LEONARDO VOLPATO

Postdoctoral Research Associate

Michigan State University - East Lansing, MI.
February 2021 to present

EDUCATION

2009 — **Instituto Federal do Triângulo Mineiro - IFTM**
T.E. in Technical Course in Agriculture — Uberlandia, Brazil

2014 — **Federal University of Viçosa - UFV**
B.S. in Agronomy — Viçosa, Brazil

2016 — **Federal University of Viçosa - UFV**
M.S. in Plant Breeding — Viçosa, Brazil

Thesis: Selection of soybean progeny for grain yield with the use of mixed models

2020 — **Federal University of Viçosa - UFV**
Ph. D. in Plant Breeding — Viçosa, Brazil

Thesis: High-throughput phenotyping for soybean plant maturity date and wheat plant height using unmanned aerial system

PROFESSIONAL RESEARCH EXPERIENCE

2021 | present — **Postdoctoral Research Associate**
Michigan State University - MSU — East Lansing, MI - USA

- HTP pipeline at dry bean breeding program.
- GxE analysis at historical dry bean dataset.
- ML to phenotyping approaches and disease resistant.

2019 | 2020 — **Visiting Research Scholar**
University Of Minnesota - UMN — Minneapolis, MN - USA

- Applied remote sensing approaches in the soybean variety development pipeline.
- Conducted field data analyses using drone imagery.
- Worked collaboratively with other graduate students and technicians.
- Pipeline implemented in R to estimate plant maturity date using HTP/UAS methods

2018 | 2019 — **Visiting Student**
International Maize and Wheat Improvement Center - CIMMYT — Mexico City, Mexico

- Supported the entire remote sensing components of wheat and maize plant breeding trials.
- Performed drone imagery and software analyses.
- Conducted missions and collected data for HTP using Unmanned Aerial System (UAS).
- Pipeline developed for measuring agronomic trait such as plant height, biomass, lodging and biologic stress using UAS.

2010 | 2014 — **Intern**
Federal University of Viçosa - UFV — Viçosa, Brazil

- Resistance of Spodoptera frugiperda (Lepidoptera: Noctuidae) to proteins from *Bacillus thuringiensis*
- Evaluation of tropical maize (*Zea mays* L.) lines fornitrogen use efficiency
- Selection within andbetween families of ornamental pepper (*Capsicum* spp.)

CONTACT INFO

volpato1@msu.edu
+1 517-505-8582
1826 Hamilton Rd Apt A9, Okemos, MI - USA
github.com/volpatoo
linkedin.com/LV
cnpq.com/LV
orcid.org/LV

STATISTICAL SOFTWARE

R, Python, and GIS tools.

EXPERIENCED AREAS

Statistical and bioinformatics analysis, mixed models, GxE interaction, Genotyping and Phenotyping in Plant Breeding. Machine Learning, CNN and Deep Learning. Field performance of UAS-flights. Remote pilot certificate in FAA-USA.

RESEARCH STRENGTHS

Full experience with remote sensing analysis, drone imagery use and HTP pipelines, Genomic selection and Multi-trait multi-environment models. Machine learning models.

PROFESSIONAL/ACADEMIC EXPERIENCE

2011 | 2012
AgroPlan-UFV - Junior Enterprise Agronomy
Federal University of Viçosa - UFV
Viçosa, Brazil

2013 | 2014
Teaching assistant in Agriculture Entomology
Federal University of Viçosa - UFV
Viçosa, Brazil

2014
Regulation of seeds and seedlings, Intern
Federal Agriculture, Livestock and Supply - MAPA
Viçosa, Brazil

2015 2017
Academic group coordinator
GenMelhor-UFV - Study Group of Genetics and Breeding
Viçosa, Brazil

2021 | 2022
Remote assistance phenotyping
Celeiro Sementes - Pipeline developed to implement phenotyping approaches in the soybean breeding program
Piaui, Brazil

SELECTED PUBLICATIONS

2018
Selection of inbred soybean progeny: an approach with population effect.
Volpato, L.; Simiqueli, G.F.; Alves, R.S.; Rocha, J. R. A. S. C.; Del Conte, M. V.; Resende, M. D. V.; Carneiro, P. C. S.; Silva, F. L. Plant Breeding, v. 138, p. i-iv, 451-672.

2019
A. Multi-trait multi-environment models in the genetic selection of segregating soybean progeny.
Volpato, L; Alves, R.S.; Teodoro, P.E.; Resende, V. M. D.; Nascimento, M.; Nascimento, A. C. C.; Ludke, W.H.; Lopes, S. F. PLoS One, v. 14, p. e0215315.

2019
SNP markers associated with soybean partial resistance to Phytophthora sojae.
Ludke, W. H.; Schuster, I.; Nora, T. D.; Oliveira, A. B.; Soares, B. A.; **Volpato, L.**; Silva, F. L. Crop Breeding and Applied Biotechnology, v. 19, p. 31-39

2020
Inference of population effect and progeny selection via a multi-trait index in soybean breeding.
Volpato, L.; Rocha, J. R. A. S. C.; Alves, R. S.; Ludke, W. H.; Oliveira, A. B.; Silva, F. L. Acta Scientiarum. Agronomy, v. 43, p. 10.4025/actasci.

2021
High Throughput Field Phenotyping for Plant Height Using UAV-Based RGB Imagery in Wheat Breeding Lines: Feasibility and Validation.
Volpato, L.; Pinto, F.; González-Pérez, L. ; Thompson, I. G. ; Borem, A.; Reynolds, M.; Gérard, B.; Molero, G.; Rodrigues, F. A. Frontiers in Plant Science, v. 12, p. 591587.

2021
High Throughput Field Phenotyping for Plant Height Using UAV-Based RGB Imagery in Wheat Breeding Lines: Feasibility and Validation.
Volpato, L.; Dobbels. A.; Borem, A,; Lorenz, A. J. The Plant Phenome J.,10.1002/ppj2.20018.

2021
Genomic selection with rapid cycling: Current insights and future prospects.
Volpato, L.; Bernardeli, A.; Gomez, F. Crop Breeding and Applied Biotechnology. 21(S): e394721S14.

SELECTED AWARD

2022
National Association of Plant Breeding (NAPB) early career award - Ames, Iowa.
NAPB Graduate Student Poster Competition titled *"Estimation of stand count in dry beans using high resolution imagery: feasibility and validation"*.

LANGUAGE

- **Portuguese**
  Native
- **English**
  Fluent
- **Spanish**
  Working knowledge