ROGÉRIO de S. NÓIA JÚNIOR

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I am an expert in analyzing agricultural production systems to quantify their resilience to extremes and climate change. My research includes crop ecophysiology to climate extremes and the use of statistical and crop simulation to support sustainable decision-making processes of farmers and agricultural policy makers. I am part of various research groups, including AgMIP, and actively collaborate with a diverse array of scientists from prestigious research institutions such as Arvalis, ZALF, JRC European Commission, NASA Goddard Institute for Space Studies, Wageningen University, Technical University of Munich and many more.

Education

PhD in Natural Sciences, Technical University of Munich, Germany (Jan 2021 – Nov 2023) – Supervised by Senthold Asseng

- Graduation with summa cum laude
- PhD thesis: Implications of extremes lows of wheat production to global food security. Available here
- The PhD research is in cooperation with several international institute and universities, among them Arvalis, INRAE, ZALF, JRC European Commission, NASA Goddard Institute for Space Studies, University of Lleida, and others.

Master of Science in Agricultural Engineering Systems, ESALQ – University of São Paulo, Brazil (Feb 2017 – Jul 2019) – Supervised by Paulo Cesar Sentelhas

- Graduation with distinction (GPA 10/10)
- Master thesis: Soybean and maize off-season sowing dates when cultivated in succession: impacts of climate variability on yield and profitability. Available here

Bachelor in Agronomy, Federal University of Espírito Santo, Brazil (Jan 2011 – Jan 2017) - Supervised by José E. M. Pezzopane

- Graduation with distinction (GPA 8.75/10)
- Bachelor thesis: Characterization of photosynthesis and transpiration in two rubber tree clones exposed to thermal stress. Available here
- Exchange program in Agri-environmental Sciences at University of Milan from August 2013 to August 2014.
- Trainee assistant of Genetics in Agriculture in 2015.
- Trainee assistant of Agricultural Meteorology in 2016.
- Trainee research assistant in 2012, 2013, 2015 and 2016.

Technical course in Agriculture, Federal Institute of Espírito Santo, Brazil (Feb 2008 – Dec 2010)

- Technical course together with high school studies.

Professional experience

Agricultural Model Intercomparison and Improvement Project, AgMIP (May 2019 – present)

- Co-leader of the waterlogging wheat team.

Postdoctoral Researcher at French National Institute for Agricultural and Environment Research - INRAE (Feb 2024 – present) – Supervised by Pierre Martre

- Co-leader of researches on the adaptation of agricultural systems to climate change.

Lecturer and supervisor of BSc and MSc students at Technical University of Munich - TUM (Jan 2021 – Dec 2023)

- Lecturer of 'R for crop modeling' for MSc students.
- Lecturer of 'Programming for data science in agriculture' for MSc students.
- Lecturer of 'Climate change and agriculture' for BSc and MSc students.
- Supervisor of a Msc and BSc thesis and research projects. Full studies available here: MSc thesis and Project.

Consultant at the Public Policy Group in Agriculture of University of São Paulo (Jan 2021 – Jan 2024)

- Co-led the creation of a soybean crop monitoring system with a crop simulation model for the National Supply Company of Brazil (CONAB, MonitoraSafra).
- Contributed to the creation of an agricultural risk sector of the Itaú Bank, the largest bank in the southern hemisphere of the world.
- Sustainability and agricultural risk consultancy for BOCOM and JBS.

Researcher at University of Florida, USA (Nov 2018 – Dec 2020)

- Member of the Southeast Partnership for Advanced Renewables from Carinata (SPARCS), with the aim of inserting carinata crop into a double cropping system in the Southeastern USA.
- Consultant of the Agro-climate Group, with the goal of creating tools for managing climate risk in agriculture.

Scientific review activities

- Reviewer of 20 peer reviewed journals (2019 - present), including International Journal of Climatology, Agricultural Systems, Field Crop Research, Agricultural and Forest Meteorology, Environmental Research Letters, and others.

Skills

- R programing.
- Experience with several crop simulation models platforms, including APSIM, SIMPLE, FAO-AEZ and DSSAT, and machine learning for crop yield estimation.
- Speak Portuguese, English, Italian and basic French and Spanish.

Selected publications (Full list of publications in Google Scholar)

1. **Nóia Júnior**, R. de S. *et al.* The extreme 2016 wheat yield failure in France. *Global Change Biology* 29, 3130–3146 (2023).
2. **Nóia Júnior**, R. de S. *et al.* A call to action for global research on the implications of waterlogging for wheat growth and yield. *Agricultural Water Management* 284, 108334 (2023).
3. **Nóia Júnior**, R. de S. *et al.* A simple procedure for a national wheat yield forecast. *European Journal of Agronomy* 148, 126868 (2023).
4. **Nóia Júnior**, R. de S. *et al.* Needed global wheat stock and crop management in response to the war in Ukraine. *Global Food Security* 35, 100662 (2022).
5. **Nóia Júnior**, R. de S. *et al.* Brassica carinata as an off-season crop in the southeastern USA: Determining optimum sowing dates based on climate risks and potential effects on summer crop yield. *Agricultural Systems* 196, 103344 (2022).
6. **Nóia Júnior**, R. de S. *et al.* Extreme lows of wheat production in Brazil. *Environmental Research Letters* 16, 104025 (2021).
7. **Nóia Júnior**, R. & Sentelhas, P. C. Yield gap of the double-crop system of main-season soybean with off-season maize in Brazil. *Crop and Pasture Science* 71, 445 (2020).
8. **Nóia Júnior**, R. de S., Fraisse, C. W., Karrei, M. A. Z., Cerbaro, V. A. & Perondi, D. Effects of the El Niño Southern Oscillation phenomenon and sowing dates on soybean yield and on the occurrence of extreme weather events in southern Brazil. *Agricultural and Forest Meteorology* 290, 108038 (2020).
9. **Nóia Júnior**, R. de S. & Sentelhas, P. C. Soybean-maize off-season double crop system in Brazil as affected by El Niño Southern Oscillation phases. *Agricultural Systems* 173, 254–267 (2019).
10. **Nóia Júnior**, R. de S. & Sentelhas, P. C. Soybean-maize succession in Brazil: Impacts of sowing dates on climate variability, yields and economic profitability. *European Journal of Agronomy* 103, (2019).
11. **Nóia Júnior**, R. D. S., Fraisse, C. W., Cerbaro, V. A., Karrei, M. A. Z. & Guindin, N. Evaluation of the Hargreaves-Samani Method for Estimating Reference Evapotranspiration with Ground and Gridded Weather Data Sources. *Applied Engineering in Agriculture* 35, 823–835 (2019).
12. **Nóia Júnior**, R. de S. *et al.* Ecophysiological acclimatization to cyclic water stress in Eucalyptus. *Journal of Forestry Research* (2019) doi:10.1007/s11676-019-00926-9.
13. **Nóia Júnior**, R. S., do Amaral, G. C., Pezzopane, J. E. M., Toledo, J. V. & Xavier, T. M. T. Ecophysiology of C3 and C4 plants in terms of responses to extreme soil temperatures. *Theoretical and Experimental Plant Physiology* 30, (2018).
14. **Nóia Júnior**, R. S., Schwerz, F., Safanelli, J. L., Rodrigues, J. C. & Sentelhas, P. C. Eucalyptus rust climatic risk as affected by topography and ENSO phenomenon. *Australasian Plant Pathology* (2018) doi:10.1007/s13313-018-0608-2.
15. **Nóia Júnior**, R. de S. *et al.* Characterization of photosynthesis and transpiration in two rubber tree clones exposed to thermal stress. *Brazilian Journal of Botany* 1–10 (2018) doi:10.1007/s40415-018-0495-3.

Achievements and Awards

- Rated as an excellent lecturer by TUM master's students in 2023.
- IPCC scholarship awards for climate-related science in 2021.
- Science without Borders – Scholarship for the best Brazilian undergraduate students in 2013.