DARIUSZ P. MALINOWSKI
Professor of Forage Agronomy

Education/Training

1995 Ph.D. Natural Sciences, Swiss Federal Institute of Technology, Zurich, Switzerland
1989 M.S. Horticulture, Warsaw University of Life Sciences (SGGW), Warsaw, Poland

Positions and Employment

2013-	Professor, Soil and Crop Sciences/Texas AgriLife Research, Texas A&M University System
2007-2013	Associate Professor, Soil and Crop Sciences/Texas AgriLife Research, Texas A&M University System
2001-2007	Assistant Professor, Soil and Crop Sciences/Texas Agricultural Experiment Station, Texas A&M University System
1998-2001	Postdoctoral Research Associate (Forages), Texas Agricultural Experiment Station, Vernon, Texas A&M University System
1996-1998	Visiting Scientist (Forages), USDA-ARS, Appalachian Farming Systems, Research Center, Beaver, WV
1991-1995	Research Assistant (Forage Agronomy and Physiology), Swiss Federal Institute of Technology, Zurich
1989-1991	Research Assistant (Plant Mineral Nutrition), Warsaw University of Life Sciences, Poland

Program Overview

Main objectives of the Forage Systems Research Program are to develop and conduct an integrated team-oriented forage cropping and grazing systems research program, and basic research to investigate the ecological and physiological basis for adaptation and productivity of summer-dormant cool-season perennial grasses and selected under-utilized crops in low rainfall environments, including development of new adapted cultivars using applied breeding approaches. The major areas of emphasis include: 1) Introduction and development of persistent and productive cool-season perennial grasses adapted to environments of the Southern Great Plains; 2) Development of management practices of these new forage crops; 3) Identifying mechanisms responsible for adaptation of cool-season perennial grasses to drought, including interactions with leaf-located *Neotyphodium* fungal endophytes; 4) Development of methods to incorporate annual and perennial legumes into mixed stands with summer-dormant cool-season perennial grasses; 5) Identifying morphological and physiological traits for selection of dual-use wheat with improved forage production and reduced bloat potential; and 6) Determine physiological stress characteristics and cropping potential of non-traditional and under-utilized crops – Breeding of superior winter-hardy hibiscus cultivars (*H. x moscheutos*).

Significant 5-Year Accomplishments (2011-2015)

In the past 5 years, I acquired $480,067 of which $171,000 went to my research program. I developed 3 breeding lines of summer-dormant tall fescue, 2 breeding lines of summer-dormant orchardgrass, and 2 breeding lines of heat-resistant perennial ryegrass, seed of which is currently multiplied by the commercial partner, Grasslands Innovation, New Zealand. My research on summer-dormant cool-season forage grasses contributed to including these new grasses on the list of USDA-NRCS recommended forage grasses for Texas in 2012 and placed the program among the top world-wide research programs on summer-dormancy in grasses. In addition, I have bred the first ever blue and salmon color flowering winter-hardy hibiscus hybrids and disclosed over 180 hibiscus breeding lines to the TAMUS Technology Commercialization, of which 80+ lines are being evaluated by numerous commercial partners in the USA and Europe. I have also released 2 winter-hardy hibiscus cultivars, Blue Angel and Robert Brown. These

achievements have placed our winter-hardy hibiscus breeding program among the best programs world-wide. I have trained 1 postdoc. I have published 19 peer-reviewed journal publications/book chapters.

Refereed Publications - *Ten most recent publications (57 total)*

Javed, S., Rauf, S., Paderewski, J., Malinowski, D.P., Saleem, U., Shahzad, M.. 2015. Evaluation of Egyptian clover (*Trifolium alexandrinum* L.) germplasm through redundancy analysis for forage yield and its components. Crop Science. Accepted for publication (November 2015).

Malinowski, D.P., W.E. Pinchak, B. Min, J.C. Rudd, and J. Baker. 2015. Phenolic compounds affect bloat potential of wheat forage. Crop, Forage and Turfgrass Management. Accepted for publication (October 2015).

Rauf, S., Sienkiewicz-Paderewska, D., Malinowski, D.P., Hussain, M.M., Niazi, I.A.K., Kausar, M.. 2015. Forages: Ecology, Breeding Objectives and Procedures. In: J.M. Al-Khayri et al. (eds) Advances in Plant Breeding Strategies: Agronomic, Abiotic and Biotic Stress Traits. Springer International Publishing AG, Cham, Switzerland. In print.

Emendack, Y., Malinowski, D., Burke, J., Burow, G., Xin, Z. 2014. Morpho-physiological characterization of cold and pre-flowering drought tolerance in grain sorghum (Sorghum bicolor L. Moench) inbreds. American J. Exp. Agric. 4 (12): 1500-1516.

Pitta, D.W., Pinchak, W.E., Dowd, S., Dorton, K., Yoon, I., Min, B.R., Fulford, J.D., Wickersham, T.A., Malinowski, D.P. 2014. Longitudinal shifts in bacterial diversity and fermentation pattern in the rumen of steers grazing wheat pasture. Anaerobe 30:11-17.

Butler, T.J., Malinowski, D.P. 2012. Systems management of perennial and annual grasses. p. 53-57. In C.A. Young, G.E. Aiken, R.L. McCulley, J.R. Strickland and C.L. Schardl. Epichloae, Endophytes of Cool-Season Grasses: Implications, Utilization and Biology. The Samuel Roberts Noble Foundation, Ardmore, Oklahoma, USA. ISBN:978-0-9754303-6-1.

Malinowski, D.P., Belesky, D.P., Ruckle, J.M., Fedders, J.M. 2012. Productivity and botanical composition of orchardgrass -white clover swards in a cool-temperate hill land region. Grassland Science 58:188-200.

Malinowski, D.P., Brown, R.S., Pinchak, W.E. 2012. 'Blue Angel' winter-hardy hibiscus (*Hibiscus x moscheutos* L.). HortScience 47:289–290.

Malinowski, D.P., Brown, R.S., Pinchak, W.E. 2012.'Robert Brown' winter-hardy hibiscus (*Hibiscus x moscheutos* L.). HortScience 47:291–292.

Malinowski, D.P., West, C.P., Belesky, D.P. 2012. The role of endophytes in summer-dormant tall fescue. p. 104-106. In C.A. Young, G.E. Aiken, R.L. McCulley, J.R. Strickland and C.L. Schardl. Epichloae, Endophytes of Cool-Season Grasses: Implications, Utilization and Biology. The Samuel Roberts Noble Foundation, Ardmore, Oklahoma, USA. ISBN:978-0-9754303-6-1.

Awards and Honors

2006 Merit Award. American Forage and Grassland Council. Research on summer-dormant cool-season grasses for Texas.

1998 Outstanding Young Scientist Award. American Forage and Grassland Council (4th out of 5 candidates). Research on *Neotyphodium* sp. endophyte effects on mineral stress tolerance in cool-season grasses.

Professional Experience (Career)

- I have secured $1,507,600 in grants, from which $694,500 went directly to my program.
- I have authored and co-authored 155 publications, 57 of which are refereed publications.
- I have disclosed to TAMUS Technology Commercialization 27 summer-dormant cool-season grass, 186 winter-hardy hibiscus, and 25 Brugmansia breeding lines for commercialization purposes.
- Consultant to 2 international (Japan, France) research programs.
- Examiner on 3 PhD dissertations and supervisor of 2 postdoctoral research associates.