

Research yields economic benefit for farmers and Virginia Tech

April 8, 2013 – Professor Carl Griffey's research to develop new strains of wheat does more than help the nation's grain producers compete in the global market. His work also generates millions of dollars for the commonwealth and Virginia Tech.



Professor Carl Griffey showcases new crop varieties at a field day at the Eastern Virginia Agricultural Research and Extension Center in Warsaw, Va. Seedsmen, producers, and grain exporters benefit from Griffey's research because they rely on small grains for their livelihoods.

Griffey - the W.G. Wysor Professor of Crop Genetics and Breeding in the Department of Crop and Soil Environmental Sciences - focuses on small-grains genetics and breeding. His research emphasizes improving disease resistance and producing traditional and specialty wheat and barley cultivars for the Mid-Atlantic states. In 2011, Griffey's small-grains varieties were planted on more than half a million acres.

Wheat and barley diseases frequently result in yield losses. In Virginia, powdery mildew can result in losses of 5 to 10 bushels per acre. If resistant varieties such as Griffey's were not available, two-thirds of Virginia producers would need to apply fungicides at a cost of \$2.4 million annually.

Increased yields also support Virginia's agribusiness export market.

With more than 25 percent of farm cash receipts attributable to export sales, Virginia's export trade reached a record \$2.3 billion in 2011 - an increase of more than 6 percent from 2010.

Wheat was one of Virginia's top exports in 2011 and is likely to remain in the top 10 through 2012. The U.S. Department of Agriculture estimated that Virginia's producers would harvest 270,000 acres of wheat

in 2012 - 20,000 acres more than were produced in 2011.

Griffey's small-grains breeding program is considered one of the best on the East Coast. Virginia Tech's 42 wheat varieties are now grown in 16 states and Canada, and the university continually releases new wheat varieties to help increase production. In addition, seven varieties of Virginia Tech's barley are grown in eight states.

"Carl listens to what Virginia growers want and need to remain profitable," said Bruce Beahm, manager of the Virginia Crop Improvement Association's Foundation Seed Farm. "He is developing two types of wheat - the durum varieties that are used in pasta and the hard varieties that are used in bread. These wheats are typically grown outside the Mid- Atlantic region."

Griffey and Wade Thomason, associate professor and Virginia Cooperative Extension grains specialist, are looking for new ways to produce higher yields without increasing fertilizer use. The researchers also want to use DNA markers to identify the presence of desirable genes such as plant height, insect resistance, grain quality, and yield.

"Our research facilitates training for a new generation of plant breeders in the most advanced technologies, which is critical for wheat research development in the coming decades," Griffey said.

Over the past two decades, the work of Griffey and his colleagues has produced nearly \$8 million in royalties and more than \$3.3 million in sponsored research funding to the university. The royalties help fund research and extension efforts.

"These dollars will return significant economic benefits to local and national wheat growers who continually seek to improve yield potential and the quality of their crop," Griffey said.
