

Farmers Mill And Market Their Grains

Derek and Tannis Axten are farmers, millers and marketers. They grow a dozen or more crops, process them on farm and find markets for them. It's a unique operation in Saskatchewan, with an equally unique Unifine mill and marketing message.

"We aren't organic, as we use herbicides, but we never use glyphosate on our crops," says Derek. "We test all our grains to be sure they're chemical residue-free. We also test them for nutrient density and antioxidants. We're confident our emphasis on soil health helps produce residue-free grains and higher levels of nutrients and antioxidants."

Tannis notes that working with so many different crops each year is a lot of work but has huge benefits for soil health. The many different crops also produce many different niches for marketing. The Axtens sell whole grains in one-ton totes and flour mostly in 25 and 50-lb. bags. They also do smaller packaging for the regional market and sell 1-kg bags online.

Building a market for their grains and flour has been challenging. Derek admits that being certified organic would help; however, consumer interest in their certified regenerative status is growing. Their approach includes cover crops, intercropping (growing multiple crops in the same field), controlled traffic (to reduce soil compaction), low-disturbance seeding, minimal use of synthetic inputs, livestock integration, and pollinator strips with perennials.

"Our challenge is helping people understand what the difference is and why we do what we do," says Derek.

These practices all build soil health and healthier grains. However, educating consumers about these facts is only part of their challenge. They also need to inform consumers about the benefits of Unifine (Vol. 43, No. 6) milled flour.

"Whole grain has the most nutritional benefits, but it has to be functional as well," notes Tannis.

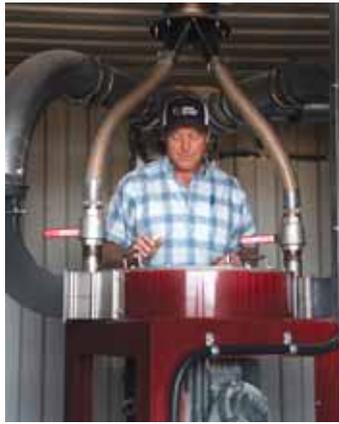
"We were always going to be a whole grain mill," says Derek. "Originally, we thought it would be a stone mill, but as we looked around, we heard about the Unifine mill."

Only a handful of the mills are in use, some 70+ years after the process was invented. Instead of grinding the grain as conventional mills do, the Unifine mill uses high-pressure air to blast the grain into particles.

Dean Folkvord, co-founder and former owner of Wheat Montana, recommended the process. Claudia Carter, executive director of the California Wheat Commission, also recommended it.

"Dean said he would have put one in had he known about it earlier, and Claudia spoke highly of the mill," says Derek. "Then Mathieu Choux, a Unifine mill owner and baker in Idaho, let us run some of our grain through his for samples."

The Axtens were sold, and soon, they sold their customers on it. "Whole wheat flour has the most nutrients and antioxidants, but it has to be functional in baking," says Tannis. "The Unifine mill makes functional whole wheat flour. We only take out about 10 percent of



Derek Axten with Unifine mill.

the larger bran, and our customers love it. They can replace white flour with nutrient-rich whole grain."

Tannis reports that the flour is more nutrient-dense, and the milling process seems to keep it fresh longer. It doesn't go rancid like other whole wheat flour tends to do. She credits the lower temperature process versus what happens in standard milling.

"We have an 18-month use label on our packaging, but recently, we opened some chickpea flour that was two years old," she says. "It still smelled fresh and tasted fine."

Derek gives some credit to the tremendous amount of air involved in the Unifine process and the very dry grain they produce.

"We have a flour that's nearly whole grain with phenomenal functionality that delivers great nutrition to our customers," says Derek.

When the Axtens invested in their on-farm processing, they did so with the idea of being able to clean and separate grains to food-grade standards. When they added milling, they did so with the future in mind.

"We're set up so we can add more mills as demand rises," says Derek. "If we had three mills, we could process a truckload of grain a day."

Demand must expand first to reach that point. The Axtens recognize that this means getting out, telling their story, and sharing the benefits of the Unifine milling process.

"I think the day is coming when Unifine milled flour will be recognized like stoneground is today," says Derek.

The Axtens are eager to share their story with other farmers and hope they will follow suit. They welcome on-farm visits and contact.

"We're just a drop in the bucket compared to the big multinational millers," notes Derek. "Having more operations like ours would be better for all of us. It takes a big investment, but 1, 5 or 10 farmers could go together, sharing the cost and the responsibilities of processing and marketing."

Contact: FARM SHOW Followup, Axten Farms, Box 181, Minton, Sask., Canada S0C 1T0 (ph 306-969-2110; tannis@axtenfarms.ca; www.axtenfarms.ca).

Textiles Made From Lab-Grown Fibers

There's a new way to think about natural materials, thanks to an innovative company cultivating them in test tubes. Boston-based startup GALY is leading the charge with Literally Cotton, a lab-grown fiber.

The company, founded in 2019 by Luciano Bueno, is on a mission to find ethical and sustainable agriculture solutions. It replicates cells from cotton plants in lab conditions. That's a big deal, as cotton plantations utilize over 85 million acres worldwide, and it takes approximately 713 gal. of water to produce the cotton for a single T-shirt. Lab-grown cotton, in contrast, uses 99% less water and 97% less land than traditional production methods while producing 77% fewer CO2 emissions.

GALY cotton doesn't start with a seed but a tiny piece of a mature cotton plant (typically a leaf). The cells are placed in a nutrient-rich petri dish and reprogrammed into totipotent cells, similar to human stem cells, which are then programmed to grow into cotton fibers. While traditionally grown cotton might take six months to reach maturity, lab-grown is ready within 20 to 40 days, with multiple "harvests" possible over the year. And, because the cotton is grown in controlled environments, it's free of dirt, plant debris, and even hulls and seeds. This makes it ideal for bandages and other medical uses.

Years of hard work are ahead before the strategy makes commercial sense. Still, GALY has financial support from numerous apparel brands and was named one of 2024's best inventions by Time Magazine. The company plans to expand its cellular agriculture platform beyond cotton.

They may find competition once they get there. Many companies are looking to transform plant waste into textiles. Fibe, a London-based material science company, is creating textile fibers from potato waste. This specialty yarn is made from the stems and leaves of potato plants, an inedible material that often goes to waste. According to Fibe, over 150 million tons of potato waste are left



Producing cotton for a single T-shirt requires approximately 713 gal. of water. Lab-grown cotton, in contrast, uses 99% less water and 97% less land than traditional production methods.

to rot each year. The company believes its patent-pending technology could put them to use, replacing up to an astonishing 70% of the world's fiber demand. They argue that potato fiber has a similar diameter to cotton, making it applicable for uses ranging from heavy canvas to breathable shirts. Potato fiber production may use over 99% less water and create 82% fewer carbon emissions than current textile industry practices.

Another plant with fiber potential is bananas. Qwstion, a Swiss company, is perfecting Bananatex, a fabric made from banana plant waste. So far, the material has been featured in a line of sneakers for the luxury brand Balenciaga.

It remains to be seen how effective these innovative fabrics will prove in the long term. Still, in these early days, they seem to have the potential to transform the world of textiles as we know it.

Contact: FARM SHOW Followup, GALY (www.galy.co), Fibe (www.fibe.uk) or Qwstion (www.qwstion.com).

Cameras Keep An Eye On Calving

Kevin Wirsta spends a lot of time away from his purebred cattle operation attending meetings, even during the critical calving season. Years ago, to keep an eye on his pregnant females and alert him of potential birthing issues, Wirsta bought and installed cameras in his calving barn and nearby corrals. These initial cameras were stationary and featured rather grainy pictures, but he recently upgraded to more state-of-the-art equipment.

His new units are fully infrared and utilize an app. They rotate 360 degrees and zoom up to 25X for a closer look.

"Rather than having my neighbor check my cows every hour or two, I can watch the feed on my phone from wherever I am," Wirsta says. "If something needs attention, I just have him put the desired cow in the barn. With the infrared cameras, there are no shadows, so even though it's pitch-black outside, it's like watching my big screen TV. I can zoom in to read an ear tag or tell if the newborn is a bull or a heifer."

The video feed can be watched live or recorded and played back later.

Wirsta placed one camera overlooking a pen beside his barn where he sorts females who will be calving soon, and another camera inside the barn to watch over those already delivering or in labor.

"I recommend a camera system to everyone who raises cattle," he says. "I don't know why you wouldn't have them as they save sleep, time, fuel, and money. I just set my alarm, check the camera, and go back



"I recommend a camera system to everyone who raises cattle," says Wirsta.

to sleep. Even if there's a calf stuck in the membrane bag, I can quickly go and make the save."

In the off-season, Wirsta uses the cameras for heat detection. He can see up to 1/4 mile away with no visibility or identification issues.

"I guarantee you'll trust them once you get used to them," he says. "You'll save calves more than you lose with a camera. They make them so cutting edge these days, and the tech is great. Plus, it's a good cost and ROI."

Contact: FARM SHOW Followup, K-Cow Ranch, Box 1450, Elk Point, Alberta, Canada T0A 1A0 (ph 780-614-5959; kcowranch@gmail.com; www.kcow.ca).



Easy Access To 48 Years Of FARM SHOW!

We've rescanned all the back issues of FARM SHOW. They're all available on our USB, along with a comprehensive database of the more than 36,000 "made-it-myself" ideas we've featured over the past 48 years. To order, go to www.farmshow.com or use order form on page 39.