Should consumers support genetically modified corn?

Genetically Modified Corn and Maize crops such as BT-Corn, an insecticide fortified corn crop have become a controversial issue worldwide in the last 10 years. The corn seed is genetically modified as the natural insecticide toxin *Bacillus Thuringiensis* is crafted into the genes of the seed. Consumers around the world have varied opinions on the use of this corn, often because of doubt about the safety of the environment around the corn plantation due to the toxin in the corn.

The *Bacillus Thuringiensis* gene is added to the corn plant along with a promoter sequence, to help make sure that the trait is expressed in the phenotype of the plant. The plant is then toxic to a number of insects that target corn crops, like the European Corn Borer. This results in less crop waste and damage as the insects are wary of destroying the corn. There have been many studies of the effect on insects by the toxin other than ones that harm the corn, like butterflies. BT-Corn crop was alleged to be toxic to the Monarch Butterfly, but studies show that the population increased by 30% in 1999, while BT-Corn crops increased around America also. This shows that BT-Corn is not a major threat to Monarch Butterflies.

A large amount of corn grown around the world in genetically modified, and ends up in our food. 11 countries openly grow GM corn, Argentina, Brazil, Canada, South Africa, Spain and the US account for some of these. Globally, 26% of corn is genetically modified. In New Zealand, GMOs are not as common as in a country like the United States of America, where 85% of corn grown is genetically modified for human consumption in products like crackers, cereals and beverages, where corn syrup is added as a sweetener.

In general, Europe and Australasia, as well as Japan have taken oppressive stances towards GM Corn and BT-Corn, especially in Europe and Japan, where only a minority of corn is genetically modified or consumed. Researchers like Karl Meilke, an economist and scientist from Canada, have theories about why these regions in particular are opponents to GM food and corn, which include environmental, health and ethical issues, which have caused many consumers worldwide (although more widespread in opponent countries) to not support the use of GM corn. A paper by Allan Buckwell from the Country and Land business association says that public health scares like Mad Cow Disease and dangerous toxins found in Belgian chickens are deterring consumers from some genetically modified food. The main opponent countries mentioned above have mostly introduced strict labelling procedures for any GM ingredients used in buyable products. Taking a very different stance, The USA and Canada are opposed to mandatory labelling, and the CATRN paper (http://ideas.repec.org/p/ags/catrcp/12889.html) showed that most Americans consider GM food to be "identical" to regular food.

A Pennsylvania State University study on consumer willingness and knowledge about GM and BT corn in the US showed that knowledge of the process and use of genetic modification in readily available products in stores around America remain low, although surveys show that consumers do not have an issue with the GM Corn. For the study, consumer preferences for either GM or non-GM corn was measured by the sale of both corn crops in a store. The study showed that consumers
where either not aware (the crops were labelled GM and non-GM) or willing to buy the corn, as it had a 44% market share, which is high enough to suggest that there is a market for BT-Corn. J.S James, of Pennsylvania University said that “Price seems to have played fairly minor role in consumer choices, as indicated by the fairly large market share of BT-Corn, which did not have a price advantage over regular corn.”

BT-Corn has advantages and disadvantages. Advantages could include less insecticide use, meaning that the surrounding area is not exposed to harsh chemical sprays and poisons. A disadvantage may be that the issue of long term exposure to insects could result in the insects becoming resistant or immune to the strain of toxin in the corn, causing the GM corn to become redundant in use. Another disadvantage is that many insects could be killed due to the BT toxin, meaning that helpful insects could also be killed, and possibly having a negative impact on the surrounding environment.

I think that consumers should be wary of genetically modified corn due to the numerous health studies done that show that the BT toxin remains in the body and can have unknown effects on health. A food controversy involving StarLink corn, which is produced only to be animal feed, allegedly caused 27 people to become ill when it ended up in consumer products like Taco Shells and other corn products. This caused outrage in public, and demonstrates how careless suppliers can be with food not fit for consumption. In scenarios like this, consumers should not support GM Corn. Governments should also make sure that the labelling of products with GM ingredients is mandatory, and support the regulation of imported products with GM ingredients. Examples like these say that GM corn can become a hazard to us if not managed properly. Genetically modified crops should not be grown in New Zealand, as there is often no need for Genetic modification.

I started my research on the internet accessing sites like Wikipedia and scientific papers. Wikipedia I found to have up-to-date, scientifically correct and unbiased, factual information about controversies and information linked to my question and idea. I learnt many facts about how prevalent GM corn is globally, and how it is produced. I then branched off, using sources found through Google, some of which providing information about New Zealand’s stance of GM crops:

Please note – These are extracts from one student’s response