Elesandro Bornhofen, Ph.D.

Genetics and Plant Breeding
192, José Getúlio street, São Paulo/SP - BRA, 01509-000
bornhofenelesandro@usp.br
https://goo.gl/7F9dvG
https://goo.gl/Fw56WP Last update: March 30, 2020

Current research interests

Elesandro has worked with soybean and wheat breeding for over ten years focusing on line development and germplasm enhancement. He has a solid background in statistical tools used to assist breeding decisions. Elesandro's current research interests include genotype-by-environment interaction, plant-pathogen interaction, genome-enabled prediction, high-throughput phenotyping, and spatial analysis as tools for improving the decision-making process in breeding programs. The potential of bridge classical breeding and state-of-the-art tools to develop better crop varieties that will keep meeting the growing food demand is what motivates Elesandro. Additional interests include value investing, financial markets and business.

Education

2015 – 2019 **Ph.D. in Genetics and Plant Breeding**
University of São Paulo,"Luiz de Queiroz" College of Agriculture, Piracicaba, São Paulo, Brazil.
Advisor: Ph.D. Natal A. Vello
Thesis: Genetic analysis reveals opportunities and obstacles of tolerance to the Asian soybean rust fungus.
2018 - Ph.D. sandwich at University of Minnesota
Advisor: Ph.D. Aaron J. Lorenz
Subject: Genomic selection on soybean NAM populations / Breeding for Asian Soybean Rust tolerance.

2018 – pres. **MBA in Business Management**
University of São Paulo - USP/ESALQ

2016 – 2017 **MBA in Project Management**
University of São Paulo - USP/ESALQ
MBA thesis: Associations between global indices of risk management and agricultural development through multivariate analysis.

2013 – 2015 **M.Sc. Agronomy**
Federal University of Technology - UTFPR, Paraná, Brazil.
Advisor: Ph.D. Giovani Benin
Dissertation: Evaluation of genetic and environmental effects on yield improvements, baking quality and stability of wheat.

2008 – 2012 **B.Sc. Agronomy**
Federal University of Technology - UTFPR, Paraná, Brazil.

2005 – 2007 **Agriculture and Livestock Technician**
State Center for Professional Education in the Southwest of Paraná - CEEP-Sudoeste, Paraná, Brazil

Employment History

2017 – 2019 **Doctorate Research Fellow** São Paulo Research Foundation (FAPESP).

2016 – pres. **Master Business Administration Advisor** at PECEGE Institute.

2018 **Visiting Scholar**, University of Minnesota, Saint Paul Campus, Minnesota, USA.

Employment History (continued)

2015 – 2017 **Doctorate Research Fellow** Coordination for the Improvement of Higher Education Personnel (CAPES).

2013 – 2015 **Master's Degree Research Fellow** Coordination for the Improvement of Higher Education Personnel (CAPES).

2012 **Research Intern** Tropical Melhoramento & Genética (TMG), Cambé - PR.

2008 – 2012 **Scientific Initiation Research Fellow** National Council for Scientific and Technological Development (CNPq).

Peer-reviewed Publications

Journal Articles

1. Espolador, F. G., Yassue, R. M., Marosini, J. S., **Bornhofen, E.**, Barbosa, P. A. M., Souza, R. S. e. & Vello, N. A. (2020). Assessing tolerance to Asian soybean rust in soybean inbred lines from exotic and adapted crosses. *Euphytica*, *216*. doi:10.1007/s10681-020-02597-8

2. Souza, R. S., Barbosa, P. A. M., Yassue, R. M., **Bornhofen, E.**, Espolador, F. G., Nazato, F. M. & Vello, N. A. (2020). Combining ability for the improvement of vegetable soybean. *Agronomy Journal*. doi:10.1002/agj2.20322

3. **Bornhofen, E.**, Ramires, T. G., Bergonci, T., Nakamura, L. R. & Righetto, A. J. (2019). Associations between global indices of risk management and agricultural development. *Agricultural Systems*, *173*, 281–288. doi:10.1016/j.agsy.2019.03.006

4. Yassue, R. M., **Bornhofen, E.**, Espolador, F. G., Barbosa, P. A. M., Souza, R. S. e. & Vello, N. A. (2019). Uni and multivariate approaches for diallel analysis in early generation trials for soybean tolerance to rust. *Bragantia*, *78*, 522–534. doi:10.1590/1678-4499.20190037

5. **Bornhofen, E.**, Todeschine, M., Stoco, M., Madureira, A., Marchioro, V. S., Storck, L. & Benin, G. (2018). Wheat Yield Improvements in Brazil: Roles of Genetics and Environment. *Crop Science*, *58*(3), 1082–1093. doi:10.2135/cropsci2017.06.0358

6. **Bornhofen, E.**, Woyann, L. G., Bozi, A. H., Stoco, M. G., Marchioro, V. S. & Benin, G. (2018). Associations between agronomic and bread-making quality traits in wheat: location and crop-year effects. *Científica*, *46*(1), 38–41. doi:10.15361/1984-5529.2018v46n1p38-41

7. Benin, G., Storck, L., Marchioro, V. S., **Bornhofen, E.**, Woyann, L. G. & Trevizan, D. M. T. (2017). Environment-specific selection to identify high yielding wheat genotypes and response to fungicide application. *Ceres*, *64*(2), 167–175. doi:10.1590/0034-737X201764020009

8. **Bornhofen, E.**, Benin, G., Storck, L., Marchioro, V. S., Meneguzzii, C., Miliolii, A. S. & Trevizani, D. M. (2017). Environmental effect on genetic gains and its impact on bread-making quality traits in Brazilian spring wheat. *Chilean journal of agricultural research*, *77*(1), 27–34. doi:10.4067/S0718-58392017000100003

9. **Bornhofen, E.**, Benin, G., Storck, L., Woyann, L. G., Duarte, T., Stoco, M. G. & Marchioro, V. S. (2017). Statistical methods to study adaptability and stability of wheat genotypes. *Bragantia*, *76*(1), 1–10. doi:10.1590/1678-4499.557

10. Storck, L., Benin, G., Marchioro, V. S., Silva, R. R., Woyann, L. G. & **Bornhofen, E.** (2016). Strategy for grouping wheat genotypes according to environmental responses in multi-location trials. *Australian Journal of Crop Science*, *10*(4), 571–578. doi:10.21475/ajcs.2016.10.04.p7450x

11. Todeschini, M. H., Milioli, A. S., Trevizan, D. M., **Bornhofen, E.**, Finatto, T., Storck, L. & Benin, G. (2016). Nitrogen use efficiency in modern wheat cultivars. *Bragantia*, *75*(3), 1–11. doi:10.1590/1678-4499.385

12. **Bornhofen, E.**, Benin, G., Galvan, D. & Flores, M. F. (2015). Épocas De Semeadura E Desempenho Qualitativo De Sementes De Soja. *Pesquisa Agropecuaria Tropical*, *45*(1), 46–55. doi:10.1590/S0100-204X2012000100003

13. Silva, C. L., Benin, G., Rosa, A. C., Beche, E., **Bornhofen, E.** & Capelin, M. A. (2015). Monitoring levels of deoxynivalenol in wheat flour of Brazilian varieties. *Chilean Journal of Agricultural Research*, *75*(1), 50–56. doi:10.4067/S0718-58392015000120007

14. Silva, C. L., **Bornhofen, E.**, Todeschini, M. H., Milioli, A. S., Trevizan, D. M. & Benin, G. (2015). Seleção de genótipos de trigo para rendimento de grãos e qualidade de panificação em ensaios multiambientes. *Ceres*, *62*(4), 360–371. doi:10.1590/0034-737X201562040005

15. Beche, E., Benin, G., **Bornhofen, E.**, Dalló, S. C., Sassi, L. H. & Oliveira, R. (2014). Eficiência de uso de nitrogênio em cultivares de trigo pioneiras e modernas. *Pesquisa Agropecuária Brasileira*, *49*(12). doi:10.1590/S0100-204X2014001200005

16. Lemes, C. S., Benin, G., **Bornhofen, E.**, Matheus, H. T., Dallo, S. C. & Scarparo, L. H. (2014). Characterization of brazilian wheat cultivars in terms of nitrogen use efficiency. *Bragantia*, *73*(2), 1–10. doi:10.1590/brag.2014.012

17. Silva, C. L., Benin, G., **Bornhofen, E.**, Beche, E., Todeschini, M. H. & Milioli, A. S. (2014). Nitrogen use efficiency is associated with chlorophyll content in Brazilian spring wheat. *Australian Journal of Crop Science*, *8*(6), 957–964.

18. **Bornhofen, E.**, Benin, G., Matei, G., Silva, C. L., Beche, E., Pagliosa, E. S., … Pinnow, C. (2013). Capacidade de combinação entre genitores de trigo em duas gerações Combining ability of wheat parents in two generations. *Semina: Ciências Agrárias*, *34*(1), 3129–3140. doi:10.5433/1679-0359.2013v34n6Supl1p3129

19. Viola, R., Benin, G., Cassol, L. C., Pinnow, C., Flores, M. F. & **Bornhofen, E.** (2013). Adubação verde e nitrogenada na cultura do trigo em plantio direto. *Bragantia*, *72*(1), 90–100. doi:10.1590/S0006-87052013005000013

20. Benin, G., **Bornhofen, E.**, Beche, E., Pagliosa, E. S., Silva, C. L. & Pinnow, C. (2012). Agronomic performance of wheat cultivars in response to nitrogen fertilization levels. *Acta Scientiarum. Agronomy*, *34*(3), 275–283. doi:10.4025/actasciagron.v34i3.14468

21. Benin, G., Pinnow, C., da Silva, C. L., Pagliosa, E. S., Beche, E., **Bornhofen, E.**, … Silva, R. R. (2012). Análises biplot na avaliação de cultivares de trigo em diferentes níveis de manejo. *Bragantia*, *71*(1), 28–36. doi:10.1590/S0006-87052012000100005

Conference Proceedings (4 out of 49)

1. Bornhofen, E. & Vello, N. A. (2019). Tolerance to rust-induced stress: A comprehensive study on the benefits and constraints to soybean breeding. In *Proceedings of the crops2019 conference*, Huntsville, Alabama, USA. http://goo.gl/pfdUfm

2. Bornhofen, E., Lorenz, A. & Vello, N. A. (2018). Unraveling the potential use of tolerance as a defense strategy against asian soybean rust. In *Proceedings of the 17th biennial conference on the molecular and cellular biology of the soybean*, Athens, Georgia, USA. http://goo.gl/pfdUfm

3. Bornhofen, E., Vello, N. A., Espolador, F. G., Yassue, R. M. & Nekatschalow, M. C. (2017). Assessing soybean rust tolerance and the impacts on seed traits. In *Proceedings of the 9th brazilian plant breeding congress*, Foz do Iguaçu, Paraná, BR. https://goo.gl/hWrfY2

4 Bornhofen, E., Vello, N. A., Espolador, F. G., Yassue, R. M. & Souza, R. S. (2017). Exploring soybean traits through multivariate analysis in contrasting rust environments. In *Proceedings of the 2nd latin-american conference on plant phenotyping and phenomics for plant breeding*, São Carlos, São Paulo, BR. https://goo.gl/2fy3va

Books and Chapters

1 *Vegetable Soybean*. (2017). Piracicaba, São Paulo, Brazil: Library and documentation division, University of São Paulo, ESALQ/USP. https://goo.gl/iFi5VK

Intellectual Property

Crop variety — UTF 25 - Protected wheat cultivar [MAPA process: 21806.000111/2019] developed at the Federal University of Technology - Paraná | shorturl.at/ilQ17.

Skills

Languages	Strong reading, writing and speaking competencies for English and Portuguese.
Coding	R, LaTeX.
Softwares	ASreml, Photoshop, RStudio, SigmaPlot, Wordpress.
Misc.	Academic research, teaching, training, consultation, statistics, project management, constant improving soft skills, solid interpersonal skills, and strong creative thinking (analytical, problem-solving, open-minded, and organization).

Miscellaneous Experience

Awards and Achievements

2018 **Certification of Achievement (second prize)**, Graduate student poster competition, presented at the 17th Biennial Conference on the Molecular and Cellular Biology of the Soybean, August 26-29th, Athens, Georgia, USA.

Research Internship Abroad (BEPE - FAPESP) process number 2017/24266-0.

2017 **Doctorate Fellowship FAPESP** process number 2017/11235-0.

2015 **Approved in the first position for the Ph.D. program in Genetics and Plant Breeding, ESALQ/USP, 2015/2.**

2014 **Approved for the position of extensionist at EMATER-PR** , process number 148/2014, resolution number 13274.

Leadership & Membership

2014 – 2015 **Graduate Students Representative** at Federal University of Technology, Graduate Program in Agronomy.

2017 – 2019 **Gvenck Member**, Genetics and Plant Breeding Group "Prof. Roland Vencovsky" (Gvenck).

2019 – present **Brazilian Society of Plant Breeding**.

Courses (3 out of 18)

2017 **Introduction to Bayesian Inference (16h)**, Department of Statistics, University of São Paulo, ESAL/USP, Piracicaba, São Paulo.

Miscellaneous Experience (continued)

2016 **Mixed models and variance components (120h)**, Department of Statistics, University of São Paulo, ESALQ/USP, Piracicaba, São Paulo.

2013 **Techniques for a better public speaking (21h)**, National Service for Commercial Training - Senac, Pato Branco, Paraná.

International Events (8 out of 13)

2019 **Brazilian Congress of Plant Breeding**, Águas de Lindóia, São Paulo, BRA.

CROPS2019: Improving agriculture through genomics, Huntsville, Alabama, USA.

2018 **2nd International Meeting on Plant Breeding (*organizing committee*)**, Piracicaba, São Paulo, BRA.

SOY2018 Conference: 17th Biennial Conference on the Molecular and Cellular Biology of the Soybean, Athens, Georgia, USA.

New Frontiers in Genetic Evaluation, Dupont/Pioneer headquarters, Johnston, Iowa, USA.

University of Minnesota Plant Sciences Symposium - From markers to markets, Saint Paul, Minnesota, USA.

2017 **Second Latin-American Conference on Plant Phenotyping and Phenomics for Plant Breeding**, Embrapa Instrumentation, São Carlos, São Paulo, BRA.

9th Brazilian Congress of Plant Breeding, Foz do Iguaçu, Paraná, BRA.

References

Available upon request