

## Career Publications

### Robert M. Aiken

Associate Professor and Research Crop Scientist  
Kansas State University  
Northwest Research-Extension Center  
105 Experiment Farm Road  
Colby, KS 67701  
785-462-6281

### Refereed Journal Articles

1. J.R. Prasifka, J. F. Campbell, R.M. Aiken and J.D. Bradshaw. 2014. Methods for assessing infestations of sunflower stem weevil, *Cylindrocopturus adspersus* LeConte (Coleoptera: Curculionidae), in sunflower stems. The Canadian Entomologist. (in press)
2. Narayanan, S., R.M. Aiken, P.V.V. Prasad, Z. Xin, G. Paul and J. Yu. 2014. A Simple Quantitative Model to Predict Leaf Area Index in Sorghum. Agron. J. 106:219-226.
3. Kapanigowda, M.H., R. Perumal, M. Djanaguiraman, R. M. Aiken, T. Tesso, P.V.V. Prasad, C.R. Little. 2013. Genotypic variation in sorghum [*Sorghum bicolor* (L.) Moench] exotic germplasm collections for drought and disease tolerance. SpringerPlus 2:650.
4. Kapanigowda, M.H., R. Perumal, R.M. Aiken, T.J. Herald, S.R. Bean, and C.R. Little. 2013. Analyses of sorghum [*Sorghum bicolor* (L.) Moench] lines and hybrids in response to early-season planting and cool conditions. Can. J. Plant Sci. (2013) 93: 773\_784
5. R.W. Todd, N.A. Cole, H.M. Waldrip, and R.M. Aiken. 2013. Arrhenius Equation for Modeling Feedyard Ammonia Emissions Using Temperature and Diet Crude Protein. J.E.Q. 42:666-671.
6. Paul, G., Gowda, P.H., Vara Prasad, P.V., Howell, T.A., Aiken, R.M., Neale, C.M.U., 2014. Investigating the influence of roughness length for heat transport ( $Z_{oh}$ ) on the performance of SEBAL in semi-arid irrigated and dryland agricultural systems. Journal of Hydrology, 509:231-244. <http://dx.doi.org/10.1016/j.jhydrol.2013.11.040>.
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8. Narayanan, S., R.M. Aiken, P.V.V. Prasad, Z. Xin and J. Yu. 2013. Water and Radiation Use Efficiencies in Sorghum. Agron. J. 105:649-656.
9. Aiken, R.M. and N.L. Klocke. 2012. Inferring transpiration control from sap flow heat gauges and the Penman-Monteith equation. Transactions of the ASABE. 55(2):543-549.
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11. Lyon, D.J., A.D. Pavlista, G.W. Hergert, R.N. Klein, C.A. Shapiro, S. Knezevic, S.C. Mason, L.A. Nelson, D.D. Baltensperger, R.W. Elmore, M.F. Vigil, A.J. Schlegel, B.L.

- Olson and R.M. Aiken. 2009. Skip-Row Planting Patterns Stabilize Corn Grain Yields in the Central Great Plains. Online. Crop Management doi:10.1094/CM-2009-0224-02-RS.
12. Coyne, P. I., R. M. Aiken, S. J. Maas and F. R. Lamm. 2009. Evaluating YieldTracker yield forecasts for corn in western Kansas. *Agron. J.* 101:671-680
  13. Lamm, F. R., R. M. Aiken, and A. A. Abou Kheira. 2009. Corn yield and water use characteristics as affected by tillage, plant density and irrigation. *Transaction of the ASABE.* 52(1): 133-143.
  14. Klocke, N.L., R. S. Currie, R. M. Aiken. 2009. Soil Water Evaporation and Crop Residues. *Trans. ASABE.* 52(1): 103-110.
  15. Xin, Z., R.M. Aiken and J. Burke. 2009. Genetic Diversity of Transpiration Efficiency in Sorghum. *Field Crops Research* 111:74-80.
  16. Charlet, L. R.M. Aiken, J. Miller and G. Seiler. 2008. Resistance Among Cultivated Sunflower Germplasm to Stem-Infesting Pests in the Central Great Plains. *Journal of Economic Entomology.* 102:1281-1290.
  17. Charlet, L.D., R.M. Aiken, G.J. Seiler, A. Chirumamilla, B.S. Hulke, and J.J. Knodel. Resistance in Cultivated Sunflower Resistance to the Sunflower Moth (Lepidoptera: Pyralidae). 2008. *Journal of Agricultural & Urban Entomology.* 25(4):245-257
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  19. Charlet, L.D., R.M. Aiken, R.F. Meyer and A. Gebre-Amlak. 2007. Impact of Combining Planting Date and Chemical Control to Reduce Larval Densities of Stem-Infesting Pests of Sunflower in the Central Plains. *J. Econ. Entomol.* 100(4):1248-1257.
  20. Kozak, J.A., R. Aiken, G. Flerchinger, D. Nielsen, L. Ma and L. Ahuja. Comparison of Modeling Approaches to Quantify Residue Architecture Effects on Soil Temperature and Water. *Soil and Tillage Research* 95:84-96.
  21. Stone, L.R., A.J. Schlegel, A.H. Khan, N.L. Klocke and R.M. Aiken. 2006. Water supply: yield relationships developed for study of water management. *J. Nat. Resour. Life Sci. Educ.* 35:161-173. <http://www.JNRLSE.org>
  22. Charlet, L.D. and R.M. Aiken. 2005. Impact of planting date on sunflower stem weevil (Coleoptera: Curculionidae) larval density and parasitism in oilseed and confection sunflower in western Kansas. *Crop Management.*
  23. Aiken, R.M. 2005. Applying thermal time scales to sunflower development. *Agron. J.* *Agron. J.* 97:746-754
  24. Aiken, R.M., D.C. Nielsen, and L.R. Ahuja. 2003. Scaling effects of standing crop residues on the wind profile. *Agron. J.* 95:1041-1046
  25. Flerchinger, G.N., T.J. Sauer and R.M. Aiken. 2003. Effects of crop residue cover and architecture on heat and water transfer at the soil surface. *Geoderma.* 1997:1-17.
  26. McMaster, G.S., R.M. Aiken, and D.C. Nielsen. 2000. Optimizing wheat harvest cutting height for harvest efficiency and soil and water conservation. *Agron. J.* 92:1104-1108.

27. Bowman, R.A., D.C. Nielsen, M.F. Vigil, and R.M. Aiken. 2000. Effects of sunflower on soil quality indicators and subsequent wheat yield. *Soil Science*. 516-522.
28. Flerchinger, G.N., R.M. Aiken, K.W. Rojas, and L.R. Ahuja. 2000. Development of the Root Zone Water Quality Model (RZWQM) for Over-Winter Conditions. *Trans. ASAE* 43(1):59-68.
29. Anderson, R.L., R.A. Bowman, D.C. Nielsen, M.F. Vigil, R.M. Aiken, and J.G. Benjamin. 1999. Alternative crop rotations for the central Great Plains. *J. Prod. Agric.* 12:95-99.
30. Nielsen, D.C. and R.M. Aiken. 1998. Wind speed above and within sunflower stalks varying in height and population. *J. Soil and Water Cons.* 53:347-352.
31. Aiken, R.M., G.N., Flerchinger, H.J. Farahani, and K.E. Johnsen. 1997. Energy Balance Simulation for Surface Soil and Residue Temperatures with Incomplete Cover. *Agron. J.* 89:404-415.
32. Aiken, R.M. and A.J.M. Smucker. 1996. Root System Regulation of Whole Plant Growth. *Annual Review of Phytopathology*. 34:325-46.
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34. Smucker, A.J.M. and R.M. Aiken. 1992. Dynamic Root Responses to Water Deficits. *Soil Science* 154: 281-289.
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### **Book Chapters**

1. Flerchinger, G.N., R.M. Aiken, K.W. Rojas, L.R. Ahuja, K. Johnsen, and C.V. Alonso. 1998. Soil Heat Transport, Soil Freezing and Snowpack Conditions. *In* Root Zone Water Quality Model—Modeling management effects on water quality and crop production. Water Resources Publications. pp. 281-314.

### **Proceedings, International Conferences**

1. G. Paul, P. Gowda, V. Prasad, T. Howell, R. Aiken, S. Hutchinson. 2013. Role of hot and cold pixel concept in remote sensing based single source surface energy balance algorithms. Seventh International Conference on Irrigation and Drainage, 103-117. U.S. Committee on Irrigation and Drainage
2. Xin, Z., M.L. Wang, R. Aiken, J. Burke. 2009. Sorghum transpiration efficiency. Proceedings of 3rd International Conference on Integrated Approaches to Improve Crop Production Under Drought Prone Environments (InterDrought-III). October 12-16, 2009. Shanghai.
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5. Aiken, R.M., D.C. Nielsen, and L.R. Ahuja. 2002. Scaling effects of standing crop residues on aerodynamic transfer processes. Proc. of the 2002 International Conference on Wind Erosion and Aeolian Processes. 22–25 July 2002. Lubbock, TX.
6. Aiken, R.M., D.C. Nielsen and L.R. Ahuja. 2002. Scaling effects of standing crop residues on aerodynamic transfer processes. Proceedings of the 2002 International Conference on Wind Erosion and Aeolian Processes.
7. Aiken, R.M., V. Thomas, and W. Waltman. 2001. AgriFACTs: Agricultural Farm Analysis and Comparison Tool. Invited presentation, Geospatial Information in Agriculture Conference. July 17, 2001, Sydney, AU.
8. Sinclair, H.R., W.J. Waltman, S.W. Waltman, R.M. Aiken, and R.L. Anderson. 1999 A method for evaluating inherent soil quality for crops across major land resource areas. *In: Proceedings of the Fourth International Conference on Precision Agriculture.* pp. 429-440.
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10. Aiken, R.M., D.C. Nielsen, M.F. Vigil, and L.R. Ahuja. 1998. Field Evaluation of Energy Balance Simulation of Surface Soil Temperatures. Proceedings of the International Symposium on Wind Erosion. USDA-ARS

### **Proceedings, National and Regional Conferences**

1. Aiken, R. M., F. R. Lamm, and A. A. Aboukheira. 2011. Oilseed crop water use and water productivity. In: Proc. 2011 Irrigation Association Tech. Conf., San Diego, California, November 6-8, 2011.
2. Aiken, R. M., F. R. Lamm, and A.A. Aboukheira. 2011. Water use of oilseed crops. In: Proc. 23rd annual Central Plains Irrigation Conference, Burlington, Colorado, Feb. 22-23, 2011.
3. Lamm, F.R., R.M. Aiken and A.A. Aboukheira. 2011. Irrigation research with sunflowers in Kansas. In: Proc. 23rd annual Central Plains Irrigation Conference, Feb. 22-23, 2011, Burlington, Colorado.
4. Aiken, R.M., P.I. Coyne and A. A. Aboukheira. 2011. A Field Procedure to Derive Heat, Water Vapor and Carbon Dioxide Exchange Rates from Digital Images of Vegetative Canopies. In: Proc. 2011 ASABE Annual International Meetings. Louisville, Kentucky, August 7 – 10, 2011
5. Aiken, R. and B. Olson. 2010. Long Term Crop Rotation Results. Proceedings. Cover Your Acres Winter Conference. January 2010. K-State Research and Extension.

6. Aiken, R.M. and N.L. Klocke. 2010. Operational Characteristics of Sap Flow Heat Gauges to Quantify Transpiration Flux in Corn. 5<sup>th</sup> National Decennial Irrigation Conference Sponsored jointly by ASABE and the Irrigation Association Phoenix, Arizona, December 5 - 8, 2010.
7. Aiken, R.M.. Climate change impacts on crop growth in the Central High Plains. 2009. Proceedings of the 21st Annual Central Plains Irrigation Conference, Colby Kansas, February 24-25, 2009. Available from CPIA, 760 N Thompson, Colby, KS. pp. 14-24.
8. Charlet, L.D., R.M. Aiken, G.J. Seiler, J.J. Knodel, K.A. Grady, A. Chirumamilla, and B.S. Hulke. 2009. Development of host-plant resistance as a strategy to reduce damage from the major sunflower insect pests. Proc. 31<sup>st</sup> Sunflower Research Workshop, Nat. Sunflower Assoc., Fargo, ND, 13-14 January 2009.
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11. Lamm, F. R., and R. M. Aiken. 2008. Comparison of Temperature-Time Threshold-and ET-based Irrigation Scheduling for Corn Production. ASABE paper no. 084202. Available from ASABE, St. Joseph, MI. 12 pp
12. Aiken, R., L. Stone and A. Schlegel. 2008. Evaluating an Inverse Solution for Crop Stress Factors in Kansas Water Budget. Proceedings of the 38<sup>th</sup> Annual Biological Systems Simulation Group Conference. 8-10 April 2008. Temple, TX.
13. Aiken, R.M. and D. O'Brien. 2008. Ten Crop Sequences, Transition to No-till. Proceedings, Cover Your Acres Winter Conference. January 2008. K-State Research and Extension.
14. Aiken, R.M. and P. Stahlman. 2008. Atrazine Tolerance/Resistance in Sunflower Isolines. Proc. 30<sup>th</sup> Sunflower Research Workshop, Natl. Sunflower Assoc., Fargo, ND, 8-9 January 2008.
15. Charlet, L.D.,R.M. Aiken, J.F. Miller, G.J. Seiler, K.A. Grady and J.J. Knodel. 2007. Germplasm Evaluation for Resistance to Insect Pests of the Sunflower Head. Proc. 29<sup>th</sup> Sunflower Research Workshop, Natl. Sunflower Assoc., Fargo, ND, 10-11 January 2007.
16. Lamm, F. R. and R. M. Aiken 2007. Conventional, strip, and no tillage corn production under different irrigation capacities In: Proc. Central Plains Irrigation Conference, Kearney, NE., Feb. 27-28, 2007. Available from CPIA, 760 N.Thompson, Colby, KS. pp. 32-47.
17. Olson, B.L.S., J. Falk and R. Aiken. 2006. Sunflower yield as affected by strip-till. Proc. 28<sup>th</sup> Sunflower Research Workshop, Natl. Sunflower Assoc., Fargo, ND, 11-12 January 2006.
18. Aiken, R.M. 2006. Cropping intensity, water use and productivity under drought conditions. Proceedings. Cover Your Acres Winter Conference. February 2, 2006. K-State Research and Extension. pp. 20–21.

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22. Olson, B.L.S and R. M. Aiken. 2005. Dryland Strip Till Production. Proc. 27<sup>th</sup> Sunflower Research Workshop, Natl. Sunflower Assoc., Fargo, ND, 11-13 January 2005.
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28. Aiken, R.M., R.L. Vanderlip, L.R. Stone, and R.D. Stockton. 2003. Can crop simulation models support sunflower production? Proc. Nat. Sunflower Assoc. 16–17 January 2003. Fargo, ND.
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## Abstracts

1. Aiken, R.M. 2013. Book Review: *Advances in Irrigation Agronomy*, M.K.V. Carr. *Agricultural Water Management.* 125:105
2. Aiken, R.M. and P.I. Coyne. 2013. Inferring Relative Heat, Water Vapor and Carbon Exchange From Digital Images of Vegetative Canopies. *Agronomy Abstracts.* 201-6.
3. Trostle, C.L., D.J. Lyon, O.J. Idowu and R.M. Aiken. 2013. Semi-Arid Dryland Cover Cropping: Panacea Or Fallacy? *Agronomy Abstracts.* 318-9.
4. Aiken, R., F. Lamm and G. Seiler. 2013 Sunflower canopy and oilseed yield formation under deficit irrigation. *National Sunflower Association Research Forum, Fargo, ND 1/7/13*
5. Aiken, R.M. Wheat crop water productivity in fallow and continuous cropping systems. *Water and Future of Kansas.* Manhattan, KS, 8/ 2013
6. Aiken, R.M. and P. Miller. 2012. Principles of transpiration and crop water production functions. *Agronomy Abstracts.*
7. Kapanigowda, M.H., R. Perumal, R. Aiken, T. Tesso and C.R. Little. 2012. Studies on sorghum [*Sorghum Bicolor* (L.) Moench] minicore germplasm and breeding lines to identify potential sources for abiotic and biotic stressors. *Agronomy Abstracts.*
8. Kapanigowda, M.H., R. Perumal, R. Aiken, S. Bean, T. Herald and C.R. Little. 2012. Field and controlled environment studies in sorghum [*Sorghum Bicolor* (L.) Moench] lines and hybrids for cold tolerance. *Agronomy Abstracts.*
9. Paul, G., P.H. Gowda, P.V.V. Prasad, T.A. Howell, S.A. Staggenborg, P. Colaizzi, S.L. Hutchinson and R.M. Aiken. 2012. Testing of two source energy balance model under irrigated and dryland conditions using high resolution airborne imagery. *Agronomy Abstracts.*
10. Paul, G., P.H. Gowda, P.V.V. Prasad, T.A. Howell, S.A. Staggenborg, P. Colaizzi, R. Aiken and S.L. Hutchinson. 2012. An intercomparison study of Tsm, Sebs and SEBAL using high resolution imagery and lysimetric data. *Agronomy Abstracts.*
11. Pidarani, K. M.B. Kirkham and R. Aiken. 2012. Stomatal resistance, leaf temperature and chlorophyll content of sorghum hybrids varying in maturity. *Agronomy Abstracts.*
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13. Narayanan, S. R. Aiken, V. Prasad, Z. Xin, G. Paul, J. Yu. 2011. Allometric model to quantify sorghum canopy formation. *Agronomy Abstracts*. American Society of Agronomy.
14. Todd, R.W., N.A. Cole and R.M. Aiken. 2010. Temperature Dependence of Feedyard Ammonia Emissions: The Arrhenius Equation. *Agronomy Abstracts*. /AnMtgsAbsts2010
15. Xin, Z., R. Aiken, G. Burow and J. Burke. 2010. Sorghum Transpiration Efficiency. *Agronomy Abstracts*. /AnMtgsAbsts2010
16. Pidan, K., R. Aiken, M.B. Kirkham, K. Roozeboom, B. Olson, A. Schlegel and J. Holman. 2010. Planting geometry effects on sorghum productivity in water limiting conditions. *Agronomy Abstracts*. /AnMtgsAbsts2010.
17. Aiken, R., D. Baltensperger, J. Krall, J. Johnson, A. Pavlista. 2010. Planting Dates and Methods for Spring Canola Establishment, Flowering and Yield in the U.S. Central High Plains. *Agronomy Abstracts*. /AnMtgsAbsts2010
18. Narayanan, S., R. Aiken, Z. Xin, V. Prasad, K. Kofoid, J. Yu. 2010. Canopy Architecture and Transpiration Efficiency in Sorghum. 2010. *Agronomy Abstracts*. /AnMtgsAbsts2010
19. Aiken, R.M., D. O'Brien, B. Olson and L. Murray. 2009. Crop sequence effects on wheat water use, productivity and economic returns. *Agronomy Abstracts/AnMtgsAbsts2009.54699*
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21. Aiken, R.M. and N.L. Klocke. 2008. Transpiration Quantified by Sap Flow Heat Gauges and the Penman-Monteith Equation. *Agronomy Abstracts*.
22. Xin, A., R.M. Aiken, and J. Burke. 2008. Variation in transpiration efficiency in sorghum. *Agronomy Abstracts*
23. Coyne, P.C., R.M. Aiken and S.J. Maas. 2008. Suitability of YieldTracker for predicting corn yields in western Kansas. *Agronomy Abstracts*.
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25. Thevar, P., M. B. Kirkham, R. Aiken, K. Kofoid, and Z. Xin. 2007. Stomatal conductance of eight grain sorghum lines varying in transpiration efficiency. *Agronomy Abstracts*.
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31. Aiken, R.M., J.M.S. Hutchinson and J.A. Harrington. 2003. "GIS modules for ET and available soil water in Northwest Kansas." *Water and the Future of Kansas*. Manhattan, KS. March 11, 2003.
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33. Aiken, R.M., F. Lamm, J. Ham, and T. Trooien. 2001. Detection Limits of Sap Flow Heat Gauges in Replicated Field Plots of Corn. *Agronomy Abstracts*. American Society of Agronomy.
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