PA-139

Analysis of the occurrence pattern of potato heat damage

Gyu Bin Lee[1]*, Hyun Jin Park[1], Jang Gyu Choi[1], Jin Hee Seo[1], Young Eun Park[1], Yong Ik Jin[1], Gun Ho Jung[1]

[1]Highland Agriculture Research Institute, National Institute of Crop Science, Rural Development Administration, Gangwon 25342, Korea

[Introduction]
Damage to farmers growing food crops has increased due to the recent heatwave. It is necessary to investigate damage patterns to establish measures to mitigate heat damage to potato farms.

[Materials and Methods]
Seed potatoes were sown on April 6, May 6, and June 11, 2020, respectively, to treat heat waves in the midsummer of July and August at the greenhouse. Heat treatment was performed for 14 days from July 24 to August 6. Houses with an average temperature of 34℃ during the day (07:00~19:00) were up to 5.2℃ higher than those at 30℃. In particular, in the 34℃ house, the internal temperature rose to 38℃ during midday from 12:00 to 16:00. Daytime (07:00-19:00).

[Results and Discussion]
In houses with an average temperature of 30℃, 'Jopung', 'Seohong', 'Haryeong', and 'Jayoung' cultivars grew, and in 34°C houses, 'Seohong', 'Haryeong', 'Jayoung' cultivars grew even under heat conditions. In the open field control, the difference before and after the heatwave by varieties was insignificant. The occurrence of secondary growth according to the heat treatment temperature was higher in the 34℃ treatment than the weekly average temperature treatment at 30℃, except for the 'Superior' cultivar. The incidence rate was low in the treatment with an average weekly temperature of 34℃ and in the field control. Changes in the shape (long width ratio) of the tubers were observed during the heat treatment during the tuber hypertrophy rather than the tuber maturity. During the tuber hypertrophy, 'Jopung', 'Jayoung' cultivars tended to have a longer width ratio in the house with an average weekly temperature of 31℃ than in the house at 36℃. When the tubers were subjected to heat treatment during maturation, no change in tuber length and width ratio was observed except for the 'Haryeong' cultivar.

[Acknowledgement)
This study was supported by joint research project from Rural Development Administration, Republic of Korea (Project number: PJ015083).

*Corresponding author: E-mail. gblee0211@korea.kr Tel. +82-33-330-1620