

论文

转基因定量检测的不确定度研究

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摘要:

目前,欧盟、日本对转基因产品都实行基于转基因含量(阈值)强制标识制度。世界各国都采用实时荧光PCR方法来开展食品成分的相对定量检测工作,以样品的内、外源基因的拷贝数之比来近似代表样品中的转基因质量分数。为了便于用户正确理解检验结果,在转基因定量检测结果报告中必须报结果的不确定度,分析了转基因量度的不确定度来源,参照化学分析中的有关方法,给出了转基因定量检测中外源基因和内源基因的标准曲线的不确定度测算公式,并以转基因大豆为试材,利用方法的室内验证数据进行不确定度计算,可供相关实验室参考。

关键词: 转基因定量 不确定度 标准曲线

Estimate the Uncertainty on Quantification of GMO by the Fluorescence Real-time PCR Method

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Abstract:

Presently under the Regulation (EC) No 1830/2003, the food and feed produced from genetically modified organisms are mandatory labeled as its GM contents beyond a specified level, threshold. The fluorescence quantitative polymerase chain reaction was used as the standard method to detect the contents of the transgenic component in China and European countries. It is recognized that in order to be able to judge if an analytical results exceeds a threshold; the MU must be estimated and reported together with the measurement result. Nowadays, on the relative quantification of GM products with real time PCR methods, the copy number ratios between endogenous gene and extraneous gene are use to stand for GMO mass fractions (m/m) in food and feed. The procedures were devised to estimate the uncertainty that originates in the analytical processes and use Roundup Ready soybean as an example to demonstrate how to estimate the analytical variability of quantitative analytical results obtained by real-time PCR, basing the data derived from in-house validation of the PCR method.

Keywords: GMO quantitative Estimate the uncertainty Standard curve

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