

ANTHONY DENNIS GENOVESI

RESEARCH SCIENTIST TURFGRASS BREEDING, TISSUE CULTURE AND BIOTECHNOLOGY

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PROFESSIONAL EXPERIENCE:

EDUCATION:

Doctor of Philosophy: Texas A&M University, College Station, TX

Major: Genetics

Year: 1978

Dissertation Title: Advances in the development of a somatic cell genetic system for rice (*Oryza sativa*) via anther culture.

Master of Science: Texas A&M University, College Station, TX

Major: Genetics

Year: 1975

Dissertation Title: Heterokaryosis and parasexuality in *Pyricularia oryzae* Cavara.

Bachelor of Science: Univ. Texas at Arlington, Arlington, Texas

Major: Engineering

Year: 1967

EMPLOYMENT HISTORY:

- Research Scientist; September 2014 to present; Associate Research Scientist; September 2009 - 2014; Assistant Research Scientist; December 1998 – August 2009; Texas A&M AgriLife Research and Extension Center, Dallas, TX 75252
- Project Leader; April 1981 – September 1997; DEKALB Genetics Corp., DeKalb, IL
- Post Doctoral Fellow, September 1978 – March 1981; University of Kentucky, Lexington, KY.
- Graduate Assistant; PhD Program; September 1975 - August 1978; Texas A&M University, College Station, TX.
- Graduate Assistant; Master's Program; September 1971 - August 1975; Texas A&M University, College Station, TX.

- Officer, U. S. Army, September 1967 – August 1970; Aberdeen Proving Ground, MD; Redstone Arsenal, AL; Ft. Bliss, TX; Seoul, Korea; White Sands Missile Range, NM.

CURRENT RESEARCH GOALS:

- Responsible for making crosses between elite lines of zoysiagrass and St. Augustinegrass for new variety development and creation of mapping populations.
- Use in vitro technology to germinate the small seeds of turfgrass species to assist in the more efficient production of new breeding populations.
- Use Embryo rescue technique with sterile St. Augustinegrass maternal lines and interspecific crosses. This technology that was developed here for SA, has allowed us to partner with Scotts/Miracle Grow to create hybrid progeny from transgenic polyploid females.
- Identify tissue culture media formulations which allow for the initiation and maintenance of callus capable of whole plant regeneration of zoysiagrass and bentgrass.
- Work with the molecular geneticist to develop in house transform technology using a gene of interest to engineer totipotent calli of various grass species using Agrobacterium-mediated or Biolistics gene transfer. Assist the Breeder to manage the greenhouse operation.
- Assist the Breeder to organize breeding populations for field planting.

PROFESSIONAL SERVICE:

- 2015 Worked with the Breeder to prepare the release document for KSUZ 0802 zoysiagrass.
- 2013 – 2014. Working with the Breeder to prepare release documents of experimental St. Augustinegrasses and zoysiagrass for commercialization.

PEER REVIEWED PUBLICATIONS:

1. **Genovesi, A. D.**, R. W. Jessup, M. C. Engelke, B. L. Burson and A. Chandra. 2015. Interspecific Hybridization between Pembagrass (*Stenotaphrum dimidiatum*) and St. Augustinegrass (*S. secundatum*) Using Embryo Rescue.) Working to re-submit to Crop Science /not as yet accepted).
2. Xiaoen Huang, Fangfang Wang, Ratnesh Singh, James A. Reinert, M.C. Engelke , **Anthony D. Genovesi**, Ambika Chandra, Qingyi Yu. 2015. Construction of high-resolution genetic maps of *Zoysia matrella* 1 (L.) Merrill: applications to QTL mapping of resistance to fall armyworm and comparative genomics analysis. (Submitted to DNA Research/not yet accepted).
3. Chandra, A., J. D. Fry, Genovesi, A. D., Meeks, M., Engelke, M.C., Zang, Q., Okeyo, D., Moss, J., Ervin, E., Xiong, X., Milla-Lewis, S., Brosnan, J., Parson, L., Griffin, J.

2016. Registration of ‘KSUZ 1 0802’ Zoysiagrass. Journal of Plant Registrations (submitted/not accepted).
4. Wang, F-F, R. Singh, **A. D. Genovesi**, A. Chandra and Q.-Y. Yu. 2015. Sequence-tagged high-density genetic maps of *Zoysia japonica* provide new insights into Chloridoideae genome evolution. Plant Journal doi: 10.1111/tpj.12842.
 5. Chandra, A., J. D. Fry, M. C. Engelke, **A. D. Genovesi**, B. G. Wherley, J. A. Reinert, S. P. Metz, Q. Zhang, and D. Okeyo. 2014. Registration of ‘Chisholm’ Zoysiagrass. Journal of Plant Registrations doi:10.3198/jpr2014.04.0020crc.
 4. Chandra, A., **A. D. Genovesi**, B. G. Wherley, S. P. Metz, J. A. Reinert, Y-Z. Wu, P. Skulkaew M. C. Engelke, , J. A. Reinert, , D. Hargey. L. R. Nelson, B. M. Schwartz, P. L. Raymer, Y. Q. Wu, D. L. Martin, S. R. Milla-Lewis, G. Miller, K. E. Kenworthy, and P. Munoz. 2014. Registration of ‘DALSA 0605’ St. Augustinegrass. Journal of Plant Registrations doi:10.3198/jpr2014.05.0036crc.
 5. Jin, S-M. Ji Wang, Xinwang Wang, Dan Sun, Guoliang Li, **A. D. Genovesi** and Shengkui Liu. 2014. Direct and indirect shoot and bulblet regeneration from cultured leaf explants of *Lilium pumilum*, an endangered species. In Vitro Cell.Dev.Biol.—Plant 50:69–75.
 6. Wherley, B., A. Chandra, **A. D. Genovesi**, Mason Kearns, Tim Pepper, and Jim Thomas. 2013. Developmental Response of St. Augustinegrass Cultivars and Experimental Lines in Moderate and Heavy Shade. HortScience 48(8):1047–1051.
 7. Okeyo, D. O., J. D. Fry, D. J. Bremer, A. Chandra, **A. D. Genovesi**, and M. C. Engelke. 2011. Stolon Growth and Tillering of Experimental Zoysiagrasses in Shade. HortScience 46(10):1418–1422.
 8. Metz, S.P., A. Chandra, **A. D. Genovesi** and C. F. Campos. 2011. Comparison of screening methods to evaluate the response of St. Augustine grass to *Magnaporthe oryzae*. Plant Pathology 61(2): 255-261.
 9. Wherley, B., P. Skulkaew, A. Chandra, **A. D. Genovesi**, and M.C. Engelke. 2011. Low-input performance of zoysiagrass (*Zoysia spp.*) cultivars maintained under dense tree shade. HortScience 46(7):1033–1037.
 10. Jessup, R.W., K. Renganayaki, J.A. Reinert, **A.D. Genovesi**, M.C. Engelke, A.H. Paterson, T.L. Kamps, S. Schulze, A.N. Howard, B. Giliberto and B.L. Burson. 2011. Genetic Mapping of Fall Armyworm Resistance in Zoysiagrass. Crop Sci. 51:1774–1783.
 11. Okeyo, D.O., J. D. Fry, D.J. Bremer, A. Chandra, **A.D. Genovesi** and M. C. Engelke. 2011. Stolon Growth Characteristics and establishment rates of zoysiagrass progeny. HortScience 46(1):113–117.
 12. Okeyo, D. O., J.D. Fry, R.A. St. John, A. Chandra, **A.D. Genovesi** and M. C. Engelke. 2010. Recovery growth of Meyer and experimental zoysiagrass progeny after sod harvest. Applied Turfgrass Science doi:10.1094/ATS-2010-1203-01-RS
 13. Schwartz, B.M., K.E. Kenworthy, M.C. Engelke, **A.D. Genovesi**, R.M. Odom, and K.H. Quesenberry. 2010. Variation in 2C nuclear DNA content of *Zoysia spp.* as determined by flow cytometry. Crop Science 50: 1519-1525.
 14. **Genovesi, A. D.**, R.W. Jessup, M. C. Engelke and B. L. Burson. 2009. Interploid St. Augustinegrass [*Stenotaphrum secundatum* (Walt.) Knutze] hybrids recovered by embryo rescue. In Vitro Cell. Dev. Biol.-Plant 45(6): 659-666.

PATENT:

Genovesi, A.D. and R.A. Yingling. June 21, 1994 and August 29, 1995.
SN07/992,637, U.S. Patent No. 5,322,789 and 5,445,961. Isolated Microspore and
Anther Culture of Monocots.

PLANT RELEASES:

Co-author with A. Chandra et al on release documents submitted to the Plant Release
Committee for DALSA 0406 (Renner) St. Augustinegrass and DALZ0102 (Chisholm)
zoysiagrass, DALSA 0605 (TamStar) St. Augustinegrass, DALBG 1201 hybrid
Bluegrass and KSUZ 0802 zoysiagrass.

EXTERNAL GRANT PROGRAM:

Competitive Research Grant Proposal(s):

1. **A. Dennis Genovesi** and A. Chandra (CoPI). Three University Cooperative Effort to Develop Cold Hardy Zoysiagrass Cultivars with Large Patch Tolerance for the Transition Zone. Total amount awarded **\$144,140** from 2012-2017.
2. **A. Dennis Genovesi** and A. Chandra (CoPI). Development of Seeded Zoysiagrass Cultivars with Improved Turf Quality and High Seed Yields. Total amount awarded: **\$89,433** from 2010-2012 by the United States Golf Association. Renewed in 2013-2015 for **\$89, 317**.
3. A. Chandra and **Genovesi, A. D. (CoPI)**. 2013 National Zoysiagrass Evaluation Program (NTEP). **\$11,000** from 2014-2018.

Turfgrass Industry Support:

4. **Genovesi, A. D.**, and A. Chandra (PI). St. Augustinegrass breeding project. Turfgrass Producers of Texas. Total amount awarded: **\$378,000** for FY 2008- May 2014.
5. **Genovesi, A. D.**, and M. C. Engelke (PI). St. Augustinegrass breeding project. Turfgrass Producers of Texas. Total amount awarded: **\$400,000** for FY 2003- May 2007.

SIGNIFICANT COLLABORATIONS:

1. **Genovesi, A. D.**, Chandra, A., Meeks, M., Fry, J., Kennelly, M., Patton, A., Ervin, E., Xiong, X., Sorochan, J., Moss, J., Richardson, M., Miller, G., Nangle, E. 2015. USGA Cold Hardy/Large Patch Cooperative Trial.
2. Fry, J., M. Kennelly, A. Patton, A. Chandra and **A. D. Genovesi**. Three University Cooperative Effort to Develop Cold Hardy Zoysiagrass Cultivars with Large Patch Tolerance for the Transition Zone. USGA Grant 2012 – 2017, Kansas State, Purdue Univ. and TAMU AgriLife - Dallas.
3. **Genovesi, A. D.**, Chunxiang Fu, Zeng Yu Wang and A. Chandra. 2012 - 2014. Transformation of *Zoysia matrella* Using Agrobacterium as a Vector. Noble Foundation Collaboration.

4. Engelke, M. C., J. Fry and **A. D. Genovesi**. 2006 – 2012. Evaluation of DALZ 0102 (Chisholm) in the Transition Zone (Kansas) for Co-Release as a Commercial Cultivar. Kansas State and TAMU AgriLife Research – Dallas.
5. Engelke, M. C., J. Fry (Kansas State), and **A. D. Genovesi**, A. Chandra. 2004 – 2013. Zoysiagrass breeding project where coarse textured, cold hardy zoysias were crossed with fine textured, less cold adapted zoysias to develop cold hardy types with finer texture. Over 600 progeny were screened and the best eight were advanced to multi-state Coop Trials with A. Chandra coordinating. Kansas State, U. Missouri, NC State, Oklahoma State, U. Tennessee, Virginia Tech and TAMU AgriLife – Dallas.