**NITHYA RAJAN**
Assistant Professor of Crop Physiology
Dept. of Soil and Crop Sciences, Texas A&M University, College Station, Texas
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**Education/Training**

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| 2007 | PhD | Agronomy, Texas Tech University |
| 2004 | MS | Soil Science, A.N.G.R. Agricultural University, India |
| 2001 | BS | Agriculture, Kerala Agricultural University |

**Positions and Employment**

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| 11/2014- | Assistant Professor, Soil and Crop Sciences, Texas A&M University |
| 7/2010-11/2014 | Assistant Professor (Cropping Systems), Texas A&M AgriLife Research and Extension Center, Vernon, TX |
| 3/2008-6/2010 | Post-doctoral Research Associate; Plant and Soil Science, Texas Tech University |
| 1/2006-12-2008 | Graduate Research Assistant; Plant and Soil Science, Texas Tech University |

**Program Overview**

My current research areas include crop ecophysiology, agroecology and water management of agricultural crops. My research integrates measurements by a variety of techniques such as remote sensing, simulation modeling, soil and boundary layer flux (CO2, water vapor, and greenhouse gases) measurements. It involves scaling up point measurements to the field and landscape scales using modeling and geospatial data. It also includes the development of decision support tools for irrigation management. My other research interests include large scale agroecosystem studies addressing issues such as land use change, water sustainability, and climate change. I currently teach a capstone undergraduate course Crop Production Systems (SCSC 441) each Fall and a graduate course in Crop Physiology (SCSC 607) every other year.

**Significant 5 Year Accomplishments**

Research: Acquired $2,057,056 of which $888,448 went to my research program. Developed and tested a remote sensing based irrigation scheduling tool for cotton. Conducted research on the impact of land use change on energy, water, carbon, and greenhouse gas fluxes associated with changes from conventional, continuous cotton systems to second-generation biofuel feedstocks (biomass sorghum and perennial grasses) in the Southern Cotton Belt region. Conducted research on the effect of irrigation and tillage on growth and water use efficiency of cotton. Demonstrated the use of irrigation management tools. Conducted crop modeling studies involving process-based crop growth simulation models. Since 2011, authored/co-authored 18 peer-reviewed publication. Supervised 2 postdoctoral research associates and 1 Ph. D student. Currently supervising 1 postdoctoral research associate, 3 Ph.D, students and 1 MS student.

**Publications**

***Ten most recent publications (22 total)***

**Graduate Student*

1. Attia, A*., **N. Rajan**, Q. Xue, S. Nair., A. Ibrahim, and D. Hays. 2016. Application of DSSAT-CERES-Wheat model to simulate winter wheat response to irrigation scheduling in the Texas High Plains. Agricultural Water Management, 165: 50-60.
2. Adhikari, P. S. Ale, J. P. Bordovsky, K. R. Thorp, N. R. Modala, **N. Rajan** and E. M. Barnes. 2016. Simulating future climate change impacts on seed cotton yields in the Texas High Plains using the CSM-CROPGRO-cotton model. Agricultural Water Management, 164: 317-330.
3. Attia, A*., **N. Rajan**, G. Ritchie, S. Cui, A. Ibrahim, D. Hays, Q. Xue, and J. Wilborn. 2015. Yield, quality, and spectral reflectance responses of cotton under sub-surface irrigation. Agronomy Journal, 107: 1355-1364.

4. Chen, Y*., S. Ale, **N. Rajan**, C. L. S. Morgan and J. Park. 2015. Hydrological responses of land use change from upland cotton to cellulosic bioenergy crops in the southern High Plains of Texas. Global Change Biology-Bioenergy, DOI: 10.1111/gcbb.12304.
5. **Rajan, N**., S. J. Maas, R. Kellison, M. Dollar, S. Cui, S. Sharma, and A. Attia. 2015. Emitter Uniformity and Application Efficiency for Center-pivot Irrigation Systems. Irrigation and Drainage, 64(3): 353-361.
6. Modala, R., S. Ale, **N. Rajan**, C. Munster, P. DeLaune, K. Thorp, S. Nair, and E. Barnes. 2015. Evaluation of the CSM-CROPGRO-Cotton Model for the Texas Rolling Plains Region and Simulation of Deficit Irrigation Strategies for Increasing Water Use Efficiency. Transactions of ASABE, 58(3): 685-696.
7. Sharma, B., G. L. Ritchie and **N. Rajan**. 2015. Near-Remote Green: Red PVI Ground Cover Fraction Estimation. Crop Science, 55:1-10.
8. **Rajan, N**., N. Puppala, S. Maas, P. Payton, and R. Nuti. 2014. Aerial remote sensing of peanut ground cover. Agronomy Journal, 106(4): 1358-1364.
9. **Rajan, N**., S. Maas, and S. Cui. 2014. Extreme drought effects on evapotranspiration and energy balance of a pasture in the Southern Great High Plains. Ecohydrology, DOI: 10.1002/eco.1574.
10. **Rajan, N** and S. Maas. 2014. Spectral crop coefficient for estimating crop water use. Advances in Remote Sensing, 3(3):197-207.

**Awards and Honors**

- 2012, Outstanding Young Scientist, awarded by the Association of Agricultural Scientists of Indian Origin

**Synergistic Activities**

- Member, ACS530 Early Career Members Committee, 2015-2016, American Society of Agronomy.
- Convenor, 2015 American Geophysical Union Fall Meeting in San Francisco, Dec 14-18. Session: The Land-Water-Energy Nexus: Hydrologic and Carbon Implications of Conventional, Unconventional, and Biofuel-Based Energy Development II
- Member, 2014 Grant Review Panel, U.S. Carbon Cycle Science Program offered jointly by NASA, NIFA, DOE, and NOAA. Washington, DC.
- Judge, C-3 Crop ecology, management, and quality division graduate student poster competition, ASA-CSSA-SSSA Annual Meeting, November 2-5, 2014, Long Beach, CA.
- Associate Editor, Agronomy Journal (2009-Present)
- Chair, Soil Plant Water Relations Community of American Society of Agronomy, Climatology and Modeling Section (2013)

**Professional Experience**

- Advised/co-advised 2 postdoctoral research associates and 1 Ph.D. student.
- Authored/co-authored 22 peer-reviewed journal articles, 1 book chapter, 2 proceedings, and 56 scientific abstracts/presentations.
- Acquired $2,057,056 of which $888,448 went to my program.
- Courses instructed: Crop Production Systems (SCSC 441)