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SHORT COMMUNICATION

Collaborative trial validation of a construct-specific real-time PCR method for detection of genetically modified linseed event 'CDC Triffid' FP967

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Abstract A real-time PCR-based method for construct-specific detection of the genetically modified (GM) linseed event 'CDC Triffid' FP967 originating from Canada has been validated in a collaborative trial. The construct-specific method amplifies a 105 bp long fragment of the transgenic insertion present in FP967 spanning the junction of the terminator region of the nopalin synthase gene from *Agrobacterium tumefaciens* (*Tnos*) to a sequence region coding for the dehydrofolate reductase gene (*dfr*) from a class I integron from *Escherichia coli*. This region is characteristic for the construct used to develop FP967. A total of 11 laboratories participated in the collaborative study. For PCR analysis, each laboratory received 14 DNA samples comprising 7 double-blind DNA samples. The samples consisted of two low GM-levels of FP967 DNA (10 or 50 copies per PCR), of DNA from two different GM-positive linseed products and of DNA from GM-negative linseed, potato and rapeseed materials, respectively. All but one of the FP967-positive DNA samples were detected correctly. No false-positive results were reported. The results demonstrate that the linseed event FP967 is detectable even at low copy number concentrations. The limit of detection (LOD) determined with plasmid DNA was shown to be at 5 copies of the *Tnos–dfr* sequence. The data provided show that the method can be applied successfully in different laboratories and is fit-for-purpose to test for the presence of the EU-unauthorised linseed event 'CDC Triffid' FP967.

Keywords Genetically modified linseed · Detection method · Real-time PCR · Collaborative trial · CDC Triffid · FP967

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Introduction

In 2009, several linseed products originating from Canada were found to contain genetically modified (GM) DNA which was attributed to the GM linseed (*Linum usitatissimum*) event FP967 ('CDC-Triffid'). This GM linseed has tolerance to soil residues of sulfonylurea-based herbicides and was developed by the Crop Development Centre (CDC) at the University of Saskatchewan in Canada in the 1990s [1]. It received regulatory feed and environmental safety authorisation in 1996, and food safety authorisation in 1998 in Canada, but was never released for commercial production according to communications of the Canadian Grain Commission (CGC) [2].

Official findings of genetic modifications in linseed products on the European market have been notified to the Rapid Alert System for Food and Feed (RASFF) for information of the regional food and feed control authorities in the EU member states [3]. According to the current legislation, no food and feed products derived from GM linseed are authorised in the EU. In order to prevent further imports of unauthorised GM linseed from Canada, the