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Development and verification of PCR based assay to dectect and quantify garden pea *lec* gene

Genetically modified organisms (GMOs) entering the food chain have became its part, which is necessary to monitor. GMO analyses are used as a control mechanism according to valid acquis communautaire for traceability and labeling of GMOs. Generally, approved PCR based protocols are used and they require stepwise procedures that use amplification of species specific gene as initial point. This study aims to develop and verify PCR based assay for amplification of garden pea lectin gene (*Pisum sativum* L.) as reference one. Lectin gene was analysed *in silico*, selected region was amplified and sequenced and new set of species specific primers for identification of

garden pea was designed. Conditions of conventional PCR as well as real-time PCR were optimised and specificity of new primer set on DNA extracted from garden pea cultivars as well as DNA extracted from other selected species from *Fabaceae* family was tested. Quantification of garden pea lectin gene using real-time PCR based on SYBR Green I was optimised and performance characteristics recorded. The characteristics fit to method acceptance criteria range. Plasmid with garden pea lectin sequence was developed and plasmid is available as a positive control.

Keywords:

 GMO; lectin; PCR detection; real-time PCR

[fulltext]