Current issues connected with usage of genetically modified crops in production of feed and livestock feeding

K. Kwiatek, M. Mazur, Z. Sieradzki

Department of Hygiene of Animal Feedingstuffs, National Veterinary Research Institute in Pulawy, Al. Partyzantów 57, 24-100 Puławy, Poland

Abstract

Progress, which is brought by new advances in modern molecular biology, allowed interference in the genome of live organisms and gene manipulation. Introducing new genes to the recipient organism enables to give them new features, absent before. Continuous increase in the area of the biotech crops triggers continuous discussion about safety of genetically modified (GM) crops, including food and feed derived from them. Important issue connected with cultivation of genetically modified crops is a horizontal gene transfer and a bacterial antibiotic resistance. Discussion about safety of GM crops concerns also food allergies caused by eating genetically modified food. The problem of genetic modifications of GM crops used for livestock feeding is widely discussed, taking into account Polish feed law.

Key words: GMO, animal feedingstuffs, feed, genetically modified soya, safety

Introduction

Progress brought by advances in molecular biology allowed interference in the genome of live organisms and gene manipulation. Introducing new genes to the recipient organism gives them new features, which they did not have before. As regards crops, insertion of new genes permits to get plants which are resistant to insects, herbicides or viruses, bacterial and fungal diseases. Genetic modification allows also improving quality of crops, and making plants more resistant to abiotic stress caused by drought, low and high temperatures, salinity and oxidative environment (Aulrich et al. 2002, Aumaitre et al. 2002).

Safety of GMO's

Steadily growing area of biotech crops in the world triggers continuous discussion about safety of genetically modified (GM) crops, including food and feed derived from them (James 2007). The supporters of GMO convince that cultivation of biotech crops brings many benefits. For example, it is becoming possible to expand crop production, to increase harvest or to decrease amount of herbicides used. Because of that, production cost will decrease what finally will result in decreasing products prices. On the other hand, the opponents of GM crops stand up for their opinion and indicate potentially negative effects,