Caio L. dos Santos

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Summary

I am currently a Ph.D. student in the Agronomy department at Iowa State University. Most of my research is focused on utilizing crop models, such as the Agricultural Production Systems Simulator (APSIM) to assess spatial and temporal variability of cropping systems. The goal is to assess the risk associated with different management decisions. There are several research areas that fascinate me. A short list of those would be: crop physiology, crop models, remote sensing, soil fertility, and statistical models.

Education

PhD, Crop Production and Physiology — 2020 – present
Minor in Statistics — Expected graduation:
Iowa State University — Dec 2025

M.S., Crop, Soil, and Environmental Sciences — 2018 – 2020
University of Arkansas
Thesis: Managing Corn Nitrogen Fertility in Arkansas Based on Data from an Unmanned Aerial System

B.S., Agricultural Engineering — 2013-2018
College of Agriculture "Luiz de Queiroz" / University of Sao Paulo

Publications

a. Peer-reviewed Papers

Pessotto, M. V., Roberts, T.L., Bertucci, M., **dos Santos**, C., Ross, J., and Savin, M. 2023. Determining cardinal temperatures for eight cover crop species. Agrosystems, Geosciences & Environment, 6, e20393.

dos Santos, C. L., Miguez, F. E., King, K. A., Ruiz, A., Sciarresi, C., Baum, M. E., Danalatos, G. J. N., Stellman, M., Wiley, E., Pico, L.O., Thies, A., Puntel, L. A., Topp, C. N., Trifunovic, S., Eudy, D., Mensah, C., Edwards, J. W., Schnable, P. S., Lamkey, K. R., … , and Archontoulis, S. V. 2023. Accelerated leaf appearance and flowering in maize after four decades of commercial breeding. Crop Science, 1–13.

Ruiz, A., Trifunovic, S., Eudy, D.M., Sciarresi, S. C., Baum, M., Danalatos, G.J.N., Elli, E.F., Kalogeropoulos,G., King, K., **dos Santos, C.L.**, Thies, A., Pico, L.O., Castellano, M.J., Schnable, P.K., Topp, C., Graham, M., Lamkey, K.R., Vyn, T.J., and Archontoulis, S.V. 2023. Harvest Index has increased over the last 50 years of maize breeding. Field Crops Research, 300, 10900.

dos Santos, C.L.; Abendroth, L.J.; Coulter, J.A.; Nafziger, E.D.; Suyker, A.; Yu, J.; Schnable, P.S.; Archontoulis, S.V. 2022. Maize Leaf Appearance Rates: A Synthesis From the United States Corn Belt. Frontiers in Plant Science, 13.

dos Santos, C.L., T.L. Roberts, and L.C. Purcell. 2021. Leaf Nitrogen Sufficiency Level Guidelines for Midseason Fertilization in Corn. Agronomy Journal, 113, 1974-1980.

dos Santos, C.L., T.L. Roberts, L.C. Purcell. 2020. Canopy greenness as a midseason nitrogen management tool in corn production. Agronomy Journal. 112, 5279-5287.

dos Santos, C.L., M. Salmerón, and L.C. Purcell. 2019. Soybean phenology prediction tool for the Midsouth. Agricultural and Environmental Lettters, 4, 190036.

dos Santos, C.L., A.F. De Borja Reis, P. Mazzafera, J.L. Favarin. 2018. Determination of the water potential threshold at which rice growth is impacted. Plants 7, 48.

b. Extension Publications

Purcell, L.C., **C.L. dos Santos** , and M. Salmerón. 2021. Soybean Development Stage Predictions. Cooperative Extension Service, University of Arkansas.

dos Santos, C.L., T.L. Roberts and L.C. Purcell. 2020. Dark Green Color Index as a midseason nitrogen management tool in corn production systems. In N.A.Slaton (eds.). Wayne E. Sabbe Arkansas Soil Fertility Studies 2019, (In press). Arkansas Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville.

dos Santos, C.L., T.L. Roberts and L.C. Purcell. 2020. Nitrogen sufficiency level guidelines for pretassel fertilization in Arkansas. In N.A.Slaton (eds.). Wayne E. Sabbe Arkansas Soil Fertility Studies 2019, (In press). Arkansas Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville.

dos Santos, C.L., L.C. Purcell, and W.J. Ross. 2018. Developing a new staging system for soybean. In: J.D. Ross (eds.). Arkansas Soybean Research Series 2016. (In press). Arkansas Agricultural Experiment Station, University of Arkansas Division of Agriculture, Fayetteville.

Hard skills

- R programming
- Python programming
- Data management
- Drone license (Part 107)
- Drone image processing
- Satellite image processing
- Crop models (APSIM)

Software

Soystage – Online decision support tool for the Midsouthern U.S. http://soystage.uark.edu	2019
pacu: Precision Agriculture Computational Utilities https://github.com/cldossantos/pacu	2024

Awards/Recognition

Agronomy Teaching Fellowship, Department of Agronomy, Iowa State University, 2023.

Outstanding Master's student in the Crop, Soil, and Environmental Sciences Department at the University of Arkansas, 2020.

2nd Place in the master's division at Gamma Sigma Delta Student Competition, 2019. Fayetteville, Arkansas.

Service and Offices Held

Member of the Curriculum Comittee	2019
President of the Crop, Soil, and Environmental Sciences Graduate Student Club	2019
Vice president of the Crop, Soil, and Environmental Sciences Graduate Student Club	2018
Scientific Initiation Scholarship – Sao Paulo Research Foundation (FAPESP)	2017
Manager of the Group of Agricultural Experimentation	2016

Teaching experience

Teaching assistant in Crop Development, Production, and Management (AGRON 280) – Iowa State University	2023
Guest Lecturer in Soybean Production (CSES 3322) – University of Arkansas	2023
Teaching assistant in Crop and Soil Modeling (AGRON 525) – Iowa State University	2022 – 2023
Teaching assistant in Soil Fertility (CSES 5114) – University of Arkansas	2019