

Allan A. Andales

Curriculum Vitae

Assistant Professor of Irrigation and Water Science
Colorado State University
Department of Soil and Crop Sciences
Campus Delivery 1170
Fort Collins, CO 80523-1170
Phone: (970) 491-6516
E-mail: Allan.Andales@colostate.edu

EDUCATION:

Ph.D. Agricultural Engineering and Water Resources, Iowa State University, 1998
M.S. Agricultural Engineering (Soil and Water Resources), Iowa State University, 1995
B.S. Agricultural Engineering (Land and Water Engineering), University of the Philippines, 1990

EXPERIENCE:

- Assistant Professor in Irrigation/Water Science, Department of Soil and Crop Sciences, Colorado State University, Fort Collins, CO (Aug 2007-present)
- Soil Scientist, USDA-ARS Agricultural Systems Research Unit (ASRU), Fort Collins, CO, (Jan 2004-Aug 2007)
- Postdoctoral Fellow, Department of Agronomy and Horticulture, New Mexico State University, Las Cruces, NM (Jun 2003-Jan 2004)
- Research Associate, Department of Rangeland Ecosystems Science, Colorado State University, Fort Collins, CO, (Nov 2002-Jun 2003)
- Visiting Soil Scientist, USDA-ARS Great Plains Systems Research Unit (GPSR), Fort Collins, CO (Feb 2001-Oct 2002)
- Assistant Professor, Institute of Agricultural Engineering, University of the Philippines, Los Baños, Laguna, Philippines (Jul 1999-Jan 2001)
- Hydrologist/Consultant, Tetra Tech EMI, Manila, Philippines (Apr 2000-Jan 2001)
- Postdoctoral Research Associate, Agricultural and Biosystems Engineering Department, Iowa State University Ames, IA (Jan-Jul 1999)
- Graduate Research/Teaching Assistant, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, IA (Jan 1994 -Dec 1998)
- Instructor, Institute of Agricultural Engineering, University of the Philippines, Los Baños, Laguna, Philippines (Nov 1991-Dec 1993)
- Research Assistant, Agricultural Technology Education Project (Philippine Government -Department of Education, Culture and Sports), Laguna, Philippines (Apr-Oct 1991)
- Instructor, Institute of Mathematical Sciences and Physics, University of the Philippines, Los Baños, Laguna, Philippines (Jun 1990- Mar 1991)

AWARDS/HONORS:

- USDA Certificates of Merit, USDA-ARS-Northern Plains Area: 2007, 2006, 2005, 2004, 2002
- The Reverend P. T. Taiganides Award (Outstanding Ph.D. Graduate Student in Agricultural Engineering), Iowa State University, 1999
- Seventh Place, National Agricultural Engineering Board Exam, Philippines, 1991

PROFESSIONAL ASSOCIATIONS AND HONOR SOCIETIES:

- American Society of Agricultural and Biological Engineers
- Soil Science Society of America
- American Society of Agronomy
- Alpha Epsilon (Honor Society of Agricultural Engineering)

- Gamma Sigma Delta (Honor Society of Agriculture)
- The Honor Society of Phi Kappa Phi
- Registered Professional Agricultural Engineer, Professional Regulation Commission, Philippines

PUBLICATIONS:

Refereed Journal Articles

- Andales, A. A., W. D. Batchelor, and C. E. Anderson. 2000. Modification of a soybean model to improve soil temperature and emergence date prediction. *Transactions of the ASAE* 43(1):121-129.
- Andales, A. A., W. D. Batchelor, C. E. Anderson, D. E. Farnham, and D. K. Whigham. 2000. Incorporating tillage effects into a soybean model. *Agricultural Systems* 66(2000) 69-98.
- McMaster, G. S., J. C. Ascough II, M. J. Shaffer, L. A. Deer-Ascough, P. F. Byrne, D. C. Nielsen, S. D. Haley, A. A. Andales, and G. H. Dunn. 2003. GPFARM plant model parameters: Complications of varieties and the Genotype x Environment interaction in wheat. *Transactions of the ASAE* 46(5):1337-1346.
- Andales, A. A., L. R. Ahuja and G. A. Peterson. 2003. Evaluation of GPFARM for dryland cropping systems in Eastern Colorado. *Agronomy Journal* 95(6):1510-1524.
- Andales, A. A., J. D. Derner, P. N. S. Bartling, L. R. Ahuja, G. H. Dunn, R. H. Hart, and J. D. Hanson. 2005. Evaluation of GPFARM for simulation of forage production and cow-calf weights. *Rangeland Ecology & Management* 58(3):247-255.
- Andales, A.A., J. Wang, T.W. Sammis, J.G. Mexal, L.J. Simmons, D.R. Miller, and V. P. Gutschick. 2006. A model of pecan tree growth for the management of pruning and irrigation. *Agricultural Water Management* 84:77-88.
- Andales, A. A., J. D. Derner, L. R. Ahuja, and R. H. Hart. 2006. Strategic and tactical prediction of forage production in northern mixed-grass prairie. *Rangeland Ecology & Management* 59(6):576-584.
- Andales, A. A., T. R. Green, L. R. Ahuja, R. H. Erskine, and G. A. Peterson. 2007. Temporally stable patterns in grain yield and soil water on a dryland catena. *Agricultural Systems* 94(2):119-127.
- Wang, J., T.W. Sammis, A. A. Andales, L.J. Simmons, V. P. Gutschick, and D. R. Miller. Crop coefficients of open-canopy pecan orchards. 2007. *Agricultural Water Management* 88:253-262.
- Ahuja, L.R., A.A. Andales, L. Ma, and S.A. Saseendran. 2007. Whole system integration and modeling essential to agricultural science and technology for the twenty-first century. *Journal of Crop Improvement* 19(1/2):73-103.
- Wang, J., D.R. Miller, T.W. Sammis, V.P. Gutschick, L.J. Simmons, and A.A. Andales. 2007. Energy balance measurements and a simple model for estimating pecan water use efficiency. *Agricultural Water Management* 91:92-101.
- J.C. Ascough II, G.S. McMaster, A.A. Andales, N.C. Hansen, L.A. Sherrod. 2007. Evaluating GPFARM Crop Growth, Soil Water, and Soil Nitrogen Components for Colorado Dryland Locations. *Transactions of the ASABE* 50(5):1565-1578.
- Ahuja, L.R., J.A. Kozak, A.A. Andales, and L. Ma. Scaling Parameters of the Lewis-Kostiakov Water Infiltration Equation across Soil Textural Classes and Extension to Rain Infiltration. 2007. *Transactions of the ASABE* 50(5):1525-1541.
- Andales, A. A., J. D. Derner, L. R. Ahuja, and R. H. Hart. Simulating Effects of Stocking Rate on Forage and Steer Production on Northern Mixed-Grass Prairie. *Rangeland Ecology & Management* (in review).

Peer-reviewed Proceeding Papers

- McMaster, G. S., J. C. Ascough II, M. J. Shaffer, P. F. Byrne, S. D. Haley, D. C. Nielsen, A. A. Andales, G. H. Dunn, M. A. Weltz, and L. R. Ahuja. 2002. Parameterizing GPFARM: An Agricultural Decision Support System for Integrating Science, Economics, Resource Use, and Environmental Impacts. In A. E. Rizzoli and A. J. Jakeman (eds.). *Integrated Assessment and Decision Support, Proceedings of the First Biennial Meeting of the International Environmental Modeling and Software Society Vol. 1*, pp. 72-77. iEMSs, June 2002.
- Ahuja, L. R., Ma, L., Andales, A. A., and Saseendran, S. A. 2002. Agricultural system models in field research and technology transfer. In P. Singh, I.P.S. Ahlawat and R. C. Gautam (eds.). *Proceedings of Second International Agronomy Congress on Balancing Food and Environmental Security – A Continuing Challenge*, Indian Society of Agronomy, I.A.R.I., New Delhi-110 012, India. pp. 226-233.
- Ascough II, J.C., G.H. Dunn, G.S. McMaster, L.R. Ahuja, and A.A. Andales (2005) Producers, Decision Support Systems and GPFARM: Lessons Learned From a Decade of Development. In Zenger, A. and Argent, R.M. (eds)

MODSIM 2005 International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2005, pp. 170-176. ISBN: 0-9758400-2-9.
http://www.mssanz.org.au/modsim05/papers/ascough_1.pdf

- McMaster, G.S., J.C. Ascough, II, D.A. Edmunds, A.A. Andales, L. Wagner and F. Fox (2005) Multi-Crop Plant Growth Modeling for Agricultural Models and Decision Support Systems. In Zerger, A. and Argent, R.M. (eds) MODSIM 2005 International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2005, pp. 2138-2144. ISBN: 0-9758400-2-9.
<http://www.mssanz.org.au/modsim05/papers/mcmaster.pdf>

Conference/Lecture Papers and Proceedings

- Andales, A. A. and C. E. Anderson. 1995. Calibration and validation of FMBWQ for an agricultural field. ASAE Paper No. MC95-118 presented at the 1995 Mid-Central Meeting of the American Society of Agricultural Engineers, St. Joseph, Missouri.
- Andales, A. A. and C. E. Anderson. 1996. Modeling subsurface drainage and preferential flow. ASAE Paper No. MC96-125 presented at the 1996 Mid-Central Meeting of the American Society of Agricultural Engineers, St. Joseph, Missouri.
- Andales, A. A. 2000. Water Management of Upland Crops. Lecture presented at the International Training Course on Integrated Crop Management in Farming Systems, Farming Systems and Soil Resources Institute (FSSRI), UPLB, College, Laguna, 15 February 2000.
- Andales, A. A. 2003. Applied crop growth modeling. In Rola, A.C. and Foronda, C.A. (eds.). New frontiers in research for sustainable development: Proceedings of a Lecture Series in Honor of UPLB Chancellor Ruben L. Villareal, 25-28 October 1999, University of the Philippines at Los Baños, College, Laguna. pp. 73-96. ISBN: 971-547-184-6. 318 p.
- Andales, A. A., L. R. Ahuja and G. A. Peterson. 2002. Evaluation of the GPFARM decision support system for dryland cropping systems in Eastern Colorado. Joint conference of the Biological Systems Simulation Group and Remote Sensing Technologies Center, 10-13 March 2002, Mississippi State University, MS.
- Andales, A. A., L. R. Ahuja and G. A. Peterson. 2002. A modeling approach to the evaluation of alternative cropping systems. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America Annual Meetings, 10-14 Nov. 2002, Indianapolis, IN. (Abstract)
- Ahuja, L. R., Ma, L., Andales, A. A., and Saseendran, S. A. 2002. Agricultural system models in field research and technology transfer. Second International Agronomy Congress on Balancing Food and Environmental Security – A Continuing Challenge, Indian Society of Agronomy, I.A.R.I., 26-30 Nov. 2002, New Delhi-110 012, India. (Extended abstract)
- Andales, A. A., L. R. Ahuja, T. R. Green, R. H. Erskine, and G. A. Peterson. 2003. Spatial and temporal correlations among dryland grain yield and soil water content in a sloping field. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America Annual Meetings, 2-6 Nov. 2003, Denver, CO. (Abstract)
- Andales, A. A., J. Derner, P. N. S. Bartling, L. R. Ahuja, G. H. Dunn, and R. H. Hart. 2004. Application of GPFARM to simulate forage production and cow-calf weights. 57th annual international meeting of the Society for Range Management, Salt Lake City, Utah, 25-30 January 2004. (Poster)
- Andales, A. A., L. R. Ahuja and G. A. Peterson. 2004. Plant stress response in GPFARM. International Workshop on Applications and Development of ARS RZWQM and GPFARM models, Fort Collins, Colorado, 20-22 April 2004. (Extended Abstract)
- Sammis, T. W., Andales, A. A., Simmons L. 2004. Adjustment of closed canopy crop coefficients of pecans for open canopy orchards. In: Thirty-eighth Western Pecan Conference Proceedings, 7-9 March 2004, Las Cruces Hilton, Las Cruces, New Mexico, pp. 28-32.
- Andales, A. A., O. David, and L. R. Ahuja. 2005. Development of a forage growth component in the Object Modeling System. Paper No. 053011, 2005 ASAE Annual International Meeting, Tampa Convention Center, Tampa, FL, 17-20 July 2005. (<http://asae.frymulti.com/toc.asp>)
- Ahuja, L.R., A.A. Andales, L. Ma, and S.A. Saseendran. 2005. Whole System Integration and Modeling Essential to Agricultural Science and Technology for the 21st Century. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America International Annual Meetings, 6-10 Nov. 2005, Salt Lake City, UT. (Symposium paper)

- Andales, A.A., Derner, J.D., Ahuja, L.R., Hart, R.H. 2006. Applications of a Forage Production Model in Semi-Arid Northern Mixed-Grass Prairie. 36th Biological Systems Simulation Group Conference, 11-13 April 2006; Fort Collins, CO. (Extended abstract)
- Morgan, J.A., Derner, J.D., Andales, A.A., Dunn, G.H. 2006. Water Relations and Management of Semi-Arid Grasslands: Current Status, Further Critical Research, and the Useful Role of Models. 36th Biological Systems Simulation Conference. 11-13 April 2006, Ft. Collins, CO. (Extended abstract)
- Andales, A.A. and L.R. Ahuja. 2006. Using a range-livestock model to estimate maximum cow-calf stocking rates on a mixed-grass prairie. Paper No. 0067041, 2006 American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting, Oregon Convention Center, Portland, OR, 9-12 July 2006. (<http://asae.frymulti.com/toc.asp>)
- Derner, J.D., Andales, A.A., and Morgan, J.A. 2006. Tactical and strategic difficulties in managing water-limited rangelands of the Western Great Plains. Soil and Water Conservation Society 2006 International Conference, Keystone Resort, Keystone, CO, 22-26 July 2006. (Abstract)
- Ahuja, L.R., J. Kozak, L. Ma, and A.A. Andales. 2006. Scaling parameters of the Lewis-Kostiakov water infiltration equation across soil textural classes. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America International Annual Meetings, 12-16 Nov. 2006, Indianapolis, IN. (Abstract)
- Ascough II, J.C., Andales, A.A., McMaster, G.S., Ahuja, L.R. 2006. Gpfarm evaluation across a no-till dryland agroecosystem landscape catena. ASA-CSSA-SSSA Annual Meeting Abstracts. Indianapolis, IN. 11/15/2006.
- McMaster, G.S., J.C. Ascough II, A.A. Andales, and D.A. Edmunds. 2007. Evaluating EPIC-based harvest index approach for yield prediction and response to soil water. ASA-CSSA-SSSA Annual Meeting Abstracts, 4-8 Nov. 2007, New Orleans, LA.
- Saseendran, S.A., L.R. Ahuja, L. Ma, D. Nielsen, T. Trout, N. Hansen, and A.A. Andales. 2007. Simulated corn yield responses to limited-water irrigation under varying soil and climate conditions. ASA-CSSA-SSSA Annual Meeting Abstracts, 4-8 Nov. 2007, New Orleans, LA.

Other Publications

- Andales, A. A., L. R. Ahuja and M. H. Nachabe. Estimation of soil properties. In GPFARM Technical Documentation, USDA-ARS-Great Plains Systems Research Unit, Fort Collins, Colorado (in ARS review).
- Andales, A. A., K. W. Rojas, L. R. Ahuja and H. J. Farahani. Potential evapotranspiration. In GPFARM Technical Documentation, USDA-ARS-Great Plains Systems Research Unit, Fort Collins, Colorado (in ARS review).
- Ahuja, L. R., M. H. Nachabe, T. R. Green, L. Ma, A. A. Andales, and K. W. Rojas. Water balance and chemical transport. In GPFARM Technical Documentation, USDA-ARS-Great Plains Systems Research Unit, Fort Collins, Colorado (in ARS review).