

## **JACKIE RUDD**

Professor and Regents Fellow, Wheat Breeding  
Dept. of Soil and Crop Sciences, Texas A&M AgriLife Research, Amarillo

### **Education/Training**

Ph.D., 1992, Kansas State University, Agronomy, Wheat Breeding; R.G. Sears.  
M.S., 1980, University of Arkansas, Agronomy, Forage Legume Breeding; M.S. Offutt.  
B.S., 1977, Tarleton State University, Agronomy.

### **Positions and Employment**

2009- Professor, Texas A&M AgriLife Research, Amarillo.  
2001-2009 Associate Professor, Texas A&M AgriLife Research, Amarillo.  
1992-2001 Assistant/Associate Professor, South Dakota State Univ., Brookings, South Dakota.

### **Program Overview**

I am the project leader of the hard winter wheat breeding program for the High Plains and Rolling Plains of Texas. Responsibilities include management of the cultivar development project, graduate student training, and conducting research relevant to wheat genetic improvement. My current research interests are breeding for water use efficiency, introgression of forage and grain yield traits from synthetic hexaploid wheat, high throughput phenotyping for biomass production, marker assisted breeding for biotic and abiotic stress resistance, and enhanced bread-making quality.

### **Significant 5 Year Accomplishments**

The TAM Wheat Improvement Team has released one oat and 3 wheat cultivars since 2011. TAM Wheat cultivars are currently planted on 40% of the wheat acres in Texas and 20% of the wheat acres in Kansas. Two new varieties were released by the breeding program in 2014. TAM 204, licensed to Watley Seed, is an awnless wheat cultivar with excellent grain and forage yield, insect resistance, and disease resistance. TAM 114, licensed to Adaptive Genetics, is for the northern regions of Texas and has extra strong mixing and baking strength, making it a premium product for millers and bakers.

### **Publications**

#### ***Ten most recent publications (24 total since 2011)***

1. Liu, S.Y., S. Ocheya, S. Dhakal, X. Gu, C.-T. Tan, Y. Yang J.C. Rudd, D.B. Hays, A.M. Ibrahim, Q. Xue, S. Chao, R. Devkota, C. Shachter, T. Huggins, S. Mohammed, M.P. Fuentealba. 2015. Validation of chromosomal locations of 90K array SNP in US wheat. *Crop Science (In Press)*. doi: 10.2135/cropsci2015.03.0194.
2. Ibrahim, Amir MH, Jackie Rudd, Ravindra Devkota, Jason Baker, Russel Sutton, Bryan, Simoneaux, Geraldine Opeña, Rex Herrington, Lloyd Rooney, Linda Dykes. 2015. Registration of 'TAM 305' Hard Red Winter Wheat. *J. Plant Reg.* 9:325-330.
3. Rudd, Jackie C, Ravindra N Devkota, Amir M Ibrahim, David Marshall, Russell Sutton, Jason A Baker, Gary L Peterson, Rex Herrington, Lloyd W Rooney, Lloyd R Nelson. 2015. 'TAM 304' Wheat, Adapted to the Adequate Rainfall or High-Input Irrigated Production System in the Southern Great Plains. *J. Plant Reg.* 9:331-337.
4. Rudd, Jackie C., Ravindra N. Devkota, Jason A. Baker, Gary L. Peterson, Mark D. Lazar, Brent Bean, David Worrall, Todd Baughman, David Marshall, Russell Sutton, Lloyd W. Rooney, Lloyd R. Nelson, Allan K. Fritz, Yiqun Weng, Gaylon D. Morgan, and Brad W. Seabourn. 2014. 'TAM 112' wheat, resistant to greenbug and wheat curl mite and adapted to the dryland production system in the Southern High Plains. *J. Plant Reg.* 8:291-297.

5. Liu, S., J.C. Rudd, G. Bai, S. Haley, A.M.H. Ibrahim, Q. Xue, D.B. Hays, R.A. Graybosch, R.N. Devkota, and P. St. Amand. 2014. Molecular markers linked to genes important for hard winter wheat production and marketing in the U.S. Great Plains. *Crop Sci.* 54: 1304-1321.
6. Pradhan, G., Q. Xue, S. Liu, J.C. Rudd, K.E. Jessup, and J.R. Mahan. 2014. Cooler canopy temperature contributed to higher yield in new drought tolerant wheat cultivars. *Crop Sci.* 54: 2275-2284.
7. Reddy, S.K., S. Y. Liu, J.C. Rudd, Q. Xue, P. Payton, S.A. Finlayson, J.R. Mahan, A. Akhunova, S.V. Holalu, N. Lu. 2014. Physiology and transcriptomics of water-deficit stress responses in wheat cultivars TAM 111 and TAM 112. *J Plant Physiol.* 171: 1289-1298.
8. Xue, Q., J.C. Rudd, S. Liu, K.E. Jessup, R.N. Devkota, and J.R. Mahan. 2014. Yield determination and water use efficiency of wheat under water-limited conditions in the US Southern High Plains. *Crop Sci.* 54:34-47.
9. Azhaguvel, P, D Mornhinweg, D Vidya-Saraswathi, J Rudd, K Chekhovskiy, M Saha, T Close, L Dahleen, Y Weng. 2013. Molecular mapping of greenbug (*Schizaphis graminum*) resistance gene *Rsg1* in barley. *Plant Breeding* 133:227-233.
10. Basnet, B.R., A.M.H. Ibrahim, X. Chen, R.P. Singh, E.R. Mason, S.Y. Liu, R.N. Devkota, N.K. Subramanian, and J.C. Rudd. 2013. Molecular Mapping of Stripe Rust Resistance in Hard Red Winter Wheat TAM 111 Adapted in the US High Plains. *Crop Sci.* 54:1361-1373.

#### **Awards and Honors**

- Texas A&M College of Agriculture and Life Sciences Dean's Outstanding Award for Interdisciplinary Research, Texas TAM Wheat Improvement Team, 2015.
- Texas A&M University, Department of Soil and Crop Sciences, 2014 Research Award.
- Texas A&M Technology Commercialization Innovation Award, TAM Wheat Variety Development Team, 2013.
- Texas A&M AgriLife Vice Chancellor's Award in Excellence, TAM Wheat Improvement Team, 2013.
- Texas A&M University Regents Fellow Service Award, 2012.
- Texas Wheat Producers '2010 Man of the Year', 2010 Commodity Symposium.

#### **Professional Experience**

- Texas A&M AgriLife Research, Development and Release of nine Hard Red Winter Wheat cultivars: TAM 112, TAM 303, TAM 304, TAM 203, TAM 401, TAM 113, TAM 305, TAM 204, TAM 114.
- Wheat Quality Council, Executive Committee, 2010-2014.
- National Wheat Improvement Committee; member, 1996-2000 (hard spring wheat region); member, 2005-2011 (hard winter wheat region).
- Panel member for external review of USDA ARS Grain Marketing and Production Research Center, Manhattan, KS. Biological Research Unit (BRU), Engineering Research Unit (ERU), Grain Quality and Structure Research Unit (GQSRU), October 22-25, 2008.
- Panel member for external review of the Washington State University Wheat Breeding Program, March 2007.
- Appointed team member on US Wheat Associates sponsored trips to buyers of US wheat to discuss quality needs and wheat variety performance. Trips to Japan, Korea, Philippines, Malaysia, Thailand, Taiwan, China, Central America, and Mexico. 1999, 2005, and 2009.