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Can GMOs Help Reduce Food Waste?

There's nothing better than gazing at an array of fresh fruits and vegetables at the grocery store, licking your lips as you anticipate the first crunch into that shiny, red apple. But, there's nothing worse than seeing it, bruised and moldy, get dumped into a garbage can that same day. In Canada, 45% of all fruits and vegetables produced each year are wasted, contributing to the 1.3 billion tonnes of food waste produced each year. About 25% of garbage in Vancouver is made up of uneaten or spoiled food, while 30 billion dollars of food are wasted annually in Canada.

But 1 in 9 people globally go to bed hungry each night, and 1.4 million Canadian children do not have access to healthy, filling food. Globally, 2.37 billion people are unable to eat a balanced diet on a regular basis. Let's go back to that same grocery store. You decide to pick up a handful of Arctic Apples, and take them home. You split one open, and eat half. Hours later, you come back and notice the apple hasn't started browning yet....how is this? Genetically modified organisms, or GMOs, are products or foods whose genetic material has been altered in a way that does not occur naturally. There are many reasons why companies choose to use GMOs- for products to be resistant to diseases, to change the flavor and improve the taste of fruits and vegetables, to resist browning after being cut or opened or to enhance the nutritional value of a product.



An Arctic Apple, genetically modified to be non-browning.

For many years, there has been debate on the positives and negatives of GMOs. Genetically modified organisms have caused a rise in food allergies, the wealth from GMO products is distributed unequally, resistance to pests and diseases can occur without genetic modification, and, in very few cases, GMOS causing the production of superbugs and contamination of fields or farms.

But, in Canada, 20 billion pounds of produce are wasted per year on these same farms. 2.9 trillion pounds worldwide is either wasted or lost. But food waste has a greater environmental impact than the wasting of water, energy and land that contribute to producing it. In landfills, food rots and produces methane, a greenhouse gas with 21 times the global warming potential of carbon dioxide, contributing to the 18% of methane emission that comes from landfills.



Can GMOs decrease food waste, lower the number of those suffering from hunger and limit methane gas emissions?

In undeveloped countries, around 20-25% of all crops are lost each year as a result of pests or crop diseases. In undeveloped countries, that number rises to 40-50% of crops. Genetically modified crops improve disease resistance in crops. In Africa, the country that produces over 145 millions tonnes of bananas each year found their food security and income for farmers rising after creating a transgenic banana- transferring resistance genes from a sweet pepper into this fruit.

GM fruits that are non-bruising and non-browning can eliminate physical characteristics from playing a part in the life cycle of this product. For example, genetically modified potatoes limit the amount of bruises and spots formed on this crop over time, meaning that less potatoes will be thrown out and distributed into landfills as occurred in 2013, when worldwide potato waste was over 1000 times the weight of the Eiffel Tower. Genetically modified crops can help farmers produce crops that are more resistant to extreme weather conditions. Drought and extreme heat were found to affect crop production by around 10% between 1964 and 2007, with 7-10% greater impacts in developing countries. Through advances in crop biotechnology, crops such as corn have been made drought tolerant, and helps farmers minimize the impacts of large-scale weather events.

Around the world, 663 million people are undernourished, while 697 million people are food insecure. They lack access to nutritious and filling food, while, on the opposite side of the world, consumers can be seen throwing out pounds of produce based on physical characteristics. Genetically modified foods can play a big role in eliminating food waste across the globe. Not to mention the impacts it will have on the reduction of methane gas from our atmosphere.

There are two sides to every story- so what is your opinion on GMOs?

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