



Researchers at the University of Minnesota are using a high-clearance tractor to interseed field pennycress into late season corn. They're hoping to develop the high oil content, winter annual weed as a cash crop.



They mounted a Gandy orbital air seeder with adjustable length drops and seed dispersers on the sprayer.

## They're Trying A Cover Crop That Pays Off

Field pennycress may be a cover crop that pays off in multiple ways. Two University of Minnesota agronomy and plant genetics researchers, Alex Hard and Scott Wells, are hoping to develop the high oil content, winter annual weed as a cash crop. They have interseeded it, and its close relative camelina, into late season corn. They are using a high-clearance tractor designed for research plot spray work. Hard and Wells had the Avenger from LeeAgra reconfigured for interseeding.

"We took the base model and mounted an orbital air seeder from Gandy with adjustable length drops and seed dispersers," explains Hard. "Our engineer on campus set it up to provide seed-to-soil contact. At the bottom of the drops we have a plate with chains to spread the pennycress. The camelina likes more seed-to-soil contact, so the plate used with it has spring-tooth tines and drag

chains."

The Avenger has adjustable under frame clearance of 59 to 84 in. Hard describes it as well suited for soybeans at its lowest height and able to plant into corn more than 10 ft. tall. However, he emphasizes that the Avenger is strictly a "proof of concept" prototype.

"It can only handle planting into 3 rows with soil disturbance, perhaps 5 when directed broadcast," says Hard.

He notes that timing is key. While the machine can plant into corn at tassel, there is too much canopy for the oilseeds to do well. "We shoot for September, when the corn is at R4, R5 and R6," says Hard.

The researchers are now in their second year of planting with the Avenger. Success was best with shorter season hybrids that start to dry down early.

"Next year we will be comparing 4 or 5 different hybrids with 80 to 100-day maturities," says Hard.

Come spring, they will be trying a different type of interseeding as they no-till soybeans into the pennycress. The soybeans will be planted into the old corn rows just as the pennycress starts to bolt.

"About 3 weeks later we should be able to clip the pennycress seed heads, and the soybeans will be ready to take off," says Hard.

The 2 researchers are still working with old lines of the 2 oilseeds. New lines have been developed and eventually will be introduced into the interseeding field trials.

"We are trying to establish and answer the more fundamental questions, but we won't see the real potential until the genetics are introduced," says Hard.

Hard and Wells have also interseeded more conventional cover crops with the Avenger. In one study this year, they interseeded 15 different cover crop varieties into late season corn and soybeans.

Hard reports the small seeded oilseeds, grains, clovers and brassicas do best with the surface seeder, while large seeded crops do better when planted an inch or more deep.

"Grasses like annual rye did best," says Hard. "They can handle less disturbance and germinate on top of the soil."

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## Strip-Till Equipment Used To Interseed Cover Crops

Carson Klosterman converted strip-till equipment to interseed cover crops, and it worked great. His company, Strip Till For You, designs strip-till, no-till and fertilizer application equipment for customers. Interseeding was an experiment he did for himself, but he got a good reaction with it at a 2017 field day.

"I demonstrated it at a University of Minnesota field day at Morris, Minn.," says Klosterman. "The farmers who were there really liked it."

Klosterman interseeded in the fall of 2016 with a 30-ft. Moore-Built toolbar equipped with 24 Dawn Duo Seeders with Dawn disc openers. For a seed supply, he mounted an older Hiniker seed hopper and airflow distribution to each Dawn unit.

Klosterman is impressed with the Dawn components. "The Dawn Duo Seeders and openers are pretty versatile, with their parallel linkage and dial-in, air-powered, down pressure," says Klosterman. "Guys are using them for seeding soybeans and putting down dry or liquid fertilizer."

In the future, they may be using them for interseeding, too. Klosterman took his into sugar beet fields at the end of August and early September. By the time the beet tops were clipped, the rye was visible, though it really hadn't grown much. Even after the heavy truck traffic in the beet field, the stand was visible.

"Later in November, we strip-tilled the beet rows, leaving strips of rye," says Klosterman.

"This spring we planted corn into the rye after it had been terminated. The corn came up nice."

Klosterman hoped the rye would hold the soil from blowing over winter and also help the corn. He tried broadcasting rye in standing sugar beets in the same field where he interseeded.

"We got little or no emergence with the broadcast rye," he says. "You could see right to the line where we put it in the ground with the interseeder."

Before the field day, he replaced one Dawn unit with a Yetter 2984 strip freshener converted for seeding. He also replaced the rolling basket on the Yetter unit with rubber tire packing wheels. Both units worked fine when he pulled into the field.

Klosterman was looking forward to doing more interseeding this fall. He outfitted a 30-ft. toolbar with Dawn disc openers and a new Valmar cover crop seeder. However, before he could use it, a Michigan strip tiller heard about it and bought the \$36,000 machine.

"He bought it to interseed sugar beets like I had, but I expect he'll end up expanding its use to corn and soybeans over time," says Klosterman. "You can use the same unit to make strips in the fall, freshen them in the spring, and then move them over 15 in. to plant cover crops."

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Strip Till For You designs strip-till, no-till and fertilizer application equipment for customers. Photo at right shows a Yetter strip freshener converted for interseeding, and rubber tire packing wheels.

## "Hinged" Muzzle Protects Vineyards, Young Trees

This "hinged" muzzle lets sheep and goats graze weeds in vineyards, but prevents them from eating the vines.

The muzzle is counterbalanced so that when the animal lifts its head, the muzzle drops over its mouth to prevent it from eating foliage and fruit. But when the animal puts its head down to graze, the muzzle swings clear - so the sheep or goat can graze.

The muzzle can also be used in orchards or when establishing shelter belts to protect young trees from damage.

For more information go to <https://www.winebaa.com>.



When animal lifts its head, hinged muzzle drops over its mouth to prevent it from eating foliage and fruit.