JOSEFINA LACASA

PhD candidate in Agronomy
MSc in Statistics
Kansas State University

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Education

PhD in Agronomy, Kansas State University, 2021-2024 (expected)
    Advisor: Dr. I.A. Ciampitti (Professor, Farming Systems)
    Dissertation topic: Statistical Inference and Applications of the Critical Nitrogen Dilution Curve

MSc in Statistics, Kansas State University, 2021-2023
    Advisor: Dr. T.J. Hefley (Professor, Statistics)
    Report topic: A Bayesian Approach for Estimating and Checking Block Designs in Agricultural Experiments

BS in Agronomy, University of Buenos Aires, 2015-2020
    Advisor: Dr. M.E. Otegui (Professor, Crop physiology)
    Thesis topic: Comparison of maize hybrids with contrasting relative maturity
    Study Abroad program at Kansas State University (GPA 4/4), 2019

References

Professor Ignacio Ciampitti, Department of Agronomy, Kansas State University. ciampitti@ksu.edu
Professor Trevor Hefley, Department of Statistics, Kansas State University. thefley@ksu.edu
Professor Maria Otegui, Department of Crop Production, University of Buenos Aires. otegui@agro.uba.ar

Research interests

Crop physiology, Agronomy, Applied Statistics, Bayesian Statistics.

Research Experience

- Graduate Research Assistant, Agronomy Department, Kansas State University, 2021-present. Topic: Advancing nitrogen nutritional status diagnoses, with an emphasis on the critical Nitrogen dilution curve.
- Graduate Research Assistant, Statistics Department, Kansas State University, 2021-present. Topic: A Bayesian Approach for estimating and checking block designs in agricultural experiments.
- Short-term intern, INRAE division of applied mathematics, Palaiseau, France, 2022. Topic: Comparing statistical frameworks to estimate the critical nitrogen dilution curve.

- Student intern, Agronomy Department, Kansas State University, 2019. Topic: yield response to plant density across the US & collaborating in field experiments with historic corn and sorghum hybrids at Manhattan, KS (USA) and Viluco (Chile).
- Research intern, Instituto de Investigaciones en Biociencias Agrícolas y Ambientales INBA (FAUBA-CONICET), 2017-2018. Topic: non-thermal plasma to enhance soybean plant quality.

Teaching Experience
- Teaching assistant in Applied Bayesian Statistics and Prediction (STAT 768), Kansas State University, Spring 2023
- Instructor in Workshop in R programming and applied statistics, Ciampitti Lab, Kansas State University, 2021 & 2022
- Teaching assistant in Crop Science (AGRON 220), Kansas State University, Fall 2021
- Teaching assistant in Crop Production, University of Buenos Aires, 2018-2020
- Teaching assistant in Applied Biochemistry, University of Buenos Aires, 2017-2018

Honors and Scholarships
- 3rd place Research Oral competition, Conference on Applied Statistics in Agriculture and Natural Resources, West Lafayette, IN, 2023
- StanCon 2023 scholarship, 2023
- K-State Dean and Director's Citation for Outstanding Undergraduate Teaching, 2023
- Kansas Corn Next Generation Scholarship, 2023
- Gerald O. Mott Award Recipient for meritorious students in crop science, CSSA, 2023
- Dr. Neal F. and Florence E. Morehouse Agronomy Research and Scholarship Program, 2022, 2021
- 1st place Agroclimatology and Agronomic Modeling Student Poster Competition at 2022, ASA-CSSA-SSSA International Annual Meeting, Baltimore, MA, 2022
- 2nd place AgDatathon, NUE workshop, Lincoln, NE, 2022
- Travel Award, Graduate Student Council, Kansas State University, 2021, 2022
- New Frontiers Scholar – Corteva Agriscience, 2021
- 2nd place in Research Oral competition, National SASES Online Meeting, 2020
- 2nd place in Research Poster competition, National SASES Meeting at San Antonio, TX, 2019
- Premio Universidad de Buenos Aires, School of Agriculture, University of Buenos Aires, 2018 & 2019 - 5th (2018) and 3rd (2019) best GPA out of all undergraduate majors

Professional Society Memberships
- Societies of Agronomy (ASA), Crop (CSSA), and Soil (SSSA) sciences, since 2019
- American Statistical Association, since 2023
- Agronomy Graduate Students' Association, since 2021
- Kansas Corn Growers Association, since 2023
- Statistics Without Borders, since 2022

Skills
- Languages: Spanish (fluent, native), English (fluent, 104 TOEFL), German (fluent, C1 Deutsches Sprachdiplom)
- Programming: R, Stan, JAGS, python

Publications

Accepted publications

1. **Lacasa J.**, Messina C., Ciampitti I., A probabilistic framework for forecasting maize crop yield response to agricultural inputs with subseasonal climate predictions. Environmental Research Letters.

2. **Lacasa, J.**, Makowski, D., Hefley, T., Fernandez, J., van Versendaal, E., Lemaire, G., & Ciampitti, I. (2023). Comparison of statistical methods to fit critical nitrogen dilution curves. European Journal of Agronomy, 145, 126770. https://doi.org/https://doi.org/10.1016/j.eja.2023.126770

3. Fernandez, J. A., van Versendaal, E., **Lacasa, J.**, Makowski, D., Lemaire, G., & Ciampitti, I. A. (2022). Dataset characteristics for the determination of critical nitrogen dilution curves: From past to new guidelines. European Journal of Agronomy, 139, 126568. https://doi.org/https://doi.org/10.1016/j.eja.2022.126568

4. Ciampitti, I., van Versendaal, E., Rybecky, J. F., **Lacasa, J.**, Fernandez, J., Makowski, D., & Lemaire, G. (2022). A global dataset to parametrize critical nitrogen dilution curves for major crop species. Scientific Data, 9(1), 277. https://doi.org/10.1038/s41597-022-01395-2

5. Ciampitti, I. A., Makowski, D., Fernandez, J., **Lacasa, J.**, & Lemaire, G. (2021). Does water availability affect the critical N dilution curves in crops? A case study for maize, wheat, and tall fescue crops. Field Crops Research, 273, 108301. https://doi.org/https://doi.org/10.1016/j.fcr.2021.108301

6. **Lacasa, J.**, Ciampitti, I. A., Amas, J. I., Curín, F., Luque, S. F., & Otegui, M. E. (2021). Breeding effects on canopy light attenuation in maize: a retrospective and prospective analysis. Journal of Experimental Botany, erab503. https://doi.org/10.1093/jxb/erab503

7. **Lacasa, J.**, Hefley, T. J., Otegui, M. E., & Ciampitti, I. A. (2021). A practical guide to estimating the light extinction coefficient with nonlinear models—a case study on maize. Plant Methods, 17(1), 60. https://doi.org/10.1186/s13007-021-00753-2

8. **Lacasa, J.**, Gaspar, A., Hinds, M., Jayasinghege Don, S., Berning, D., & Ciampitti, I. A. (2020). Bayesian approach for maize yield response to plant density from both agronomic and economic viewpoints in North America. Scientific Reports, 10(1), 15948. https://doi.org/10.1038/s41598-020-72693-1

Extension Publications and Activities

1. Adjust corn plant density for the coming 2022 season (2022). Kansas State Univeristy eUpdate. https://eupdate.agronomy.ksu.edu/article_new/adjust-corn-plant-density-for-the-coming-2022-season-490

2. Corn seeding rate using weather models (2022). K-State Research and Extension. https://www.ksre.k-state.edu/news/stories/2022/04/video-corn-seeding-rates-and-weather-forecasts.html

3. Understanding The Past To See The Future Of Corn Hybrid Plants (2021). K-State Research and Extension. https://www.ksre.k-state.edu/news/stories/2021/08/corn-hybrids-lessons-learned-help-develop-better-hybrids.html

4. Summary of 2019 Kansas Corn Yield Contest (2020). Kansas State University eUpdate. https://eupdate.agronomy.ksu.edu/eu_article_prep.php?article_id=2447

5. 2019 Kansas Corn Schools - KS Corn Comission

Posters and Oral presentations

1. Lacasa, J., Makowski, D., Hefley, T., & Ciampitti, I. A. (2022) A Framework to Estimate Critical Nitrogen Dilution Curves [Abstract]. ASA, CSSA, SSSA International Annual

Meeting, Baltimore, MD. https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/142444

2. Lacasa, J., Hernandez, C. M., Rybecky, J. F., & Ciampitti, I. A. (2022) A probabilistic assessment for future precipitation according to ENSO predictions [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Baltimore, MD. https://scisoc.confex.com/scisoc/2022am/meetingapp.cgi/Paper/143188

3. Lacasa, J., Messina, C. D., & Ciampitti, I. A. (2021) A Probabilistic Decision Tool to Leverage Climate Predictions for Management Optimization: A Case Study for Corn and Plant Density [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/135713

4. Lacasa, J., Hefley, T., Otegui, M. E., & Ciampitti, I. A. (2021) A Practical Guide to Estimating the Light Extinction Coefficient with Nonlinear Models – a Case Study on Maize [Abstract]. ASA, CSSA, SSSA International Annual Meeting, Salt Lake City, UT. https://scisoc.confex.com/scisoc/2021am/meetingapp.cgi/Paper/135638

5. Lacasa, J., Messina, C. D., & Ciampitti, I. A. (2021) A probabilistic decision tool to leverage climate predictions for management optimization: A case study for corn and plant density [Abstract]. Research and the State, Kansas State University.

6. Lacasa, J., Otegui, M. E., & Ciampitti, I. A. (2020) Changes in Canopy Light Attenuation Linked to Maize Genetic Improvement [Abstract]. ASA, CSSA, SSSA International Annual Online Meeting

7. Lacasa, J., Schwalbert, R., & Ciampitti, I. A. (2019) Corn Yield Responses to Plant Density: a Bayesian Approach [Abstract]. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.

8. Carla Zilli, Cecilia Pérez Pizá, Emilia Anselmo, Josefina Lacasa, Héctor Kelly, Leandro Prevosto and Karina Balestrasse. (2017) Non-thermal plasma enhances the quality of soybean plant. 53th Annual Meeting Argentine Society for Biochemistry and Molecular Biology.

Leadership and service activities

- Member of the organizing committee an interdisciplinary Symposium from Corteva Agriscience Plant Sciences Symposia Series, to be held October 2023
- Blood donor, American Red Cross
- Chair of the applied statistics and programming committee, Agronomy Graduate Students' Association, 2021-2022
- Student Member for the search committee for Precision Agriculture tenure-track professor position at Kansas State University, 2022.
- Volunteer at Statistics Without Borders, collaborating in a project developing an app for Canada Birds, 2022.
- Service testimony, Spiritual Retreat San Isidro, 2019.
- Member of Wheat State Agronomy Club, 2019.
- Volunteer overseeing School of Agriculture (University of Buenos Aires) student elections, 2018.
- Volunteer at El Ombu tutoring high school students in neglected neighbourhoods, 2018-2020.
- Volunteer overseeing Argentine National Elections for electoral transparency, Foro Cívico San Isidro, 2013-2017.
- Volunteer at Un Techo para mi País improving housing conditions in neglected neighbourhoods, 2017.
- Team captain, Volleyball (2006-2017), Goethe Schule

Professional development
- StanCon, St. Louis, MO, 2023
- ASA, CSSA, SSSA International Annual Meeting, all since 2019
- Workshop "Scalable Bayesian models and estimation methods for the analysis of big spatial and spatio-temporal data" (A. Finley and J. Doser). Conference on Applied Statistics in Agriculture and Natural Resources, West Lafayette, IN, 2023
- Graduate Student Leadership Conference, 2022, ASA-CSSA-SSSA International Annual Meeting, Baltimore, MA.
- Entrepreneurship bootcamp, Trama ITBA. 2018