

Isoflavone and Mineral Content in Conventional Commercial Soybean Cultivars and Transgenic Soybean Planted in Minas Gerais, Brazil

Authors : Renata Adriana Labanca, Gabriela Rezende Costa, Nilton de Oliveira Couto e Silva, José Marcos Gontijo Mandarin, Rodrigo Santos Leite, Nilson César Castanheira Guimarães, Roberto Gonçalves Junqueira

Abstract : The objective of this study was to evaluate the differences in composition between six brands of conventional soybean and six genetically modified cultivars (GM), all of them from Minas Gerais State, Brazil. We focused on the isoflavones profile and mineral content questioning the substantial equivalence between conventional and GM organisms. The statement of compliance label for conventional grains was verified for the presence of genetic modified genes by real time polymerase chain reaction (PCR). We did not detect the presence of the 35S promoter in commercial samples, indicating the absence of transgene insertion. For mineral analysis, we used the method of inductively coupled plasma-optical emission spectrometry (ICP-OES). Isoflavones quantification was performed by high performance liquid chromatography (HPLC). The results showed no statistical difference between the conventional and transgenic soybean groups concerning isoflavone content and mineral composition. The concentration of potassium, the main mineral component of soy, was the highest in conventional soybeans compared to that in GM soy, while GM samples presented the highest concentrations of iron.

Keywords : glycine max, genetically modified organism, bioactive compounds, ICP-OES, HPLC

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