

This is provisional English translation of an excerpt from the original full report.

Safety Assessment Report

Japanese potato SPS-000Y9-7

(Genetically Modified Foods and Feeds)

Food Safety Commission of Japan (FSCJ)

October 2019

ABSTRACT

FSCJ conducted a safety assessment of Japanese potato SPS-000Y9-7 line resistant to potato blight, containing low free asparagine, low reducing sugar, and low polyphenol oxidase activity, based on the documents submitted by the applicant.

Japanese potato SPS-000Y9-7 line was generated through the introduction of potato blight resistance gene derived from potato wild species into a potato cultivar (*Solanum tuberosum* subsp. *Tuberosum*), thus becoming resistant to potato blight. Also, segment of asparagine synthetase gene, segment of promoter region of water dikinase gene, segment of promoter region of phosphorylase L gene, and segment of vacuolar invertase gene, derived from the potato cultivar were introduced. These gene insertions induced gene silencing so that expressions of the relevant endogenous genes were suppressed, and thus production of acrylamide during high temperature heating processing was reduced. Moreover, segment of 3' untranslated region of polyphenol oxydase-5 gene derived from potato wild species was introduced, and thereby gene silencing was induced so that expression of endogenous gene were suppressed, and formation of blackspot bruise of Japanese potato was reduced.

Safety of donors of the inserted DNAs, sequence of the inserted DNAs, stability of the inserted DNAs in the successive generations, influences on metabolic pathways in the plant, and changes of nutrients and toxic ingredients in the plant were evaluated based on the “Standards for the Safety Assessment of Genetically Modified Foods (Seed Plants)”¹. None of newly generated safety concerns was detected in comparison with the potato line without genetic modification.

Consequently, FSCJ concluded that Japanese potato SPS-000Y9-7 line resistant to potato blight, containing low free asparagine, low reducing sugar, and low polyphenol oxidase activity has no concern relevant to human health.

¹ “Standards for the Safety Assessment of Genetically Modified Foods (Seed Plants)” (Decision of the Commission dated 29 January 2004)