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# Evaluation of agronomic traits and environmental biosafety of a transgenic tomato plant expressing satellite RNA of *Cucumber mosaic virus*

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## Summary

A transgenic tomato, 'No.4-7 line', expressing satellite RNA of *Cucumber mosaic virus* (CMV), which shows resistance to CMV, was evaluated for its agronomic traits and biosafety in a closed greenhouse, semi-closed greenhouse, and an isolated field of the National Agricultural Research Center for Hokkaido Region.

'No4-7 line' was slightly dwarfed, flowered earlier, and show higher productivity than the original variety both in the semi-closed greenhouse and the isolated field. The differences might be caused by mutations that occur during the process of callus formation in tissue culture for transformatin rather than position effects in the transformed genomes or by the expression of the introduced gene.

In the capacity of gene flow through pollen, there was no difference between 'No4-7 line' and the original variety, because cross-pollination was not observed under conditions of artificial wind and flower-visiting-insects in the semi-closed greenhouse and natural open field. In biosafety assessment tests, no significant differences were found in several characteristics such as growth properties, kinds of chemical substances produced by the plants and microorganism flora in soil between the original variety and transgenic plants. The results suggest that the transgenic tomato plant was no effect on the natural environment and surrounding ecosystem.

**Key words**: transgenic tomato, *Cucumber mosaic virus*, satellite RNA, biosafety, evaluation

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