

References: Bioreactor

Peer Review

Addy, K., A.J. Gold, L.E. Christianson, M.B. David, L.A. Schipper, and N.A. Ratigan. 2016.

Denitrifying Bioreactors for Nitrate Removal: A Meta-Analysis. *Journal of*

Environmental Quality 45: 873-881.

Christianson, L.E., A. Bhandari, and M.J. Helmers. 2012. A Practice-Oriented Review of

Woodchip Bioreactors for Subsurface Agricultural Drainage. *Applied Engineering in*

Agriculture 28(6): 861-874.

Christianson, L.E. and L.A. Schipper. 2016. Moving Denitrifying Bioreactors beyond Proof of

Concept: Introduction to the Special Section. *Journal of Environmental Quality* 45: 757-

761.

Christianson, L.E., C. Lepine, P.L. Sibrell, C. Penn, and S.T. Summerfelt. 2017. Denitrifying

woodchip bioreactor and phosphorus filter pairing to minimize pollution swapping. *Water*

Research 121: 129-139.

Chun, J.A., R.A. Cooke, J.W. Eheart, and M.S. Kang. 2009. Estimation of flow and transport

parameters for woodchip-based bioreactors: I. laboratory-scale bioreactor. *Biosystems*

Engineering 104: 384-395.

Chun, J.A., R.A. Cooke, J.W. Eheart, and M.S. Kang. 2010. Estimation of flow and transport

parameters for woodchip-based bioreactors: II. field-scale bioreactor. *Biosystems*

Engineering 105: 95-102.

- David, M.B., C.G. Flint, L.E. Gentry, M.K. Dolan, G.F. Czapar, R.A. Cooke, and T. Lavaire. 2015. Navigating the Socio-Bio-Geo-Chemistry and Engineering of Nitrogen Management in Two Illinois Tile-Drained Watersheds. *Journal of Environmental Quality* 44: 368-381.
- David, M. B., L.E. Gentry, R.A. Cooke, and S.M. Herbstritt. 2016. Temperature and Substrate Control Woodchip Bioreactor Performance in Reducing Tile Nitrate Loads in East-Central Illinois. *Journal of Environmental Quality* 45: 822-829.
- Fenton, O., M.G. Healy, F.P. Brennan, S.F. Thornton, G.L. Lanigan, and T.G. Ibrahim. 2016. Holistic Evaluation of Field-Scale Denitrifying Bioreactors as a Basis to Improve Environmental Sustainability. *Journal of Environmental Quality* 45: 788-795.
- Feyereisen, G.W., T.B. Moorman, L.E. Christianson, R.T. Venterea, J.A. Coulter, and U.W. Tschirner. 2016. Performance of Agricultural Residue Media in Laboratory Denitrifying Bioreactors at Low Temperatures. *Journal of Environmental Quality* 45: 779-787.
- Ghane, E., N.R. Fausey, and L.C. Brown. 2014. Non-Darcy flow of water through woodchip media. *Journal of Hydrology* 519: 3400-3409.
- Ghane, E., G.W. Feyereisen, and C.J. Rosen. 2016. Non-linear hydraulic properties of woodchips necessary to design denitrification beds. *Journal of Hydrology* 542: 463-473.
- Halaburka, B.J., G.H. LeFevre, and R.G. Luthy. 2017. Evaluation of Mechanistic Models for Nitrate Removal in Woodchip Bioreactors. *Environmental Science and Technology* 51: 5156-5164.

Hang, Q., H. Wang, Z. Chu, B. Ye, C. Li, and Z. Hou. 2016. Application of plant carbon source for denitrification by constructed wetland and bioreactor: review of recent development. Environ Sci Pollut Res 23: 8260-8274.

Hartz, T., R. Smith, M. Cahn, T. Bottoms, S.C. Bustamante, L. Tourte, K. Johnson, and L. Coletti. 2017. Wood chip denitrification bioreactors can reduce nitrate in tile drainage. California Agriculture 71(1): 41-47.

Hoover, N.L., A. Bhandari, M.L. Soupir, and T.B. Moorman. 2016. Woodchip Denitrification Bioreactors: Impact of Temperature and Hydraulic Retention Time on Nitrate Removal. Journal of Environmental Quality 45: 803-812.

Hoover, N.L., M.L. Soupir, R.D. VanDePol, T.R. Goode, and J.Y. Law. 2017. Pilot-Scale Denitrification Bioreactors for Replicated Field Research. Applied Engineering in Agriculture 33(1): 83-90.

Hua, G., M.W. Salo, C.G. Schmit, and C.H. Hay. 2016. Nitrate and phosphate removal from agricultural subsurface drainage using laboratory woodchip bioreactors and recycled steel byproduct filters. Water Research 102: 180-189.

Jaynes, D.B., T.B. Moorman, T.B. Parkin, and T.C. Kaspar. 2016. Simulating Woodchip Bioreactor Performance Using a Dual-Porosity Model. Journal of Environmental Quality 45: 839-838.

Mankiewicz-Boczek, J., A. Bednarek, I. Gagala-Borowska, L. Serwecinskaa, A. Zaborowskic, E. Kolatea, J. Pawelczykc, A. Zaczekd, J. Dziadek, M. Zalewski. 2017. The removal of nitrogen compounds from farming wastewater – The effect of different carbon substrates and different microbial activators. Ecological Engineering 105: 341-354.

Moorman, T.B., T.B. Parkin, T.C. Kaspar, and D.B. Jaynes. 2010. Denitrification activity, wood loss, and N₂O emissions over 9 years from a wood chip bioreactor. Ecological Engineering 36: 1567-1574.

Moorman, T.B., M.D. Tomer, D.R. Smith and D.B. Jaynes. 2015. Evaluating the potential role of denitrifying bioreactors in reducing watershed-scale nitrate loads: A case study comparing three Midwestern (USA) watersheds. Ecological Engineering 75: 441-448.

Pluer, W.T., L.D. Geohring, T.S. Steenhuis, and M.T. Walter. 2016. Controls Influencing the Treatment of Excess Agricultural Nitrate with Denitrifying Bioreactors. Journal of Environmental Quality 45: 772-778.

Porter, M.D., J.M. Andrus, N.A. Bartolero, L.F. Rodriguez, Y. Zhang, J.L. Zilles, and A.D. Kent. 2015. Seasonal Patterns in Microbial Community Composition in Denitrifying Bioreactors Treating Subsurface Agricultural Drainage. Microbial Ecology 70: 719-723.

Robertson, W.D. 2010. Nitrate removal rates in woodchip media of varying age. Ecological Engineering 36: 1581-1587.

Warneke, S., L.A. Schipper, D.A. Bruesewitz, W.T. Baisden. 2011. A comparison of different approaches for measuring denitrification rates in a nitrate removing bioreactor. Water Research 45: 4141-4151.

Weigelhofer, G. and T. Hein. 2015. Efficiency and detrimental side effects of denitrifying bioreactors for nitrate reduction in drainage water. Environ Sci Pollut Res 22: 13534-13545.

Factsheets

Christianson, L. 2011. Woodchip Bioreactors for Nitrate in Agricultural Drainage. Iowa State University Extension and Outreach.

Lassiter, E. and Z.M. Easton. 2013. Denitrifying Bioreactors: An Emerging Best Management Practice to Improve Water Quality. Virginia Cooperative Extension.

Maxwell, B. and F. Birgand. 2016. Woodchip Bioreactors: Overview, Findings, and Future.

Books/Chapters

Aide, M., I. Braden, and S. Svenson. 2016. Edge of Field Technology to Eliminate Nutrient Transport from Croplands: Specific Focus on Denitrification Bioreactors, Soil Contamination - Current Consequences and Further Solutions, Dr. Marcelo Laramendy (Ed.), InTech.

Reports

Strock, J., A. Ranaivoson, G. Feyereisen, K. Spokas, D. Mulla, and M. Roser. 2017. Nutrient removal in agricultural drainage ditches. Final Report, State of Minnesota Department of Agriculture.