

**Jorge da Silva – Professor**  
**Soil and Crop Science Department**  
**Texas A&M AgriLife Research & Extension Center, Weslaco, TX**  
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### **Education/Training**

- Ph.D. 1993 Cornell University, Ithaca, NY, Plant Breeding  
M.S. 1987 ESALQ, Universidade de São Paulo, Piracicaba, São Paulo, Brazil, Genetics and Plant Breeding  
B.S. 1983 Universidade Federal Rural. Rio de Janeiro, Brazil, Agronomy

### **Appointments**

- 2011 –Current **Professor**, Soil & Crop Science Department, Texas A&M AgriLife. 100 % research assignment, with emphasis on sugarcane genetic breeding using genomics techniques for the State of Texas sugar industry and energy cane genetic breeding for bioenergy.
- 2010 – 2011 **Professor and Associate Center Director**, Professor/Director, Soil & Crop Science Department, Texas A&M AgriLife. Supervise all research activities conducted at the Weslaco center.
- 2009 – 2010 **Director**, Sugarcane Breeding, Syngenta Crop Protection, Sao Paulo, Brazil. Install experiment station and implement sugarcane genetic breeding program.
- 2003 – 2009 **Associate Professor**, Sugarcane Project Leader, Texas AgriLife Research; Soil & Crop Science Department, Texas A&M AgriLife. 100 % research assignment, with emphasis on sugarcane genetic breeding using genomics techniques for the State of Texas sugar industry.
- 2001 – 2003 **Research Scientist**, Sugarcane Project Leader, Texas Agricultural Experiment Station, Soil & Crop Science Department, Texas A&M AgriLife. 100 % research assignment, with emphasis on sugarcane genetic breeding for the State of Texas sugar industry.
- 1987 – 2001 **Senior Research Scientist**, sugarcane genetic breeding, CTC - Centro de Tecnologia Copersucar - Piracicaba, Sao Paulo, Brazil. Research scientist working for the local private sector sugarcane genetic breeding program.
- 1986 – 1987 **Agronomist**, Copener, Alagoinhas, Bahia, Brazil. Working as agronomist in charge of production of grains under irrigation in the state of Bahia, Brazil.
- 1986 **Agronomist**, Meridional Planejamentos Agrícolas., Rio de Janeiro, Brazil. Working as agronomist supervising irrigation projects of grains in different parts of Brazil

### **Consulting Experience:**

- 2008** Syngenta Biotechnology Inc. – Global Evaluation of Sugarcane Technology and Breeding Programs. Assessing different sugarcane genetic breeding programs for Syngenta to choose a country to start its own sugarcane genetic breeding program.
- 2006** E. I. Du Pont de Nemours and Company - Sugarcane Genetic Breeding and Biotechnology. Visit a sugarcane breeding station in Campinas, Brazil, to evaluate its breeding program and help Du Pont to assess its value for a possible joint venture.

### **Program Overview**

Using cutting-edge technologies in molecular biology and plant genetics, my Sugarcane Breeding program at Texas A&M AgriLife Research has developed energy cane cultivars with high biomass yield, in partnership with Chevron Technologies Venture and BP Biofuels, that can be grown in a wider region of Texas and the United States, specifically designed for use in the production of bio-fuels. This program has also optimized efficient capabilities for scaling up production of feedstock planting stock. In addition, applying Next-Generation DNA sequencing techniques my program has identified and isolated genes controlling stress resistance, such as cold, which could prevent losses to the \$3.8 billion US sugar industry and is developing DNA markers to tag important genes controlling cell wall composition and disease resistance.

## Publications

### Ten most recent publications (36 in total)

1. Park, J., Benatti, T., Marconi, T., Yu, Q., Gracia, N. S., Mora, V., da Silva, J. 2015. Cold Responsive Gene Expression Profiling of Sugarcane and *Saccharum spontaneum* with Functional Analysis of a Cold Inducible *Saccharum* Homolog of NOD26-Like Intrinsic Protein to Salt and Water Stress. *PLoS ONE* 10(5): e0125810. doi:10.1371/journal.pone.0125810
2. Park, J-W and da Silva, J. 2015. Hybridization of Sugarcane and other Grasses for Novel Traits. In: *Compendium of Bioenergy Plants: Sugarcane*. Lam, E., Carrer, E., Da Silva, J.A. and Cole, C. (Eds.) CRC Press 129 pp.
3. Pedrozo, C.A. Jifon, J., Barbosa, M.H., da Silva, J.A., Park, J.-W. and Gracia, N.S. 2015. Differential, Morphological Physiological and Molecular Responses to Water Deficit Stress in Sugarcane. *Journal of Plant Breeding and Crop Science*. Vol. 7 (7): 226-233. DOI: 10.5897/JPBCS2015.0500.
4. Monge, J.J., Ribera, L.A., Jifon, J.L., da Silva, J.A. and Richardson, J.W. 2014. Economics and Uncertainty of Lignocellulosic Biofuel Production from Energy Cane and Sweet Sorghum in South Texas. *Journal of Agricultural and Applied Economics*, 46, 4 (November 2014): 457–485.
5. Silva, M. A., Jifon, J.L., Santos, C.M, Jadoski, C.J. and da Silva, J.A. 2013. Photosynthetic Capacity and Water Use Efficiency in Sugarcane Genotypes Subject to Water Deficit During Early Growth Phase. *Braz. Arch. Biol. Technol.* v.56 n.5: pp. 735-748.
6. Park, J-W., Gracia, N.S. Trevino, C., and da Silva, J.A. 2011. Exploitation of Conserved Intron Scanning as a Tool for Molecular Marker Development in the *Saccharum* Complex. *Molecular Breeding*, Digital Object Identifier (DOI) 10.1007/s11032-011-9683-6.
7. Hodnett, G.L., Hale, A.L., Packer, D.J., Stelly, D.M., da Silva, J. and Rooney, W. L. 2010. Elimination of a Reproductive Barrier Facilitates Intergeneric Hybridization of *Sorghum bicolor* and *Saccharum*. *Crop Science*, vol. 50: 1-8.
8. Zhou, M.M. Kimbeng, C. A., da Silva, J.A. and White, W. H. 2010. Cross-resistance between the Mexican Rice Borer and the Sugarcane Borer (Lepidoptera: Crambidae): A Case Study Using Sugarcane Breeding Populations. *Crop Science*, vol. 50: 861-869.
9. Lam, E., J. Shine Jr, J. da Silva, M. Lawton, S. Bonos, M. Calvino, H. Carrer, M. C. Silva-Filho, N. Glynn, Z. Helsel, J. Ma, E. Richard Jr., G. Souza, R. Ming. 2009. Improving Sugarcane for Biofuel: Engineering for an even better feedstock. *Global Change Biology Bioenergy* 1:251-255.
10. Brumbley, S.M., Snyman, S.J., Gnanasambandam, A., Joyce, P., Hermann, S.R., da Silva, J.A.G., McQualter, R.B., Wang, M.-L., Egan, B., Patterson, A.H., Albert, H.H. and Moore, P. H., Sugarcane, in C Kole and T C Hall (Eds.). 2008. "A Compendium of Transgenic Crop Plants: Sugar, Tuber and Fiber Crops", Volume VIII: Sugar, Tuber & fiber Crops. Blackwell Publishing, **Oxford, UK**.

### **Synergistic Activities**

- 1) Chair Person Workshop Sugarcane Production, 6<sup>th</sup>. International Congress of Crop Science. Bento Gonçalves, Rio Grande do Sul, Brazil, August 6-10, 2012.
- 2) Invited Presentation at WORKSHOP TECNOLÓGICO SOBRE MELHORAMENTO GENÉTICO E BIOTECNOLOGIA” Projeto PPPP Etanol – FAPESP – Sao Paulo – Brazil
- 3) Invited Presentation at the Bioenergy Grass Genomics, Plant & Animal Genome XX, San Diego, CA, USA. 01/14/2012 - “Genomic Tools for Cane Wide Hybrids as Energy Feedstock”.
- 4) Invited to review CTC – Centro de Tecnologia Canavieira’s genetic breeding program. Piracicaba, Sao Paulo, Brazil. June 2012.

### **Awards and Honors**

Jorge has been recognized for his excellence in research, being granted the immigrant status as an Outstanding Researcher/Professor by the US government. He has also received the following awards: The Denver T. Loupe Best Presentation at the 2003 32nd. Joint Meeting of the American Society of Sugar Cane Technologists – ASSCT.  
The Denver T. Loupe Best Presentation at the 2005 34th. Joint Meeting of the American Society of Sugar Cane Technologists – ASSCT.