NITHYA RAJAN

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EDUCATION

2007	Ph.D. (Agronomy) Texas Tech University, Lubbock, TX. Dissertation: Estimation of Crop Water Use for Different Cropping Systems in the Texas High Plains Using Remote Sensing
2004	M. Sc (Soil Science & Agricultural Chemistry) A.N.G.R. Agricultural University, Hyderabad, India. Thesis: Soil Fertility Mapping of Major Nutrients for Site-Specific Nutrient Recommendations Using GIS Techniques
2001	B. Sc (Agriculture) Kerala Agricultural University, India.

PROFESSIONAL EXPERIENCE

July 2010 - Present	**Assistant Professor** Cropping Systems Texas AgriLife Research and Extension Center, Vernon, TX.
March 2008 – June 2010	**Post-doctoral Research Associate** Texas Alliance for Water Conservation Demonstration Project Department of Plant & Soil Science Texas Tech University, Lubbock, TX.
January 2005 - December 2007	**Graduate Research Assistant** Department of Plant & Soil Science Texas Tech University, Lubbock, TX.
July 2004 -December 2004	**Senior Research Associate** Directorate of Maize Research Indian Agricultural Research Institute, Pusa, New Delhi, India.

RESEARCH INTERESTS

Crop production and management with primary interest in improving crop production systems and enhancing their sustainability. Agricultural water management, crop water use, and irrigation management. Studying various biophysical parameters related to crop growth and yield. Impact of global climate change on crop production.

TEACHING EXPERIENCE

PSS 5351 (Lab) Environmental Instrumentation and Measurements (Spring 2007, 2009)

GRANTS (FUNDED)

1. The Texas High Plains: a candidate site for long-term agroecosystems research and education. 2010-11, CSREES-USDA-AFRI, **$ 200,000.** (Collaborator).
2. Comparative evaluation of actual crop water use of forage sorghum and corn for silage. USGS and Texas Water Resources Institute, 2007, **$ 5,000.** (PI).

PROFESSIONAL ACTIVITIES

- ASA National Student Speech Contest Committee. Jan 2010-Dec 2012
- Session Chair, Eddy covariance in Agricultural Studeies, Nov 2010
- Secretary/Treasurer, Association of Agricultural Scientists of Indian Origin (AASIO). Oct 2008-present
- Webpage developer, Association of Agricultural Scientists of Indian Origin (www.aasio.colosatate.edu). May 2008-present
- Session Chairperson, Remote Sensing II session, 9th International Conference on Precision agriculture, 20-23 July, Denver, CO. 2008
- Member, Graduate Student Award Committee, Association of Agricultural Scientists of Indian Origin. 2008
- Elected member, Graduate Advisory Committee, Department of Plant and Soil Science, Texas Tech University. 2005-2006
- Executive Committee Member (student) of the Indian Society of Soil Science (ISSS), Hyderabad Chapter. 2002-2003

REVIEWING ACTIVITIES

Associate Editor, *Agronomy Journal*
Reviewer, *Soil Science Society of America Journal*
Reviewer, *Precision Agriculture*

PUBLICATIONS

1. **Rajan, N**., S. J. Maas., and J. C. Kathilankal. 2010. Crop water use of cotton in the Texas High Plains. *Agronomy Journal (In Press).*
2. **Rajan, N**., and S. J. Maas. 2009. Mapping crop ground cover using airborne multispectral digital imagery. *Precision Agriculture* 10(4): 304-318.
3. Maas, S. J., and **N. Rajan**. 2008. Estimating ground cover of field crops using medium-resolution multispectral satellite imagery. *Agronomy Journal* 100(2): 320-327.

ABSTRACTS, PROCEEDING PAPERS & PRESENTATIONS

*****_presenter_

1. S. J. Maas*., and **N. Rajan**. 2009. Biomass indices. Cotton Incorporated Precision Cotton and COTMAN meetings, 10-12 November, Austin, TX.
2. **Rajan, N***., S. J. Maas, and J. C. Kathilankal. 2009. Evapotranspiration of irrigated and dryland cotton fields determined using eddy covariance and Penman-Monteith methods. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 1-5 November, Pittsburgh, PA. (CD-ROM)
3. S. J. Maas., and **N. Rajan*.** 2009**.** Relation between soil surface resistance and soil surface reflectance. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 1-5 November, Pittsburgh, PA. (CD-ROM)
4. **Rajan, N***., and S. J. Maas. 2008. Acclimation of crops to soil water availability. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 5-9 October, Houston, TX. (CD-ROM)
5. Maas, S. J., and **N. Rajan***. 2008. Estimating plant transpiration and soil evaporation using remote sensing. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 5-9 October, Houston, TX. (CD-ROM)
6. **Rajan, N***., and S. J. Maas. 2008. Comparison of PVI and NDVI for estimating crop ground cover for precision agriculture applications. *In* Proc., 9th International Conference on Precision agriculture. 20-23 July, Denver, CO. (CD-ROM)
7. **Rajan, N***., and S. J. Maas. 2007. Assessing the crop water use of silage corn and forage sorghum using remote sensing and crop modeling. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 4-8 November, New Orleans, LA. (CD-ROM)
8. **Rajan, N***., and S. J. Maas. 2007. Comparison of water use among crops in the Texas High Plains estimated using remote sensing. Abstracts, New Mexico Water Research Symposium. 14 August, Socorro, NM.
9. **Rajan, N***., and S. J. Maas. 2007. Calibrating aerial imagery for estimating crop ground cover. *In* R. R. Jensen, P. W. Mausel, and P. J. Hardin (ed.) Proc., 21st Biennial Workshop on Aerial Photography, Videography, and High Resolution Digital Imagery for Resource Assessment. 15-17 May, Terre Haute, IN. ASPRS, Bethesda, MD.
10. **Rajan, N***., and S. J. Maas. 2006. A spectral crop coefficient for estimating crop water use. Abstracts, Annual Meetings, Amer. Soc. Agronomy. 12-15 November, Indianapolis, IN. (CD-ROM)
11. **Rajan, N***., and S. J. Maas. 2006. Estimating daily and seasonal crop water use of High Plains cropping systems using remote sensing and crop modeling. p. 25-29. *In* R. C. Schwartz, R. L. Baumhardt, and J. M. Bell (ed.) Proc., 28th An. Southern Conserv. Systems Conf., 26-28 June, Amarillo, TX. USDA-ARS, Bushland, TX.
12. Maas, S. J*., **N. Rajan,** J. Ko, J. Duesterhaus, and R. Lascano. 2005. Remote sensing approach for estimating daily crop water use. *In* C. Yang and J. H. Everitt (ed.) Proc., 20th Biennial Workshop on Aerial Photography, Videography, and High Resolution Digital Imagery for Resource Assessment. 4-6 October, Weslaco, TX. ASPRS, Bethesda, MD.

POSTER PRESENTATIONS

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1. **Rajan, N*.,** P. H. Gowda, Matthew Baddock, S. J. Maas, S. Basu, and S. Nair**.** 2009. Vegetation cover mapping at multiple scales using MODIS, Landsat, RapidEye, and Aircraft imageries in the Texas High Plains. Fall meeting, American Geophysical Union. 12-18 December, San Francisco, CA.
2. **Rajan, N***., S. Basu., P. H. Gowda, N. Puppala, and S. J. Maas. Vegetation fraction mapping with artificial neural network and high resolution multispectral aerial imagery acquired during BEAREX07. Fall meeting, American Geophysical Union. 12-18 December, San Francisco, CA.
3. **Rajan, N***., Brosch. S., S. J. Maas, and M. F. Muharam. 2009. Variable rate nitrogen application in cotton using commercially available satellite and aircraft imagery. Annual Meetings, Amer. Soc. Agronomy. 1-5 November, Pittsburgh, PA.
4. Maas, S. J., and **N. Rajan***. 2009. Evaluation of the bare soil line from reflectance measurements on seven dissimilar soils. Joint Annual Meetings, Western Society of Crop Science and Western Society of Soil Science. 22-24 June, Fort Collins, CO.
5. **Rajan, N***., and S. J. Maas. 2007. Using remote sensing and crop models to compare water use of cotton under different irrigation systems. Annual Meetings, American Society of Agronomy. 4-8 November, New Orleans, LA.

REPORTS

1. Maas, S. J., and **N. Rajan**. 2009. Task 5: Plant water use and water use efficiency. An integrated approach to water conservation for agriculture in the Texas Southern High Plains, Texas Alliance for Water Conservation, 4th Annual Report to the Texas Water Development Board.
2. **Rajan, N**. 2008. Comparative evaluation of actual crop water use of forage sorghum and corn for silage. Report submitted to the Texas Water Resources Institute. p.42
3. Maas, S. J., R. Lascano, and **N. Rajan**. 2007. Task 5: Plant water use and water use efficiency. An integrated approach to water conservation for agriculture in the Texas Southern High Plains, Texas Alliance for Water Conservation, 3rd Annual Report to the Texas Water Development Board. p.220-239.
4. Maas, S. J., R. Lascano, and **N. Rajan**. 2006. Task 5: Plant water use and water use efficiency. An integrated approach to water conservation for agriculture in the Texas Southern High Plains, Texas Alliance for Water Conservation, 2nd Annual Report. p.185-193.

AWARDS

- Outstanding Graduate Student, awarded by the Association of Agricultural Scientists of Indian Origin. 2007
- First Prize, Sixth Annual Graduate Student Research Poster Competition held by the Texas Tech Graduate School. 2007
- Edward Zukauckas Scholarship, Department of Plant and Soil Science, Texas Tech University. 2007

- A.W. Young Graduate Student Support Endowment Scholarship, Department of Plant and Soil Science, Texas Tech University. 2006-2007
- Harold & Mary Dregne Graduate Program Endowment Scholarship, Department of Plant and Soil Science, Texas Tech University. 2005-2006
- Junior Research Fellowship (JRF) in Soil Science & Agricultural Chemistry awarded by the Indian Council of Agriculture Research for Master's program in India. 2002-2003

PROFESSIONAL AFFILIATIONS

American Society of Agronomy, Soil Science Society of America, Crop Science Society of America, American Association for the Advancement of Science, Association of Agricultural Scientists of Indian Origin, Association of Women Soil Scientists