Extension
UNIVERSITY OF WISCONSIN-MADISON
DODGE COUNTY

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Winter camelina: a new cover crop for Wisconsin?

There has been some recent interest in winter camelina being used as a cover crop in Wisconsin, giving farmers an option other than cereal rye for a late-planted, overwintering cover. Beyond just adding some diversity to our winter cover, camelina has other potential benefits to our cropping systems, including less nitrogen tie up before corn, providing pollinator habitat in the early spring when it bolts and little else is flowering in agricultural fields, and presenting an opportunity for relay or double cropping.

Background:

Camelina, also known as false flax, is a part of the brassica or mustard family, the same family as crops such as canola, turnips, radishes, and even broccoli. It can act as an annual or winter-annual depending on if it germinates in the fall or spring. Varieties are generally specific to fall or spring planting like winter/spring wheat. Minnesota's Forever Green Initiative was instrumental in developing the Joelle variety that has winter-hardiness similar to winter rye.

Production today:

Cultivation on a commercial scale in Canada and parts of the Northern Great Plains started in the 1990's, however it has been grown as early as 4000 BC in Europe as an ancient oilseed. Today, camelina is grown and processed for a wide range of applications, including use as oil for human consumption, due in part to its high omega-3 fatty acids and shelf stability, as well as its largest potential market as a biofuel for commercial and military airplanes. The byproduct of fuel or food production can then be used as a high protein animal feed. Researchers in Wisconsin are also exploring camelina's use as forage in dairy cow diets.

Here in the Midwest, few farmers are growing camelina but those that are are mainly growing it as a cover crop or for cover crop seed. For more information and resources on camelina production as an oilseed, visit its profile on Extension's Emerging Crops page.

Current project:

Extension is evaluating winter camelina's capacity to fill a crucial role of cereal rye cover crops in scavenging nitrogen leftover in the soil, preventing nitrate loss to the environment. Nitrates can infiltrate groundwater and pose risks to human health at elevated levels. With four farmer-collaborators who all planted winter camelina in strip trials along with cereal rye and a no cover control after soybeans, we are evaluating post-harvest and pre-plant soil nitrogen levels, biomass production, and subsequent corn yields along with employing a, at least to our knowledge, new-to-Wisconsin method of measuring nitrogen loss to the environment: resin puck lysimeters. These relatively inexpensive devices, $5-10 a pop, sandwich a nitrate selective resin

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often used in home water filtration systems between layers of sand and mesh in a pvc pipe. The pvc puck is then placed in a trench dug horizontally from an access hole about 20 inches below the surface in order to catch nitrogen leaving the root zone of an undisturbed soil column. These pucks were installed immediately prior to cover crop planting and will be removed just before corn planting in order to compare the nitrogen leaving the fields between the camelina, cereal rye, and no cover control.

Camelina also needs to work agronomically if it is going to be adopted as a cover crop, which is why we are also evaluating the following corn crop yields planted on top of the cover crop strips. Camelina has a lower carbon to nitrogen ratio and produces less biomass than cereal rye, which will tie up less nitrogen and potentially release nutrients quicker to the corn seedlings. Will this prevent some of the yield drag we see in fields with later cereal rye termination? Stay tuned for results from the research after harvest next year.

Have a question? Feel free to reach out to the Dodge County Extension office in the Crops & Soils program.
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