GMO TESTING OF ROUNDPUP READY SOYBEAN IN FOODSTUFFS

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SUMMARY

Since their first commercial release in 1992, transgenic crops are spreading more rapidly than any other agricultural technology in history (Raney, 2006). Soybean is the most widespread and cultivated GM crop around the globe (James, 2005). EU legislation established labeling of foodstuffs derived from or containing GMOs as a tool for ensuring customer’s right to make an informed choice. In this context, specific molecular analyses, performed by competent laboratories, are used to determine if labeling should be applied according to the legislation.

Certified Reference Materials (CRMs) for Roundup Ready soybean (RRS) were used to assess the performance of the working methods. Ten different commercially available food products were selected to be tested for the presence and content of GTS 40-3-2 transformation event (RRS). For DNA extraction we employed four different methods. The extracts were assessed by agarose gel electrophoresis, spectrophotometer measurements and PCR and real-time amplification. Specific PCR primers were then employed for screening and GMO qualitative testing. Quantification of GMO content was achieved by real-time PCR using the TaqMan methodology. All PCR and real-time PCR protocols were taken from already available scientific publications (Querci et al., 2004; ISO 21570:2005).

All control samples held the expected results both for the PCR and real-time PCR experiments. However, the unknown samples were positive only for plant and soybean specific primers. Results indicated that none of the selected unknown samples contains RRS above the LOD and LOQ of the testing methods.

REFERENCES