

# James T. Brosnan, Ph.D.

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[tnturfgrassweeds.org](http://tnturfgrassweeds.org)  
[weeddiagnostics.org](http://weeddiagnostics.org)  
[mobileweedmanual.com](http://mobileweedmanual.com)  
Twitter: [@UTturfweeds](https://twitter.com/UTturfweeds)

## Current position

*Professor*, University of Tennessee, Dept. of Plant Sciences.  
*Director*, University of Tennessee Weed Diagnostics Center.

## Areas of specialization

Turfgrass Weed Science; Herbicide Resistance.

## Appointments held

2013-2019 Associate Professor, University of Tennessee  
2010-2015 Co-Director, Center for Athletic Field Safety, University of Tennessee  
2008-2013 Assistant Professor, University of Tennessee  
2007-2008 Assistant Professor/Extension Specialist, University of Hawaii

## Education

2007 Ph.D. in Agronomy, The Pennsylvania State University  
2004 M.S. in Plant, Soil, and Insect Science, The University of Massachusetts Amherst  
2002 B.S. in Turfgrass Science, The Pennsylvania State University

## Recent Refereed Publications

2020 Carroll, D.E., **J.T. Brosnan**, and G.K. Breeden. Annual bluegrass control in bermudagrass using dimethenamid and pendimethalin. *Crop, Forage, and Turfgrass Management*. (*In press*).

- 2020 Sheekoofa, A.S., **J.T. Brosnan**, J.J. Vargas, D.P. Tuck, and M.T. Elmore. Environmental effects on efficacy of herbicides for postemergence goosegrass (*Eleusine indica*) control. *Scientific Reports*. 10:20579. <https://doi.org/10.1038/s41598-020-77570-5>
- 2020 **Brosnan, J.T.**, A. Chandra, R.E. Gaussoin, A. Kowalewski, B. Leinauer, F.S. Rossi, D.J. Soldat, J.C. Stier, and J.B. Unruh. A justification for continued management of turfgrass during economic contraction. *Agricultural and Environmental Letters*. <https://doi.org/10.1002/ael2.20033>
- 2020 Soldat, D.J., **J.T. Brosnan**, A. Chandra, R.E. Gaussoin, A. Kowalewski, B. Leinauer, F.S. Rossi, J.C. Stier, and J.B. Unruh. Estimating economic minimums of mowing, fertilizing and irrigating turfgrass. *Agricultural and Environmental Letters*. <https://doi.org/10.1002/ael2.20032>.
- 2020 Richardson, M.D., **J.T. Brosnan**, J. McCalla, and G.K. Breeden. Fraise mowing can improve herbicidal control of bermudagrass. *Agron. J.* <https://doi.org/10.1002/agj2.20411>
- 2020 **Brosnan, J.T.**, J.J. Vargas, G.K. Breeden, and J.M. Zobel. Herbicide resistance in annual bluegrass (*Poa annua*) on Tennessee golf courses. *Crop, Forage, and Turfgrass Mgmt.* <https://doi.org/10.1002/cft2.20050>
- 2020 Reasor, E.H. and **Brosnan, J.T.** Trinexapac-ethyl applications and light-weight rolling on ultradwarf bermudagrass (*Cynodon dactylon* (L.) Pers. x *C. transvaalensis* Burtt-Davy) putting greens. *Crop, Forage, and Turfgrass Mgmt.* <https://doi.org/10.1002/cft2.20036>
- 2020 Reasor, E.H., **J.T. Brosnan**, and M.S. Woods. A new method to measure bermudagrass (*Cynodon* spp.) golf course putting green ball roll uniformity. *Journal of Testing and Evaluation*. 49. <https://doi.org/10.1520/JTE20180277>.
- 2020 **Brosnan, J.T.**, M.T. Elmore, and M.V. Bagavathiannan. Herbicide resistant weeds in turfgrass: current status and emerging threats. *Weed Technol.* 34:424-430. <https://doi.org/10.1017/wet.2020.29>
- 2020 **Brosnan, J.T.**, M.W. Barrett, and P.B. Bhowmik. Herbicide resistance in turfgrass: a chance to change the future? *Weed Technol.* 34:431-436. <https://doi.org/10.1017/wet.2020.28>
- 2020 **Brosnan, J.T.**, J.J. Vargas, B. Spesard, D. Netzband, J.M. Zobel, J. Chen, and E.L. Patterson. Annual bluegrass (*Poa annua*) resistance to indaziflam applied early-postemergence. *Pest Manag. Sci.* 76:2049-2057. <https://doi.org/10.1002/ps.5740>
- 2020 **Brosnan, J.T.**, G.K. Breeden, J.M. Zobel, A.J. Patton, and Q.D. Law. Non-chemical annual bluegrass (*Poa annua*) management via fraise mowing. *Weed Technol.* 34:482-488. <https://doi.org/10.1017/wet.2019.136>
- 2019 **Brosnan, J.T.** and G.K. Breeden. Postemergence weed control in warm-season turfgrass with a mixture of pyrimisulfan + penoxsulam. *HortScience*. 54:960-963. <https://doi.org/10.21273/HORTSCI13658-18>.
- 2018 Reasor, E.H., **J.T. Brosnan**, J.P. Kerns, W.J. Hutchens, D.R. Taylor, J.D. McCurdy, D.J. Soldat, and W.C. Kreuser. Growing degree day models for plant growth regulator applications on ultradwarf hybrid bermudagrass putting greens. *Crop Sci.* 58:1801-1807. DOI: 10.2135/cropsci2018.01.0077

- 2018 Marble, S.C., M.T. Elmore, and **J.T. Brosnan**. Tolerance of native ornamental grasses to over-the-top applications of Pylex herbicide. *HortScience*. 53:842-849. DOI: 10.21273/HORTSCI112989-18.
- 2018 Dickson, K.H., J.C. Sorochan, **J.T. Brosnan**, J.C. Stier, J. Lee, and W.D. Strunk. Impact of soil water content on hybrid bermudagrass athletic field performance. *Crop Sci.* 58:1416-1425. DOI: 10.2135/cropsci2017.10.0645.
- 2018 Cutulle, M.C., G.R. Armel, D.A. Kopsell, H.P. Wilson, **J.T. Brosnan**, J.J. Vargas, T.E. Hines, and R.M. Koepke-Hill. Several pesticides influence the nutritional content of sweet corn. *J. Agric. Food Chem.* 66: 3086-3092. DOI: 10.1021/acs.jafc.7b05885.
- 2017 Trigiano, R.N., W.E. Klingeman, E. Bernard, S. Boggess, G. Pietsch, and **J.T. Brosnan**. First report of Powdery Mildew on Resucegrass (*Bromus catharticus*) by *Blumeria graminis* in Tennessee. *Plant Disease*. 102:449. DOI: 10.1094/PDIS-08-17-1175-PDN).
- 2017 Breeden, S.M., **J.T. Brosnan**, G.K. Breeden, J.J. Vargas, G. Eichberger, S. Tresch, and M. LaForest. Controlling dinitroaniline resistant goosegrass in turfgrass. *Weed Technology*. 31:883-889
- 2017 Reasor, E.H., **J.T. Brosnan**, M.E. Staton, T. Lane, R.N. Trigiano, P.A. Wadl, J.A. Conner, and B.M. Schwartz. Genotypic and phenotypic evaluation of off-type grasses in hybrid bermudagrass (*Cynodon dactylon* (L.) Pers. x *C. transvaalensis* Burt-Davy) putting greens using genotyping-by-sequencing and morphological characterization. *Hereditas*. DOI: 10.1186/s41065-017-0043-3
- 2017 Dickson, K.H., J.C. Sorochan, **J.T. Brosnan**, J.C. Stier, J.M. Zobel, and A.W. Thoms. Crumb rubber depth is more important than particle size for improving bermudagrass traffic tolerance. *Crop Science*. 57:2837-2842
- 2017 Patton, A.J., L.L. Beck, D.V. Weisenberger, **J.T. Brosnan**, and G.K. Breeden. Evaluation of herbicides for ground ivy (*Glechoma hederacea*) control at two application timings. *Int. Turf. Res. Journal* 13:692-697.
- 2017 **Brosnan, J.T.**, J.J. Vargas, E.H. Reasor, R. Viggiani, G.K. Breeden, and J.M. Zobel. A diagnostic assay to detect herbicide resistance in annual bluegrass (*Poa annua*). *Weed Technology*. 31:609-616.
- 2017 Serensits, T.J., A.S. McNitt, and **J.T. Brosnan**. 2017. Kentucky bluegrass divot resistance as affected by cultivar, trinexapac-ethyl, and soil cultivation. *Crop Science*. 57: S-218-S-226
- 2017 **Brosnan, J.T.**, J.J. Vargas, G.K. Breeden, S.L. Boggess, M.E. Staton, P.A. Wadl, and R.N. Trigiano. Controlling herbicide resistant annual bluegrass (*Poa annua*) phenotypes with methiozolin. *Weed Technology*. 31:470-476.
- 2017 Barton, Em., El. Barton, S. Barton, C. Boyer. **J.T. Brosnan**, P. Hill, J.A. Hoyle, J. Reid, J. Seiger, and E. Stafne. Using technology to enhance extension and outreach. *HortTechnology*. 27:177-186.

- 2017 Jeffries, M.D., T.W. Gannon, **J.T. Brosnan**, and G.K. Breeden. Sprayer setup affects dislodgeable 2,4-D foliar residues from hybrid bermudagrass. *Weed Technology*. 31:269-278.
- 2017 Chandra, A, J.D. Fry, A.D. Genovesi, M. Meeks, M.C. Engelke, Q. Zhang, D. Okeyo, J. Moss, E. Ervin, X. Xong, S. Milla-Lewis. **J.T. Brosnan**, J. Griffin, and L. Parsons. Registration of 'KSUZ 0802' zoysiagrass. *J. Plant Registrations*. 11:100-106.
- 2017 **Brosnan, J.T.**, G.K. Breeden, J.J. Vargas, R.N. Trigiano, S.L. Boggess, and M.E. Staton. Confirmation and control of annual bluegrass resistant to photosystem II inhibiting herbicides. *Int. Turf. Res. Journal*. 13:675-680.
- 2017 Breeden, S.M., **J.T. Brosnan**, T.C. Mueller, G.K. Breeden, B.J. Horvath, and S.A. Senseman. Confirmation and control of annual bluegrass with resistance to prodiamine and glyphosate. *Weed Technology*. 31:111-119.

A total of **90** other peer-reviewed publications from 2005-2016.

A total of **137** popular press and extension publications from 2005-2020.

#### Abstracts & Proceedings

Over **189** published abstracts and proceedings since 2004.

#### Grants

- 2018 Bagavathiannan, M.V., R. Grubbs, J.D. McCurdy, **J.T. Brosnan**, J.S. McElroy, L.B. McCarty, P.E. McCullough, T.W. Gannon, J.B. Unruh, A.J. Patton. S.D. Askew, M.T. Elmore, J.E. Kaminski, A. Kowaleski, D. Ervin, and G. Frisvold. Research and extension to address herbicide resistance epidemic in annual bluegrass in managed turf systems. USDA-SCRI. Four Years: 2018-2022. \$5,700,000.
- 2017 **Brosnan, J.T.** Surveying herbicide resistance in annual bluegrass populations of golf course turf. Golf Course Superintendents Association- Environmental Institute for Golf. Two Years: 2018-2019 (\$20,000)
- 2017 **Brosnan, J.T.** and J.J. Vargas. Developing methods to diagnose herbicide resistance in goosegrass. United States Golf Association. Two years: 2018-2019 (\$78,880)

Funding and support since 2008 in excess of \$6,500,000

#### Awards & Honors

- 2020 Outstanding Paper Award, Crop, Forage & Turfgrass Management
- 2017 Dr. William H. Daniel Award, Sports Turf Managers Association of America
- 2016 Outstanding Educator Award, Northeastern Weed Sci. Soc.
- 2016 Young Crop Scientist Award, Crop Science Society of America.
- 2014 Outstanding Young Weed Scientist Award, Southern Weed Sci. Soc.
- 2014 T.J. Whatley Distinguished Young Scientist Award, UT Institute of Agriculture
- 2013 Outstanding Researcher Award. Northeastern Weed Sci. Soc.

2012  
2011

University of Tennessee QUEST Scholar of the Week  
Tennessee Turfgrass Professional of the Year

### Outreach

Over **557** presentations made at seminars, workshops, and technical meetings at the International, National, State, Multi-state, and Departmental Levels.

Director of the UT Weed Diagnostics Center created to provide stakeholders from across the United States an array of diagnostic tests specific to problematic weeds including weed identification, herbicide resistance screening, and bermudagrass characterization.

Manage UT Extension website, <http://www.tennesseeturfgrassweeds.org/>, that has been visited over 300,433 times by individuals from 199 countries, 50 U.S. states and 276 municipalities across Tennessee since debuting online in 2008.

Developed <http://www.mobileweedmanual.com/> a new mobile website that provides herbicide tolerance information for over 2,400 turf and ornamental species, and labels for nearly 100 different herbicides; all of which are optimized to be easily accessible from the palm of one's hand. Since debuting online in 2013, the site has been visited over 234,120 times by users in 191 countries, all 50 U.S. states, and 268 municipalities in Tennessee.

Coordinate the University of Tennessee Turf & Ornamental Field Day, [#TNTurfTuesday](#) digital learning series, and the [Tennessee Turfgrass Association](#) Conference and Trade Show.