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## Change in agricultural practices opportunity to decrease emissions

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The StarPhoenix

*Tuesday, June 12, 2007*

Canada could meet its commitment to greenhouse-gas (GHG) emissions reduction simply by shifting its agricultural practices. That's the message of a new video letter to the prime minister released on [www.quantumshift.tv](http://www.quantumshift.tv).

Quantum Shift TV is a kind of green, good news channel that describes itself as "a 21st Century storyteller." Its mission is to shift "culture from 'me' to 'we' by sharing the news stories of those who positively impact social and environmental sustainability on our planet."

An innovative, Canadian web TV station, it features leading-edge technology, citizen journalism, creative and entertaining packaging, and positive, stimulating and inspiring content. It highlights stories of human co-operation, solutions to global warming, the positive effect of aid efforts and philanthropists around the world, examples of corporate social responsibility and environmental improvements and breakthroughs.

The video SOIL: The Secret Solution to Global Warming proposes a policy shift that could reduce Canada's GHG emissions by 20 per cent. It claims that shifting existing agricultural subsidies to support sustainable farming practices could result in sequestering up to 152 million additional tons of CO2 from the atmosphere annually by storing more carbon in the soil.

The claim is based on research by the U.S.-based Rodale Institute, which found that sustainable no-till-farmed soil with winter cover crops holds up to 30 per cent more carbon than conventional agriculture. In turn, extra carbon in the soil increases food nutrients, which could result in improvements to health that would reduce medical costs by some \$5 billion. Yields were not reduced by using these techniques and even showed more resistance to unpredictable weather patterns.

In an unusual move, the television network has proposed an agricultural policy shift to the prime minister and has invited the general public to cast their vote for the policy via an online poll.

Quantum CEO Hugo Bonjean says the Rodale research applies in the more northern latitudes of the Prairie provinces, which contain most of Canada's farmland. He says a massive switch to no-till farming would sequester 10 per cent additional carbon in the soil while the use of winter cover crops would result in a further 20 per cent increase in sequestration. This could allow Canada to meet its international obligations to reduce GHGs.

Brian McConkey, a research scientist with Agriculture and Agri-Food Canada in Swift Current, believed the claim made by the video has credence, but may be overly optimistic. McConkey actually appears in the video, but his footage was shot several years ago when researchers were more optimistic about the potential for agriculture to mitigate climate change.

McConkey says about 60 per cent of Saskatchewan farmland has already switched to no-till. This has already reduced Canada's GHG emissions by about one to two per cent through increased sequestration of carbon and reductions in emissions of another GHG, nitrous oxide. No-till farming does not necessarily have a positive impact on GHG emissions outside the Prairie region, however.

Typically, Saskatchewan no-till farmers also eliminate summer fallow, which reduced GHG emissions another one or two per cent. And no-till farming also requires less energy consumption by tractors. So it might be reasonable to assume that Saskatchewan farmers have already delivered a three to five per cent reduction in Canada's GHG emissions. (Increased emissions in other sectors have resulted in higher total emissions for Canada.)

McConkey says the use of winter cover crops is not generally applicable to Prairie farming as the season is too short and moisture inadequate. Cover crops can be used for some short season crops in some parts of the Prairies, and may have application in areas with excess moisture. Cover crops can have the beneficial effect claimed in the video in areas with longer growing seasons.

In general, McConkey agrees that measures like energy efficiency, no-till, cover crops, switching marginal land to pasture and hay and the reduction of methane emissions by better management of manures could have a big effect on Canada's total emissions. He estimates it might be reasonable to expect a 10 per cent emission reduction from agriculture, a substantial contribution.

Although the Quantum policy proposal is overly enthusiastic, it has considerable merit and should be pursued by federal and provincial governments.

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