GUEST COLUMN

Why Add GE Reduced-Lignin Alfalfa to Your Seed Order?

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Alfalfa is a staple in many animal diets since it is an excellent source of fiber and high-quality protein. It is complementary to other types of forage and grain, cost-effective, and palatable. However, there can be challenges when feeding alfalfa, mainly due to its digestibility. A recent industry push has prompted research to help overcome this challenge. This research has resulted in a solution: HarvXtra® Alfalfa with Roundup Ready® Technology.

What is lignin? Lignin is a structural component of the alfalfa plant holding it upright, but its woody texture makes it indigestible. It also binds with other cell wall components, further decreasing digestibility. As the alfalfa crop matures, lignin increases, lowering digestibility, and making harvest timing vital.

Developed through Research. Researchers found two ways to reduce lignin in alfalfa. The first, used for more than three decades, is to select for improved quality and reduced lignin using conventional breeding techniques. The second uses gene suppression to rewire the process alfalfa plants use to make lignin. This discovery came during a long-term research effort by the Consortium for Alfalfa Improvement using modern biotechnology to make improvements in alfalfa forage quality not possible through conventional breeding.

Increased Flexibility for Harvest. One of the biggest benefits of GE reduced-lignin alfalfa is the ability to delay harvest. This can result in higher forage yield potential, improved persistence and increased harvest timing flexibility. University of Wisconsin (UW) trials have shown a 15-20% forage yield advantage for a 3-cut vs. 4-cut management system over a 4-year rotation. Forage quality of conventional alfalfa in the UW 3-cut trial was significantly lower than in the 4-cut trial. This "forage yield vs. forage quality tradeoff" defines the dilemma most alfalfa farmers have in managing their cutting strategies. The potential for delayed harvest with GE reduced-lignin alfalfa without sacrificing quality provides a "high-yield, high-quality" solution to this historical dilemma.

Higher Quality, Increased Digestibility. The option to maintain regular harvest schedules for higher quality forage or delay harvest 7-10 days to gain yield potential offers greater opportunity to produce premium-quality hay with higher digestibility. Trials comparing GE reduced-lignin alfalfa 2017 FD4 commercial varieties to commercial checks show a 14-18% increase in neutral detergent fiber digestibility (NDFD) and relative forage quality (RFQ).

Greater profit, higher performance, and increased utilization are benefits farmers can see when producing high-quality forage.

No Agronomic Differences. When it came to GE reduced-lignin alfalfa, no effects on lodging or yield were observed when compared to conventional alfalfa harvested at the same stage of maturity. Forage quality and digestibility go hand-in-hand, making the introduction of GE reduced-lignin alfalfa with glyphosate resistance so exciting. It gives farmers a flexible cutting window while decreasing lignin content, increasing digestibility, and maintaining standability.