

CURRICULUM VITAE

Duli Zhao

(Ph.D. in Agronomy and Crop Physiology)

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Business:

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EDUCATION:

Ph.D. University of Arkansas, Fayetteville, USA, May 1997

Major: Agronomy/Crop Physiology

Dissertation title: *Cotton square development and responses to shade and plant growth regulator PGR-IV*

Supervisor: Distinguished Professor Dr. Derrick M. Oosterhuis

M. S. Northwestern Agricultural University (China), January 1985

Major: Crop Physiology

Thesis title: *Relationships between cotton fruit development and temperature*

Supervisor: Professor Xuan Xu

B. S. Northwestern Agricultural University (China), January 1982

Major: Agronomy

Thesis title: *A preliminary study on crop water relation in cotton cropping systems*

Supervisor: Professor Qianshen Chen

PROFESIONAL INTERESTS:

- Research on (1) Sugarcane breeding and cultivar development, and genotype × environment interactions; (2) Agronomy, cropping systems, and sustainable agriculture in sugarcane, cotton and other row crops; (3) Whole plant physiology, plant nutrition and soil fertility, plant water status and irrigation scheduling, plant growth regulators, and crop-soil-water relation; (4) Crop growth, yield and quality responses to biotic and abiotic stresses, and (5) Best management practices of field crops (especially for sugarcane, cotton, soybean, corn, peanuts, and cover crops).
- Management of the scientific enterprise, including (1) planning, designing, and conducting applied and basic research on agronomy and crop sciences; (2) collecting, analyzing and interpreting research data; and (3) presenting, reporting, and publishing research results.
- Agricultural extension, agronomic and crop science education at the undergraduate and graduate levels, as well as public outreach, particularly through extension, demonstration, and consultant services.

PROFESIONAL EXPERIENCE:

1. Research and Extension

11/2008–present Research Agronomist at the USDA-ARS, Sugarcane Field Station, Canal Point, FL. Research includes sugarcane variety selection, genotype and environment interaction, plant abiotic stress physiology, and production management.

10/2006–10/2008 Research Scientist (90% research and 10% extension) at University of Florida, IFAS, North Florida Research & Education Center, Quincy, FL. Research areas mainly emphasize

conservation tillage, cropping systems and rotations, N fertilizer and irrigation management, and crop physiology of cotton, peanuts, corn, and forage in sod-based rotations.

7/2004–9/2006 Research Agronomist (Post-doc) at the Grazinglands Research Laboratory, USDA-ARS, El Reno, Oklahoma. Research areas include forage quality, livestock management, plant physiology, and remote sensing.

3/2001–6/2004 Visiting Research Scientist in Department of Plant and Soil Sciences, Mississippi State University. Research projects include cotton production, environmental stress physiology, crop modeling, remote sensing, and precision agriculture.

5/1997–3/2001 Post-doc Research Associate in Department of Crop, Soil and Environmental Sciences, University of Arkansas, Fayetteville. Research focuses on cotton production management practices, cotton plant nutrition (N, K and B) and fertilizations, and plant growth regulator application.

8/1993–5/1997 Ph.D. Graduate Student Research Assistant of cotton growth, physiology, production, and management in Department of Agronomy, University of Arkansas, Fayetteville.

1992–1993 Visiting Research Scientist. Engaged in cooperative research on cotton production and whole plant physiology in the Department of Agronomy, University of Arkansas, Fayetteville.

1988–1991 Instructor of Agronomy at the Northwestern Agricultural University, China. Responsibilities included research (40%), teaching (30%), and extension (30%). Research focuses on the effects of water deficit and nutrient stresses during flowering and fruiting stages on cotton growth, development, lint yield, and fiber quality.

1987–1988 Technical Farm Manager at the Agricultural Experiment Station, Northwestern Agricultural University, China. Supervise cotton variety test, crop rotations, tillage, and other field crop management practices.

1985–1987 Lecturer in Department of Agronomy, Northwestern Agricultural University, China. Conduct experiments in cotton variety test, effects of irrigation scheduling and temperature on cotton boll development and fiber quality, and application of plant growth regulators to cotton plants.

1982–1984 Graduate Student Research Assistant for M.S. degree program at the Northwestern Agricultural University, China. Conduct experiments in cotton growth, development, lint yield, and fiber quality responses to air temperature.

2. Teaching

2001–2004 Taught a part of laboratory demonstration in a class of “*Whole Plant Physiology and Crop modeling*” in Department of Plant and Soil Sciences, Mississippi State University.

1998–2000 Taught “*Whole Plant Physiology Laboratory*” in the graduate course of Research Techniques in Agronomy in Department of Crop, Soil, and Environmental Sciences, University of Arkansas, Fayetteville.

1996–2000 Lectured “*Chinese Agricultural Systems and Agricultural Policy*” in Dr. M. Davis’s International Agriculture and Cropping System Discussion class in Department of Crop, Soil, and Environmental Science, University of Arkansas, Fayetteville.

1987–1992 Taught one graduate course “*Crop Physiology*” and two undergraduate courses “*Principle of Crop Production*” and “*Farming Systems*” at the Northwestern Agricultural University, China.

1985–1986 Taught two undergraduate courses “*Laboratory of Crop Production and Management Practices*” and “*Cropping Systems and Practices*” at the Northwestern Agricultural University, China.

RESEARCH GRANTS:

- Wright, D. D. Zhao, and J. Marois. Improving Cotton Water and N Use Efficiencies in Sod-based Rotation. Cotton Foundation (2008) **\$18,190**.

- Wright, D., D. Zhao, J. Marois, C. Mackowiak, J.A. Howe, D.L. Holshouser, and R.S. Tubbs. Risk Avoidance by Using Perennial Grasses in Crop Rotations. USDA-SCREES (2008) **\$805,054**.
- Wright, D., J. Marois, and D. Zhao. Peanut growth and yield responses to kill time of bahiagrass and tillage method. Florida Peanut Checkoff (2007) **\$20,000**.
- Reddy, K.R. and D. Zhao. Development and field validation of algorithms for predicting plant N status of cotton, corn and sorghum using the specific reflectance ratios. Advanced Spatial Technologies for Agriculture, MAFS (2004-2005) **\$68,740**.
- Oosterhuis, D.M. and D. Zhao. Physiological and biochemical mechanisms of boron effect on cotton growth and yield. The US Borax (2000-2001) **\$45,000**.
- Oosterhuis, D.M. and D. Zhao. Interactive effects of nitrogen and boron fertilizers on growth, lint yield, and fiber quality of field-grown cotton. The U. S. Cotton Incorporated (1999-2000) **\$50,000**.
- Oosterhuis, D.M. and D. Zhao. Growth and physiological responses of cotton and rice to plant growth regulators. Micro-Flo Company. (1997-2000) **\$100,000**.
- Oosterhuis, D.M. and D. Zhao. Study on mode of a new plant growth regulator MepiqPlus effect cotton growth and yield. Micro-Flo Company (1999-2000) **\$24,000**.
- Oosterhuis, D.M. and D. Zhao. Field evaluation of various plant growth regulators in cotton. Micro-Flo Company (1999-2001) **\$36,000**.
- Oosterhuis, D.M. and D. Zhao. Using the COTTONMAG program to manage field cotton growth, development, and yield. Arkansas Cotton Promotion (2000-2001) **\$32,000**.
- Oosterhuis, D.M. and D. Zhao. Efficacy of plant growth regulator PIX when foliar application is followed by precipitation. The BASF, Plant Science (1998-1999) **\$20,000**.
- Oosterhuis, D.M. and D. Zhao. Field evaluation and screening of various cotton defoliation chemicals for cotton best management. Arkansas Cotton Promotion Board (1998-1999) **\$36,000**.
- Oosterhuis, D.M. and D. Zhao. Comparison of transgenic and non-transgenic cotton line in physiology and yield. Monsanto Company (1999) **\$8,000**.
- Xu, Xuan, Yuzhang Xu, and Duli Zhao. Influence of environmental factors on cotton growth. Development, physiology, lint yield, and fiber quality. Chinese National Science foundation. (1989-1991) **\$35,000**.
- Xu, Yuzhang, Duli Zhao, and Xuan Xu. Balance of cotton vegetative and reproductive growth by cultural practices. Sci-tech Society of Shaanxi Province (1985-1988) **\$15,000**.

PUBLICATIONS:

Books and Book Chapters (Career Total of 6)

- **Zhao, D.**, D. L. Wright, J.J. Marois, and D. Rowland. 2015. Rotation of peanut and cotton with bahiagrass to improve soil quality and crop productivity. *In*: B.L. Ma (ed.) Crop Rotations: Farming Practices, Monitoring and Environmental Benefits. Nova Science Publishers, Inc. Hauppauge, NY (in review).
- **Zhao, D.**, and Y.-R. Li. 2014. Climate change impact on sugarcane production in developing countries. *In*: Y.-R. Li, G.P. Rao, S. Solomon, L.-T. Yang, Z. Liu, W.-Z. He, Y. Zeng, Q.-Z. Tang, S.-Y. Liu, H. Zhou, and R.-H. Lu (eds.) Green Technologies for Sustainable Growth of Sugar & Integrated Industries in Developing Countries. IAPSIT, pp 11-14.
- Wright, D. L., J.J. Marois, C. Mackowiak, **D. Zhao**, G. Anguelov, and C. Lamb. 2014. Sod-based/livestock/row crop integration: An improved conservation farming system. *In*: J. Bergtold, G. Hawkings, K. Iversen, and R. Raper (eds.) Conservation Tillage Systems: Production, Profitability, and Stewardship. Beltsville, MD: SARE Outreach (in press).

- **Zhao, D.**, K.R. Reddy, and P.J. Starks. 2005. Assessments of cotton and forage plant nitrogen status using remote sensing. *In: C. J. Li et al., (eds.), Plant Nutrition for Food Security, Human Health and Environmental Protection*, Tsinghua University Press, Beijing, China, pp. 1104-1105.
- **Zhao, D.**, and D.M. Oosterhuis. 1997. Cotton square development and responses to shade and plant growth regulator PGR-IV. Ph.D. Dissertation, University of Arkansas, Fayetteville, AR.
- **Zhao, D.**, Xuan Xu, and Hanwen Wang. 1985. Relationships between cotton fruit development and air temperature. M.S. Thesis. Northwestern Agricultural University, Shaanxi, China.

Refereed Publications (Career Total of 89)

- (1) Davidson, R.W., **D. Zhao**, J.C. Comstock, B. Glaz, S.J., Edmé, R.A. Gilbert, N.C. Glynn, S. Sood, H. Sandhu, P. McCord, and K. McMorkle. 2015. Registration of 'CP 06-2042' sugarcane. *J. Plant Reg.* (in preparation)
- (2) Sandhu, H., J.C. Comstock, P. McCord, R.W. Davidson, **D. Zhao**, B. Glaz, S.J. Edmé, R.A. Gilbert, N.C. Glynn, S. Sood, and K. McMorkle. 2015. Registration of 'CP 07-2137' sugarcane. *J. Plant Reg.* (in preparation)
- (3) **Zhao, D.**, R.W. Davidson, M. Baltazar, J.C. Comstock, P. McCord, and S. Sood. 2015. Screening sugarcane brown rust for stage-I clones of the Canal Point sugarcane cultivar development program. *J. Agronomy*. (in preparation)
- (4) **Zhao, D.**, and Y.-R. Li. 2015. Climate change and sugarcane production: Impact and mitigation strategies. *Int. J. Agron.* (submitted)
- (5) Edmé, S.J., R.W. Davidson, **D. Zhao**, J.C. Comstock, H. Sandhu, B. Glaz, S. Milligan, C.J. Hu, S. Sood, K. McMorkle, R.A. Gilbert, and N.C. Glynn. 2015. Registration of 'CPCL 05-1201' sugarcane. *J. Plant Reg.* (in review)
- (6) **Zhao, D.**, R.W. Davidson, M. Baltazar, and J.C. Comstock. 2015. Field evaluation of sugarcane orange rust for first clonal selection stage of the CP sugarcane cultivar development program. *Am. J. Agric. Biol. Sci.* 10(1): 1-11.
- (7) **Zhao, D.**, B. Glaz, M.S. Irely, and C.-J. Hu. 2015. Sugarcane genotype variation in leaf photosynthesis properties and yield as affected by mill mud application. *Agron. J.* 107(2):506-514.
- (8) **Zhao, D.**, J.C. Comstock, H. Sandhu, B. Glaz, S.J. Edmé, R.W. Davidson, S. Sood, R.A. Gilbert, K. McMorkle, and N.C. Glynn. 2015. Registration of 'CP 06-2400' sugarcane. *J. Plant Reg.* 9:71-77.
- (9) **Zhao, D.**, B. Glaz, and J.C. Comstock. 2014. Physiological and growth responses of sugarcane genotypes to N rate on a sand soil. *J. Agron. Crop Sci.* 200:290-301.
- (10) Sandhu, H., B. Glaz, S.J. Edmé, R.W. Davidson, **D. Zhao**, J.C. Comstock, R.A. Gilbert, S. Milligan, C.J. Hu, N.C. Glynn, S. Sood, and K. McMorkle. 2014. Registration of 'CPCL 02-6848' sugarcane. *J. Plant Reg.* 8:155-161.
- (11) Todd, J., B Glaz, M.S. Irely, **D. Zhao**, C.-J. Hu, and N. El-Hout. 2014. Sugarcane genotype selection on a sand soil with and without added mill mud. *Agron. J.* 106:315-323.
- (12) Reddy, K.R., S.K. Singh, S. Koti, V.G. Kakani, **D. Zhao**, W. Gao, and V.R. Reddy. 2013. Quantifying corn growth and physiological responses to ultraviolet-B radiation for modeling. *Agron. J.* 105(5):1367-1377.
- (13) Davidson, R.W., **D. Zhao**, J.C. Comstock, H. Sandhu, B. Glaz, S.J., Edmé, S. Sood, R.A. Gilbert, N.C. Glynn, S. Milligan, C.J. Hu, and K. McMorkle. 2013. Registration of 'CPCL 05-1791' sugarcane. *J. Plant Reg.* 7:312-320.
- (14) **Zhao, D.**, J.C. Comstock, B. Glaz, S.J. Edmé, R.W. Davidson, R.A. Gilbert, N.C. Glynn, S. Sood, H. Sandhu, K. McMorkle, J.D. Miller, and P.Y.P. Tai. 2013. Registration of 'CP 05-1526' sugarcane. *J. Plant Reg.* 7:305-311.

- (15) Glaz, B., S.J. Edmé, R.W. Davidson, **D. Zhao**, J.C. Comstock, H. Sandhu, N.C. Glynn, R.A. Gilbert, S. Sood, K. McMorkle, S. Milligan, and C.J. Hu. 2013. Registration of 'CPCL 05-1102' sugarcane. *J. Plant Reg.* 7:296-304.
- (16) Edmé, S.J., R.W. Davidson, R.A. Gilbert, N.C. Glynn, **D. Zhao**, J.C. Comstock, B. Glaz, S. Sood, J.D. Miller, and P.Y.P. Tai. 2013. Registration of 'CP 04-1935' sugarcane. *J. Plant Reg.* 7:288-295.
- (17) Comstock, J.C., B. Glaz, S.J. Edmé, R.W. Davidson, R.A. Gilbert, N.C. Glynn, **D. Zhao**, S. Sood, J.D. Miller, and P.Y.P. Tai. 2013. Registration of 'CP 04-1566' sugarcane. *J. Plant Reg.* 7:273-279.
- (18) **Zhao, D.**, B. Glaz, and J.C. Comstock. 2013. Sugarcane leaf photosynthesis and growth characters during development of water-deficit stress. *Crop Sci.* 53:1066-1075
- (19) Glaz, B., S.J. Edmé, R.W. Davidson, R.A. Gilbert, N.C. Glynn, **D. Zhao**, J.C. Comstock, S. Sood, J.D. Miller, and P.Y.P. Tai. 2013. Registration of 'CP 04-1844' sugarcane. *J. Plant Reg.* 7:280-287.
- (20) Gilbert, R.A., N.C. Glynn, S.B. Milligan, **D. Zhao**, J.C. Comstock, B. Glaz, S.J. Edmé, R.W. Davidson, S. Sood, and C.J. Hu. 2013. Registration of 'CPCL 02-1295' Sugarcane. *J. Plant Reg.* 7:172-179.
- (21) Glynn, N.C. **D. Zhao**, J.C. Comstock, S.B. Milligan, B. Glaz, S.J. Edmé, R.W. Davidson, R.A. Gilbert, C.-J. Hu, and S. Sood. 2013. Registration of 'CPCL 02-0926' sugarcane. *J. Plant Reg.* 7:164-171.
- (22) Davidson, R.W., S.B. Milligan, R.A. Gilbert, N.C. Glynn, **D. Zhao**, J.C. Comstock, B. Glaz, S.J. Edmé, C.-J. Hu, D.G. Holder, and S. Sood. 2013. Registration of 'CPCL 95-2287' sugarcane. *J. Plant Reg.* 7:42-50.
- (23) **Zhao, D.**, N.C. Glynn, B. Glaz, J.C. Comstock, and R.M. Johnson. 2012. Development of leaf spectral models for evaluating large numbers of sugarcane genotypes. *Crop Sci.*, 52:1837-1847.
- (24) **Zhao, D.**, J.C. Comstock, B. Glaz, S.J. Edme, N.C. Glynn, A. de Blanco, R.A. Gilbert, R.W. Davidson, and C.Y. Chen. 2012. Vigor rating and Brix for first clonal selection stage of the Canal Point sugarcane cultivar development program. *J. Crop Improv.* 26:60-75.
- (25) Gilbert, R.A., J.C. Comstock, B. Glaz, I. A. del Blanco, S.J. Edmé, R.W. Davidson, N.C. Glynn, S. Sood, **D. Zhao**, J. D. Miller, and P.Y.P. Tai. 2011. Registration of 'CP 03-1912' sugarcane. *J. Plant Reg.* 5:318-324.
- (26) Glynn, N.C., S.B. Milligan, R.A. Gilbert, R.W. Davidson, J.C. Comstock, B. Glaz, S.J. Edme, C.J. Hu, D.G. Holder, I.A. del Blanco, S. Sood, and **D. Zhao**. 2011. Registration of 'CPCL 00-4111' sugarcane. *J. Plant Reg.* 5:325-331.
- (27) **Zhao, D.**, N. Glynn, B. Glaz, J.C. Comstock, and S. Sood. 2011. Orange rust effect on leaf photosynthesis and related characters of sugarcane. *Plant Dis.* 95:640-647.
- (28) Davidson, R. W., S. Milligan, B. Glaz, J. Comstock, C.J. Hu, N. Glynn, S. Edme, D. Holder, R. Gilbert, S. Sood, A. Del Blanco, and **D. Zhao**. 2011. Registration of 'CPCL 99-4455' sugarcane. *J. Plant Reg.* 5:54-61.
- (29) **Zhao, D.**, B. Glaz, and J. Comstock. 2010. Sugarcane responses to water deficit stress during early growth on organic and sand soils. *Am. J. Agric. Biol. Sci.* 5:403-414.
- (30) **Zhao, D.**, B. Glaz, S. Edme, and I.D. Blanco. 2010. Precision of sugarcane biomass estimates using fresh and dry weights. *J. Am. Soc. Sugar Cane Technol.* 30:37-49.
- (31) **Zhao, D.**, D.L. Wright, J.J. Marois, C.L. Mackowiak, and M. Brennan. 2010. Improved growth and nutrient status of an oat cover crop in sod-based versus conventional peanut-cotton rotations. *Agron. Sustain. Dev.* 30:497-504.
- (32) **Zhao, D.**, C.T. MacKown, P.J. Starks, and B. Kindiger. 2010. Rapid analysis of nonstructural carbohydrate components in grass forage using microplate enzymatic assays. *Crop Sci.* 50:1537-1545.

- (33) **Zhao, D.**, K.R. Reddy, V.G. Kakani, and J.J. Read. 2010. Remote-sensing algorithms for estimating nitrogen uptake and nitrogen-use efficiency in cotton. *Acta Agric. Scand., Section B - Plant Soil Sci.* 60:500-509.
- (34) **Zhao, D.**, D.L. Wright, and J.J. Marois. 2009. Peanut yield and grade responses to timing of bahiagrass termination and tillage in a sod-based crop rotation. *Peanut Sci.* 36:196-203.
- (35) **Zhao, D.**, C. MacKown, P.J. Starks, and B. Kindiger. 2008. Interspecies variation of forage nutritive value and nonstructural carbohydrates in perennial cool-season grasses. *Agron. J.* 100:837-844.
- (36) Starks, P.J., **D. Zhao**, and M.A. Brown. 2008. Estimation of nitrogen concentration and *in vitro* dry matter digestibility of herbage of warm-season grass pastures from canopy hyperspectral reflectance measurements. *Grass Forage Sci.* 63:168-178.
- (37) **Zhao, D.**, P.J. Starks, M.A. Brown, W.A. Phillips, and S.W. Coleman. 2007. Assessment of forage biomass and quality parameters of bermudagrass using proximal sensing of pasture canopy reflectance. *J. Grassland Sci.* 53:39-49.
- (38) **Zhao, D.**, K.R. Reddy, V.G. Kakani, J.J. Read, and S. Koti. 2007. Canopy reflectance in cotton for growth assessment and lint yield prediction. *Eur J. Agron.* 26:335-344.
- (39) Koti, S., K.R. Reddy, V.G. Kakani, **D. Zhao**, and W. Gao. 2007. Effects of carbon dioxide, temperature, and ultraviolet-B radiation and their interactions on soybean (*Glycine Max L.*) growth and development. *Environ. Exp. Bot.* 60:1-10.
- (40) Koti, S., K.R. Reddy, G.W. Lawrence, V.R. Reddy, V.G. Kakani, **D. Zhao**, and W. Gao. 2007. Effect of enhanced UV-B radiation on reniform nematode (*Rotylenchus Reniformis* Linford and Oliveria) populations in cotton (*Gossypium Hirsutum L.*). *Plant Pathol. J.* 6:51-59.
- (41) Zhou, Z.C., Z.P. Shangguan, and **D. Zhao**. 2006. Modeling vegetation coverage and soil erosion in the Loess Plateau Area of China. *Ecological Modelling.* 198:263-268.
- (42) Starks, P.J., **D. Zhao**, W.A. Phillips, and S.W. Coleman. 2006. Herbage mass, nutritive value, and canopy spectral reflectance of bermudagrass pastures. *Grass Forage Sci.* 61:101-111.
- (43) Starks, P.J., **D. Zhao**, W.A. Phillips, and S.W. Coleman. 2006. Development of canopy reflectance algorithms for real-time prediction of bermudagrass pastures biomass and nutritive values. *Crop Sci.* 46:927-934.
- (44) Kakani, V.G., K.R. Reddy, and **D. Zhao**. 2006. Deriving a simple spectral reflectance ratio to determine cotton leaf water potential. *J. New Seeds.* 8:11-27.
- (45) **Zhao, D.**, K.R. Reddy, V.G. Kakani, S. Koti, and W. Gao. 2005. Physiological causes of cotton fruit abscission under conditions of high temperature and enhanced Ultraviolet-B radiation. *Physiol. Plant.* 124:189-199.
- (46) Kakani, V.G., K.R. Reddy, S. Koti, T.P. Wallace, P.V.V. Prasad, V.R. Reddy and **D. Zhao**. 2005. Differences in *in vitro* pollen germination and pollen tube growth of cotton cultivars in response to high temperature. *Ann. Bot.* 96:59-67.
- (47) Reddy, K.R., and **D. Zhao**. 2005. Interactive effects of elevated CO₂ and potassium deficiency on photosynthesis, growth, and biomass partitioning of cotton. *Field Crops Res.* 94:201-213.
- (48) **Zhao, D.**, K.R. Reddy, and V.G. Kakani. 2005. Nitrogen deficiency effects on plant growth, leaf photosynthesis, and hyperspectral reflectance properties of sorghum. *Eur. J. Agron.* 22:391-403.
- (49) Koti, S., K.R. Reddy, V.R. Reddy, V.G. Kakani, and **D. Zhao**. 2005. Interactive effects of carbon dioxide, temperature, and ultraviolet-B radiation on soybean (*Glycine max L.*) flower and pollen morphology, pollen production, germination, and tube lengths. *J. Exp. Bot.* 56:725-736.
- (50) **Zhao, D.**, K.R. Reddy, V.G. Kakani, J.J. Read, and S. Koti. 2005. Selection of optimum reflectance ratios for estimating leaf nitrogen and chlorophyll concentrations of field-grown cotton. *Agron. J.* 97:89-98.

- (51) Koti, S., K.R. Reddy, V.G. Kakani, **D. Zhao**, and V.R. Reddy. 2004. Soybean (*Glycine max*) pollen germination characteristics, flower and pollen morphology in response to enhanced ultraviolet-B radiation. *Ann. Bot.* 94:855-864.
- (52) Reddy, K.R., V.G. Kakani, **D. Zhao**, S. Koti, and W. Gao. 2004. Interactive effects of ultraviolet-B radiation and temperature on cotton physiology, growth, development, and hyperspectral reflectance. *Photochem. Photobiol.* 79:416-427.
- (53) **Zhao, D.**, K.R. Reddy, V.G. Kakani, J.J. Read, M. Razack, and W. Gao. 2004. Leaf and canopy photosynthetic characteristics of cotton (*Gossypium hirsutum*) under elevated CO₂ concentration and UV-B radiation. *J. Plant Physiol.* 161:581-590.
- (54) Kakani, V.G., K.R. Reddy, **D. Zhao**, and W. Gao. 2004. Senescence and hyperspectral reflectance of cotton leaves exposed to ultraviolet-B radiation and carbon dioxide. *Physiol. Plant.* 121:250-257.
- (55) **Zhao, D.**, K.R. Reddy, V.G. Kakani, J.J. Read, and G.A. Carter. 2003. Corn (*Zea mays* L.) growth, leaf pigment concentration, photosynthesis, and leaf hyperspectral reflectance properties as affected by nitrogen supply. *Plant Soil.* 257:205-217.
- (56) Kakani, V.G., K.R. Reddy, **D. Zhao**, and K. Sailaja. 2003. Field crop responses to ultraviolet-B radiation: a review. *Agric. Forest. Meteorol.* 120:191-218.
- (57) Reddy, K.R., V.G. Kakani, **D. Zhao**, A.R. Mohammed, and W. Gao. 2003. Cotton responses to ultraviolet-B radiation: Experimentation and algorithm development. *Agric. For. Meteorol.* 120:249-266.
- (58) **Zhao, D.**, K.R. Reddy, V.G. Kakani, J.J. Read, and J.H. Sullivan. 2003. Growth and physiological responses of cotton (*Gossypium hirsutum* L.) to elevated carbon dioxide and ultraviolet-B radiation under controlled environmental conditions. *Plant Cell Environ.* 26:771-782.
- (59) Kakani, V.G., K.R. Reddy, **D. Zhao**, and R. Mohammad. 2003. Effects of ultraviolet-B radiation on cotton (*Gossypium hirsutum* L.) morphology and anatomy. *Ann. Bot.* 91:817-826.
- (60) **Zhao, D.**, and D.M. Oosterhuis. 2003. Cotton growth and physiological responses to boron deficiency. *J. Plant Nutr.* 26:855-867.
- (61) **Zhao, D.**, and D.M. Oosterhuis. 2002. Cotton carbon exchange, nonstructural carbohydrates, and boron distribution in tissues during development of boron deficiency. *Field Crops Res.* 78:75-87.
- (62) **Zhao, D.**, D.M. Oosterhuis, and C.W. Bednarz. 2001. Influence of potassium deficiency on photosynthesis, chlorophyll content, and chloroplast ultrastructure of cotton plants. *Photosynthetica* 39:103-109.
- (63) Oosterhuis, D.M. and **D. Zhao**. 2001. Effect of boron deficiency on the growth and carbohydrate metabolism of cotton. In: *Plant Nutrition-Food Security and Sustainability of Agro-Eco-Systems*. W.J. Horst et al. (Eds.), pp. 166-167.
- (64) **Zhao, D.**, and D.M. Oosterhuis. 2000. Pix Plus and Pix mepiquat chloride effects on physiology, growth, and yield of field-grown cotton. *J. Plant Growth Regul.* 19:415-422.
- (65) **Zhao, D.**, and D.M. Oosterhuis. 2000. Dynamics of nonstructural carbohydrates in developing leaves, bracts, and floral buds of cotton. *Environ. Exp. Bot.* 42:185-195.
- (66) **Zhao, D.**, and D.M. Oosterhuis. 2000. Cotton responses to shade at different growth stages: Lint yield and fiber quality. *Exp. Agric.* 36:27-39.
- (67) **Zhao, D.**, and D.M. Oosterhuis. 1999. Dynamics of mineral nutrient element concentrations in developing cotton leaves, bracts and floral buds in relation to position in the canopy. *J. Plant Nutr.* 22:1107-1122.
- (68) **Zhao, D.**, and D.M. Oosterhuis. 1999. Photosynthetic capacity and carbon contribution of leaves and bracts to developing floral buds in cotton. *Photosynthetica* 36:279-290.

- (69) **Zhao, D.**, and D.M. Oosterhuis. 1998. The influence of shade on mineral nutrient status of field-grown cotton. *J. Plant Nutr.* 21:1681-1695.
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- 4) Glaz, B.S., W.R. Davidson, S.G. Sood, S.J. Edme, J.C. Comstock, R.A. Gilbert, D. Zhao, N.C. Glynn, and I.A. Del Blanco. 2011. Evaluation of New Canal Point Clones: 2009-2010 Harvest Season. *Gov. Publication. ARS-172, 39 pp.*
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- Zhao, D., M. Irely, C. Laborde, and C.-J. Hu. 2015. Comparison of sugarcane and energy cane in growth and biomass production. *ASA-CSSA-SSSA Meeting Abstracts.* Nov. 15-18, Minneapolis, MN.
- Zhao, D., M. Irely, C.-J. Hu, and C. LaBorde. 2015. Assessment of sugarcane growth and yield across genotypes using canopy reflectance measurements. *Abstract of the ISSCT Agronomy and Agricultural Engineering Workshop.* Aug. 24-28, 2015, South Africa.
- Singh M.P., D. Zhao, J. Shine, K. Polacik, and A. Singels. 2015. Variation in growth, physiology, and yield of six sugarcane cultivars from across the globe grown in Florida. *Abstract of the ISSCT Agronomy and Agricultural Engineering Workshop.* Aug. 24-28, 2015, South Africa.
- Zhao, D., V. Gordon, J. Comstock, N. Glynn, and R.M. Johnson. 2015. Relationships between sugarcane canopy reflectance and yield components across a large number of genotypes. *The 45th ASSCT Joint Meeting Abstract, J. ASSCT.*
- Zhao, D., C. LaBorde, and R. Perdomo. 2014. Sugarcane genotype variation in Juice sugar composition as affected by sampling date. *ASA-CSSA-SSSA Meeting Abstracts.* Nov. 3-6, Long Beach, CA.
- LaBorde, C., N. Glynn, W. Davidson, J. Comstock, M. Irely, J. Shine, R. Perdomo, C.J. Hu, D. Zhao, L. Davis, K. Polacik, and M. Singh. Screening USDA Canal Point breeding germplasm for sandland variety development. *The 44th ASSCT Joint Meeting Abstract, J. ASSCT.*
- Zhao, D., R.W. Davidson, M. Baltazar, and J.C. Comstock. 2014. Evaluation of sugarcane orange rust for first clonal stage of the CP cultivar development program. *The 44th ASSCT Joint Meeting Abstract, J. ASSCT.*
- Zhao, D., B. Glaz, and J.C. Comstock. 2013. Sugarcane growth and physiological responses to nitrogen supply. *ASA-CSSA-SSSA Meeting Abstracts.* Nov. 3-6, Tampa, FL.
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- Nuessly, G.S., H. Sandhu, N. Larsen, and D. Zhao. 2010. Examination of the significance of sugarcane rust mite (*Abacarus sacchari*) on sugarcane. *ESA 58 Annual Meeting*. Dec. 12-15, San Diego, CA.
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- Kakani, V.G., K.R. Reddy, D. Zhao, B.M. Kolla, and A. Thomasson. 2004. Comparison of canopy hyperspectral reflectance and multispectral imagery in determining growth, development and yield of field cotton. *ASA-CSSA-SSSA Meeting Abstract*. Oct. 31-Nov. 4, Seattle, WA.
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- Zhao, D., K.R. Reddy, and V.G. Kakani. 2003. Seasonal trends of cotton leaf N and chlorophyll concentrations and hyperspectral reflectance. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 2-6, Denver, CO.
- Kakani, V.G., K.R. Reddy, D. Zhao, S. Koti and K.N. Reddy. 2003. Discrimination of crop and weed species based on morpho-physiological characters and hyperspectral reflectance, *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 2-6, Denver, CO.
- Kakani, V.G., K.R. Reddy, D. Zhao, S. Koti, W. Gao. 2003. Effect of ultraviolet-b radiation and temperature on growth, development and physiology of cotton. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 2-6, Denver, CO.

- Koti, S., K.R. Reddy, V.G. Kakani, D. Zhao, and W. Gao. Response of cotton genotypes to UV-B radiation. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 2-6, Denver, CO.
- Reddy, K.R., D. Zhao, V.G. Kakani, J.J. Read, and S. Koti. 2003. Estimating cotton growth and developmental parameters through remote sensing. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 2-6, Denver, CO.
- Zhao, D., K.R. Reddy, V.G. Kakani, J.J. Read, and S. Koti. 2003. Growth, yield and canopy hyperspectral reflectance of cotton as affected by Nitrogen application. . *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN.
- Kakani, V.G., K.R. Reddy, D. Zhao, and S. Koti. 2003. Cotton genotype response to ultraviolet-B radiation. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN.
- Zhao, D., K.R. Reddy, V.G. Kakani, and J.J. Read. 2002. Canopy spectral reflectance to estimate cotton growth and yield. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 10-14, Indianapolis, IN.
- Kakani, V.G., K.R. Reddy, D. Zhao and G.A. Carter. 2002. Changes in hyperspectral reflectance of cotton leaves exposed to enhanced ultraviolet-B radiation and carbon dioxide. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 10-14, Indianapolis, IN.
- Reddy, K.R., D. Zhao, V.G. Kakani, and J.J. Read. 2002. Nitrogen deficiency effects on corn photosynthesis and hyperspectral reflectance. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 10-14, Indianapolis, IN.
- Reddy, K.R., V.G. Kakani, and D. Zhao. 2002. Changes in hyperspectral reflectance of ageing and senescing cotton leaves exposed to enhanced ultraviolet-B radiation and carbon dioxide. *Agronomy Abstract*. American Society of Agronomy Annual Meetings, Nov. 10-14, Indianapolis, IN.
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- Kakani, V.G., K.R. Reddy, D. Zhao, and J.J. Read. 2002. Influence of ultraviolet radiation and elevated CO₂ on leaf reflectance properties. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN.
- Razak, M., K.R. Reddy, D. Zhao, and V.G. Kakani. 2002. Cotton photosynthetic responses to ultraviolet-B radiation and elevated CO₂. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN.
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- Brown, R.S., D.M. Oosterhuis, D. Zhao, W.C. Robertson, J.S. McConnell, and D.L. Coker. 2002. Effect of soil and foliar-applied boron on the physiology and yield of cotton. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN.
- Reddy, K.R., D. Zhao, L. Tarpley, J.J. Read, J.M. Mckinion. 2001. Mepiquat chloride effects on cotton growth, physiology and leaf spectral properties. *The Third International Conference on Geospatial Information in Agriculture and Forestry*. Nov. 4-7, Denver, CO.
- Zhao, D. and D.M. Oosterhuis. 2001. Changes in plant growth and physiology during the development of boron deficiency. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 540.
- Zhao, D. and D.M. Oosterhuis. 2000. Boron deficit effect on carbon metabolism of cotton. The 3rd International Crop Science Congress, 17-22 Aug. 2000, Hamburg, Germany. *Book of Abstracts*. p. 76.
- Oosterhuis, D.M., D. Zhao, and D. Brunk. 2000. Effect of Pix Plus and Bacillus cereus on the physiology and yield of cotton. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. pp. 514-515.

- Zhao, D., D.M. Oosterhuis, and T. Daniel. 1999. Efficacy of PIX control plant growth after application followed by precipitation. *Proc. of the Beltwide Cotton Conference*. National Cotton Council, Memphis, TN. pp. 557-558.
- Zhao, D. and D.M. Oosterhuis. 1998. Yield and physiological responses of cotton to shade: an overview. *Abstract of the World Cotton research Conference - 2*. Sept. 4-12, Athens, Greece. p. 320.
- Zhao, D. and D.M. Oosterhuis. 1997. Mineral nutrient status of cotton plants as affected by light intensity. *Agronomy Abstracts*. p. 101.
- Zhao, D. and D.M. Oosterhuis. 1997. Effects of shade on carbohydrate and mineral nutrient status of field-grown cotton *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1389.
- Zhao, D. and D.M. Oosterhuis. 1996. Effects of shade on leaf photosynthesis and nonstructural carbohydrates of cotton. *Agronomy Abstracts*. p. 96.
- Zhao, D. and D.M. Oosterhuis. 1996. Effects of shade on cotton carbohydrate metabolism and square development. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1237.
- Zhao, D. and D.M. Oosterhuis. 1995. Effect of PGR-IV on the Growth and Yield of Environmentally Stressed Cotton. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1150.
- Zhao, D. and D.M. Oosterhuis. 1995. Physiological and yield responses of cotton to shade at different growth stages. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1125.
- Oosterhuis, D.M. and D. Zhao. 1994. Enhanced cotton root growth with the plant growth regulator PGR-IV. *Agronomy Abstract*. p. 149.
- Zhao, D. and D.M. Oosterhuis. 1994. Responses of water-stressed cotton to the plant growth regulator PGR-IV. *Agronomy Abstract*. p. 147.
- Oosterhuis, D.M. and D. Zhao. 1994. Physiological effects of PGR-IV on the growth and yield of cotton. *Abstracts of World Cotton Research Conference-1*. Feb. 14-17, 1994. Brisbane, Australia.
- Guo, C., D.M. Oosterhuis, and D. Zhao. 1994. Evaluation of plant growth regulators in cotton. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1326.
- Zhao, D. and D.M. Oosterhuis. 1994. Physiological responses of cotton plants to PGR-IV application under water stress. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1373.
- Oosterhuis, D.M. and D. Zhao. 1993. Effect of PGR-IV on the growth and yield of cotton. *Proc. of Twentieth Annual Plant Growth Regulator Meeting of America*. p. 202.
- Oosterhuis, D.M. and D. Zhao. 1993. Increased root length and branching in cotton from PGR-IV. *Proc. of International Conference of Root Study*. p. 54.
- Guo, C., D.M. Oosterhuis, and D. Zhao. 1993. Effect of a new bioregulator exp-s1089 on nutrient uptake, photosynthesis and soluble. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1272.
- Oosterhuis, D.M. and D. Zhao. 1993. Effect of rate and timing of PGR-IV application on cotton growth and development. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1284.
- Oosterhuis, D.M. and D. Zhao. 1993. Physiological effects of PGR-IV on the growth and yield of cotton. *Proc. Beltwide Cotton Conf.*, National Cotton Council, Memphis, TN. p. 1270.
- Zhao, D., Y.Z. Xu, and X. Xu. 1988. Effects of water deficiency during flowering and fruiting on cotton growth, physiological characteristics, and yield and quality. *Proc. of the 7th Chinese Cotton Production and Research*. pp. 144-145.
- Xu, Y.Z., X. Xu, and D. Zhao. 1988. Effects of plant growth regulators on cotton growth, yield and lint quality. *Proc. of the 7th Chinese Cotton Production and Research Conference*. pp. 111-112.

INVITED PRESENTATIONS:

- Invited by American Society of Agronomy (ASA) to write summary of Agronomy Journal article for ASA website (<https://www.agronomy.org>) and for featured Agronomy Journal article in February 2015 CSA News Magazine (Sugarcane Genotype Responses to Mill Mud Application), 2015.
- Impact of climate change on sugarcane production in developing countries. The 2014 SI Conference, Nanning, China, Nov. 25-28, 2014.
- Improving sugarcane yields on sandy soils by multidisciplinary approaches at the Guangxi Sugarcane Research Institute, China, March 20, 2010
- Physiological approaches to improve sugarcane yields and variety selection for sand soils at the Improving Sugarcane Varieties for Sand Soils Workshop, Clewiston, FL., 13 May 2009.
- Physiological approaches for improvement of crop growth and yields. August 17, 2008. USDA-ARS, Sugarcane Field Station, Canal Point, Florida.
- Cotton responses to environment and management practices. January 16, 2008. University of Missouri-Columbia.
- Assessment of forage productivity and nutritive value using remote sensing. Sept. 22, 2006. USDA-ARS, Grazinglands Research Laboratory, El Reno, Oklahoma.
- Nitrogen and boron management in the Mid-South US cotton production systems. August 18, 2006. North Florida Research and Education Center, Quincy, University of Florida.
- Factors essential for leaf photosynthesis. December 8, 2005. Department of Plant and Soil Science, Texas Tech University.
- Cotton growth and physiological responses to elevated CO₂, high temperature, and UV-B radiation. December 9, 2005. Department of Plant and Soil Science, Texas Tech University.
- Growth and physiological responses of cotton to potassium supply. September 9, 2005. College of Life Sciences, Northwest A & F University, China.
- Timely assessment of crop growth, physiology, and yield using remote sensing of canopy reflectance. September 6, 2005. Institute of Water and Soil Conservation, Chinese Academy of Science, Yangling, China.
- Monitoring crop physiology, growth and yield using remote sensing technologies. March 5, 2004. USDA-ARS, Grazinglands Research Laboratory, El Reno, Oklahoma.
- Remote sensing: a useful tool for detecting crop stresses. June 20, 2003. BASF Plant Science section, Research Triangle Park, North Carolina.
- Linking crop growth, physiology, and yield to remote sensing. June 31, 2003. Department of Crop and Soil Science, Alabama A&M University.
- Potential use of remote sensing to estimate cotton growth, physiology, and yield. March 20, 2003. Department of Plant and Soil Sciences, Mississippi State University.
- Cotton physiological and yield responses to nitrogen and boron nutrients. January 12, 2000. Department of Agronomy, Northwestern Sci-Tech University of Agriculture and Forestry.

TECHNICAL REPORTS:

More than 48 technical research summaries and reports of our research projects were prepared and submitted to different universities, research institutes, organizations, and chemical companies in last eight years (1997-2015).

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

- Crop Science Society of America (1994-present)
- American Society of Agronomy (1994-present)
- Sigma Xi Scientific Research Society (1993-2000)
- Chinese Society of Crop Science (1984-1992)

- Chinese Society of Cotton Science (1984-1992)
- Association of Chinese Plant and Soil Scientists in North America (1994-present)
- American Society of Sugar Cane Technologists (ASSCT) (2009-present)
- International Society of Sugar Cane Technologists (ISSCT) (2012-present)

HONORS AND AWARDS:

1. A **USDA-ARS Technology Transfer Award in 2011** from the USDA-ARS.
2. A **Research Achievement Award in 2005** from the USDA-ARS, Grazinglands Research Laboratory.
3. A **Travel Grant Award (\$2,000)** for early-career crop scientists for participating in the Third International Crop Science Congress (ICSC) in Jan. 2000 from the Crop Science Society of America.
4. An **Outstanding Graduate Student Award in Arkansas Cotton Research** in April 1998 from Arkansas Cotton Research Committee.
5. A **Gerald O. Mott Meritorious Graduate Student Award** in Feb. 1997 from Crop Science Society of America.
6. “Effects of shade on cotton square development and carbohydrate metabolism” won the **Poster Presentation Award (1st place)** in the BASF graduate student competition, 1996 Beltwide Cotton Physiology Conference, National Cotton Council of America.
7. “Physiological and yield responses of cotton to shade at different growth stages” won the **Oral Presentation Award (3rd place)** in the BASF graduate student competition, 1995 Beltwide Cotton Physiology Conference, National Cotton Council of America.
8. “Physiological response of cotton plants to PGR-IV application under water stress” won the **Poster Presentation Award (1st place)** in the BASF graduate student competition, 1994 Beltwide Cotton Physiology Conference, National Cotton Council of America.
9. “Physiological effects of PGR-IV on the growth and yield of cotton” won the **Poster Presentation Award (3rd place)** in the BASF graduate student competition, 1993 Beltwide Cotton Physiology Conference, National Cotton Council of America.
10. “Effect of Environmental Factors on Cotton Boll Development - Temperature and Water Deficit Stress” (A Project supported by the Chinese National Science Foundation) received **An Award of Great Research Contributions in Cotton Science** from the Agricultural Council of Shaanxi Province, China in 1994.
11. “Effect of Environmental Factors on Cotton Boll Development” (A Project supported by the Chinese National Science Foundation) received **An Award of Cotton Research Achievement** from the Science Society of Shaanxi Province, China in 1994.
12. “Water Deficit Stress Effects on Cotton Yield and Fiber Quality during Fruiting” won the **Oral Presentation Award (2nd place)** in the Second Academic Conference of Young Scientists, Northwestern Agricultural University in 1990.
13. A **Young Faculty Outstanding Teaching Award** from the Northwestern Agricultural University, China in 1990 and 1991.
14. “Studies on cellulose precipitation in fiber of developing cotton boll and its relation to air temperature” received **An Excellent Publication Award in Cotton Research** from Cotton Science Society of China in 1989.
15. “Cellulose Precipitation in Developing Fibers of Field-Grown Cotton in Relation to Temperature” won the **Oral Presentation Award (1st place)** in the First Academic Conference of Young Scientists, Northwestern Agricultural University in 1985.
16. An **Outstanding Graduate Student Award** from the Northwestern Agricultural University, China in 1983.

PROFESSIONAL SERVICE:

Professional Committee Member:

- Associate Editor of Crop Science, Jan, 2015 – Dec. 2017 (CSSA).
- Associate Editor of Agronomy Journal, Jan. 2015 – Dec. 2017 (ASA).
- Member of the Kingenta Agricultural Science Award Committee, 2015-2016 (ASA)
- Program Chair of the 44th Annual Joint Meeting for American Society of Sugar Cane Technologists, 2014 (ASSCT).
- Chair of Monsanto Crop Science Distinguished Career Award Committee, 2008 (CSSA)
- Member of Monsanto Crop Science Distinguished Career Award Committee, 2006-2007 (CSSA)

Manuscript Reviewer for the Following National and International Journals:

- African Journal of Agricultural Research
- Agricultural Research of Arid and Semiarid Areas
- Agronomy Journal
- American Journal of Plant Sciences
- Biologia
- Biomass and Bioenergy
- China Cotton
- Crop Science
- Environmental and Experimental Botany
- Field Crops Research
- Grass and Forage Science
- Grassland Science
- Industrial Crops and Products
- International Journal of Remote Sensing
- Journal of Agronomy and Crop Science
- Journal of ASSCT
- Journal of Cereal Crops
- Journal of Chemical Ecology
- Journal of Cotton Science
- Journal of Crop Improvement
- Journal of New Crop
- Journal of Northwestern Agricultural University
- Journal of Plant Physiology
- Journal of the American Society for Horticultural Science
- Journal of the Science of Food and Agriculture
- Peanut Science
- Plant Physiology and Biochemistry
- Planta
- Proceedings of International Society of Sugar Cane Technologists (ISSCT)
- Scientia Agricola
- Shaanxi Agricultural Science
- Soil Science Society of America Journal
- The Americas Journal of Plant Science and Biotechnology

LEADERSHIP ROLES:

2013-present Lead Scientist for the Canal Point sugarcane breeding and cultivar development program.

1998-2000 Coordinating three Chinese agricultural delegations to visit University of Arkansas, Wal-Mart headquarter, and Tyson Food Company. Organized programs and served as a tour guide and English interpreter.

1997-2000 Assisting Dr. Derrick. M. Oosterhuis to manage the crop physiology laboratory. Responsibilities include student training, hourly worker supervision, and instrument maintain.

1988-1991 Project Leader of crop physiology and crop production program in Department of Agronomy, Northwestern Agricultural University, China to provide leadership for both teaching and research.

1987-1988 Technical Manager at the Agricultural Experiment Station, Northwestern Agricultural University, China.

1982-1983 President of the Graduate Student Association at the Northwestern Agricultural University, China.

1980-1981 Vice President of the Undergraduate Student Club in the Department of Agronomy, Northwestern Agricultural University.

RESEARCH SKILLS:

Specific Techniques in Agronomy, Soil Science, Cropping System, Crop Production management and Plant Physiological Measurements

- Assessments of soil penetration, soil bulk density, soil organic matter, soil pH, soil moisture, and soil water holding capacity using different instruments
- Plant photosynthetic rate, respiration, and chlorophyll fluorescence measurements using LI-COR 6200 and LI-COR 6400 photosynthesis systems
- Plant tissue nonstructural carbohydrate (glucose, fructose, sucrose, starch) measurements using both colorimetric (spectrophotometers) and enzyme analysis (Micro-Plate Readers)
- Plant canopy and leaf level hyperspectral reflectance signatures using the spectroradiometer (ASD, SE590, and GER instruments)
- Leaf chlorophyll, carotenoids, phenolics using spectrophotometer
- Plant tissue carbon fixation and translocation using ¹⁴C label techniques
- Leaf water potential and water potential components using both pressure chamber and thermocouple psychrometers
- Stomatal conductance, leaf temperature, and transpiration using LI-1600 Steady Stable Porometer
- Cell membrane integrity or membrane leakage to test plant stress sensitivities using electrical conductance measurements
- Plant tissue ATP concentration using the ATP meter
- Plant tissue ethylene, sugar, mannitol, and myo-inositol determinations using the GC and HPLC
- Tissue morphology and structures using light microscopy; chloroplast and organelle ultrastructures using electron microscopy
- Plant pollen and bacteria culture using special cultural medium
- Non-destructive measurements of plant canopy light interception and LAI using LI-COR light bars and LAI-2000 meters
- Plant growth analyses with traditional plant physiological procedures
- Crop yield and yield components

Experimental Designs, Statistics, and Data Analyses

- Completely randomized design
- Randomized complete block design

- Latin square design
- Split-Plot design
- One- and two-way ANOVA, Student-t tests, Fisher LSD test, Tukey and Duncans Tests, GLM, MIXED, SQL, Graphics, linear, nonlinear, and multiple regression, and multi-variant analysis using SAS procedures and S-Plus statistical packages

Computer Literacy

- Graphics (Power Point, Sigma Plot, Harvard Graphics, Photo Shop, Excel, and Lotus)
- Word processing (Microsoft Words, Work Perfect)
- Program language (familiar with Visual Basic, C and C++)
- Internet explore and home page design

OTHER PROFESSIONAL TRAINING:

- Multi-variance Analysis and Statistics Training at the USDA-ARS, Crop System Research Laboratory, Lubbock, March 1 to 3, 2005 (Organized by USDA-ARS, South Plain Area Office).
- Data analysis and interpretation of remote sensing in agriculture, April 14 to 20 (8 hours daily), 2001. Remote Sensing Technology Center, Mississippi State University
- Computer Program short courses for University faculty and staff. 1999 to 2000 (2 hours each week). Computer Service Center, University of Arkansas
- Statistical Packages (Graduate student level class from Mathematics Department), registered during my post-doc research in fall semester, 2000 and graded "A". University of Arkansas
- Regression (graduate student level class), registered in spring semester, 2001 in Mathematics Department, University of Arkansas (not finished due to change in the job)
- Computer programming (C++) class audited in fall semester, 1999. University of Arkansas
- American Agricultural Education and Extension Workshop presented by Dr. M. Johnson (Professor and Associate dean of University of Idaho), Sept. to Oct. 1990 in Northwestern Agricultural University, Yangling, Shaanxi, China
- English Improvement Training in fall semester, 1989. Beijing Forestry University, Beijing, China
- Plant Stress Physiology Workshop (presented by two Germany physiologists), 1984 summer, Shandong Cotton Research Center, China.