

MICA F. McMILLAN, Ph.D.

PROFESSIONAL EXPERIENCE

Demeter Agricultural Consulting , Ft. Lauderdale, FL Manager, Lead Agronomist, Trainer	2019-Present
Urban Horticulture Advisory Board , Broward County, FL	2018-Present
Exacto Inc. and Tria Global Solutions , Sharon, WI RDI Lead Agronomist	2018-2019
Aquatrols Corporation of America , Paulsboro, NJ Research Assistant - > Agronomy Services Manager	2002 – 2018

EDUCATION AND RESEARCH

Ph.D., Soil and Water Science , April 2016 University of Florida, Gainesville, FL Dissertation: "The Influence of Hydrophobicity, Inorganic Amendments and Surfactants on Turfgrass Establishment, Growth and Quality in Constructed Root Zone Mixes."
M.S., Agronomy and Soils , May 2001 Auburn University, Auburn, AL Thesis: "Evaluation of a Commercial VAM Inoculum for Bentgrass and Bermudagrass Putting Greens."
B.S., Agronomy and Soils , May 1997 Auburn University, Auburn, AL

PROJECT MANAGEMENT

- ✦ Agriculture, Peat-Mixer, Turfgrass and Landscape Management- Developed products and solutions to improve water and nutrient use efficiency while enhancing plant growth.
- ✦ Soil Science- Studied the effects of water repellency, soil hydrology and surfactant movement in soils.
- ✦ Water Management- Explored technologies to reduce water use while maintaining plant health and reducing costs to the end user.
- ✦ Seed Coating- Developed seed coatings to enhance germination in water repellent soils and drought affected sites.
- ✦ Novel Technologies-Managed North American field development trials to study novel chemistries in a variety of edaphic environments.
- ✦ Soil/Water Quality- Collaborated with researchers and technical advisors to launch soil and water quality product line.
- ✦ Surfactant/Fungicide/Insecticide Interactions- Explored efficacy of a variety of commonly used pesticides in combination with surfactants.
- ✦ Fertilizer Use Efficiency/Fertilizer Coatings-Demonstrated the influence of block copolymers on slow release and soluble fertilizers.
- ✦ Agriculture Research- Managed field trials with university researchers and growers in a variety of crops throughout the United States.
- ✦ Environmental Stewardship- Evaluated products and cultural practices to maximize sustainability of natural resources.

- ✦ Statistical Analysis and Cooperator Updates- Initiated *Turfscout* program to improve cooperator updates and to streamline registration and regulatory processes.
- ✦ Regulatory and Registration – Penned and provided research documents to verify product efficacy.
- ✦ Communication of technical information formatted specifically for the target audience: growers, cooperators, superintendents, researchers, universities, public and managers.

EXTENSION ACTIVITIES

- In-Service Training – 2019- Present
- Master Gardener Tour and Talk- 2019- Present
- Extension Instructional Videos - 2020
 - Identifying Pests in the Landscape
 - Determining Soil Water Repellency in the Garden and Landscape

TECHNICAL EXPERTISE

- Expert in Excel, Word, PowerPoint and ARM
- Accomplished public speaker
- Skilled in operation of tensiometer, WinRhizo, LiCor, TDR, etc.
- Expert in soil applied chemistries including but not limited to soil surfactants and polyacrylamides
- Accustomed to working globally and sensitive to cultural differences
- Proficient in training and educating on a variety of scientific subjects

PUBLICATIONS

McMillan, M.F., Fidanza, M.F., Kostka, S.J., Moore, K.K., Daroub, S.A. and L. Gettys. Tank Mixing an APG-E Soil Surfactant and Ammonium Sulfate to Improve Nitrogen Uptake and Turfgrass Quality. *In Review*.

McMillan, M.F., Daroub, S.H., Moore, K.K., Erickson, J.E., Kostka, S.J., Sartain, J.B. Methods to Induce Hydrophobicity on Sand. Part I. *In Review*.

McMillan, M.F., Daroub, S.H., Moore, K.K., Erickson, J.E., Kostka, S.J., Sartain, J.B. Methods to Induce Hydrophobicity on Sand. Part II. Evaluating the effects on turfgrass establishment and quality. *In Review*.

McMillan, M.F., Daroub, S.H., Moore, K.K., Erickson, J.E., Kostka, S.J., Sartain, J.B. Improving seed germination under deficit irrigation in a hydrophilic and hydrophobic soil using a soil surfactant seed coating. *In Review*.

McMillan, M.F., Daroub, S.H., Moore, K.K., Erickson, J.E., Kostka, S.J., Sartain, J.B. Golf Course Superintendent wetting agent and amendment survey. *In Review*.

Madsen, M.D., Fidanza, M.F., Barney, N.S., Kostka, S.J., Badrakh, T. and M.F. McMillan. 2016. Low-dose Application of Nonionic Alkyl Terminated Block Copolymer Surfactant Enhances Turfgrass Seed Germination and Plant Growth. *HortTech*. Aug. vol.26:no4:379-385.

Mattox, C.M., McDonald, B.W., Kowaleski, A.R., M.F. McMillan. 2013-2014. 2015. Evaluation of the use of a wetting agent for the control of anthracnose on annual bluegrass in western Oregon. *Plant Dis. Manage. Report*. Vol. 9.

Moore, D., Kostka, S.J., Boerth, T.J., Franklin, M., Ritsema, C.J., Dekker, L.W., Oostindie, K., Stoof, C. and J. Wesseling. 2010. The effect of soil surfactants on soil hydrological behavior, the plant growth environment, irrigation efficiency and water conservation. *J. Hydrol. Hydromech.* 58:3, 142-148.

Fidanza, M.A., J.L. Cisar, S.J. Kostka, J.S. Gregos, M.J. Schlossberg, and M. Franklin. 2007. Preliminary investigation of soil chemical and physical properties associated with type-I fairy ring symptoms in turfgrass. *Hydrological Processes* 21:2285-2290.

Kostka, S.J., Schuermann, G. and M. Franklin. 2007. Alkyl-capped block copolymer surfactants for remediation of soil water repellency and heterogeneous rootzone moisture. *J. of ASTM International* 4(7).

CONFERENCE PROCEEDINGS

McMillan, M.F., Kostka, S.J., Boerth, T., Fidanza, M., Bigelow, C., Cisar, J., Soldat, D., Van Dyke, A., Karas, I. and K. Williams. Monitoring seasonal soil water repellency in USA golf course putting greens. ITRC. 2012. Beijing, China.

Kostka, S.J., Dekker, L.W., Ritsema, C.J., Cisar, J.L. and M.K. Franklin. 2007. Surfactants as management tools for ameliorating soil water repellency in turfgrass systems. Proceedings of the 8th International Symposium on Adjuvants for Agrochemicals (ISAA2007) 6-9. Publisher: International Society for Agrochemical Adjuvants (ISAA) Columbus, Ohio, USA. Editor: RE Gaskin

ABSTRACTS

Kostka, S.J., Lampe, M., van Mondfrans, J., Madsen, M.D. and M.F. McMillan. Development of surfactants seed coating as a viable means of modifying soil water status and Improving stand establishment in a water repellent soil under water deficits. International Turfgrass Research Conference. Brunswick, New Jersey. 2017.

Mattox, C.M., McDonald, B.W., Kowaleski, A.R., McMillan, M.F. and M. Gould. 2013-2014. Reducing anthracnose on a *Poa Annua* putting green with frequent applications of a soil surfactant. ASA-CSSASSA. Phoenix, AZ. 2016.

McMillan, M.F., Reeder, S.R., Daroub, S.H., Moore, K.A., Kostka, S.J., Erickson, J.E., Cisar, J.L., and J. Sartain. Surfactant Effect on Artificially Induced Repellent Sand. ASA-CSSA-SSSA. Phoenix, AZ. 2016.

McMillan, M.F., Madsen, M.A., Daroub, S.H., Kostka, S.J., Erickson, J.E., Moore, K.A., Sartain, J.B. and J.L.Cisar. Surfactant seed coating technology: a method to increased soil moisture and improve rewettability of sands. European Turfgrass Society. Algarve, Portugal. 2016.

Fidanza, M., McMillan, M., Kostka, S.J. and C. Bigelow. An investigation into the use and sustainability of surfactant coated turfgrass seed for the green industry. ISAA. Monterey, CA. 2016.

Duffy, A. and M.F. McMillan. Surfactant effects on municipal sports fields. STMA Conference. Denver, Colorado. 2015.

Kostka, S.J. and M.F. McMillan. Plant health and stress tolerance in turfgrass – challenging existing paradigms. The 2nd World Congress on the Use of Biostimulants in Agriculture. Florence, Italy. 2015.

Kostka, S.J., Lampe, M., van Mondfrans, J. Madsen, M. and M. McMillan. Modifying soil water status and improving stand establishment in a water repellent soil using surfactant coated seed. EGU General Assembly. Vienna, Austria. 2015.

Madsen, M. Herbert, M. Winn, M., McFarland, A., McMillan, M. and S.J. Kostka. Influence of nonionic surfactant seed coatings for promoting germination and plant growth under deficit irrigation and nonoptimal temperatures. ASHS. New Orleans, LA. 2015.

McMillan, M.F., Madsen, M.D., Daroub, S.H., Kostka, S.J., Erickson, J.E., Sartain, J.B. and K.A. Moore. Evaluating surfactant coated seed under deficit irrigation in hydrophobic soils. The 2nd World Congress on the Use of Biostimulants in Agriculture. Florence, Italy. 2015.

McMillan, M. Modifying Soil Water Status and Improving Stand Establishment in a Water Repellent Soil Using Surfactant Coated Seed. ASHS. New Orleans, LA. 2015.

McMillan, M.F., Cisar, J.L. and K.E. Williams. Evaluation of surfactant coating on soluble and slow release fertilizers in bermudagrass. FSHS. St. Augustine, FL. 2015.

Xihong, Xi., M.F. McMillan. Soil water repellency and wetting agent: Introduction and Newest Updates. STMA. Denver, Colorado. 2015

Fidanza, M., McMillan, M., Kostka, S.J. and M.D. Madsen. 2014. An investigation into the potential use and sustainability of surfactant coated turfgrass seed for the green industry. EGU General Assembly 2014, held in Vienna, Austria. 2014

McMillan MF, Cisar JL, Madsen MD. Experimental seed coatings increase percent emergence and cover under deficit irrigation. International Horticultural Congress. Brisbane, Australia. 2014.

McMillan MF, Cisar JL, Madsen MD, Williams K. and S.J. Kostka. Experimental seed coatings improve seed germination and cover in water repellent soils. European Turfgrass Society. Osnabrueck, Germany. 2014.

McMillan, M.F., Cisar, J.L., Park, D.M., Williams, K. E. and S.J. Kostka. Surfactant coated fertilizers enhance quality and increase nitrogen uptake in St. Augustine turfgrass. ASA-CSSA-SSSA Inter. Ann. Meeting. Long Beach, CA. 2014.

Madsen, M.D., Kostka, S.J., Hulet, A., McMillan, M.F. 2013. Establishing turfgrass on water repellent soil with ethylene oxide-propylene oxide block copolymer surfactant seed coatings. Biohydrology Conference, Landau/Pfalz, Germany. 2013.

Madsen MD, Kostka SJ, Hulet A, Mackey BE, Harrison MA, McMillan MF. Surfactant Seed Coating – A strategy to improve turfgrass establishment on water repellent soils. International Symposium on Adjuvants for Agrochemicals. Foz do Iguacu, Brazil. 2013.

McMillan, M., Kostka, S.J., Williams, K.E., Cisar, J.L., and T. Boerth. A summary of soil hydrophobicity trials in U.S. Golf Greens. The Bouyoucos Conference on the Advances in Research on Soil Biological, Chemical and Physical Properties for Sustainable Constructed Rootzones. Philadelphia, PA. 2012.

McMillan, M.F., E.A. Guertal, and J.L. Cisar. 2012. Reducing nitrogen leaching while maintaining quality turfgrass. 8th International Soc. Root Res. Dundee, Scotland.

McMillan, M.F., E.A. Guertal, and J.L. Cisar. 2012. The use of an APG-E surfactant to reduce nitrogen leaching. 33rd Symp. Pesticide Form. and Delivery Syst. Atlanta, GA.

Franklin, M.K., Boerth, T. and S.J. Kostka. The environmental impact of soil surfactants. Biohydrology. Bratislava, Slovakia, 2009.

Franklin, M.K., Kostka, S.J., and T. Boerth. Evaluating Different Surfactant Chemistries on an Inorganic Porous Ceramic Amended Golf Course Green. ASA-CSSA-SSSA Intl Meeting. New Orleans, LA. 2007.

Franklin, M. and S.Kostka. 2006. Evaluating different surfactant chemistries on an inorganic porous ceramic amended golf course green. ASA-CSSA-SSSA. Indianapolis, Indiana. 2006

Franklin, M., Kostka, S. and S. McCann. Evaluating turfgrass performance after surfactant application in a wettable and non-wettable soil. EGU General Assembly, Vienna, Austria, vol. 7. 2006.

TRADE JOURNAL ARTICLE

McMillan, M. Water movement and repellency: putting wetting agents to work. STMA. April 2012: online at <http://sportsturfonline.com/2012/04/17/water-movement-and-repellency-putting-wettingagents-to-work/>

PATENTS

Hydrophilization polymers and methods for use

Publication number:20150113873

Application number: US 14/527,812 Pending.

Seed composition for enhancing germination and plant growth having a low-dose application of non-ionic alkyl terminated block copolymer surfactant

Publication number:WO 20166049525 A1

Application number:PCT/US2015/052353

Pending.

Seed composition and method to improve germination and emergence under adverse soil conditions

Publication number: WO2015195687 A1

Application number: PCT/US2015/036064

Pending.