

# MY CARBON-NEUTRAL CSA

By Mark Wilson

**I like to think of the farmers, wildcrafters and gardeners as the canaries that never die: they just compost. These people are intertwined with crops and wild plants, and this creates an excellent observation deck for climate change.**

I've become more aware of the erratic shifts in climate over the past eight years. The real awakening point was when I watched *The End of Suburbia*, a documentary about peak oil by Greg Green from Toronto. Peak oil is the point where the economics of oil production become less lucrative, where peak production of oil passes, and we move towards a terminal decline in production, where the prices go up and stay up. Sound familiar? It's probably come and gone already.

Some people are taking measures to reduce their carbon footprints. They are not flying, they are not driving, and they're buying carbon offsets. (David Suzuki's website has a bunch of tips about how to limit your carbon footprint.) For me living in Newfoundland, I feel the best way to make change is to grow food locally, and to offer a carbon-neutral CSA for 2009.

My customers won't have to buy food shipped in from California and don't have to start their car to get it onto their table either. I deliver.

So how will I make NL Organics—my farm and CSA—carbon neutral for 2009?

## The truck and tractor

My biggest carbon output comes from my 1992 Ford Diesel truck. Soon, this beast will be converted to run-off waste vegetable oil (WVO) and I'll save on fuel costs. Every litre of oil I use as fuel reduces both the carbon costs of getting it to the rendering plant in Nova Scotia, and the initial production of diesel.

I'm not the only one looking at this alternative. While our Ag Canada Biofuels funding gets funneled into biodiesel and ethanol, Edward Beggs of PlantDrive is following in the true tradition of the

engine innovator Rudolph Diesel. Ed, and many others out there, are harnessing a real solution (albeit not for everyone) to an energy crisis that doesn't end up furthering the empowerment of the petroleum companies. The best thing about the straight and waste vegetable oil systems is that they don't require the extra steps needed to make biodiesel. For under a thousand dollars, you can buy a kit for your car, truck or tractor from PlantDrive.

I talked to mechanic Jay Olivo who lives just outside of Sharbot Lake, Ontario. He is a strong believer in WVO systems and runs three cars on double-filtered WVO. Jay uses German efficiency while showing me around the cars and is driven to produce simple mechanical solutions. He's even suited up an Audi sports car to run on the joy juice. "It takes some work to get to know how your oil should look and

how it will burn once it goes through the injectors. Winter is a tough time as it takes some preheating to get the same viscosity as diesel, about 80°C." Jay does this through a simple heated fuel pump and a 12-Volt heater cable. Jay believes that vegetable oil is safer than gasoline or diesel in terms of the risk of combustion and the toxicity of inadvertent spills.

Let's look at EverPURE Biodiesel Co-op (part of Everdale Environmental Learning Centre in Ontario). They have an excellent fuel solution that pushes them towards carbon neutrality. They produce local vegetable oil that is sold to restaurants and later recycled into biodiesel. Nice! No loss to food security and low production costs of 50–60 cents per litre. In regions where you can grow the big oil-producing crops like canola, sunflowers, and soy, this is a bit easier than cool old Newfoundland

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*A bicycle-powered water pump in Guatemala.*

and Labrador. You can get yourself an oil press for a couple of thousand dollars. If you're selling your home-grown vegetable oil to a restaurant at roughly \$1 per litre (which is very cheap), and you can get all that fuel back from the restaurant once it's used, then by my calculations you can be paid \$20 to run your tractor for about an hour. Interesting economics, eh!

In my mind, the importance of growing your own fuel is paramount to keeping food costs down, at least if you want to grow outside the city for more than your family and your immediate neighbours. What is the cost of gas going to be in a year or two? Making your own fuel offers a cost control on your food and can bring local cooking oil into a CSA. I always think in terms of what new products I can offer that will keep my customers out of the grocery store. They feel good about buying local too.

Complicated equations demonstrate that growing and using vegetable oil as a fuel can have a net negative contribution of carbon to the atmosphere. Crazy? Maybe not.

### **Carbon sequestering**

If we keep organic matter in the soil, we are storing carbon. Research has shown that no-till corn fields can store one-half ton per acre of carbon dioxide annually. This can turn into dollars for the farmer. The Chicago Climate Exchange offers carbon credits for sequestering carbon in the farm fields of the Midwest. Carbon is stored in plant cells as they take up carbon dioxide from the atmosphere. More carbon is kept in the soil when conservation tillage is used, such as no-till/strip-till, or ridge-till methods, rather than row cropping. "Globally, there is a potential to offset about 30% of the annual carbon dioxide emissions [this way]," exclaims Charles Rice, a soil microbiologist

with Kansas State Department of Agronomy. "And in the US, [using these methods] we could offset about 15% of our annual carbon dioxide emissions," he says.

According to Russel Hughes of Searsboro, Iowa, the best way to sequester carbon is to stop growing corn and soybeans and turn those fields into permanent pasture. "Grass and clover covers this ground year-round," he adds. Ain't no trouble selling grass-fed beef either, I'd say.

### **Greenhouse greening**

I have tried to reduce my need for plastic in the greenhouse. For example, seedling trays are made from petroleum-based plastic and, in my experience, break down quickly. Instead, I use soil blocks. I put these on large re-usable bread trays (plastic but very durable). I find this very convenient for planting as well. Eliot Coleman says that the equivalent of five tons of organic matter is added per acre with 2-inch soil blocks spaced at a foot apart. Not bad!

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Many carbon credit companies plant trees to offset flights, or allow you to purchase energy from sustainable sources. People want to spend money on carbon neutrality. This is an advantage when you are marketing your organic vegetables. We are all stewards of the land and a carbon-neutral CSA can offer a local solution with a global twist.

## Human-power

Don't underestimate human and animal power in terms of bike deliveries, bike pumps, and small-scale human-powered machinery. I will be designing a bike-powered lettuce spinner this summer and increasing productivity at the same time. There is even a fully human-powered CSA in Massachusetts (Montview Farm).

## Heat and electricity

Jonathan Scurlock of the UK's National Farmers' Union (NFU) identified heated buildings as contributing about 40% to agricultural energy use. He offers biomass heating and improved insulation as serious solutions that "dramatically cut carbon emissions."

For example, we all have a compost pile sitting somewhere on the farm. Try embedding flexible

pipe throughout the hot compost pile and install a small blower to add a bit of heat to the greenhouse.

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## Organic is best done on a small scale and I believe that this is how we will change our world.

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The movement in the UK is strong and UK NFU identifies the marketing advantages that going carbon neutral can offer. They believe that there will be carbon footprint ratings on every product within the next few years. Meanwhile, we are still not even putting GMO labels on products.

Organic is best done on a small scale and I believe that this is how we will change our world. There

is no supermarket or industrial agricultural solution that can compete with small-scale environmentally efficient CSAs and local farms. We are the solution to huge-scale global environmental issues. Why not do a few things this year to make your farm more efficient and to make your produce stand out as a global solution to climate change.

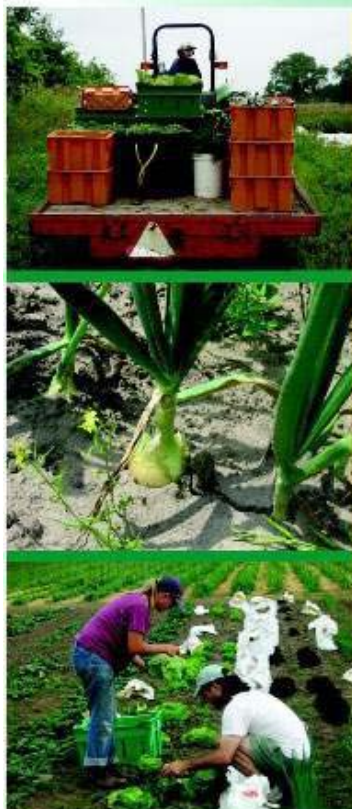
## For more information:

**Carbon-neutral sites** – Can Farming Become Carbon Neutral? National Farmer's Union (UK): [www.nfuonline.com/documents/CarbonNeutral\\_Cereals\\_public.pdf](http://www.nfuonline.com/documents/CarbonNeutral_Cereals_public.pdf)

City Farm Boy: [www.cityfarmboy.com/zerocarbonfood.htm](http://www.cityfarmboy.com/zerocarbonfood.htm)

David Suzuki Foundation: [www.davidsuzuki.org](http://www.davidsuzuki.org)

**Human-powered** – Montview Farm: [www.montviewfarm.org](http://www.montviewfarm.org)



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**Mayapedal –**[www.mayapedal.org](http://www.mayapedal.org)

**Pedal Power (Vancouver) –**[www.pedalpower.org](http://www.pedalpower.org)

**NL Organics Ltd. –**[www.nlorganics.com](http://www.nlorganics.com)

**Carbon trading credits and carbon sequestration –**  
 Chicago Climate Exchange: [www.chicagoclimatex.com](http://www.chicagoclimatex.com)

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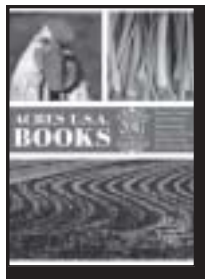
**Alternative fuel solutions –** EverPURE Biodiesel

Co-op: [www.everdale.org/node/85](http://www.everdale.org/node/85)

PlantDrive Canada: [www.plantdrive.ca](http://www.plantdrive.ca)

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