Ho Jung[1], Chung Guk Kim[1], Jae Un Lee[1] and Young Up Kwon[1]

[1]Crop Cultivation & Environment Research Division, NICS, Suwon 126, Korea

[Introduction]

Many researches or experiments have been conducted to be applied to the North Korea. This experiment also was designed to get the results adaptable to the northern region. Nowadays, Korean peninsula have been suffered by the climate change such as average temperature increase, drought, heavy rainfall etc. Therefore. we have to find out optimum cultivation technologies which will be adaptable to the North Korea. Especially, new cropping system development research is very important topics for increasing arable land percentage as well as crop yield production in Korean peninsula. This study was conducted to find optimum sowing date of corn relating to the combination of succeeding other crops in the northern region.

[Materials and Methods]

Corn variety(Mibaek 2) was used for the experiment and sowed three different dates of April 15th April 25th and May 5th at the two region(Pyeongchang, Yeoncheon) in 2017. The planting density was 60cm x 20cm We surveyed general growth characteristics and yield components such as stem length, plant height, stem diameter, ear length, ear diameter and total ear weight etc. We also analyze meteorological data at the two regions.

[Results and Discussions]

We analyzed the meterological data of two regions, Pyoungchang, Yuncheon. In case of Pyoungchang, average temperature was 19.6°C which is 0.2°C higher than common year. the precipitation was 811mm which is also 80mm much higher than common year. Yuncheon also similar meteorological pattern. Average temperature was 20.6°C which is 0.3°C higher than common year. the precipitation was 734mm which is also 63mm much higher than common year. Generally, Yeoncheon showed hight temperature, but lower precipitation in 2017. According to the result, sowing date, May 5th showed relatively higher stem length and plant height than other planting dates with two regions. In Pyeongchang, the stem length was 198cm which is 3cm shorter than Yeoncheon maybe due to the low temperature and soil fertility. In case of stem diameter and ear length, both regions were not shown to different. Otherwise, ear diameter in the Yeoncheon showed longer than that of Pyeongchang, but corn setting number showed different result. In Pyoungchang, average corn setting number was 20.5cm, and 20.1cm in the Yeoncheon. Average ear weight in in the Yeoncheon was 731kg per 10 a which is lower than that of Pyeongchang. Those data was not showed statistically different. Nonetheless, the sowing date, May 5th was prominent date for the corn cultivation in the northern region.

[Acknowledgements]

This work was supported by a grant from development of maximum production cropping system of food crops adaptable to the northern region of Korean peninsula (No. PJ012619012017), Rural Development Administration of Korea

*Corresponding author: Tel. +82-31-290-0650, E-mail. shimkb@korea.kr