

Paul B. DeLaune

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Texas A&M AgriLife Research at Vernon
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Educational Background:

2002	PhD	Soil Science, University of Arkansas
1999	MS	Agronomy, University of Arkansas
1997	BS	Agronomy, Oklahoma State University
1995	AS	Agronomy, Eastern Oklahoma State College

Experience:

2007-present	Assistant/Associate Professor of Environmental Soil Science, Texas A&M AgriLife Research
2003- 2007	Post-Doctoral Research Associate, Biological & Agricultural Engineering, University of Arkansas
2002- 2003	Post-Doctoral Research Associate, Crop, Soil, and Environmental Sciences, University of Arkansas
1999-2002	Sr. Graduate Research Assistant, Crop, Soil, and Environmental Sciences, University of Arkansas
1997-1999	Graduate Research Assistant, Crop, Soil, and Environmental Sciences, University of Arkansas

Program Overview

My research focuses on protecting water resources while maintaining agricultural production goals in semi-arid cropping systems. Research topics include evaluating tillage and water management strategies and crop rotation options in various cropping systems to improve nutrient and water use efficiencies, carbon and nutrient cycling, crop yields, and subsequent soil water storage. Working directly with producers and private and/or government agencies is crucial to identifying applied research goals and transferring results to engaged stakeholders.

Significant 5 Year Accomplishments

To date, \$5,833,092 in grant dollars have been secured of which \$1,758,177 went directly to my research program. Conducted research showing N fertilizer applications can be reduced by 43-72% when accounting for well water nitrates and crediting toward crop N requirements while maintaining crop yields, saving at least \$29 per acre. Research efforts also led to the removal of the Buck Creek Watershed from the state's impaired stream list, which was shown as impaired for bacteria. Research has shown that the adoption of conservation tillage systems should not negatively affect crop yields or net returns in deficit irrigated systems within the Texas Rolling Plains, particularly during the transition from intensively tilled systems to conservation tilled systems. Data have also indicated that substantial water savings could be realized in irrigated systems through deficit irrigation and adjusting irrigation timing to critical growth stages. Our research in the region has shown that no-till results in a 78% reduction in sediment loss, as much as 52% increase in water infiltration, and 3 times lower losses of nutrients such as phosphorus and ammonium. More recently we have shown that cover crops use significant soil moisture, but soil moisture is recaptured more efficiently and cash crop yields have not been affected. Research has also shown that soil physical properties are enhanced by conservation tillage systems although we do not always see a significant change in soil organic C.

Publications:

DeLaune, P.B., J. W. Sij, S. C. Park, and L. J. Krutz. 2012. Cotton production as affected by irrigation level and transitioning tillage systems. *Agron. J.* 104:991-995.

DeLaune, P.B., and J.W. Sij. 2012. Impact of tillage on runoff in long term no-till wheat systems. *Soil Tillage Res.* 124:32-35.

DeLaune, P.B., J.C. MacDonald, and B.W. Auvermann. 2012. Manure and runoff water quality from feedlots as affected by diet and pen surface. *Trans. ASABE* 55(6): 2319-2324.

DeLaune, P.B., and P.A. Moore, Jr. 2013. 17 β -estradiol in runoff as affected by various poultry litter application strategies. *Sci. Total Environ.* 444:26-31.

DeLaune, P.B., J.W. Sij, and L.J. Krutz. 2013. Impact of soil aeration on runoff characteristics in dual-purpose no-till wheat systems *J. Soil Water Conserv.* 68(4):315-324.

Reiter, M.S., T.C. Daniel, P.B. DeLaune, A.N. Sharpley, and J.A. Lory. 2013. Effects of long-term poultry litter application on phosphorus soil chemistry and runoff water quality. *J. Environ. Qual.* 42:1829-1837.

DeLaune, P.B. and P.A. Moore, Jr. 2014. Factors affecting arsenic and copper runoff from fields fertilized with poultry litter. *J. Environ. Qual.* 43:1417-1423.

DeLaune, P.B. 2015. Impact of cover crops on Texas Rolling Plains cotton production. Beltwide Cotton Conference, San Antonio, TX. 5-7 January, 2015. In Proc. 2015 Beltwide Cotton Conference [CD-ROM].

DeLaune, P.B., J.W. Keeling, M. Kelly, and T. Provin. 2015. Soil properties in long-term conservation tillage cotton cropping systems. Beltwide Cotton Conference, San Antonio, TX. 5-7 January, 2015. In Proc. 2015 Beltwide Cotton Conference [CD-ROM].

Modala, N.R., S. Ale, N. Rajan, C. L. Munster, P. B. DeLaune, K. R. Thorp, S. S. Nair, E. M. 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. *Trans. of the ASABE* 58(3): 685-696.

Memberships

American Society of Agronomy
Crop Science Society of America
Soil Science Society of America

Honors, Activities, and Special Accomplishments

2013 Texas Environmental Excellence Award in Agriculture
2015 Vice-Chair Beltwide Cotton Soil Management & Plant Nutrition Conference
2015 Secretary/Treasurer Southern Branch American Society of Agronomy