PRODUCTION
ONTARIO Farmer

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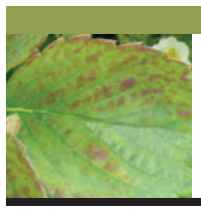
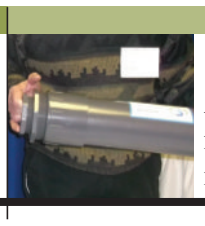


VIRUS ALERT
Strawberry virus has spread quickly in the Maritime provinces 10B



BETTER WATER
A magnesium device may be the next step in the effort to improve cow health 8B

HOG JOB
An animal lover finds her perfect job working on a hog operation 23B

Emerging markets for biomass crops like switchgrass, corn stover and miscanthus are hoping farmers will take note

Making the switch

Bioenergy crops like this stand of miscanthus would provide a reliable source of biomass and help growers increase soil organic matter

BY JEFF CARTER
Ontario Farmer

The promise of agricultural biomass in Ontario may finally be bearing fruit.

A potential market for corn stover is developing in Sarnia. There's interest in using purpose-grown crops like switchgrass to replace wheat in the compost recipe for mushroom production. Higher prices under the provincial Feed-in-Tariff program for electricity from on-farm biogas could drive the demand for green-harvested biomass.

All three developments were part of the discussion at the Biomass Knowledge Exchange at the Guelph Line and Highway 401 recently.

"We really need that anchor market to entice more farmers to join. The average farmer sees all sorts of potential with cash crops and with biomass crops the attitude is, 'I'll jump onto the train once I see the train is rolling'," Urs Eggiman, vice-president of the Ontario Biomass Producers Co-Operative Inc. said.

Ontario agriculture ministry engineer Jake DeBruyn said the price for on-farm electricity generated from biogas increased last fall to 26.5 cents per kilowatt hour for systems up to 100 kilowatts in capacity. For systems from 100 to 250 kilowatts, it's now 21 cents.

"There is a new opportunity here. We've seen a price escalation," DeBruyn said.

DeBruyn said the numbers need to be crunched to determine how much of an incentive that will provide for biomass crops and the size and sophistication of the plants to be built.

There are currently 35 on-farm biogas systems generating electricity in Canada, according to Kurtis Baute, a master's candidate at the Ridgetown Campus of the University of Guelph. That compares to about 4,000 plants in Germany where the industry is heavily subsidized.

DeBruyn said 100 kilowatt systems cost in the vicinity of $1 million while a 250-kilowatt system may cost $1.8 million. One advantage of smaller systems is that they may be able to connect to single phase lines.

SWITCHGRASS IS already being used for mushroom compost, according to Don Knott who's been growing the crop Huron County for eight years. The fiber is better for the application than wheat straw because the strength and longer length of its fibers maintain higher oxygen levels in the compost pile.

"We sold our entire 2012 crop to a mushroom producer. They're looking to do experiments to see how switchgrass performs as a compost component – at up to 45 per cent," Nott said.

An international company, BioAmber, is driving interest in corn stover, according to Guelph consultant Charles Lalonde. The idea is to convert stover into cellulosic sugar which, in turn, can be used to produce succinic acid.

Succinic acid is used to make plastics, rubbers and industrial chemicals.

A study commissioned by industry, government and farm organizations suggests an annual harvest of 250,000 tonnes of corn stover from Chatham-Kent, Lambton, Huron and Middlesex to supply a multi-stakeholder cooperative, Lalonde said. However, BioAmber is likely to launch its operation using sugar derived from grain corn.

Lalonde said that while other agricultural biomass could also be converted into sugar, corn stover makes sense because it's already readily available and farmers in the region would be reluctant to commit to crops like miscanthus and switchgrass because of the productivity of their soils.

Eggiman, however, argued that purpose-grown crops would provide a more reliable source of biomass and build soil organic matter levels at the same time.

"With perennial crops you know what you'll have available the next year unless there's an earthquake or something like that. With corn stover, I see it as more of an opportunistic situation."

Current production of purpose-grown biomass in Ontario serves a range of markets, from fuel to bedding. Overall production is quite small.

Producers like Nott, Eggiman and Jim Fisher, chair of the Biomass producers group, have been refining the agronomics. The Ontario Soil & Crop Improvement Association and Ontario Power Generation recently released its final report from a three-year, 725-acre research project involving 28 different cooperators.

HEATHER ENGBERS, with soil and crop, said field crop preparation, timely planting and weed management are crucial to the establishment of switchgrass.

Regular farm equipment can be used on the job and if crop is being established on poorer ground, reaching maximum yield potential could take time, she said.

Nott has successfully under-seeded switchgrass in spring wheat. The technique allows farmers to harvest a crop during the first year of establishment.

Broadleaf weeds were controlled with herbicide and the spring wheat provided control of grass weed species, he said.

David Smith, a Norfolk farmer,

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