

# Ryan Dierking, Ph.D.

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**OBJECTIVE** To obtain a position in which I can utilize my education and experience to contribute to a team advancing the knowledge of production agriculture.

## **EDUCATION**

Dec. 2010 **Ph.D. Division of Plant Sciences**  
University of Missouri-Columbia  
Dissertation: Physiological and genetic responses of Mediterranean and Continental tall fescue to cold stress  
GPA 3.7/4.0  
Advisors: Drs. Robert Kallenbach and David Sleper

2008-2010 **Graduate Researcher**  
Samuel Roberts Noble Foundation  
Forage Improvement Division  
Ardmore, Oklahoma  
Supervisors: Drs. Joe Bouton and Malay Saha

The purpose of this collaboration was to construct a linkage map for tall fescue and identify QTLs for fall growth and winter survivability traits for my Ph.D. dissertation.

Dec. 2008 **M.S. Division of Plant Sciences**  
University of Missouri-Columbia  
Thesis: Fatty acid variation between forage species and within populations and fatty acid content of beef finished on pasture with different forage species  
GPA 3.7/4.0  
Advisors: Dr. Robert Kallenbach

May 2005 **B.S. Agronomy**  
University of Missouri-Columbia  
Cum Laude; GPA 3.7/4.0



## **REFEREED PUBLICATIONS**

- R.M. Dierking**, D. J. Allen, S.M. Cunningham, S.M. Brouder, and J.J. Volenec. Nitrogen reserve pools in two *Miscanthus × giganteus* genotypes under contrasting N managements. *Frontiers Plant Sci.* 2017. 8 pp.1618-1630
- R.M. Dierking**, D.J. Allen, S.M. Brouder, J.J. Volenec. Yield, biomass composition, and N use efficiency during establishment of four *Miscanthus × giganteus* genotypes as influenced by N management. *Biomass and Bioenergy.* 2016. 91, pp.98-107.
- R.M. Dierking**, A. Perumal, R.L. Kallenbach, M.C. Saha, D. Kopecký, K. Chekhovskiy, J. Bouton, A. Hopkins. Linkage maps of a Mediterranean x Continental tall fescue (*Festuca arundinacea*) population and their comparative analysis with other Poaceae species. *Plant Genome.* 2015 8:1-18. *doi:10.3835/plantgenome2014.07.0032*
- R.M. Dierking**, R.L. Kallenbach. Mediterranean and Continental Tall Fescue: II. Effects of cold, non-freezing temperatures on leaf extension, proline, fructan, abscisic acid (ABA). *Crop Sci.* 2012 52: 460-469.
- R.M. Dierking**, R.L. Kallenbach. Mediterranean and Continental Tall Fescue: I. Effects of endophyte status on leaf extension, proline, mono- and disaccharides, fructan, and freezing survivability. *Crop Sci.* 2012 52: 451-459.
- R.M. Dierking**, R.L. Kallenbach and I.U. Grün. Effect of Forage Species on Fatty Acid Content and Performance of Pasture Finished Steers. *Meat Sci.* 2010 85:597-605.
- R.M. Dierking**, R. L. Kallenbach, and C. A. Roberts. Fatty Acid Profiles of Orchardgrass, Tall Fescue, Perennial Ryegrass, and Alfalfa. *Crop Sci.* 2010 50: 391-402.
- R.M. Dierking**, R. L. Kallenbach, M. S. Kerley, C. A. Roberts, and T. R. Lock. Yield and Nutritive Value of 'Spring Green' *Festulolium* and 'Jesup' Endophyte-Free Tall Fescue Stockpiled for Winter Pasture. *Crop Sci.* 2008 48: 2463-2469.

## **ORAL/POSTER PRESENTATIONS**

- R.M. Dierking**, A.C. McCloughan, J.L. Breen (2017). Effect of Proximus® on Soil Nitrate Concentrations, Plant Dry Matter, and Yields. ASA-CSSA-SSSA meetings Tampa, FL
- A.C. McCloughan, **R.M. Dierking**, J.L. Breen (2017). Reducing Nitrate Leaching with Proximus®, a New Tool for Nitrogen Management (2017). ASA-CSSA-SSSA meetings Tampa, FL
- J.L. Breen, **R.M. Dierking**, A.C. McCloughan, E.R. Toosi (2017). Proximus®, a New Tool for Reducing Nitrogen Leaching in Agricultural Soils. ASA-CSSA-SSSA meetings Tampa, FL

- E.R. Toosi, A.C. McCloughan, **R.M. Dierking**, J.L. Breen (2017). In Search for Biological Approaches to Mitigate Nitrate Leaching, Proximus Case. ASA-CSSA-SSSA meetings Tampa, FL
- S.K. Talukder, S. Bhamidimarri, **R.M. Dierking**, K. Chekhovskiy, and M.C. Saha (2015). QTL for Traits Related to Summer Dormancy in Tall Fescue. ASA-CSSA-SSSA meetings Minneapolis, MN
- A. Montgomery, **R.M. Dierking**, S. Brouder, I. Chaubey, J. Volenec (2015). The effects of different biofuel crops and fertilizer rates on subsurface water quality and yield on marginal land. Paper No. 152189916. ASABE Annual International Conference. New Orleans, LA.
- R.M. Dierking**, J. Volenec, S. Brouder, D. Allen (2014). Miscanthus Yields and Tissue N Concentrations during Establishment with Various N-Rates Grown on Marginal Soils. ASA-CSSA-SSSA meetings Long Beach, CA
- Diego Trejo-Soria, **R.M. Dierking**, Suzanne Cunnigham, and J. Volenec (2014). Understanding Nitrogen Use, Annual and Perennial Bioenergy Crops. CenUSA meetings Minneapolis, MN
- R.M. Dierking**, J. Volenec and P. Murphy (2013). Forage yield and quality of *Miscanthus x giganteus* subjected to simulated haying/grazing conditions. ASA-CSSA-SSSA meetings Tampa, FL
- Saha M.C., **R.M. Dierking**, S. Bhamidimarri, P. Azhaguvel, M. Trammell, A.A. Hopkins, D. Kopecký, E.C. Brummer (2013). Summer-dormant tall fescue: a savior to the ranchers in hot and dry regions. Satellite Meeting of the 22nd International Grasslands Congress Sydney University
- R.M. Dierking**, J. Volenec and S. Brouder (2012). The Potential of Maize and Sorghum Biomass Grown On Marginal Sites. ASA-CSSA-SSSA meetings Cincinnati, OH
- J. Burks, **R.M. Dierking**, M. Long, L. Rivera, S. Cunningham, S. Brouder, G. Ejeta, and J. Volenec. (2012). Nutrient Use in Bioenergy Cropping Systems. Plant Growth, Nutrition and Environment Interactions Conf., University of Veterinary Medicine, Vienna, Austria.
- R.M. Dierking** and R.L. Kallenbach (2010). The response of tall fescue (*Lolium arundinaceum*) to cold stress. ASA-CSSA-SSSA meetings. Long Beach, CA
- R.M. Dierking**, R.L. Kallenbach, P. Azhaguvel, K. Chekhovskiy, J. Bouton, and M.C. Saha (2010). Tall fescue (*Lolium arundinaceum*) QTLs associated with fall growth, winter survivability, and spring green-up in a Mediterranean x Continental cross. ASA-CSSA-SSSA meetings Long Beach, CA

**R.M. Dierking** and R.L. Kallenbach (2009). Growth characteristics, oligosaccharides, and proline responses in Continental and Mediterranean tall fescue (*Lolium arundinaceum*) under cold temperatures. ASA-CSSA-SSSA meetings. Pittsburgh, PA

**R.M. Dierking** and R.L. Kallenbach (2007). Fatty acid composition in forage species and their influence on pasture finished beef. ASA-CSSA-SSSA meetings. Houston, TX

### **FIELD DAYS/EXTENSION PRESENTATIONS**

Fall 2014 “Second Generation” Bioenergy Harvest and Marketing Meeting. Indiana forage field day. Trafalgar, IN

Fall 2014 Indiana forage field day. Wabash, IN

Fall 2013 Fertilization and yield responses in *Miscanthus x giganteus* and switchgrass. Purdue University Bioenergy Grass Field Tour at Throckmorton Purdue Agricultural Center (TPAC), Lafayette, IN

Fall 2013 Fertilization and yield responses in *Miscanthus x giganteus* and switchgrass. Purdue University CenUSA Field Day relating to Bioenergy Feedstocks at Throckmorton Purdue Agricultural Center (TPAC), Lafayette, IN.

Fall 2010 Cold tolerance mechanisms in tall fescue. University of Missouri Extension Field day at Southwest Center (SWC), Mount Vernon, MO.

### **TEACHING/MENTORING**

2014 Mentored an undergraduate student with the CEN USA grant (Multistate program for undergraduate students with research regarding bioenergy research).

2012 Mentored an undergraduate student taking part in the Research Experience for Undergraduates (REU) program coordinated by the Division of Environmental and Ecological Engineering.

### **REVIEWER**

2014 Reviewer for Crop Science (C06)

### **GRANTS/FELLOWSHIPS**

2013 **R.M. Dierking**, M-J. Orr, J. Volenec, S. Brouder, R. Turco, and R.L. Kallenbach. Proposal 2013-02826: Climate mitigating pastures and management practices. Submitted to:

National Institute of Food and Agriculture (NIFA) Renewable Energy, Natural Resources and Environment (RENRE) program area (A1401). \$500,000. Ranked: 23 Not Funded.

2013 **R.M. Dierking**, J. Volenec, M. Saha, D. Kopecký. Proposal 2013-02146: Mediterranean tall fescue's role in future grazinglands. Submitted to: National Institute of Food and Agriculture (NIFA) Renewable Energy, Natural Resources and Environment (RENRE) program area (A1141). \$500,000. Ranked: Medium Priority. Not Funded.

2012 **R.M. Dierking**, J. Volenec, and R.L. Kallenbach. Evaluation of Talish Clover to the Midwest. Submitted to: Oregon Clover Commission. Not funded.

2006-2010 Division of Plant Sciences Competitive Fellowship (one awarded annually)

### **HONORS/AWARDS**

2010 Robert F Barnes Graduate Student Competition.  
3<sup>rd</sup> place. ASA-CSSA-SSSA meetings, Long Beach, CA.

2008 Robert F Barnes Graduate Student Competition.  
2<sup>nd</sup> place. ASA-CSSA-SSSA meetings, Houston, TX.