



WILLOW HARVESTER: THE LAST PIECE OF THE PUZZLE

After more than four years of field research confirming the environmental protection provided by willow buffer strips, Agriculture and Agri-Food Canada's Agri-Environment Services Branch (AESB) is ready to take a big step forward.

The purchase and delivery late last year of a willow harvester and chipper is the last piece of the puzzle to support the region's farmers in their efforts to protect waterways.

"Up until now the only missing piece in building greater acceptance of willow buffer strips was how to harvest the willows efficiently using farm scale equipment, at the right cost," said Chris Pharo, regional manager – sustainable agri-production systems at Agri Environment Services Branch in Atlantic Canada.

Which brings us to the Ny Vraa Type 192 single-row willow harvester. After several months of research and talking to agroforestry specialists at the AAFC's Agroforestry Development Centre, AESB purchased this one row harvester chipper from a Danish supplier.

"This piece of equipment fills that gap," said Pharo.

It can be pulled by an average sized tractor. It cuts and chips willows and blows it into a wagon, all at a price equal to the cost of a new pick-up truck.

"It is user friendly. A one man operation, much like taking off corn silage," said Pharo.

In 2006, AESB established two demonstration projects on potato farms in Prince Edward Island in partnership with the P.E.I. Soil and Crop Improvement Association to evaluate the effectiveness of growing willow strips in riparian areas to catch excess nitrogen and phosphorous and reduce surface runoff.

"The data collected from project monitoring shows the willows are holding up their part of the bargain," said Chris Pharo.

Project results show willows are ideal for buffer zones. They grow back quickly and are excellent at absorbing excess nutrient that could leach into waterways. Depending on the species and growing conditions, harvest could occur on a 3-7 year cycle.

The goal was not only to provide a beneficial management practice on the farm, but also to provide a source of renewable energy for farmers and reduce the reliance on fossil fuels on the farm. The willows will be chipped and burned in farm buildings.

"We know how to plant willows, how they perform and why they are a good fuel," said Pharo. "We are seeing some of the highest yields ever recorded in Canada for willow production biomass."

The new equipment arrived in December and Pharo will be working the kinks out of the new gear this spring at AAFC's Harrington Research Farm, north of Charlottetown, with plans for full blown field days in the fall to demo the harvester.

"We want to have farmers see it in action." We'd like to have it in as many hands as we can," said Pharo, who plans make the equipment available to interested farmers.

The P.E.I. Department of Agriculture has established some willow sites on high sloping land that will be ready for harvest in the fall of 2011.

There are four or five different farms that could use this equipment. AESB is also looking at establishing willow sites in Nova Scotia and New Brunswick.

Pharo is excited about the prospect of having the harvester available and the springboard effect it will have in getting more farmers to undertake willow planting on farms to reduce nitrogen leaching into groundwater but also to produce renewable energy.

"Now we have a harvester in the region that we can show farmers how to manage and harvest and let the farmer know, yes this makes sense," said Pharo.

Pharo believes as a beneficial management practice the harvester will have both environmental benefits and an economic benefit for the farmer.

"We are growing renewable energy in areas on the farm where row crops may not be an option due to slope or other restrictions."

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