Third Crop with Benefits

Hybrid Winter Rye & the Corn-Soybean Rotation

KWS

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An improved version of rye provides farmers on-farm value and off-farm market revenue potential.

Hybrid rye is a versatile third crop option for grain, forage, and feed.

Hybrid rye is gaining in popularity in the Midwest, but it already has been widely grown for more than a decade in Europe, where the grain is used as feed for hogs and cattle, marketed to distilleries or ethanol plants, and sold as a cereal grain for milling and human consumption.

German company, KWS, has spent ten years developing hybrid rye varieties that are the result of plant breeding and not genetic engineering. The resulting "crosses" (hybrids) are as winter-hardy as the cereal rye being used for cover crops. KWS has developed nine different hybrid rye varieties, three of which are sold in the U.S: Bono, Brasetto, and Progas. Bono and Brasetto are the two grain-type hybrids, while Progas is a forage-type hybrid.

Midwest farmers could easily integrate hybrid rye into their corn-soybean rotation. It can follow any crop that allows planting in September, but it performs best with early fall planting following a short-season crop species other than a grass, such as early soybeans, hay, or legume cover crops.

With its low input management, hybrid rye is a crop that lets farmers spread out their workload. It's planted after corn harvest (when most fall field work is already completed) using their existing seed drills, Brillion planters, or broadcast seeders. It's then harvested in July or August – typically "slower" periods for crop farmers – which even allows enough time to establish another cover crop in the rye stubble. Then farmers can plant soybeans into the cover crop the next spring, followed by another round of hybrid rye.

5 BIG BENEFITS OF HYBRID RYE VERSUS CEREAL RYE

1. YIELD (3X)

Farmers are well-familiar with the weed-suppressing benefit of cereal rye, a grain commonly grown by as a weed-stopping cover crop or as a soil-building "green manure", but it's typically not grown for the rye grain in the U.S. Planted in the fall, traditional cereal rye is terminated in the spring to make space for a cash crop.

But hybrid rye is different: it's grown as a third crop taken to harvest. Whereas traditional winter rye yields only 30-60 bushels per acre, **hybrid rye varieties can yield three times more than open-pollinated varieties.**

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The University of Minnesota's statewide field crop trials showed the KWS Bono hybrid rye variety produced 187 bushels an acre and KWS Brasetto hybrid rye produced 167 bushels an acre, over three years (2015-2017).

This yield difference comes, in part, from more plant tillers – plant shoots that produce grain heads. When planted early and at the optimum population, hybrid winter rye produces 8 to 20 tillers per plant in the fall, with each tiller representing a potential head of rye the following spring.

2. ON-FARM FEED POTENTIAL

On-farm research has demonstrated that incorporating rye in hog feed rations results in lower overall feed intake, because the hogs feel full while getting the nutrition they need to put on finish weight.

Rye's nutritional value is similar to wheat, but it has higher energy and lysine concentration than other small grains. It has the same amino acid composition as corn and a similar protein content.

It has lower fiber and higher energy content than oats, which allows it to meet nutrient requirements for most stages of grow-finish pork operations. In fact, hybrid rye grain can replace up to half of the corn in grow-finish hog feed rations and 10 percent in lactating sow rations, but it is not recommended for starter pigs due to its lower palatability.

New Hampton, Iowa: *Young hogs fed hybrid rye rations. October 2018*

With the potential for lower feed demand, hybrid rye can reduce costs for pork and producers. Dairy producers also can reap the benefits of hybrid rye's feed potential by double cropping and making hybrid rye silage.

3. LESS LODGING

Although it grows several inches shorter than conventional rye, hybrid rye has sturdier stalks, allowing it to stand better in wind and rain events with less lodging (falling over).

Dyersville, Iowa. *Jude Becker scouting a solid stand of hybrid rye. July 2018*

4. UNIFORM POLLINATION = LOWER ERGOT INFECTION

Traditional cereal rye is susceptible to ergot infection because of uneven pollination rates; however, hybrid rye varieties produce twice as much pollen in a relatively short timeframe, so pollination takes place across the entire crop in a matter of hours – not days. Farmers even may notice a "dust cloud" of pollen over the field during pollen shed. That uniform pollination is important, because while the rye flowers are open, they are susceptible to ergot infection. But once they're pollinated, the flowers close, and the risk of ergot infection drops.

5. LARGER ROOT SYSTEM = WEED SUPPRESSION + EROSION PROTECTION

Farmers know that plant diversity is one of the requirements for healthy soil. Hybrid rye enhances water penetration and retention, reduces soil erosion, and reduces weed biomass by 65 percent to 90 percent. Hybrid rye's large root system uses 20 percent less water and 20 percent less fertilizer than winter cereal rye. By introducing small grains into the corn-soybean rotation, farmers can break up weed cycles. It grows fast in the fall and again in the spring and easily can outcompete giant ragweed and foxtail.

Left to Right: *Claus Nymand (KWS), Ron Rosmann (Rosmann Family Farms), and Matt Helgeson (Albert Lea Seed) assessing hybrid rye roots in Harlan, Iowa. July 2018*

New Hampton, Iowa: *Fall-planted hybrid rye establishing in soybeans. October 2018*