

DALE J. BREMER
Associate Professor

Horticulture, Forestry and Recreation Resources
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EDUCATION

- Ph.D. Agronomy** August 1998. Kansas State University, Manhattan, KS.
M.S. Agronomy December 1994. Kansas State University, Manhattan, KS.
B.S. Agronomy December 1985. University of Nebraska, Lincoln, NE. (GPA: 3.4)

DEMONSTRATED SKILLS

Research

- * Conducted micrometeorological experiments in carbon, nitrogen, water, and energy transport from various landscapes, including native and managed plant ecosystems
- * Experienced with Bowen ratio energy balance and eddy covariance techniques
- * Operated and maintained micro-meteorological towers
- * Constructed, tested, and field operated heat balance sap flow gauges and dual-probe heat-capacity sensors
- * Assembled automated data acquisition systems for multi-instrument data collection
- * Familiar with programming of Campbell Scientific and other dataloggers
- * Proficient in operation of scientific instruments including portable photosynthesis measuring devices, meteorological instruments, gas chromatographs, diffusion porometers, and others
- * Supervised graduate and undergraduate employees in operation of scientific equipment and in collection of samples in the field and laboratory
- * Built and maintained website for my research program in turfgrass science at K-State
- * Skilled in use of word processing, graphics, statistical, and spreadsheet software
- * Organized cultivar and variety test plot studies; summarized and published data
- * Evaluated effectiveness of fertilizers and pesticides in comparison trials

Teaching

- * Taught Hort 846 (2002-present) and Hort 951 (2001-present), graduate-level courses in Horticulture, Forestry & Recreation Resources, Kansas State University
- * Advised three Ph.D. and two M.S. students and from 12 to 20 undergraduate students per semester
- * Instructed graduate students and technical staff in construction of complex environmental instruments
- * Served as committee member for 10 graduate students; outside chair for 2 Ph.D. defenses
- * Invited guest lecturer in: Hort 706 (Turfgrass Science); MC 630 (Public Relations Case Studies); Agron 900 (Biometeorology)
- * Tutored undergraduates in biology, algebra, calculus, physics, and chemistry
- * Field lectures describing Ameri-flux monitoring stations to interested groups, including USDA-ARS Wind Erosion Unit's 1997 International Symposium/Workshop, 1999 LTER Site Review of Konza Prairie Biological Station, Hort 846 (2002-2008) and Agron 220 (1997-2000) field trips.

Agri-business

- * Advised clients in cost-effective methods of crop production
- * Implemented chemical, fertilizer and irrigation programs for farmers
- * Inspected crops for weed and insect infestation levels
- * Calibrated planting and spraying equipment
- * Proficient in operation of wide range of farm equipment and tools
- * Raised swine and cattle on family farm
- * Achieved commercial pilots rating and aeriially applied pesticides
- * Extensive field experience in central Nebraska and western Kansas

WORK HISTORY

2007-present	Associate Professor – Horticulture Dept, K-State, Manhattan, KS
2001-2007	Assistant Professor – Horticulture Dept, K-State, Manhattan, KS
2000-2001	Research Analyst – Kansas Farm Bureau – Manhattan, KS
1998-2000	Research Associate (post-doctoral) - Agronomy Dept, K-State, Manhattan, KS
1992-1998	Graduate Research Assistant - Agronomy Dept, K-State, Manhattan, KS
1989-92	Agricultural Technician - Southwest Kansas Research-Extension Center Kansas State University, Tribune, KS
1987-88	Shipper/Receiver - RUBBAIR Door Inc. - Ayer, MA
1984-86	Agronomist & Field Scout - Midwest Crop Consulting, Inc. - Holdrege, NE
To 1983	Family Farm and Ranch - Scotia, NE

PROFESSIONAL ORGANIZATIONS

American Society of Agronomy. 1998 – present.
 Crop Science Society of America. 2001 – present.
 Soil Science Society of America. 2000 – present.
 Golf Course Superintendents Association of America. 2001 – present.
 International Turfgrass Society. 2008-present.
 Gamma Sigma Delta Honor Society of Agriculture. 2007 – present.

PUBLICATIONS

Peer-Reviewed: 20

1. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2008. Rooting characteristics and canopy responses to drought of turfgrasses including hybrid bluegrasses. *Agron. J.* 100:949-956.
2. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2008. Mowing and drought effects on a hybrid compared with a Kentucky bluegrass. *Int. Turf. Soc. Res. J.* (in press).
3. St. John, R., J. Fry, D. Bremer, and S. Keeley. 2008. Establishment rate and lateral spread of *Festuca arundinacea* cultivars. *Int. Turf. Soc. Res. J.* (in press).
4. Zhang, Q., J. Fry, X. Pan, C. Rajeshkar, D. Bremer, M. Engelke, and X. Wang. 2008. Acclimation of *Zoysia japonica* and *Z. matrella* and changes in rhizome abscisic acid levels. *Int. Turf. Soc. Res. J.* (in press).
5. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2007. Effects of high temperature and drought on a hybrid bluegrass compared with Kentucky bluegrass and tall fescue. *Crop Sci.* 47:2152-2161. doi: 10.2135/cropsci2006.12.0781.
6. Griffin, J.J., W.R. Reid, and D.J. Bremer. 2007. Turf species affects establishment and growth of redbud and pecan. *HortScience* 42:267-271.
7. Bremer, D.J. 2006. Nitrous oxide fluxes in turfgrass: Effects of nitrogen fertilization rates and types. *J. Environ. Qual.* 35:1678-1685.
8. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2006. Performance in the transition zone of two hybrid bluegrasses compared with Kentucky bluegrass and tall fescue. *Applied Turfgrass Science* doi:10.1094/ATS-2006-0808-02-RS
9. Bremer, D.J., and J.M. Ham. 2005. Measurement and partitioning of *in situ* CO₂ fluxes in turfgrasses using a pressurized chamber. *Agron. J.* 97:627-632.
10. Zuk, A.J., D.J. Bremer, and J.D. Fry. 2005. Establishment of seeded zoysiagrass in a perennial ryegrass sward: Effects of soil-surface irradiance and temperature. *Int. Turf. Soc. Res. J.* 10:302-309.
11. Bremer, D.J. 2003. Evaluation of microlysimeters used in turfgrass evapotranspiration studies with the dual-probe heat-pulse technique. *Agron. J.* 95:1625-1632.
12. Turner, D.P., Urbanski, S., Wofsy, S.C., Bremer, D.J., Meyers, T., Gregory, M., and Gower, S.T. 2003. A Cross-biome Comparison of Light Use Efficiency for Gross Primary Production. *Global Change Biol.* 9:383-395.
13. Bremer, D.J., and J.M. Ham. 2002. Measurement and modeling of soil CO₂ flux in a temperate grassland under mowed and burned regimes. *Ecol. Appl.* 12:1318-1328.

Peer-reviewed publications (continued)

14. Bremer, D.J., L.M. Auen, J.M. Ham, and C.E. Owensby. 2001. Evapotranspiration in a prairie ecosystem: Effect of grazing by cattle. *Agron. J.* 93:338-348.
15. Bremer, D.J., and J.M. Ham. 1999. Effect of spring burning on the surface energy balance in a tallgrass prairie. *Agric. For. Meteorol.* 97:43-54.
16. Knapp, A.K., N. Bargman, L.A. Maragni, C.A. McAllister, D.J. Bremer, J.M. Ham, and C.E. Owensby. 1999. Elevated CO₂ and leaf longevity in the C₄ grassland-dominant *Andropogon gerardii*. *Int. J. Plant Sci.* 160:1057-1061.
17. Bremer, D.J., J.M. Ham, C.E. Owensby, and A.K. Knapp. 1998. Responses of soil respiration to clipping and grazing in a tallgrass prairie. *J. Environ. Qual.* 27:1539-1548.
18. Owensby, C.E., J.M. Ham, A.K. Knapp, D.J. Bremer, and L.M. Auen. 1997. Water vapour fluxes and their impact under elevated CO₂ in a C₄-tallgrass prairie. *Global Change Biol.* 3:189-195.
19. Bremer, D.J., J.M. Ham, and C.E. Owensby. 1996. Effect of elevated atmospheric carbon dioxide and open-top chambers on transpiration in a tallgrass prairie. *J. Environ. Qual.* 25:691-701.
20. Ham, J.M., C.E. Owensby, P.I. Coyne, and D.J. Bremer. 1995. Fluxes of CO₂ and water vapor from a prairie ecosystem exposed to ambient and elevated atmospheric CO₂. *Agric. For. Meteorol.* 77:73-93.

Popular Trade Journals, Magazines, and Newsletters: 15

1. Bremer, D.J. 2008. Water restrictions are coming: Will we be ready? *Turfnews: The Kansas Turfgrass Foundation Newsletter*. October, p.2-3.
2. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2008. Hybrid bluegrass vs. Kentucky blue and tall fescue in transition zone. *SportsTurf* (Official publication of the Sports Turf Managers Association). September. 24(9): p. 16-20.
3. Keeley, S., D. Bremer, and K. Su. 2008. Heat and drought performance of Texas bluegrass hybrid turf: Does this new turfgrass live up to the hype? *USGA Green Section Record*. November/December. 46(6): p. 21-14.
4. Bremer, D.J., S.J. Keeley, J.D. Fry, and J.D. Lewis. 2008. Comparative irrigation requirements: A close look at 30 Kentucky bluegrass cultivars under a protective rainout facility in the transition zone. *Turf News* (Official publication of Turfgrass Producers International). May/June. 31(3): p. 56-60.
5. Bremer, D.J. 2007. Carbon sequestration in turfgrass: An eco-friendly benefit of your lawn. *Turfnews: The Kansas Turfgrass Foundation Newsletter*. October, p.2 and 5.
6. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2007. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. *USGA. 2006 Turfgrass and Environmental Research Summary*. p. 8.
7. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2007. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. *Turf News* (Official publication of Turfgrass Producers International). May/June. 30(3): p. 50-52.
8. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2006. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. *USGA 2007 Research Summary*. October 2006. p. 12.
9. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2006. Comparison of performance of two hybrid bluegrasses with Kentucky bluegrass and tall fescue. *Golf Course Management* 74(12) 78-82.
10. Bremer, D.J. 2006. Texas bluegrass hybrids: The real deal for Kansas or is the jury still out? *Turfnews: The Turfgrass Foundation Newsletter*. October, p.2.
11. Bremer, D.J. 2005. Laughing turfgrass warms mother earth. *Turfnews: The Kansas Turfgrass Foundation Newsletter*. October, p.2-3.
12. Bremer, D.J. 2004. Evapotranspiration and precipitation in Kansas: Part II. *Turfnews: The Kansas Turfgrass Foundation Newsletter*. January, p. 3-4.

Popular Trade Journals, Magazines, and Newsletters (continued)

13. Bremer, D.J., and J.M. Ham. 2003. Soil moisture sensors can help regulate irrigation. *Golfdom: Turfgrass Trends*. June, p. 49-54.
14. Bremer, D.J. 2003. Evapotranspiration and precipitation in Kansas: Part I. *Turfnews: The Kansas Turfgrass Foundation Newsletter*. January, p. 3-4.
15. Bremer, D.J. 2002. Texas bluegrass for use in golf course fairways and roughs. *Golf Course Management*. August, p. 64.

K-State Turfgrass Research Reports: 34

1. Bremer, D.J., S.J. Keeley, J.D. Fry, and J.D. Lewis. 2008. Irrigation requirements of 28 Kentucky bluegrass cultivars and two Texas bluegrass hybrids in the transition zone. *K-State Turfgrass Research Report of Progress 998*, p. 3-8.
2. Bremer, D., and J. Lewis. 2008. Potential for slow-release polymer coated and organic nitrogen fertilizers to mitigate greenhouse gas (nitrous oxide) emissions in turfgrass. *K-State Turfgrass Research Report of Progress 998*, p. 24-26.
3. Bremer, D., J. Lewis, J. Deusterhaus, and J. Ham. 2008. Measurement of photosynthesis and respiration in turfgrass with large and small surface chambers. *K-State Turfgrass Research Report of Progress 998*, p. 20-23.
4. Lewis, J., and D. Bremer. 2008. Emissions of nitrous oxide from three different turfgrass species. *K-State Turfgrass Research Report of Progress 998*, p. 27-31.
5. Fry, J., R. St. John, D. Bremer, and S. Keeley. 2008. Compare lateral spread of tall fescue cultivars and blends with Kentucky bluegrass. *K-State Turfgrass Research Report of Progress 998*, p. 38-41.
6. Bremer, D.J., S.J. Keeley, J.D. Fry, and J.D. Lewis. 2007. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. *K-State Turfgrass Research Report of Progress 981*, p. 41.
7. Lee, H., D.J. Bremer, and K. Su. 2007. Evaluation of turfgrass quality and green leaf area index and aboveground biomass with multispectral radiometry. *K-State Turfgrass Research Report of Progress 981*, p. 6.
8. Lewis, J.D., and D.J. Bremer. 2007. Emissions of nitrous oxide from three different turfgrass species and from perennial ryegrass under different irrigation regimes. *K-State Turfgrass Research Report of Progress 981*. p.80.
9. Fry, J.D., D.J. Bremer, S.J. Keeley, and R. St. John. 2007. Lateral spread of tall fescue cultivars and blends. *K-State Turfgrass Research Report of Progress 981*, p. 10.
10. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2007. Effects of high temperature and drought on a hybrid bluegrass compared with Kentucky bluegrass and tall fescue. *K-State Turfgrass Research Report of Progress 981*, p. 46.
11. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2007. Effects of drought on the performance of two hybrid bluegrasses Kentucky bluegrass, and tall fescue. *K-State Turfgrass Research Report of Progress 981*, p. 36.
12. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2007. Mowing height and drought effects on a Texas bluegrass hybrid compared with Kentucky bluegrass. *K-State Turfgrass Research Report of Progress 981*, p. 50.
13. Zhang, Q., J.D. Fry, M. Engelke, D. Genovesi, and D.J. Bremer. 2007. Freezing tolerance of new zoysiagrass progeny. *K-State Turfgrass Research Report of Progress 981*, p. 55.
14. Bremer, D.J. 2006. Diurnal trends in and transient effects of nitrogen fertilization and irrigation on, nitrous oxide fluxes in turfgrasses. *K-State Turfgrass Research Report of Progress 962*.

K-State Turfgrass Research Reports (continued)

15. Bremer, D.J. 2006. Effects of turfgrass species on nitrous oxide fluxes under typical nitrogen-management regimes. K-State Turfgrass Research Report of Progress 962.
16. Bremer, D.J. 2006. Effects of nitrogen fertilizer types and rates and irrigation on nitrous oxide fluxes in turfgrass. K-State Turfgrass Research Report of Progress 962.
17. Lee, H., D.J. Bremer, and K. Su. 2006. Evaluation of turfgrass quality with multispectral radiometry in a rainout shelter study. K-State Turfgrass Research Report of Progress 962.
18. Zhang, Q., J.D. Fry, M. Engelke, D. Genovesi, and D.J. Bremer. 2006. Preliminary evaluation of freezing tolerance of new zoysiagrass progeny. K-State Turfgrass Research Report of Progress 962.
19. Su, K. D.J. Bremer, Richard Jeannotte, and Ruth Welti. 2006. Membrane lipid composition and heat tolerance in Kentucky bluegrass, tall fescue, and a hybrid bluegrass. K-State Turfgrass Research Report of Progress 962.
20. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2006. Root lengths of two hybrid bluegrasses, Kentucky bluegrass, and tall fescue: A greenhouse study. K-State Turfgrass Research Report of Progress 962.
21. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2006. Root lengths of two hybrid bluegrasses, Kentucky bluegrass, and tall fescue: A field study. K-State Turfgrass Research Report of Progress 962.
22. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2006. Performance in the transition zone of two hybrid bluegrasses compared with Kentucky bluegrass and tall fescue. K-State Turfgrass Research Report of Progress 962.
23. Bremer, D.J., J.D. Fry, S.J. Keeley, and K. Su. 2005. Drought resistance of two cultivars of Texas bluegrass hybrid compared with Kentucky bluegrass and tall fescue. K-State Turfgrass Research Report of Progress 946.
24. Bremer, D.J. 2005. Effects of nitrogen fertilizer types and rates and irrigation on nitrous oxide fluxes in turfgrass. K-State Turfgrass Research Report of Progress 946.
25. Bremer, D.J., and K. Su. 2005. Evaluation of turfgrass quality with multispectral radiometry. K-State Turfgrass Research Report of Progress 946.
26. Su, K, D.J. Bremer, S.J. Keeley, and J.D. Fry. 2005. Comparison of the heat and drought tolerances of a Texas bluegrass hybrid compared with Kentucky bluegrass and tall fescue: A growth chamber study. K-State Turfgrass Research Report of Progress 946.
27. Zhang, Q., J. Fry, D. Bremer, and S. Keeley. 2005. Evaluation of abscisic acid (ABA) in drought stress suppression on turfgrass. K-State Turfgrass Research 2004 Report of Progress 946.
28. Zuk, A.J., D.J. Bremer, and J.D. Fry. 2005. Establishment of seeded zoysiagrass in a perennial sward: Effects of soil-surface irradiance and temperature. K-State Turfgrass Research Report of Progress 946.
29. Bremer, D., K. Su, J. Fry, and S. Keeley. 2004. Drought resistance of two cultivars of Texas bluegrass hybrid compared with Kentucky bluegrass and tall fescue. K-State Turfgrass Research Report of Progress 929.
30. Bremer, D.J. 2004. Nitrous Oxide Fluxes in Turfgrass: Effects of irrigation and nitrogen fertilization rates. K-State Turfgrass Research Report of Progress 929.
31. Bremer, D.J., K. Su, S. Keeley, and J. Fry. 2004. Preliminary examination of the heat tolerance of a Texas bluegrass hybrid compared with Kentucky bluegrass and tall fescue. K-State Turfgrass Research Report of Progress 929.
32. Bremer, D.J., and J.M. Ham. 2004. Measurement and partitioning of *in situ* CO₂ fluxes in turfgrasses using a pressurized chamber. K-State Turfgrass Research Report of Progress 929.

K-State Turfgrass Research Reports (continued)

33. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2003. Drought resistance of two Texas bluegrass hybrids compared with Kentucky bluegrass and tall fescue. K-State Turfgrass Research Report of Progress 911.
34. Bremer, D.J. 2003. Evaluating microlysimeters used in turfgrass evapotranspiration studies using the dual-probe heat-pulse technique. K-State Turfgrass Research Report of Progress 911.

Progress Reports to Funding Agencies: 17

1. Bremer, D., J. Fry, and J. Lewis. 2008 Potential for slow-release polymer-coated and organic nitrogen fertilizers to reduce greenhouse gas (nitrous oxide) emissions in turfgrass. Annual Research Update to Agrium, Inc. February.
2. Bremer, D., J. Fry, and J. Lewis. 2008 Potential for slow-release polymer-coated and organic nitrogen fertilizers to reduce greenhouse gas (nitrous oxide) emissions in turfgrass. Annual Research Update to International Plant Nutrition Institute (IPNI). January.
3. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2007. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. USGA Research Update – Full Report. December.
4. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2006. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. U.S. Golf Association Research Update – Full Report. December 2006.
5. Bremer, D.J. 2006. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Final project report to Kansas NSF EPSCoR. July 2006.
6. Bremer, D.J., K. Su, S.J. Keeley, and J.D. Fry. 2005 progress report for The Scotts Company: Effects of drought and mowing height on two Texas bluegrass hybrids, Kentucky bluegrass, and tall fescue. Annual Report to The Scotts Company. December 2005.
7. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2005. Mid-year report for GCSAA: Evaluation of Texas bluegrass for use in golf course fairways and roughs. Semi-Annual Report to the Golf Course Superintendents Association of America. May.
8. Bremer, D.J. 2004. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Final report to Kansas NSF EPSCoR Phase IV. November.
9. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2004 year-end report for GCSAA: Evaluation of Texas bluegrass for use in golf course fairways and roughs. Annual Report to the Golf Course Superintendents Association of America. December 2004.
10. Bremer, D.J., and J.D. Fry. 2004 progress report for The Scotts Company: Drought resistance of two cultivars of Texas bluegrass compared with Kentucky bluegrass and tall fescue. Annual Report to The Scotts Company. December 2004.
11. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2004. Mid-year report for GCSAA: Evaluation of Texas bluegrass for use in golf course fairways and roughs. Semi-Annual Report to the Golf Course Superintendents Association of America. May.
12. Bremer, D.J. 2003. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Year 1 report to Kansas NSF EPSCoR Phase IV. December.
13. Bremer, D.J. 2003. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Description for general public for First Award Project funded by Kansas NSF EPSCoR.
14. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2003. Year-end report for GCSAA: Evaluation of Texas bluegrass for use in golf course fairways and roughs. Annual Report to the Golf Course Superintendents Association of America. December.

Progress Reports to Funding Agencies (continued)

15. Bremer, D.J., and J.D. Fry. 2003. Progress report for The Scotts Company: Drought resistance of two cultivars of Texas bluegrass compared with Kentucky bluegrass and tall fescue. Annual Report to The Scotts Company. December.
16. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2003. Mid-year report for GCSAA: Evaluation of Texas bluegrass for use in golf course fairways and roughs. Semi-Annual Report to the Golf Course Superintendents Association of America. May.
17. Bremer, D.J., and J.D. Fry. 2002. Progress report for The Scotts Company: Drought resistance of two cultivars of Texas bluegrass compared with Kentucky bluegrass and tall fescue. Annual Report to The Scotts Company. October.

Special Reports for Private Industry

1. Bremer, D.J. 2001. Carbon sequestration in agricultural lands: An overview. Kansas Farm Bureau. Manhattan, KS.
2. Bremer, D.J. 2001. Contributions of agriculture to the Kansas economy and to the Kansas export market with emphasis on Japan. Kansas Farm Bureau. Manhattan, KS.

Extension Publications

1. Bremer, D.J., and D.L. Frickel. 1992. Weather information at Tribune. p. 4. *In* 1992 Field Day Report, Southwest Kansas Research-Extension Center. Garden City, KS.
2. Bremer, D.J., and D.L. Frickel. 1991. Weather information at Tribune. p. 2. *In* 1991 Field Day Report, Southwest Kansas Research-Extension Center. Garden City, KS.
3. Schlegel, A.J., and D.J. Bremer. 1991. Greeley County irrigated corn performance test results. pp. 26-28. *In* 1991 Kansas Performance Tests with Corn Hybrids. Kansas State University, Manhattan, KS.
4. Schlegel, A.J., and D.J. Bremer. 1991. Greeley County fallow and irrigated grain sorghum performance test results. pp. 32-35. *In* 1991 Kansas Performance Tests with Grain Sorghum Hybrids. Kansas State University, Manhattan, KS.
5. Schlegel, A.J., D.J. Bremer, and D.F. Frickel. 1991. Corn and grain sorghum response to tillage, preplant irrigation, and phosphorus placement. pp. 17-19. *In* 1991 Field Day Report, Southwest Kansas Research-Extension Center, Manhattan, KS.
6. Schlegel, A.J., and D.J. Bremer. 1990. Optimum scheduling of limited irrigation for grain sorghum. pp. 5-7. *In* 1990 Field Day Report, Southwest Kansas Research-Extension Center, Manhattan, KS.

GRANT PROPOSALS FUNDED

1. Bremer, D.J., Ham, J.M., Keeley, S.J., Fry, J.D., Lavis, C., Moley, L., and St. John, R. 2008-2011. Modifying homeowners' lawn-irrigation behavior to conserve water and improve water quality in urbanizing watersheds. USDA National Integrated Water Quality Program. \$600,000.
2. Keeley, S., J. Fry, and D. Bremer. 2008. An Undergraduate Certificate Program in Turfgrass Management. Div. of Continuing Education, Kansas State University. \$14,639.
3. Bremer, D.J. 2008. General Turfgrass Research. Kansas Turfgrass Foundation. \$9,000.
4. Bremer, D.J., S.J. Keeley, J.D. Fry, R.A. St. John, Department of Horticulture, Forestry & Recreation Resources; J.M. Ham, Department of Agronomy; D. Gourlay, Colbert Hills Golf Course. 2008-2013. Evaluation of Irrigation Requirements and Water Conservation in Turfgrasses. AES CES Five-Year Action Plan (Hatch Project). Accepted.
5. Bremer, D.J. 2007. General Turfgrass Research. Kansas Turfgrass Foundation. \$11,000.

Grant proposals funded (continued)

6. Bremer, D.J., and J.D. Lewis. 2007-2008. Potential for slow-release polymer-coated and organic nitrogen fertilizers to reduce greenhouse gas (nitrous oxide) emissions in turfgrass. Agrium, Inc. \$8,750.
7. Bremer, D.J., J.D. Fry, and J.D. Lewis. 2007-2008. Potential for slow-release polymer-coated and organic nitrogen fertilizers to reduce greenhouse gas (nitrous oxide) emissions in turfgrass. International Plant Nutrition Institute, Inc. \$8,000.
8. Fry, J.D., Q. Zhang, D.J. Bremer, and C. Rajashekar. 2007. Freezing tolerance of new zoysiagrass progeny and identification of physiological contributors to hardiness. Heart of America Golf Course Superintendents Association. \$ 8,000.
9. Fry, J., Q. Zhang, R. St. John, C. Rajashekar, D. Bremer, M. Kennelly, M. Engelke, and D. Genovesi. 2007-2008. Screening new zoysiagrass progeny for freezing, drought, and disease resistance. Kansas Agricultural Experiment Station. \$14,672.
10. Kennelly, M., J. Fry, R. St. John, and D. Bremer. 2008-2010. Cultural practices, environment, and pathogen biology: studies for improved management of large patch (*Rhizoctonia solani* AG2-2). \$ 46,806.
11. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2006-2008. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. U.S. Golf Association. \$47,058.
12. Bremer, D.J. 2006. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$12,800.
13. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2006-2008. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. Turfgrass Producers International. \$10,000.
14. Fry, J., Q. Zhang, D. Bremer, and C. Rajashekar. 2006. Freezing tolerance of new zoysiagrass progeny and identification of physiological contributors to hardiness. Heart of America Golf Course Superintendents Association. \$ 8,000.
15. Bremer, D.J., and C. Shoemaker. 2006-2007. Renewal of K-State Graduate School Timothy R. Donoghue Graduate Scholarship. \$5,000 for Jason Lewis salary (Doctoral student).
16. Bremer, D.J. 2005. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$16,000.
17. Bremer, D.J., J.D. Fry, and S.J. Keeley. 2005-2006. Membrane lipid composition and heat tolerance in Kentucky bluegrass, tall fescue, and a hybrid bluegrass. The Scotts Co. \$3,000.
18. Bremer, D.J. 2005-2006. Travel to 10th International Turfgrass Research Conference 2005, Llandudno, Wales, UK. President's Faculty Development Award (FDA). K-State Office of Research and Sponsored Programs. \$1,400.
19. Bremer, D.J., and C. Shoemaker. 2005-2006. K-State Graduate School Timothy R. Donoghue Graduate Scholarship. \$5,000 for Jason Lewis salary (Doctoral student). July 2005 – June 2006.
20. Bremer, D.J. 2004. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$13,250.
21. Bremer, D.J. 2003-2004. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Kansas National Science Foundation (NSF) Experimental Program to Stimulate Competitive Research (EPSCoR). \$48,250.
22. Bremer, D.J. 2003. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$10,000.
23. Bremer, D.J., and J.D. Fry. 2002-2004. Drought resistance of two cultivars of Texas bluegrass compared with Kentucky bluegrass and tall fescue. The Scotts Co. \$21,000.
24. Bremer, D.J. 2002. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$10,000.

Grant proposals funded (continued)

25. Bremer, D.J., J.D. Fry, and C. Rajashekar. 2002-2006. Evaluation of Texas bluegrass for use in golf course fairways and roughs. Golf Course Superintendents Association of America (GCSAA). \$9,000.
26. Bremer, D.J. 2001. Funding for general turfgrass research. Kansas Turfgrass Foundation. \$5,000.
27. Bremer, D.J., J.D. Fry, S.J. Keeley, C. Rajashekar, Department of Horticulture, Forestry & Recreation Resources; J.M. Ham, Department of Agronomy; D. Gourlay, Colbert Hills Golf Course. 2002-2007. Water conservation in turfgrass via use of new, drought resistant cultivars and automated irrigation control. AES CES Five-Year Action Plan (Hatch Project). Accepted.

Total Grants Funded at Kansas State University from 2001 to 2008: \$945,625

PROFESSIONAL PRESENTATIONS/ABSTRACTS

1. Bremer, D.J. J.D. Lewis, J.M. Ham, and J.L. Deusterhaus. 2008. Grassland measurements of photosynthesis and respiration with surface chambers. International Annual Meetings of the ASA, CSSA, and SSSA, Houston, TX, October 7.
2. Lewis, J.D., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2008. Comparative irrigation requirements of 28 cultivars of Kentucky bluegrasses and two Texas bluegrass hybrids in the transition zone. International Annual Meetings of the ASA, CSSA, and SSSA, Houston, TX, October 6.
3. Bremer, D.J. J.D. Lewis, J.L. Deusterhaus, and J.M. Ham. 2007. Measurement of photosynthesis and respiration in turfgrass with large and small chambers. ASA Annual Meeting (New Orleans, LA).
4. Lewis, J.D., and D.J. Bremer. 2007. Mitigation of nitrous oxide emissions from turfgrasses using controlled-release fertilizers. ASA Annual Meeting (New Orleans, LA).
5. Lewis, J.D., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2007. Comparative irrigation requirements of 30 cultivars of Kentucky bluegrasses under a large rainout facility in the transition zone. ASA Annual Meeting (New Orleans, LA).
6. Frank, E.E., S.E. Travers, S.H. Hulbert, J.E. Leach, J.Bai, P.S. Schnable, M.D. Smith, R. Welti, D.J. Bremer, and K.A. Garrett. 2007. Rust and drought effects on gene expression and phytohormone concentration in the dominant species of tallgrass prairie. *Phytopathology* 97:S36 (Supplement).
7. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2006. Effects of mowing height and drought on Kentucky bluegrass and a hybrid bluegrass. ASA Annual Meeting (Indianapolis, IN).
8. Lewis, J.D., and D.J. Bremer. 2006. Effects of turfgrass species on nitrous oxide fluxes under typical nitrogen management regimes. ASA Annual Meeting (Indianapolis, IN).
9. Lee, H., and D.J. Bremer. 2006. Evaluation of cool-season turfgrass quality with multispectral radiometry. ASA Annual Meeting (Indianapolis, IN).
10. Zuk, A.J., D.J. Bremer, and J.D. Fry. 2005. Establishment of seeded zoysiagrass in a perennial ryegrass sward: Effects of soil surface irradiance and temperature. 10th International Turfgrass Research Conference (Llandudno, Wales).
11. Griffin, J.J., W.R. Reid, and D.J. Bremer. 2005. Turf species affect establishment and growth of *Cercis canadensis* and *Carya illinoensis*. Southern Nursery Association Annual Research Conference, August 2005.
12. Griffin, J.J., W.R. Reid, and D.J. Bremer. 2005. Turf species affect establishment and growth of *Cercis canadensis* and *Carya illinoensis*. ASHS Annual Conference, July 2005.
13. Bremer, D.J. 2004. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. ASA Annual Meeting (Seattle, WA).
14. Su, K., D.J. Bremer, S.J. Keeley, and J.D. Fry. 2004. High temperature and drought effects of a Texas bluegrass hybrid compared with Kentucky bluegrass and tall fescue. ASA Annual Meeting (Seattle, WA).
15. Griffin, J.J., W.R. Reid, and D.J. Bremer. 2004. Turfgrass affects first year growth and photosynthesis of redbuds (*Cercis canadensis* L.). p. 431-433. *In* B.L. James (ed) Proc. of Southern Nursery Assoc. Research Conf., Forty-Ninth Annual Report, Atlanta, GA.

Professional presentations (continued)

16. Bremer*, D.J. 2004. Nitrous oxide fluxes in turfgrass: Effects of irrigation and nitrogen fertilization rates. Kansas Statewide Epscor Conference – Biosciences and the New Economy in Kansas. (Manhattan, KS).
17. Bremer, D.J., and J.M. Ham. 2003. Measurement and partitioning of in situ carbon fluxes in turfgrasses. ASA Annual Meeting (Denver, CO).
18. Keeley, S.J., R.W. Kraft, K. Su, and D.J. Bremer. 2003. Gradual conversion of perennial ryegrass fairway turf to Kentucky bluegrass. ASA Annual Meeting (Denver, CO).
19. Bremer, D.J. 2002. Measurement of soil water content inside microlysimeters and in adjacent soils using the dual-probe heat-pulse technique: A Field Study. ASA Annual Meeting (Indianapolis, IN).
20. Bremer, D.J., J.M. Ham, L.C. Johnson, and C.E. Owensby. 2000. Impact of forest expansion (*Juniperus virginiana*) on surface fluxes of CO₂ in the Great Plains. Ecol. Soc. Am. Annual Meeting. (Snowbird, UT).
21. Bremer, D.J., J.M. Ham, C.E. Owensby, and L.M. Auen. 1999. Effects of grazing by cattle on energy fluxes in a tallgrass prairie. ASA Annual Meeting (Salt Lake City, UT).
22. Bremer, D.J., and J.M. Ham. 1998. Effect of spring burning on the surface energy balance in a tallgrass prairie. ASA Annual Meeting (Baltimore, MD).
23. Bremer, D.J., J.M. Ham, C.E. Owensby, and A.K. Knapp. 1997. Effect of grazing on seasonal and annual soil respiration in a tallgrass prairie. ASA Annual Meeting (Anaheim, CA).
24. Ham, J.M., A.K. Knapp, and D.J. Bremer. 1997. Effect of fire on surface-layer fluxes of energy and carbon from grasslands. American Geophysical Union Annual Meetings. (San Francisco, CA).
25. Bremer, D.J., J.M. Ham, and C.E. Owensby. 1996. Effect of grazing on soil carbon dioxide flux in a tallgrass prairie. ASA Annual Meeting (Indianapolis, IN).
26. Bremer, D.J., and J.M. Ham. 1995. Field scale measurements of net carbon exchange using Bowen ratio and conditional sampling. ASA Annual Meeting (St. Louis, MO).
27. Ham, J.M., J.M. Tarara, and D.J. Bremer. 1995. Control systems for measuring sap flow with compensating power techniques. ASA Annual Meeting (St. Louis, MO).
28. Bremer, D.J., J.M. Ham, and C.E. Owensby. 1994. Transpiration from a tallgrass prairie exposed to ambient and elevated levels of carbon dioxide. ASA Annual Meeting (Seattle, WA).
29. Bremer, D.J., A.J. Schlegel, and L.R. Stone. 1991. Optimum scheduling of limited irrigation for grain sorghum. ASA Annual Meeting (Denver, CO).