Here's Bullet!

Introducing OK Bullet (not the horse)

By Jeana Sankey, Council Grove, Kan.

More than 15 years can be spent developing a new variety of wheat. However, the development of OK Bullet took only 11.

"Many times it takes more than one crossing to make a new variety," said Brett Carver, Oklahoma State University plant and soil sciences professor. "So, it can take quite a bit of time to develop something new."

Research for OK Bullet started in 1994, and the variety was released for common production in 2005. A wheat improvement team, which consisted of OSU professors and U.S. Department of Agriculture employees, assisted in the development of OK Bullet.

Carver said during that time, the team spent numerous hours crossbreeding wheats, trying to find a successful breed that would improve Oklahoma wheat production.

Carver, along with the wheat improvement team, decided the OK Bullet variety was a successful cross between the Oklahoma wheat Jagger and a leaf rust resistant wheat derived from *Triticum tauschii*. Both parents were developed by Kansas State University researchers.

Above: Jared Johnson checks wheat samples for growth. (Photo by Jeana Sankey)

Top: Before harvest, golden wheat "waves" in Oklahoma. (Photo by Gail Banzet)

OSU crossed the two breeds, arriving at a useful variety for Oklahoma wheat producers.

Yield potential, grazing potential, high test weight and kernel size, and excellent milling and baking characteristics combined with strong disease resistance would be beneficial for the Oklahoma wheat industry, Carver said.

"We found that Bullet would hit all targets as far as producers were concerned," he said. "It met all specifications to improve the production and yield of wheat in Oklahoma."

OK Bullet's significance as a new variety is important to producers and consumers. Hard red winter wheat is the top cash crop for Oklahoma, and the state ranks second in the nation for the production of winter wheat.

Carver said it is important for the wheat improvement team to develop a product they know will be successful. When developing a new variety, approvals are based on honesty. Technically, there is not a specific board that approves new varieties.

OSU develops new wheat varieties, does testing plots and decides if the variety is strong enough to be successful in Oklahoma. Once OSU decides it is strong enough, the improvement team puts together a proposal and sends it to the USDA.

When developing a name for a new wheat variety, Carver said it is important to find a name that reflects the variety's purpose and capabilities. Getting the name approved is not that hard; OSU sends the suggested name to the USDA to receive approval.

"When Bullet was first released, they asked that we use numbers, so I did," he said. "However, I wanted a catchy name that would cover how special the new wheat variety was, so I came up with Bullet."

Carver said he asked his student workers and other OSU faculty to provide input on the name of the new variety. "Bullet" just seemed to fit, not only since the new variety was developed at OSU, but also because the new variety "hit all targets for the producer."

Student Involvement

Jared Johnson, an agricultural education senior, worked for Carver and the wheat improvement team.

Johnson had input on the name, but he said Carver made the final decision. Johnson said his job required him to be punctual and willing to learn.

"Crossbreeding takes quite a bit of time to do; therefore, once it actually gets done, it is important to plant right away," Johnson said.

As a student worker for OSU and for the wheat improvement team, he spent a lot of time traveling around Oklahoma to plant wheat.

"For me, the best time of work involves the planting," Johnson said. "We travel across the state to about seven different locations."

Outlook for OK Bullet

Carver said improving production is the goal for the wheat improvement team and the university; the OSU Division of Agricultural Sciences and Natural Resources researchers want to produce wheat that will be successful for farmers around the state.

"I learned about OK Bullet by attending various wheat production field days held at different locations in the state," said Joe Caughlin, wheat producer near Tonkawa, Okla.

"This past year, we grew 150 acres of OK Bullet," Caughlin said. "We are excited about our plans to grow around 600 acres of OK Bullet this next year to see how the variety performs on a broader scale."

Even with the recent drought conditions in Oklahoma, Caughlin harvested 40 bushels per acre on the 150 acres of OK Bullet he planted.

Caughlin said he expects better success with OK Bullet under more favorable conditions.

OSU wheat varieties produce high-quality wheat for bread and grain products. Hard red winter wheat is the most commonly used wheat in Oklahoma. (Photo courtesy of the U.S. Department of Agriculture)

Carver said for most Oklahoma farmers, OK Bullet must be above average on disease resistance, especially resistance to tan spot and septoria complexes, races of leaf and stripe rust, and to soil-borne and spindle-streak mosaic viruses. This is most beneficial to no-till and minimum-tillage producers, Carver said.

"If OK Bullet's disease package can continue to perform, then the variety should have a strong position in our wheat line-up for several years," Caughlin said.

According to trials performed by the wheat improvement team, OK Bullet shows a four- to five-bushel-per-acre advantage over Jagger, the leading hard red winter wheat in Oklahoma. Compared with Jagger, OK Bullet has better forage production; however, tests show OK Bullet is not suitable for late spring grazing if high grain yield is desired.

Caughlin said this past season, OK Bullet seed dealers were asking $10 per bushel, but next season, when OK Bullet is more commonly used throughout the state, he expects the cost will come down to $8 per bushel.

Carver said if OK Bullet can withstand drought and diseases, it will be "a class act" among wheat varieties.

"OK Bullet looks to be a landmark variety," Carver said. "With its rare combination, it should prove to be a hit with the producers of Oklahoma."