

References

- Ahuja, L., Great Plains Agricultural Council, and Colorado Water Resources Research Institute. 1995. Workshop on Computer Applications in Water Management: Proc. of the 1995 Workshop, May 23-25, Colorado State University, Fort Collins, CO. 23-25 May 1995. Information Series No. 79. p. 153-156. Great Plains Agricultural Council, Water Resources Research Institute, and Colorado State University: Fort Collins, CO.
- Beckie, H.J., A.P. Moulin, C.A. Campbell, and S.A. Brandt. 1995. Testing effectiveness of four simulation models for estimating nitrates and water in two soils. *Can. J. Soil Sci.* 75(1):135-143.
- Berry, J. and J.A. Delgado. 2008. Precision conservation. *In* Stanley Trimble (ed.) *Encyclopedia of Water Science*. Markel and Decker, New York. DOI: 10.1081/E-EWS-120042829-electronic.
- Berry, J.K., J.A. Delgado, F.J. Pierce, and R. Khosla. 2005. Applying spatial analysis for precision conservation across the landscape. *J. Soil Water Conserv.* 60(6):363-370.
- Berry, J.R., J.A. Delgado, R. Khosla, and F.J. Pierce. 2003. Precision conservation for environmental sustainability. *J. Soil Water Conserv.* 58(6):332-339.
- Bittman, S., and M.L. Swift. 2010. Nitrogen budgets for agricultural policy and farm management. p.128-161. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Bock, B.R, and G.W. Hergert. 1991. Fertilizer nitrogen management. p. 139-164. *In* R.F. Follett, D.R. Keeney, and R.M. Cruse (eds.) *Managing nitrogen for groundwater quality and farm profitability*. SSSA, Madison, WI.
- Boggia, A. and K.S. Klair. 1995. PLANETOR: The potential to adapt it for Italy. Staff Paper P95-02. University of Minnesota, Department of Applied Economics. 40 p. Available online at <http://purl.umn.edu/14224> (verified 25 Jan 2010).
- Cooke, L. 1991. Computer model helps ensure clean water- Nitrate Leaching and Economic Analysis Package. *Agric. Res.* 39(4):10-12.
- Dabney, S.M., J.A. Delgado, J.J. Meisinger, H.H. Schomberg, M.A. Liebig, T. Kaspar, J. Mitchell, and W. Reeves. 2010. Using cover crops and cropping systems for nitrogen management. p. 231-282. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Daly, C., M. Halbleib, J.I. Smith, W.P. Gibson, M.K. Doggett, G.H. Taylor, J. Curtis and P.P. Pasteris. 2008. Physiographically sensitive mapping of climatological

- temperature and precipitation across the conterminous United States. *Int. J. Climatol.* DOI:10.1002/joc.1688
- Deichert, L.A. and J.M. Hamlet. 1992. Nonpoint groundwater pollution potential in Pennsylvania. ASAE paper No. 922531. Am. Soc. Agric. Eng. International Winter Meeting, Nashville, TN. 15-18 Dec. 1992. 21 p.
- Delgado, J.A. 1998. Sequential NLEAP simulations to examine effect of early and late planted winter cover crops on nitrogen dynamics. *J. Soil Water Conserv.* 53(3):241-244.
- Delgado, J.A. 2001. Use of simulations for evaluation of best management practices on irrigated cropping systems. p. 355-381. *In* M.J. Shaffer et al. (ed.) Modeling carbon and nitrogen dynamics for soil management. Lewis Publishers, Boca Raton, FL.
- Delgado, J.A., 2002. Quantifying the loss mechanisms of nitrogen. *J. Soil Water Conserv.* 57(6):389-398.
- Delgado, J.A. and J.K. Berry. 2008. Advances in Precision Conservation. *Adv. Agron.* 98:1-44.
- Delgado, J.A. and M.J. Shaffer. 2008. Nitrogen management modeling techniques: Assessing cropping systems/landscape combinations. p. 539-570. *In* R.F. Follett and J.L. Hatfield (eds.) Nitrogen in the Environment: Sources, Problems and Management. Elsevier Science, New York, USA.
- Delgado, J.A. and W.C. Bausch. 2005. Potential use of precision conservation techniques to reduce nitrate leaching in irrigated crops. *J. Soil Water Conserv.* 60(6):379-382.
- Delgado, J.A., A.K. Alva, A. Fares, S. Paramasivam, D. Mattos, and K. Sajwan. 2005. Numerical modeling to study the fate of nitrogen in cropping systems and best management case studies. *J. Crop Improvement.* 15(2):421-470.
- Delgado, J.A., M. Shaffer, and M.K. Brodahl. 1998a. New NLEAP for shallow and deep rooted rotations. *J. Soil Water Conserv.* 53(4):338-340.
- Delgado, J.A., M. Shaffer, C. Hu, R. Lavado, J. Cueto Wong, P. Joosse, D. Sotomayor, W. Colon, R. Follett, S. Del Grosso X. Li, and H. Rimski-Korsakov. 2008a. An index approach to assess nitrogen losses to the environment. *Ecol. Eng.* 32:108-120.
- Delgado, J.A., M. Shaffer, C. Hu, R.S. Lavado, J. Cueto Wong, P. Joosse, X Li, H. Rimski-Korsakov, R. Follett, W. Colon and D. Sotomayor. 2006. A decade of change in nutrient management: A new nitrogen index. *J. Soil Water Conserv.* 61(2):62A-71A.

- Delgado, J.A., M.A. Dillon, R.T. Sparks, and S.Y.C. Essah. 2007. A decade of advances in cover crops: Cover crops with limited irrigation can increase yields, crop quality, and nutrient and water use efficiencies while protecting the environment. *J. Soil Water Conserv.* 62(5):110A-117A.
- Delgado, J.A., M.J. Shaffer, H. Lal, S. McKinney, C.M. Gross, and H. Cover. 2008b. Assessment of nitrogen losses to the environment with a Nitrogen Trading Tool (NTT). *Comput. Electron. Agric.* 63: 193-206.
- Delgado, J.A., P. Gagliardi, M.J. Shaffer, H. Cover, E. Hesketh, J.C. Ascough, and B.M. Daniel. 2010a. New tools to assess nitrogen management for conservation of our biosphere. p. 374-410. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Delgado, J. A., C. M. Gross, H. Lal, H. Cover, P. Gagliardi, S. P. McKinney, E. Hesketh, and M. J. Shaffer. 2010b. A new GIS nitrogen trading tool concept for conservation and reduction of reactive nitrogen losses to the environment. *Adv. Agron.* 105:117-171.
- Delgado, J.A., R. Khosla, W. C. Bausch, D.G. Westfall and D.J. Inman. 2005. Nitrogen fertilizer management based on site-specific management zones reduce potential for nitrate leaching. *J. Soil Water Conserv.* 60(6):402- 410.
- Delgado, J.A., R.F. Follett, and M.J. Shaffer. 2000. Simulation of nitrate-nitrogen dynamics for cropping systems with different rooting depths. *Soil Sci. Soc. Am. J.* 64:1050-1054.
- Delgado, J.A., R.F. Follett, J.L. Sharkoff, M.K. Brodahl, and M.J. Shaffer. 1998b. NLEAP facts about nitrogen management. *J. Soil Water Conserv.* 53(4):332-337.
- Delgado, J.A., R.J. Ristau, M.A. Dillon, H.R. Duke, A. Stuebe, R.F. Follett, M.J. Shaffer, R.R. Riggensbach, R.T. Sparks, A. Thompson, L.M. Kawanabe, A. Kunugi, and K. Thompson. 2001a. Use of innovative tools to increase nitrogen use efficiency and protect environmental quality in crop rotations. *Comm. Soil Sci. Plant Anal.* 32(7&8):1321-1354.
- Delgado, J.A., R.R. Riggensbach, R.T. Sparks, M.A. Dillon, L.M. Kawanabe, and R.J. Ristau. 2001b. Evaluation of nitrate-nitrogen transport in a potato-barley rotation. *Soil Sci. Soc. Am. J.* 65:878-883.
- Delgado, J.A., R.T. Sparks, R.F. Follett, J.L. Sharkoff, and R.R. Riggensbach. 1999. Use of winter cover crops to conserve soil and water quality in the San Luis Valley of South Central Colorado. p. 125-142. *In* R. Lal (ed.) *Soil quality and soil erosion*. CRC Press, Boca Raton, FL.

- DiLuzio, M., G.L. Johnson, C. Daly, J.K. Eischeid, and J.G. Arnold. 2008. Constructing retrospective gridded daily precipitation and temperature datasets for the conterminous United States. *J. Applied Meteorology and Climatology*. 47(2):475-497.
- Eischeid, J.K., P.A. Pasteris, H.F. Diaz, M.S. Plantico, and N.J. Lott. 2000. Creating a serially complete National Daily Time Series of Temperature and Precipitation for the Western United States. *J. Applied. Meteor.* 39 (9): 1580-1591.
- Fares, A., M. Safeeq, A. Kimoto, and A. Dogan. 2010. Use of buffers to reduce sediment and nitrogen transport to surface water bodies. p. 283-313. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Follett, J.R., R.F. Follett, and W.C. Herz. 2010. Environmental and human impacts of reactive nitrogen. p. 1-37. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Follett, R.F. 1995. NLEAP model simulation of climate and management effects on N leaching for corn grown on sandy soil. *J. Contam. Hydrol.* 20(3-4):241-252.
- Follett, R.F. and J.A. Delgado. 2002. Nitrogen fate and transport in agricultural systems. *J. Soil Water Conserv.* 57:402-408.
- Follett, R.F., M.J. Shaffer, M.K. Brodahl, and G.A. Reichman. 1994. NLEAP simulation of residual soil nitrate for irrigated and non-irrigated corn. *J. Soil Water Conserv.* 49:375-382.
- Gross, C., J.A. Delgado, S. McKinney, H. Lal, H. Cover, and M. Shaffer. 2008. Nitrogen Trading Tool to facilitate water quality credit trading. *J. Soil Water Conserv.* 63(2):44A-45A.
- Gross, C.M., J.A. Delgado, M.J. Shaffer, D. Gasseling, T. Bunch, and R. Fry. 2010. A tiered approach to nitrogen management: A USDA perspective. p. 411-425. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Hall, M.D., M.J. Shaffer, R.M. Waskom, and J.A. Delgado. 2001. Regional nitrate leaching variability: What makes a difference in northeastern Colorado. *J. Am. Water Resour. Assoc.* 37:139-150.
- Hansen, S., M.J. Shaffer, and H.E. Jensen. 1995. Developments in modelling nitrogen transformations in soil, Chapter 3, pp. 83-107, *In* P.E. Bacon (ed.) *Nitrogen fertilization and the environment*. Marcel Dekker, Inc, New York, NY.
- Hepperly, P.R., K. Kpombrekou-A, and J.G. Davis. 2010. Organic nitrogen systems in the United States. p. 162-183. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances*

- in nitrogen management for water quality. SWCS, Ankeny, IA.
- Herrera, J.M., and J.A. Delgado. 2010. Integrated nitrogen management. p. 94-127. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Khakural, B.R. and P.C. Robert. 1993. Soil nitrate leaching potential indices: Using a simulation model as a screening system. *J. Environ. Qual.* 22:839-845.
- Kraft, G. 1995. Does the best management practices approach adequately protect groundwater? A case study. p. 1-2. *In* *Keeping current: Central Wisconsin Groundwater Center*. March 1995.
- Lal, H. 2010. Nutrient credit trading— a market-based approach for improving water quality. p. 344-361. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Lavado, R.S., J.M. de Paz, J.A. Delgado, and H. Rimski-Korsakov. 2010. Evaluation of best nitrogen management practices across regions of Argentina and Spain. p. 314-343. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Li, X. C. Hu, J.A. Delgado, Y. Zhang, and Z. Ouyan. 2007. Increased nitrogen use efficiencies as a key mitigation alternative to reduce nitrate leaching in north china plain. *Agric. Water Manage.* 89:137-147.
- Long, D.S., and F.J. Pierce. 2010. Precision farming for nitrogen management. p.184-206. *In* Delgado, J.A., and R.F. Follett (eds.) *Advances in nitrogen management for water quality*. SWCS, Ankeny, IA.
- Ma, L., and M.J. Shaffer. 2001. Review of carbon and nitrogen processes in nine U.S. soil nitrogen dynamics models. p. 55-102. *In* M.J. Shaffer et al. (ed.) *Modeling carbon and nitrogen dynamics for soil management*. CRC Press, Boca Raton, FL.
- Ma, L., M.J. Shaffer, and L. Ahuja. 2001. Application of RZWQM for soil nitrogen management. p. 265-302. *In* M.J. Shaffer et al. (ed.) *Modeling carbon and nitrogen dynamics for soil management*. CRC Press, Boca Raton, FL.
- McGinnis, L., J. Suszkiw, and E. Peabody. 2006. Healthy potatoes, healthy people, healthy profit: Improving conservation in the potato field. *Agricultural Research*. 54(5):10-12.
- Meisinger, J., J.A. Delgado, and A. Alva. 2006. Nitrate leaching management. p. 1122–1124. *In* *Encyclopedia soil sci.* Markel and Decker, New York.
- Meisinger, J.J. and J.A. Delgado. 2002. Principles for managing nitrogen leaching. *J. Soil Water Conserv.* 57:485-498.
- Meisinger, J.J., and G.W. Randall. 1991. Estimating nitrogen budgets for soil-crop

- systems. p. 85-124. *In* R.F. Follett, D.R. Keeney, and R.M. Cruse (eds.) Managing nitrogen for groundwater quality and farm profitability. SSSA, Madison, WI.
- Mohtar, R., D. Buckmaster, and S. Fales. 1994. A model for grass growth under grazing system. Proc. ASAE 1994 Winter Meeting, 13-16 December. Atlanta, GA. ASAE paper No.947525. 32 pp.
- Pierce, F.J., M.J. Shaffer, and A.D. Halvorson. 1991. Screening procedure for estimating potentially leachable nitrate-nitrogen below the root zone. p. 259-283. *In* R.F. Follett, et al. (ed.) Managing nitrogen for groundwater quality and farm profitability. SSSA, Inc., Madison, WI.
- Randall, G.W., J.A. Delgado and J.S. Schepers. 2008. Nitrogen management to protect water resources. p. 911-945. *In* Schepers and Raun (ed.) Nitrogen in agricultural systems. SSSA Monograph 49. ASA, CSSA, and SSSA, Madison, WI.
- Randall, G.W., M.J. Goss, and N.R. Fausey. 2010. Nitrogen and drainage management to reduce nitrate losses to subsurface drainage. p. 61-93. *In* Delgado, J.A., and R.F. Follett (eds.) Advances in nitrogen management for water quality. SWCS, Ankeny, IA.
- Ristau, R. (ed.) 1999. San Luis Valley water quality demonstration project (SLVWQDP). Best management practices for nutrient and irrigation management in the San Luis Valley (Ext. Bull). R.J. Ristau (ed.) CSU Coop. Ext., Fort Collins, CO.
- Sadler, E.J., W.C. Bausch, N.R. Fausey, and R.B. Ferguson. 2010. Water management: A key to reducing nitrogen losses. p. 38-60. *In* Delgado, J.A., and R.F. Follett (eds.) Advances in nitrogen management for water quality. SWCS, Ankeny, IA.
- Schepers, J.S., and W.R. Raun. 2010. Nitrogen sensors to fine tune the nutrient management decision making process. p. 207-230. *In* Delgado, J.A., and R.F. Follett (eds.) Advances in nitrogen management for water quality. SWCS, Ankeny, IA.
- Schuff, S. 1992. Nitrates can leach but they can't hide. Colorado Rancher and Farmer. 46(14):6-12.
- Shaffer, M.J. 2002. Nitrogen modeling for soil management. J. Soil Water Conserv. 57 (6): 417-425.
- Shaffer, M.J. and B.K. Wylie. 1995. Identification and mitigation of nitrate leaching hot spots using NLEAP-GIS technology. J. Contam. Hydrol. 20:253-263.
- Shaffer, M.J. and Delgado, J.A. 2002. Essentials of a national nitrate leaching index assessment tool. J. Soil Water Conserv. 57(6):327-335.
- Shaffer, M.J. and J.A. Delgado. 2001. Field techniques for modeling nitrogen management. p. 391-411. *In* R.F. Follett and J.L. Hatfield (ed.) Nitrogen in the

- environment: Sources, problems, and management. 1st ed. Elsevier Science B.V., Amsterdam, The Netherlands.
- Shaffer, M.J. and L. Ma. 2001. Carbon and nitrogen dynamics in upland soils. p. 11-26. *In* M.J. Shaffer et al. (ed.) Modeling carbon and nitrogen dynamics for soil management. CRC Press, Boca Raton, FL.
- Shaffer, M.J. and M.K. Brodahl. 1998. Rule-based management for simulation in agricultural decision support systems. *Comput. Electron. Agric.* 21:135-152.
- Shaffer, M.J., A.D. Halvorson, and F.J. Pierce. 1991. Nitrate Leaching and Economic Analysis Package (NLEAP): Model description and application. p. 285-322. *In* R.F. Follett, D.R. Keeney, and R.M. Cruse (eds.) Managing nitrogen for groundwater quality and farm profitability. SSSA, Madison, WI.
- Shaffer, M.J., B.J. Newton, and C.M. Gross. 2001. An internet-based simulation model for nitrogen management in agricultural settings. *The Scientific World* 1:728-736.
- Shaffer, M.J., B.K. Wylie, R.F. Follett, and P.N.S. Bartling. 1994. Using climate/weather data with the NLEAP model to manage soil nitrogen. *Agric. For. Meteorol.* 69:111-123.
- Shaffer, M.J., J.A. Delgado, C. Gross, R.F. Follett, and P. Gagliardi. 2010. Simulation processes for the Nitrogen Loss and Environmental Assessment Package. p.362-373. *In* Delgado, J.A., and R.F. Follett (eds.) Advances in nitrogen management for water quality. SWCS, Ankeny, IA.
- Shaffer, M.J., K. Lasnik, X. Ou, and R. Flynn. 2001. NLEAP internet tools for estimating $\text{NO}_3\text{-N}$ leaching and N_2O emissions. p. 403-426. *In* M.J. Shaffer et al. (ed.) Modeling carbon and nitrogen dynamics for soil management. CRC Press, Boca Raton, FL.
- Shaffer, M.J., L. Ma, and S. Hansen (ed.) 2001a. Modeling carbon and nitrogen dynamics for soil management. CRC Press, Boca Raton, FL.
- Shaffer, M.J., L. Ma, and S. Hansen. 2001b. Introduction to simulation of carbon and nitrogen dynamics in soils. p.1-10. *In* M.J. Shaffer et al. (ed.) Modeling carbon and nitrogen dynamics for soil management. CRC Press, Boca Raton, FL.
- Shaffer, M.J., M.D. Hall, B.K. Wylie, and D.G. Wagner. 1996. NLEAP/GIS approach for identifying and mitigating regional nitrate-nitrogen leaching. p. 283-294. *In* D.L. Corwin and K. Loague (eds.) Applications of GIS to the modeling of non-point source pollutants in the vadose zone. SSSA Spec. Pub. 48, Soil Sci. Soc. Am., Madison, WI.
- Shaffer, M.J., P.N.S. Bartling, and J.C. Ascough, II. 2000. Object-oriented simulation of integrated whole farms: GPFARM framework. *Comput. Electron. Agric.* 28:29-

49.

- Smith, S.J., and D.K. Cassel. 1991. Estimating nitrate leaching in soil materials. p.165-188. *In* R.F. Follett, D.R. Keeney, and R.M. Cruse (eds.) Managing nitrogen for groundwater quality and farm profitability. SSSA, Madison, WI.
- Van Es, H.M. and J.A. Delgado. 2006. Nitrate leaching index. p. 1119-1121. *In* R. Lal (ed.) Encyclopedia Soil Sci. 2nd ed. Vol. 2. Taylor & Francis Group, New York, NY.
- Walthall, P.M., W.D. Brady, and R.L. Hutchinson. 1996. Cotton production on the Macon Ridge: How to reduce nitrate leached into drinking water? *La. Agric.* 39(2):5-9.
- Williams, J.R., and D.E. Kissel. 1991. Water percolation: An indicator of nitrogen-leaching potential. p. 59-83. *In* R.F. Follett, D.R. Keeney, and R.M. Cruse (eds.) Managing nitrogen for groundwater quality and farm profitability. SSSA, Madison, WI.
- Wylie, B.K., M.J. Shaffer, and M.D. Hall, 1995. Regional assessment of NLEAP NO₃-N leaching indices. *Water Resour. Bull.* 31:399-408.
- Wylie, B.K., M.J. Shaffer, M.K. Brodahl, D. Dubois, and D.G. Wagner. 1994. Predicting spatial distributions of nitrate leaching in northeastern Colorado. *J. Soil Water Conserv.* 49:288-293.
- Xu, C., M.J. Shaffer, and M. Al-Kaisi. 1998. Simulating the impact of management practices on nitrous oxide emissions. *Soil Sci. Soc. Am. J.* 62:736-742.