

National agricultural watershed study:

Agricultural practices are aimed at improving water quality

Farmers in the Chaudière-Appalaches region of southern Quebec are determined to prove that small watersheds can have a big impact when it comes to improving water quality in local rivers.

Producers in two local watersheds – the Bras d'Henri and the Fourchette – are participating in a national project aimed at evaluating the effectiveness of science-based farming methods on water quality. The goal of the study is to use beneficial management practices (BMPs) to reduce the potential impacts of agriculture on regional water quality. The project is being conducted by Agriculture and Agri-Food Canada (AAFC), the Research and Development Institute for the Agri-Environment (IRDA), and Club de Fertilisation de la Beauce inc. (CFB), in collaboration with several other organizations.

The Bras d'Henri / Fourchette study is one of seven taking place in designated watersheds across the country. It's all happening under WEBs – the Watershed Evaluation of BMPs – a four-year national project being carried out with the participation of producers in each of the watersheds. Funding for the WEBs project is provided largely through AAFC's Greencover Canada program, with Ducks Unlimited Canada a key funding partner.

The Bras d'Henri Watershed is located within the Chaudière River Watershed, while the Fourchette lies within the Etchemin River Basin. Both major rivers – the Chaudière and the Etchemin – empty into the St. Lawrence River, just upstream of Quebec City. The Chaudière Watershed has one of the highest concentrations of animal production in Quebec and nearly two-thirds of the land is under crop production. Meanwhile, water quality in the Etchemin River needs to be addressed.

“Both rivers and their tributaries present a challenge in terms of balancing the needs of agricultural production with the health of the environment,” says Eric van Bochove, AAFC's WEBs project lead in Quebec. “We believe that beneficial management practices can reduce agricultural contributions to sediment and contaminant loading in streams.”

“But the environmental and economic performance of these practices needs to be better evaluated. Results might have a huge impact on where our efforts are focused in the future.”

Four BMPs are being tested in the Bras d'Henri / Fourchette study, including a hog slurry management program which uses a low-ramp spreader equipped with trail hoses to apply slurry to forage and corn. This method cuts nutrient loss through volatilization and, when applied to a standing crop, reduces runoff losses to nearby streams.

"We have treated about 30 per cent of the corn and forage land in the Bras d'Henri sub-watershed so far," says van Bochove. "On the corn, the slurry was applied post-emergence, so the crop can take up the nutrients quickly which improves the environmental and economic benefits."

Three other BMPs are also aimed at improving environmental and economic benefits. Surface runoff controls such as grassed waterways, buffer strips and other measures are being implemented by the Québec Ministry of Agriculture, Fisheries and Food to reduce sediment and contaminant transport from agricultural soils to ditches and streams.

Reduced herbicide use in corn is being implemented through a decision-support system that determines whether spraying for weeds in a particular situation is economically beneficial. Finally, crop rotations that reduce the amount of corn in the rotation and use crops such as forage to take up excess nutrients from the soil and help break the pest cycle are being encouraged.

"Currently, the process is largely one of advising producers of the problems and of outlining methods that can be taken to manage the problems," says van Bochove. "The acceptance of the BMPs has been very positive and the cooperation of the producers has been excellent."

Although various BMPs have been evaluated in the past on small test plots and individual fields, the WEBs project marks new territory for assessing BMP effectiveness in a small watershed setting. Results of this research will be applied to larger watersheds using computer models.

For more information on the Bras d'Henri/Fourchette WEBs project, please contact:

Eric van Bochove, Agriculture and Agri-Food Canada

Phone: (418) 657-7985

E-mail: vanbochovee@agr.gc.ca

For more information on the Greencover Canada Program, visit the web site at:

www.agr.gc.ca/greencover-verdir

- 30 -

Article prepared by Agriculture and Agri-Food Canada – February 2006