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Effect of high temperature and pressure on quantification of MON 810 maize

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Maize MON 810 (*Zea mays* L.) is the only transgenic cultivar grown in the European Union countries and food products with its content higher than 0.9% must be labelled. Processing such as high temperature (121 ° C), elevated pressure (0.1 MPa), and low pH 2.25 fragmented DNA. A two order difference in the species specific gene content compared to the transgenic DNA content in plant materials used has led to false negative results in the quantification of transgenic DNA. The maize containing 4.2% of the transgene after processing appeared to be as low as 3.0% (100 ° C) and 1.9% (121 ° C, 0.1 MPa). The 2.1% amount of the transgene dropped at 100 ° C to 1.0% and at 121 ° C, 0.1 MPa to 0.6%.

Determination of GMO (Genetically Modified Organism) content in processed foods may lead to incorrect statement and labelling could mislead consumers in these cases.

Keywords:

DNA degradation; PCR; highly processed foods

[fulltext]