

PA-17

Climate Effect on Productivity of Rice at Middle Mountainous Region in Gyeongbuk Province

Jong-Hee Shin^{1*}, Chae-Min Han¹, Jung Bae Kwon¹, Jong-Gun Won¹, Young-Un Song¹

¹Division of Crop Research, Gyeongsangbuk-do Provincial Agricultural Research and Extension Services, Daegu 702-708, Republic of Korea

[Introduction]

The influence of weather conditions as temperature, rainfall and duration of sunshine are very important for the growth of rice. Therefore, the climate change affects rice yield and quality. The aim of this study was to analyze the relationship between rice yield and climate elements in inland mountainous area.

[Materials and Methods]

This experiment was conducted to clarify the effect of the air temperature and sunshine duration during rice growth period on yield and quality of rice cultivated in Andong region(inland mountainous area) in Korea from 2016 to 2020. Four mild-late maturing rice varieties (Ilpum, Saechucheong, Samgwang, Chilbo) were cultivated by standard cultivation method for rice. Seedlings were transplanted to the experimental plots on May 20 at a spacing of 30cm×14cm.

[Results and Discussion]

The average air temperature of the rice growing period from 2016 to 2020 was similar to that of the normal year. In the case of 2016, The high minimum temperature and the decrease in sunshine hours due to frequent rains during the ripening season resulted in a significant decrease in yield. The effect of climate factors on the rice yield and quality of four rice varieties include the main varieties of Gyeongsangbuk-do, ‘Ilpum’ and ‘Samgwang’, was investigated. The rice yield and head rice rate of ‘Samgwang’ were the highest among the test varieties, and the annual variation was small, their protein content was kept below 6%. The heading date of ‘Samgwang’ was significantly affected by the air temperature and sunshine duration of the reproductive growth period. In the case of ‘Ilpum’, there was little variation between years in heading date, but the head rice rate was lower than that of other varieties and the variation between years was large. These results obtained in this study imply that the selected varieties with high yield and quality could be recommended to rice cultivation farmers in the regions with high priority.

[Acknowledgement]

This work was carried out with the support of “Cooperative Research Program for Agriculture Science & Technology Development (Project No. PJ01508603)” Rural Development Administration, Republic of Korea.

*Corresponding author: Tel. +82-53-320-0271, E-mail. szzong91@korea.kr