Why do GMOs spark debate?

Genetic engineering allows scientists to introduce new genetic information into existing cells in order to modify one or more characteristics of an organism.

The purpose of genetically engineering plants used for food is usually to obtain one or more desirable traits. Typically, these might be improved pest or disease resistance, increased shelf life or improved nutritional value. The changed plant with its new traits is referred to as a genetically modified organism (GMO).

Genetic engineering technology is relatively new and often highly controversial. Most opponents fall into one of three categories: those with an ethical objection to human meddling in biology (or 'playing God'); those who feel that not enough is known about potential negative consequences of genetic modification; and those who are opposed to experimentation with animals (through genetic engineering or otherwise).

In plants, there is little end-result difference between same-species cross-breeding, which has been practiced by farmers for many years, and genetic engineering. Right now, GM soybean (used for animal feed and direct human consumption), maize (livestock feed and a human staple) and canola (cooking oil) are produced in large quantities.

In the United States, consumers are more accepting of GMOs than consumers in Europe and Japan. Nonetheless concerns over potential cross-pollination of GM crops with non-GM crops have led to regulations world-wide. These address limiting contact and developing containment strategies.

There is also an ongoing debate about GM food labelling. Some European countries label GM foods, but in South Africa there is no legislation requiring it. The South African Department of Health cites concerns over increased food prices and its effects on the poor is one of the primary reasons GMOs are not labelled as such locally.