

Autonomous robots make light work of in-field tasks; Rowbots will apply in-crop nitrogen, seed cover crops, and some day even control weeds, for about \$12 an acre

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DeKalb, Illinois -The rubber meets the road right here in corn country Illinois, at least when it comes to field robots showing their potential for spraying as-needed nitrogen in-crop, or planting a late cover crop on massive acres not planted this wet spring.

Kent Bares, CEO of Minnesota-based Rowbot, brought what he calls “Unit One and Unit Three” of his robots to the Whiskey Acres Farm, which was hosting participants in this year's AgTech Nexus Conference put on by Global AgInvesting.

He made the drive up from Iowa early that morning, where he had the robots working as custom operators as it were, on a farm.

This conference is designed for innovation and real big money to meet, each seeking out the other. Hence there is no complaint from Bares for taking a day off from his busy schedule.

This group of venture capitalists includes a young man in his 30s who told the crowd that morning back in Chicago that his family is worth \$4 billion, along with some leading scientists, and the odd farmer with five-figure acreage. All, including two farm reporters, were here to hear Bares pitch and to view what these robots could do.

It was five years ago when the Bares brother had a large dairy farm in western New York and started to complain about wet weather holding up and ruining the timely application of nitrogen for the corn crop through the season.

Hence the development of that robot was initially entirely for that purpose, he said.

Being adaptable to run between 20 and 30 inch rows, and spraying four rows at a time, but never shutting down, his unit can cover 80 acres in 24 hours, said Bares.

There is a 13 hp Kubota engine driving it, "but one day we can have electric," he predicted.

When pressed as to price, Bares 'business model, for now, is not to sell them but instead to charge the farmer a competitive \$12 (U.S.) per acre for the spraying service.

Right now there are just the first few models and he's traveling a lot of miles to be where he's asked. But the long term plan is to have a number of them situated throughout the countryside where they "only need to be delivered to and picked up at the farm," said Bares.

With a small team of experts "able to know two states away if one stops, they'll be able to get it going again from far away," said Bares. "If a driverless car stops on the road that's a problem; if this stops for five minutes in the middle of a corn field, until the problem is figured out, that's not dangerous," said Bares.

Having a per acre cost is fair to both large and small corn growers, with a potential fleet being delivered out to a large farm to get the job completed quickly and easily, said Bares.

"There's as much compaction as you walking on a field and we can put sensors on these things, that can bring real accurate, ground level data back to the farmer, far better than a drone," he said.

Also sitting on display was Unit Three, which was constructed from March to June this year, but put on tracks – Unit One is on wheels – and also designed for seeding, said Bares.

The seed boxes sit up front and drop the seed in front of the slightly vibrating tracks, which have studs to push the cover crop seed slightly underground, said Bares.

It also can turn on a dime like a skid steer, with one of Bares'assistants putting it through its paces at top speed for a demonstration.

Mechanical weeding on organic operations or to go down rows of conventional fields and pull resistant weeds before they go to seed is also a potential use that they can easily modify these units to do, predicted Bares.

But now, with the kinks worked out of the original models, and the robots working really well, in order to go into larger scale production, plus incorporate a number of modifications like sensors providing data, or weeding, "I need an infusion of capital," said Bares.