

Next steps in automated apple picking

By DAN WHEAT
Capital Press

MOSES LAKE, Wash. — Automated Ag Systems, of Moses Lake, and DBR Conveyor Concepts, of Conklin, Mich., are field testing a hybrid system they say will be the best harvest assist for apples short of robotic pickers.

The system features DBR vacuum tubes replacing picker bags and mounted on Automated Ag's self-propelled Bandit Express picking platform. It will be an affordable tool significantly improving efficiency until and perhaps beyond the advent of commercial robotic pickers in five to eight years, the companies' principals say.

The Automated Ag-DBR should be commercially available next fall, said Phil Brown, DBR owner. It should improve picking efficiency by 85 percent over ladders and by 40 percent over Bandit Express platforms produced by Automated Ag, said J.J. Dagherret, Automated Ag owner.

The apple industry in Washington, Michigan and New York is highly interested in mechanized apple picking to answer an increasing labor shortage.

"They phoned me up last winter and asked if I could put their harvester on my platform. I said yes, let's give it a shot," Dagherret said.

The self-propelled platform portion of DBR's machine was simply too long, Dagherret said.



Field testing of Automated Ag-DBR harvest assist in a Stemilt Growers apple orchard in Mattawa, Wash., on July 31. Vacuum tubes replace picking bags. Courtesy of Automated Ag Systems

It never caught on for sales in Washington, the largest apple producing state, Brown said.

Four pickers on the Automated Ag platform pick into DBR vacuum tubes strapped to their bodies instead of bags. The tubes and DBR deceleration and bin fillers fill bins in four to five minutes versus 10 to 12 minutes with pickers using bags, Dagherret said.

"You're eliminating bag dumping so you're saving time and bruising fruit less," he said. "There's no weight for pickers because they never have to hoist and handle bags. I think it'll be a game changer."

The Bandit Express picks up empty bins left in rows by tractors in front of it and lowers filled bins off the back for tractors to haul away.

The new system was first tested in a Stemilt Growers' orchard of Rave, an early managed apple variety, in Mattawa on July 31.

"It was a little shaky. There were some issues with the bin-filling and electrical stuff. We are adjusting that and will test it in Lodi, Calif., next week," Dagherret said.

The platform pickers pick fruit from about six-feet and upward. Pickers walking on the ground will pick low-hang-

ing fruit into bags and dump them into bins.

Automated Ag built and sold about 725 Bandit Express mobile platforms from 2013 through 2017 and is building 65 this year, plus 65 Bandit Cubs which are 17 inches narrower than the Bandit Express. The Express sell for \$63,000 apiece and Cubs for \$68,000.

The DBR vacuum system will sell for \$35,000 to \$40,000 each and will mount right on the Express or Cub, Dagherret and Brown said.

The idea is a functional, dependable product that is affordable, they said.

Brown said commercial-ro-

botic harvesters are probably five to six years away and are slowed, as much as anything, by needing trees designed for robotic pruning and picking.

Automated Ag also is working with FFRobotics, of Emeq-Hefter, Israel, to field test FFRobotics robotic apple picker this fall in Washington. The DBR bin filler will be used with the robotic picker on a Bandit Express or Bandit Cub platform, Dagherret said.

Abundant Robotics, of Hayward, Calif., is the only other major player in robotic apple picking development but its machine is too big to fit well in tree rows, Dagherret said. It

only has one picking arm and lacks pass-through bin flow, he said.

Dan Steere, Abundant Robotics CEO, declined comment other than to say field testing of his system continues. At the December 2016 annual meeting of the Washington State Tree Fruit Association, Steere said his goal was to have a robotic apple picker ready for commercial use by fall of 2018.

Karen Lewis, Washington State University Extension tree fruit specialist in Ephrata, said she's a bit more optimistic than Dagherret about robotic development. She said she thinks commercialization will be sooner than five to eight years.

She said DBR has been part of WSU research and that she's thrilled to see its vacuum system combined with the successful Automated Ag picking platforms. If it works well, it will tap out human picking efficiency, she said. The only other thing to improve human or eventually robotic picking speed is further improvement of tree canopies, she said.

It remains to be seen, Lewis said, whether the Automated Ag-DBR will take off big or whether several technologies converge at the same time.

"We are at a cusp and need to all stay on our toes to make sure what comes is appropriate technology that solves problems," she said. "Not technology in search of a problem."

Farmland cash rents mixed in region

By BRAD CARLSON
Capital Press

Farmland cash rents have been up this year in Oregon and Washington, and mostly flat in Idaho, the USDA National Agricultural Statistics Service reported in early August.

Drew Eggers, a farmer in Meridian, Idaho, said the rents he pays are in line with his state's averages. He doesn't expect much change as he starts to arrange leases for next year.

"Lately, with commodity prices softening, landlords haven't felt like they want to raise the rent — unlike six or seven years ago when the commodity prices were stronger and farmers had better income off their crops," he said. "Landlords felt like they ought to share in that and take advantage of increases in the prices of the crops."

Eggers leases ground for three or more years, or for a year with a renewal option. He grows mint, a crop he said is suited to a multi-year lease since it is a perennial that is not planted every year and comes with much of its input cost up front.

"Now I run into land that maybe will sell and go out of ag," he said. "So I also even have buyout clauses in mint leases." Such buyout or "make-whole" clauses could come into play where a mint crop is somewhere in the middle of a three- to five-year growing cycle, he said.

NASS said Idaho cropland overall this year rented for \$160 per acre for the full growing season, unchanged from 2017. Cash rent for irrigated cropland rose a dollar to \$216. Non-irrigated cropland rented for \$56 per acre, down \$2. Pasture rents dropped by an average of a dollar to \$11.

Eggers said he does not lease for a "growing season" timeframe, which can come into play for statistical reporting purposes to reflect leases that expire immediately after harvest.

From 2017 to this year, NASS said, Oregon cash rents went from \$152 to \$159 for all cropland, irrigated cropland increased by \$10 to \$215, non-irrigated cropland rose \$3 to \$93, and pasture rents rose by a dollar to \$12. After falling in 2015 and '16, all-cropland and irrigated cropland rents in Oregon increased last year and this year.

In Washington from 2017 to this year, cash rents went from \$198 to \$203 for cropland overall, \$350 to \$358

for irrigated cropland, and \$73 to \$75 for non-irrigated cropland, NASS said. A pasture rent comparison was not listed.

Christopher Mertz, Washington-based NASS director for the Northwest, said that in addition to traditional drivers of demand, cash rents can vary from one year to the next based on changes in crop rotations, rainfall totals, hay prices and other factors.

Changes in cash rent can follow changes in farm real estate values but do not always do so, he said. For example, as Idaho all-cropland rents went unchanged from a year ago, all-cropland real estate values increased by 3.5 percent.

All-cropland real estate values from 2017 to 2018 went up by 2.4 percent and 1 percent in Oregon and Washington, respectively.



A field near Nampa, Idaho, is planted to seed peas. Farmland cash rents have been up this year in Oregon and Washington, and mostly flat in Idaho, the USDA National Agricultural Statistics Service reported in early August.

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