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Field trials of herbicide resistant transgenic potato (*S. tuberosum* cv. Dejima)

Hyo-Won Seo^{1*}, Jung-Yoon Yi¹, Shin-Chul Bae², Young-Eun Park¹, Sung-Yeul Kim¹

¹National Institute of Highland Agriculture, RDA, Pyeongchang, 232-955, Korea

²National Institute of Agricultural Biotechnology, RDA, Suwon, 441-857, Korea

Objectives

To investigate the agronomic characteristics of the transgenic potatoes with herbicide (Basta) resistance gene, genetically confirmed several clones were evaluated in the isolated trial field.

Materials and Methods

1. Material: Potato transgenic clones genetically confirmed of bar gene's integration
2. Methods : 1) Plant propagation : Pot culture in the greenhouse 2) Confirmation of foreign gene's integration : PCR 3) Investigation of agricultural characteristics : We cultivated the potato clones in the isolated field according to the standard potato growing method of Rural Development Administration. To evaluate agronomic characters, each characters were investigated by UPOV standard. 4) Herbicide resistance : Treated with Basta solution (18% Glufosinate ammonium)

Results and Discussion

The annual variation of yield and plant characters were showed similar tendency for 2 years from generation 3 to 4. Herbicide resistant potato Bar 3 line was selected as a promising event for commercialization. The yields and the herbicide resistance were made up for practical use. Except for herbicide resistance, the agronomic characteristics and botanical characteristics of Bar 3 are equal to non-transgenic cultivar Dejima. Bar 3 also showed the low occurrence of common scab. But the reason of this result is not yet confirmed. It is needed that the biosafety test have to be performed before DUS test for the enrollment to National List of Variety (NLV) as a new cultivar.

Key words : Field trial, GMO, Herbicide resistance, Transgenic potato

* Corresponding author : Hyo-Won Seo, TEL: 033-330-7815, E-mail: shwonkw@rda.go.kr