

# Waiter, there's a gene in my soup!

BY SAM FRASER-SMITH,  
CHERYL MORRISON  
AND KIRSTIN DANIELSON

Carrots with petunia genes? Tomatoes implanted with fish DNA? Do these things scare you? Maybe they should, and maybe not. It depends who you believe. A percentage of people in Europe suggest that there is something to worry about. Rallies and controversy have surrounded the issue of genetically modified (GM) foods in Europe and there have been calls for a ban on all GM foods in European Union member countries.

This controversy surrounding GM foods came to Dal last week. They were discussed at a lecture held at the Weldon Law Building given by Wayne Roberts, the author of Real Food For Change. Roberts thinks that the risks involved with GM foods outweigh their benefits. He emphasized the importance of making an informed decision about something that can potentially affect your health.

GM enthusiasts claim that technology will enhance crop yields, improve taste and nutritional

value, create longer shelf lives, help to feed the 'developing world,' reduce dependence on fertilizers and pesticides, and will provide fuels, medicines, nutraceuticals and biodegradable plastics. Advocates for increased testing or banning of GM foods warn that potential risks include increased herbicide resistance that might be transferred to other species or might encourage more extensive use of chemical herbicides.

They are also concerned about plant biotechnology leading to an increased dependence on fewer and fewer varieties, a problem that has led to disease epidemics, like the 19th Century Irish potato famine.

Another risk is the use of antibiotic genes as "markers" in the process of engineering the crops. As bacterial species progressively acquire antibiotic resistance there may be adverse affects on human health. Already there is medical concern over the increasing number of multi-resistant strains of bacteria. Many Western governments have established advisory committees to oversee safety issues concerning foods

produced by the techniques of genetic engineering.

In Canada, the Canadian Food Inspection Agency (CIFA) and Health Canada oversee the safety and quality of genetically modified organisms (GMO's). So far there have been 42 GM foods approved in Canada. Most are component foods: foods that are included in a list of ingredients, rather than served by themselves. You may already be unknowingly eating them in processed foods. Some examples include corn, canola, potato, tomato, squash, soybean, flax and cottonseed. The biggest concern of the federal government is that GM foods are healthy and safe for human consumption. Their criteria include: What the genetic change is exactly, and how the food was developed. What the food's nutritional makeup is compared to the natural counterpart. The potential for toxicity. And the potential for causing an allergic reaction.

Concerns about the safety of GMO's extend beyond the potential health risks and benefits to humans. Some scientists claim that the effect of GM crops on insect and animal

populations may prove harmful. Lately, American researchers have reported that the threatened monarch butterfly suffered higher mortality rates when exposed to pollen from GM maize. The ingestion of this modified pollen causes the interior lining of caterpillar guts to disintegrate and leads to significantly decreased populations.

Advocates for restricting Canadians' production and access to GM foods subscribe to two schools of thought. One group wants GM foods banned. The other will be satisfied with the mandatory labelling of GM foods. At this point, the industry appreciates the public stigma associated with GM foods and does not support mandatory labelling. Analysts know that if foods are labelled as genetically altered, many people will not buy them. To counter this problem, industry giants, like McCain, Heintz and Frito Lay, have opted to avoid using GM foods and are beginning to use organically products. This phase-out will occur gradually, over five years and has been prompted by the growing demand for organic products in Europe.

World agricultural production is dismally falling short of any goals to feed the world's population. A recent conference of the United Nations Food and Agriculture Organization (FAO) predicted that by the year 2010, chronic malnutrition in the 93 developing countries would continue to afflict 637 mil-

lion people. But the problem isn't producing adequate amounts of food. Scientists and agri-businesses alike say that the advent of GM food technology could potentially go a long way to alleviate global hunger, but it remains to be shown that this would really happen. In the current global situation, the European Union stores food surpluses in butter mountains and wine lakes to ultimately deteriorate and Canada wastes important food sources like potatoes and milk to protect market interests, while across the Mediterranean in parts of Africa, people are starving due to waste and a failure to equitably distribute wealth and food. These cases make it seem as if there are bigger philosophical problems that would more directly eradicate world hunger than creating new and improved brands of foods.

In the face of mounting evidence, both pro and con, it is hard to make a decision about your own health and the role that genetically modified foods will play in your diet. Until conclusive evidence is demonstrated either for or against the safety of GM foods, it seems that the consumer is left with being careful as the only option.

For further information, visit these sites:

- [www.time.com/time/daily/special/genetics/plant.html](http://www.time.com/time/daily/special/genetics/plant.html)
- [www.hc-sc.gc.ca/english/archives/genmod.html](http://www.hc-sc.gc.ca/english/archives/genmod.html)

## Water Conservation — Doing the same with less

BY BIANCA GORE

Let's assume that you are an average Canadian. You've heard the term "water conservation" and you believe in reducing the amount of water consumed and wasted. Granted, you generally leave the water running while you brush your teeth, and you tend to like long hot showers in the morning, but you would not consider yourself excessive. Unfortunately you, like most of us, are guilty.

According to the most recent Statistics Canada figures (1996), a typical Canadian household is made up of 2.6 people and consumes about 6000 liters of water per week indoors and another 2000 liters per week outdoors (averaged over the year for lawn/ garden watering and car washing). That totals of approximately 412,000 liters per year. This is an excessive amount of water when compared with the volume of water *actually required* for daily activities in the home.

The first and most important site where water efficiency can be achieved is the bathroom. About 60 percent of indoor home water use occurs in the bathroom and the toilet is the single greatest water user. How efficient is your toilet? Well, if it is one of the 40 percent of toilets that continue to run after flushing, it can waste up to 200,000 liters of water in a single year! Or maybe you are thinking you are among the remaining 60 percent who are not responsible. Not so, even a regular toilet (more than 10 years old) that does not leak, uses about 18 or more liters of water per flush when only six liters per flush will do. When you do the math, that's about four flushes per person per day, multiplied by 18 liters of clean fresh water, that equals nearly 30,000 liters of water per year to get rid of 650 liters of body waste. What can you do about this?

There are basically three ways to make your toilet more efficient. You can use a water retention

device, a water displacement device or an alternate-flushing device. The most common water retention device is a toilet dam, which is about \$10 and easy to install. A toilet dam will save about five liters of water per flush, but they do tend to leak over time and generally do not save as much water as other devices.

Water displacement devices are even cheaper and easier to install. Plastic bags or plastic bottles filled with water can be put into the flush box at the back of the toilet and displace an equivalent amount of water every time you flush. Unfortunately, like the toilet dam, they do not displace a great amount of water and if installed improperly they can interfere with the normal operation of the toilet; nevertheless they help.

There are two alternate flushing devices, the early-closure and the dual flush. Both devices are attached to the overflow tube inside the toilet tank. When you flush, the flush lever is activated and the flush valve or flapper closes after the tank is only partially emptied. In other words, these devices interrupt the flush cycle so that you can achieve a partial flush, a full flush or a heavy flush. The idea with any of these devices is that they are supposed to make your toilet more efficient, so you may need to try more than one method in order to decide which device is most compatible with the design of your toilet.


So, we've covered the toilet, what about those long, hot showers? Showers and baths consume the second most amount of water inside the home. Conventional showerheads have flow rates up to 15 to 20 liters per minute. Reduce the flow per minute by half and you still have a comfortable shower. A low-flow showerhead can be purchased in most plumbing supply outlets and start at around \$10. If you are really serious about conserving, you can choose to buy one with a shut-off button and in between your lathering you can shut the water off. When you're ready to rise, the water comes

out at the same temperature and flow rate. But don't stop at the showerhead. Buy an inexpensive low flow aerator for your faucet too! Conventional faucets use 13.5 liters of water per minute, when two liters per minute would do the trick in the bathroom and six to nine liters per minute would suffice in the kitchen.

Since, you've now taken a leadership role in your home trying to save water, double check to make sure you have no leaky faucets. A leak of only one drop per second wastes about 10,000 liters of water per year! For Goodness sake if you have a leak, fix it! Leaking faucets are often caused by worn out washers that cost pennies to replace. The hardware store even has facet repair kits with pretty pictures showing you exactly what to do.

So far, all you've had to do was check your facets, put a plastic bottle in your toilet, and get a decent showerhead — pretty painless tasks. But for those among us that seem to get stuck at good intentions, you can take even smaller steps and still relieve some of the strain on our water. Don't leave water running while brushing your teeth, don't use the toilet as a wastebasket or flush it unnecessarily, take a shorter shower, keep cold water in your fridge instead of letting the water run and don't run the dishwasher or laundry machine with half a load.

The cold, clear truth is that the importance of protecting our water supply can not be overstated. So often we hear about Canada's "vast amounts" of water and we get comfortably disillusioned about the reality of our water situation. Water is not a renewable resource and once it's gone, it's gone. So whether you live in Canada or not, if you waste, you will inevitably face the same thirsty future. When one gram of PCBs can make up to one billion liters of water unsuitable for freshwater aquatic life and one gram of common household herbicide can contaminate 10 million liters of drinking water, every precious drop counts.



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TORONTO	-	23:25	13:50	12:10* 20:35* 23:35	-	-	-
ST. JOHN'S	-	18:30	-	18:40	-	-	-

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FT. LAUDERDALE	17:40 <sup>2</sup>	-	-	-	-	-	-
ORLANDO	-	06:00 <sup>3</sup> 15:50 <sup>7</sup>	-	18:05 <sup>3</sup>	-	-	-
ST. PETERSBURG	-	-	06:00	-	-	-	-

<sup>1</sup>Begins March 20 <sup>2</sup>Ends March 19 <sup>3</sup>Ends March 26 <sup>4</sup>Week of March 27 only

**AIRPORT STANDBY FARES:** Are subject to available seats prior to departure. Passengers may register 2 1/2 hours prior to the scheduled departure of flight. Fares are subject to change without notice. Travel on any specific flight is not guaranteed. Payment (Cash or Credit Card only) must be made on departure. One way travel only. Schedule subject to change without notice.

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