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Researcher understands farmer doubts about hands-free farming

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The Hands-Free Hectare project proved farming is possible using only automatic equipment, including drones. | Harper Adams University photo

Farming by robot? Remote control? Laser-sensing technology? Drones?

Canadian farmers don't believe they will make major use of autonomous farming methods for at least another five years, [according to a survey undertaken by Glacier FarmMedia](#).

However futuristic it may sound, hands-free farming methods exist and have successfully been used in the Hands Free Hectare project at Harper Adams University in England (www.handsfreehectare.com).

Jonathan Gill, a lead researcher on the project, talked about the accomplishment Dec. 5 at the Farming Smarter conference in Lethbridge. He wasn't surprised to hear about survey results that showed farmer ambivalence.

"I can understand that, mainly because the amount of investment in technology for certain machinery has to pay back whatever it is, over a set period of time, so generally agricultural machinery is worked on a three-to-five year basis.

"Maybe that's the reason why people are saying, 'well you know, not yet but when it's actually available for me ... I'll be there using it in my next round of upgrading my equipment.' "

Gill and his team proved that older equipment can be automated for hands-free capability. They used a low horsepower tractor and a 25-year-old combine to farm a single hectare.

Instead of one large machine, be it a tractor or combine, several automated smaller machines could do the same job in the same amount of time and if one broke down, work could still continue, said Gill.

As well, smaller machines are lighter, causing less compaction and making it possible to work fields earlier in spring and later in fall.

"The exciting thing is, a machine doesn't have to be monitored, in a sense, all the time because it can run for a longer period of time. It can have no breaks, it can run throughout the dark and it can continue to do work," Gill said in an interview.

"Smaller machines are easier to maintain and look after and repair. An awful lot cheaper as well."

Gill said major farm equipment manufacturers have the technology to produce autonomous equipment but haven't had the impetus to produce and market it.

"Why would they actually put their neck out when they can keep on selling larger and larger machinery that can still keep on making them profits and do the job that generally the market believes they need," Gill asked.

"However, this cycle needs to be broken down because it's not actually doing good for our agricultural practices. It's not helping us look after our soils. We're not putting more back in, enabling us to actually get good, rounded approaches to things."

Agriculture can benefit from current and concentrated research on autonomous passenger vehicles and trucks. That work can solve issues around safety and collision avoidance, as well as other traffic factors.

"All you've got to do is just take that technology, throw it onto a tractor and it will be safe enough to work in an area that doesn't generally have people."

Such farm equipment may help address the labour shortage, said Gill, but he also thinks it could bring people back to rural areas for the highly skilled jobs that require knowledge of robots, sensors and drones.