

MSU Montana Foundation Seed Program and Bulgarian company partner on winter wheat

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BOZEMAN --- The word for partnership in Bulgarian is “съдружие” (pronounced sud-ruz-hie). For Montana State University Seed Manager Doug Holen, that translation also means to literally sow Montana seeds across the world.

The MSU Montana Foundation Seed Program, which seeks to strengthen crop productivity with the release and distribution of foundation-produced MSU developed crop varieties, has released two MSU-certified winter wheat varieties to a Bulgarian commercial agribusiness company. Holen believes this is the first time Montana-bred wheat varieties are being grown in Bulgarian soil.

The international partnership is reflective of MSU’s College of Agriculture and Montana Agricultural Experiment Station’s research that supports global food production and security, according to Charles Boyer, MSU vice president of agriculture.

“The point of a land-grant university, particularly in agriculture sciences, is to meet agriculture and natural resources challenges on a local, national and global scale,” Boyer said. “One of our important priorities is to develop products for a healthy, sustainable food supply, and this partnership is one example. Land-grant universities are pivotal players in finding out what it will take to the feed the world now and into the future, and MSU is meeting that challenge.”

Boyer said annually, the college and station conduct roughly \$2.7 million in federal agricultural research, a large portion of which is allocated to developing products for global food security and supply.

Holen said the partnership with Bulgaria came about after he received a phone call from a retired Montana grain professional, calling on behalf of a Bulgarian farmer.

“I was working in my second week as the manager for the MSU Foundation Seed Program, and I get a call from a man representing a farmer in Bulgaria who’s interested in our wheat varieties and the possibility of giving (a) trial run for a few of our varieties in Bulgarian soil,” Holen said. “It caught me a bit off guard, but I wanted to treat him like any other farmer wanting to know the latest and greatest varieties coming out of MSU.”

The man on the other end of the phone line was Si Mattheis, a retired professional in Kalispell who spent more than 30 years in the grain industry. Mattheis had worked closely with a Bulgarian farmer and business man, Teodor Ivanov, who together with his son, Ivan, owned and operated Agrotime, a Bulgarian agribusiness company that leads agriculture innovation and implementation in seeds, grain, fruits and pork and whose products are sold throughout Europe and the Middle East, according to the company's website. Following the death of Teo this winter, Ivan now manages Agrotime.

“Throughout my career, I had known about MSU varieties and the kinds of grain research happening at the university,” Mattheis said. “Both Teodor and I thought there might be some suitable grain varieties for his company that would match the current Bulgarian grains industry needs, and I offered to make the connection. From beginning to end, I was incredibly impressed with the willingness of MSU, and particularly with Doug (Holen), to find varieties that were suitable.”

Fast forward nine months, through many conversations and considerable legal and international paperwork, and MSU-bred winter wheat varieties Yellowstone and Decade were planted in Bulgaria in 2016. They are now being grown in several Bulgarian fields that Ivanov manages.

Phil Bruckner, MSU winter wheat breeder, first developed Yellowstone in 2006 and Decade in 2010. They have since been two of the most popular wheat varieties that Montana farmers plant, known for their strong baking traits, pest and disease resistance, and high-protein qualities. In 2017, Yellowstone accounted for 18.8 percent of 2.3 million acres planted of winter wheat in Montana, according to the U.S. Department of Agriculture (USDA).

Like Montana farmers, Ivanov has to keep pace with market demands and consumer preference when it comes to desired wheat qualities for end-use products like flour, noodles and baked goods. Coincidentally, Montana and Bulgaria share comparable latitudinal climate zones and similar soil and agronomic conditions with long winters and short growing seasons, according to Ivanov.

Holen recommended Ivanov plant Yellowstone and Decade certified seed, given the protein success Montana farmers have had with both varieties. Ivanov said Agrotime is currently using Austrian wheat varieties that are not yielding what the Bulgarian and world markets desire.

“The current trend in Europe at the moment is high-yielding wheat, but with little end-use quality,” Ivanov said. “We’re excited to have varieties with the genetics that are tailored to our similar environments and industry needs.”

Ivanov said production agriculture is also a cornerstone of the Bulgarian economy, similar to Montana, though lack of public funds for investing in university agricultural seed research and development is a noted difference.

“Agriculture is a continually competitive industry, so it’s imperative that we’re always looking for new solutions,” he said. “We have to be quite innovative and search for products that will perform in the best possible way.”

John Sherwood, head of the MSU Department of Plant Sciences and Plant Pathology, said the products developed from MSU plant breeding and genetics research have invaluable impact to world agriculture.

“The agronomic and economic value of our products are gaining international attention,” Sherwood said. “This is a powerful example of the impact of the land-grant mission in agriculture: producing products that make a difference in the global food economy.”

The international spotlight and licensing of MSU-developed wheat varieties ultimately helps the Montana farmer, according to Daniel Juliano, associate director of technology licensing in the MSU Technology Transfer Office (TTO). The MSU TTO manages the transfer of intellectual property from the university to industry and is currently overseeing the potential licensing of wheat genetics to Agrotime.

Juliano said MSU’s first priority is to serve Montana’s agricultural community, before sharing MSU-developed technology with other domestic or international markets.

“During this process, we’ve ensured that Agrotime will not compete with Montana seed growers in any way,” Juliano said. “Agrotime’s license will restrict their seed sales to certain European countries and explicitly prohibit sales into the United States, and will not affect the availability or pricing of these varieties in the U.S.”

Like any Montana farmer who wishes to grow and sell MSU-certified seed through the Montana Seed Growers Association, Ivanov is legally bound to honor strict certification standards in regard to seed cleaning, storing, distributing and upholding field and soil standards. Ivanov said that eventually, the goal is to act as any other private certified seed grower in Montana by storing and distributing certified seed to regional markets and to pay associated royalties to MSU.

Juliano added this would not be the first time MSU would license an MSU variety to an international company. MSU has previously licensed varieties to major international agricultural companies, with similar royalties and field standards.

“What is new is that we are developing a mechanism to direct some of the expected royalty revenue back into MSU’s breeding programs for increased research and development of varieties that will benefit Montana growers,” Juliano said.

The process wasn’t without complicated logistics and delicate maneuvering for legally and safely transporting certified seed across international waters and

borders. MSU Legal Counsel, as well as the Montana Department of Agriculture and USDA, had to sign off, in addition to garnering the required phytosanitary certification from the National Plant Protection Certification and Quarantine for United States plant exports. Finally, the European Union had to approve the transfer of seeds.

“The magnitude of miles, borders and many players involved in getting MSU-certified seed into Bulgarian fields was impressive, to say the least,” Holen said. “I’m amazed at the international scale of commodity exports and proud to say MSU-certified seed, and the paperwork behind it, performed admirably at every step.”

Holen said he’s proud MSU wheat varieties were sought after and might help Bulgarian farmers and the country’s agriculture community.

“Our job at the MSU Foundation Seed Program is making the connection of plant breeder efforts to producer needs by providing quality seed developed specifically for a range of soil, climatic and pest conditions, whether that particular field is in Bozeman or Bulgaria,” Holen said. “What’s neat about this is that MSU embodies the idea that the land-grant mission serves all, and that our programs and products literally have no boundary.”

Holen added the partnership is still developing and remains a pilot project until MSU and Agrotime agree to licensing terms.

“MSU has been incredibly careful and helpful in developing this partnership,” Ivanov said. “We think there is potential for a strong benefit for the Bulgarian Ministry of Agriculture and future European grain markets.”

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