

LAWRENCE STEPHEN FAYEUN, PhD

Associate Professor (Reader) in Plant Breeding and Quantitative Genetics

Department of Crop, Soil and Pest Management | Federal University of Technology, Akure, Nigeria

Email	lsfayeun@futa.edu.ng
Website	fayeun.com.ng
ORCID	0000-0001-6772-0406
Scopus Author ID	57204141224
Google Scholar	397 citations; h-index 11; i10-index 10 (Aug 2026)

Academic Evidence at a Glance

40+	11	10	2
scholarly publications & outputs	Google Scholar h-index	ongoing PhD supervisions (5 main; 5 co-supervised)	registered cowpea cultivars

Professional Profile

Plant breeder and quantitative geneticist working across crop improvement, genetic diversity, genotype-by-environment interaction, stability analysis, multi-environment trials, agricultural experimentation and research technology. Fluted pumpkin (*Telfairia occidentalis*) has been a sustained research focus from undergraduate work through postgraduate research and subsequent work on genetic variability, marketable leaf yield, reproductive biology, seedling traits, phenotypic diversity and landrace variation.

Education and Qualifications

Year	Qualification	Institution
2015	PhD, Plant Breeding	Federal University of Agriculture, Abeokuta
2011	M. Agric. Tech., Crop Management	Federal University of Technology, Akure
2002	B. Agric. Tech., Crop, Soil and Pest Management	Federal University of Technology, Akure

Academic Appointment and Career Progression

Oct 2024-present: Associate Professor (Reader), Plant Breeding and Quantitative Genetics, FUTA.
Oct 2021-Sep 2024: Senior Lecturer, FUTA.
Oct 2018-Sep 2021: Lecturer I, FUTA.
May 2015-Sep 2018: Lecturer II, FUTA.
5 Nov 2014-Apr 2015: Assistant Lecturer, FUTA - first academic appointment at the university.

Research Funding

- 2025 - **Principal Investigator**, TETFund Institutional-Based Research (IBR): Sweet sorghum selection and ethanol technology.
- 2023 - **Co-Investigator**, TETFund Institutional-Based Research (IBR): Multi-location evaluation of FUTA extra-early hybrid maize; field testing continued through the 2024 planting season.

Research Focus and Programme Highlights

Fluted pumpkin genetics and improvement

More than two decades of research on *Telfairia occidentalis* spanning genetic diversity, marketable leaf yield, genotype-by-environment interaction, floral biology, apomixis, seedling traits, phenotypic diversity and breeding implications.

Fluted pumpkin research trajectory

- 2002: B. Agric. Tech. project on genetic variability and character association of leaf yield and components.
- 2011: M. Agric. Tech. dissertation on genetic diversity of fluted pumpkin in southern Nigeria.
- 2015: PhD thesis on genetic diversity, stability, floral biology and apomixis across two agro-ecologies in southwestern Nigeria.
- 2012-2023: Peer-reviewed studies on genetic variability, heritability, AMMI/GGE, seedling traits, apomixis, floral biology, phenotypic diversity and landrace variation.

Other crop-improvement research

- Maize, sorghum, cowpea, Bambara groundnut and coffee: genetic variability, adaptation, disease resistance, yield stability and multi-environment evaluation.
- Current research questions include SRY-gene investigation in fluted pumpkin, sweet-sorghum adaptation and ethanol yield, and characterization of Nigerian Bambara groundnut accessions.
- Underutilized legumes and food-system research, including consumption patterns and drivers of use among Nigerian youths.

Research Software, Innovation & Academic Leadership

- VivaSense Stat (2026): Creator and scientific lead of an AI-assisted agricultural data-analysis platform integrating experimental design, field data collection, R-based statistical computation, design-aware interpretation and publication-ready reporting. Software DOI: [10.5281/zenodo.20328141](https://doi.org/10.5281/zenodo.20328141).
- Field-to-Insight Academy (2026): Programme Lead, FIA-ADAP Foundations Cohort 4 - a six-week, 12-session competence-based programme in agricultural data analysis.
- Agricultural Innovations (2026-current): Editor-in-Chief of the open-access agricultural research journal published by the African Society for Innovative Agriculture.

Analytical, Statistical and Digital Skills

- Statistical and research software: R, SAS, GenStat, PBTools, MINITAB, Microsoft Excel and Microsoft Access.
- Quantitative methods: ANOVA, genetic parameters, correlation/path analysis, AMMI, GGE biplot, stability analysis and multi-environment trials.
- Research-software and web development: Python, FastAPI, React-based interfaces, R analytical engines, Git/GitHub workflows and Dockerized deployment.
- AI-assisted scientific workflow design, automated research reporting and design-aware interpretation safeguards.

Selected Professional Training

- 2013: Experimentation, Statistical Analysis and Data Interpretation.
- 2014: Use of Statistical Analysis Packages and Project Write-up Workshop.
- 2015: Introductory Biotechnology Training Course.
- 2016: Advanced Plant Breeding and Quantitative Genetics, International Institute of Tropical Agriculture (IITA), Ibadan.
- 2020: Molecular Biology Training and Open Labware Building Workshop, JR BIOTEK Foundation, University of Abomey-Calavi, Benin Republic.

Teaching

Teaching philosophy: Research question → experimental design → data structure → appropriate analysis → assumptions → statistical output → biological interpretation → scientific conclusion.

Selected undergraduate and postgraduate courses

CSP 204	Botany of Economic Crops
CSP 323	Computer Applications in Crop, Soil and Pest Management
CSP 409	Plant Genetics
CSP 502	Plant Improvement
CSP 509	Biostatistics and Field Experimentation
CSP 807	Advanced Genetics
CSP 811	Biometrical Genetics

Postgraduate Supervision

Completed MSc/PGD supervision: 20 MSc dissertations and 2 PGD projects.

Completed PhD supervision: 5 PhD theses as co-supervisor.

Ongoing PhD supervision: 10 candidates - main supervisor for 5 and co-supervisor for 5.

Selected completed / current research themes

- PhD (completed; co-supervisor): Turfgrass performance as influenced by poultry manure, seasonal variation and mowing intervals in Southwest Nigeria.
- PhD (completed; co-supervisor): Management of maize fall armyworm in Southwest Nigeria using *Beauveria bassiana*.
- MSc: Interspecific and intraspecific variation and early sex identification in fluted pumpkin genotypes using machine learning.
- MSc: Introgression of Opaque-2 into popcorn using marker-assisted selection.
- MSc: Genetic variability and character association in brown blotch-tolerant cowpea genotypes.
- MSc: Response of Bambara groundnut accessions to induced water stress using morphological and molecular markers.
- PGD: Genetic variability for seedling traits in cowpea.
- PGD: Sorghum varietal response and storage-period effects on *Sitophilus zeamais* infestation.

Professional Membership, Editorial & Peer-Review Service

- Genetics Society of Nigeria.
- Association of Seed Scientists of Nigeria - National Financial Secretary, 2016-2018.
- Biotechnology Society of Nigeria.
- African Plant Breeders' Association.

Ad hoc peer reviewer for *Journal of Plant Breeding and Crop Science*; *International Journal of Plant and Soil Science*; *Jordan Journal of Biological Sciences*; *American Journal of Experimental Agriculture*; *Applied Tropical Agriculture*; and *Agro-Science: Journal of Tropical Agriculture, Food, Environment and Extension*.

Selected Conferences and Scholarly Presentations

- 2026: *VivaSense Stat: Design, Architecture, and Development of an AI-Assisted Agricultural Data Analysis Platform* - 1st International Conference on Emerging Computing Applications and Technologies (ECAT 2026), FUTA.
- 2026: *System Thinking and Innovation in Agricultural Education: A 5-Layer AI Architecture for Scaling Quantitative Genetics Mentorship in Nigerian Universities* - abstract accepted for the 2nd Biennial OWSD Southwest Zonal Conference, Obafemi Awolowo University, Ile-Ife.
- 2022: *Promotion of Sweet Sorghum Cultivation for Climate Resilience and Economic Diversification in Southern Nigeria* - Humboldt Kolleg / international conference, FUTA.
- 2019: *Variation in Floral Morphology of Fluted Pumpkin* - poster, First African Plant Breeders' Association Conference, University of Ghana, Accra.
- 2013: *Evaluation of in situ/on-farm conservation of genetic resources of fluted pumpkin* - 3rd International Conference on Neglected and Underutilized Species for a Food-Secure Africa, Accra, Ghana.

Selected Peer-Reviewed Publications

Selected journal articles, arranged from recent to foundational work.

1. Akintola, K. G., Agbelusi, O., Oladoja, I. P., **Fayeun, L. S.**, Lawal, S. O. & Aderibigbe, O. M. (2025). Diseases Detection in Tomato Plants Using Deep Learning. *NIPES Journal of Science and Technology Research*, 7, Special Issue, 706-713. <https://doi.org/10.37933/nipes/7.4.2025.SI82>
2. Ohunakin, A. O., Odiyi, A. C. & **Fayeun, L. S.** (2023). Genetic Analysis of Resistance to Northern Leaf Blight of Tropical Maize Inbred Lines. *Journal of Crop Science and Biotechnology*, 26(5), 595-606. <https://doi.org/10.1007/s12892-023-00202-7>
3. Baba Nitsa, M., Odiyi, A. C., Akinyele, B. O., Aiyelari, O. P. & **Fayeun, L. S.** (2023). Genetic Diversity of Robusta Coffee (*Coffea canephora* Pierre ex A. Froehner) Using EST-SSR Markers. *Journal of Plant Molecular Breeding*, 11(1), 17-27. <https://doi.org/10.22058/JPMB.2023.2002371.1273>
4. Adetumbi, J. A., Akinyosoye, S. T., Oduwaye, O. F., Kareem, K. T., Olakojo, S. A., Kehinde, T. O., Adekoya, M. A., Adeniji, O. T. & **Fayeun, L. S.** (2022). Registration of ARTPEA/BBT/72/B and ARTPEA/BBT/22/W, Brown Blotch-Tolerant and Early-Maturing Cowpea Cultivars for Humid Ecologies of Nigeria. *Journal of Plant Registrations*, 16(3), 522-528. <https://doi.org/10.1002/plr2.20250>
5. Adunola, M. P., **Fayeun, L. S.** & Fadara, A. B. (2021). Impact of Climate Change on Armyworm Infestation on Maize in Nigeria: A Review. *Journal of Plant Breeding and Crop Science*, 13(3), 158-167. <https://doi.org/10.5897/JPBCS2020.0895>
6. Nwagbara, S. I., **Fayeun, L. S.** & Akinyele, B. O. (2021). Effects of Induced Water Stress at the Flowering Stage of Bambara Groundnut (*Vigna subterranea* L. Verdc) on Its Yield. *American Journal of BioScience*, 9(6), 192-198. <https://doi.org/10.11648/j.ajbio.20210906.14>
7. Ohunakin, A. O., Odiyi, A. C., Akinyele, B. O., **Fayeun, L. S.** & Alake, G. C. (2021). Parametric and Non-parametric Procedures for Identifying Stable and Adapted Tropical Maize Genotypes in NLB Disease Infested Environments. *American Journal of BioScience*, 9(6), 199-209. <https://doi.org/10.11648/j.ajbio.20210906.15>
8. Alade, O. D., Odiyi, A. C., **Fayeun, L. S.**, Akinyele, B. O. & Obilana, A. B. (2021). Genetic Variability, Heritability and Correlation Studies in Fifty Sorghum (*Sorghum bicolor* L. Moench) Accessions Collected from Southern Nigeria. *Asian Journal of Agricultural and Horticultural Research*, 8(4), 65-72. <https://doi.org/10.9734/AJAHR/2021/v8i430128>
9. Olawamide, D. O. & **Fayeun, L. S.** (2020). Correlation and Path Coefficient Analysis for Yield and Yield Components in Late Maturing Pro-vitamin A Synthetic Maize (*Zea mays* L.) Breeding Lines. *Journal of Experimental Agriculture International*, 42(1), 64-72. <https://doi.org/10.9734/JEAI/2020/v42i130452>
10. **Fayeun, L. S.** & Sesay, S. (2019). Evaluation of Drought Tolerant Top Cross and Three-Way Cross Maize Hybrids for Grain Yield and Related Traits in Three Agro-Ecological Zones of Southwest Nigeria. *Notulae Scientia Biologicae*, 11(3), 414-421. <https://doi.org/10.15835/nsb11310338>
11. **Fayeun, L. S.**, Alake, G. C. & Akinlolu, A. O. (2018). GGE Biplot Analysis of Fluted Pumpkin (*Telfairia occidentalis*) Landraces Evaluated for Marketable Leaf Yield in Southwest Nigeria. *Journal of the Saudi Society of Agricultural Sciences*, 17(4), 416-423. <https://doi.org/10.1016/j.jssas.2016.10.001>

Selected Peer-Reviewed Publications

12. **Fayeun, L. S.**, Omikunle, A. O., Famogbiele, A. A. & Oyetunde, O. A. (2018). Phenotypic Traits Diversity in Fluted Pumpkin (*Telfairia occidentalis* Hook. F.). *International Journal of Plant & Soil Science*, 24(2), 1-11. <https://doi.org/10.9734/IJPSS/2018/16119>
13. Adewusi, O. F. & **Fayeun, L. S.** (2017). Combining Ability Analysis to Identify Potential Parents and Hybrids for Yield and Its Related Traits in Soybean. *International Journal of Plant & Soil Science*, 19(6), 1-7. <https://doi.org/10.9734/IJPSS/2017/34174>
14. **Fayeun, L. S.**, Hammed, L. A., Oduwaye, O. A., Madike, J. U. & Ushie, E. U. (2016). Estimates of Genetic Variability for Seedling Traits in Fluted Pumpkin (*Telfairia occidentalis* Hook. F.). *Plant Breeding and Biotechnology*, 4(2), 262-270. <https://doi.org/10.9787/PBB.2016.4.2.262>
15. **Fayeun, L. S.**, Ojo, D. K., Odiyi, A. C., Adebisi, A. M. & Hammed, L. A. (2016). Floral Biology of Fluted Pumpkin (*Telfairia occidentalis* Hook. F.). *Notulae Scientia Biologicae*, 8(4), 482-488. <https://doi.org/10.15835/nsb849895>
16. **Fayeun, L. S.**, Ojo, D. K., Odiyi, A. C., Adebisi, A. M., Hammed, L. A. & Omikunle, A. O. (2016). Identification of Facultative Apomixis in Fluted Pumpkin (*Telfairia occidentalis* Hook F.) through Emasculation Method. *American Journal of Experimental Agriculture*, 10(1), 1-10. <https://doi.org/10.9734/AJEA/2016/15261>
17. Edugbo, R. E., Nwofia, G. E. & **Fayeun, L. S.** (2015). An Assessment of Soybean (*Glycine max* L. Merrill) Grain Yield in Different Environments Using AMMI and GGE Biplot Models in Humid Forest Fringes of Southeast Nigeria. *Agricultura Tropica et Subtropica*, 48(3-4), 82-90. <https://doi.org/10.1515/ats-2015-0012>
18. **Fayeun, L. S.** & Odiyi, A. C. (2015). Variation and Heritability of Marketable Leaf Yield Components in Fluted Pumpkin. *Scientia Agriculturae*, 11(1), 8-14. <https://doi.org/10.15192/PSCP.SA.2015.11.1.814>
19. **Fayeun, L. S.**, Odiyi, A. C., Makinde, S. C. O. & Aiyelari, O. P. (2012). Genetic Variability and Correlation Studies in the Fluted Pumpkin (*Telfairia occidentalis* Hook. F.). *Journal of Plant Breeding and Crop Science*, 4(10), 156-160.

Selected Book Chapters

20. Aworunse, O. S., Popoola, J. O., **Fayeun, L. S.**, Ahuekwe, E. F. & Obembe, O. O. (2023). Morphological Trait Variation and Correlation Analysis in Landraces of Southern Nigerian Fluted Pumpkin. In *Biotechnological Approaches to Sustainable Development Goals*. Springer, Cham. https://doi.org/10.1007/978-3-031-33370-5_5
21. Ojokoh, B. A., Makinde, O. S., **Fayeun, L. S.**, Babalola, O. T., Salako, K. V. & Adzitey, F. (2022). Impact of COVID-19 and Lockdown Policies on Farming, Food Security, and Agribusiness in West Africa. In *Data Science for COVID-19*. Academic Press, pp. 209-223. <https://doi.org/10.1016/B978-0-323-90769-9.00014-1>
22. Sangeetha, J., Thangadurai, D., **Fayeun, L. S.** et al. (2020). Origin and Evolution of Rice as Domesticated Food Crop. In *Rice Research for Quality Improvement: Genomics and Genetic Engineering*. Springer, Singapore. https://doi.org/10.1007/978-981-15-4120-9_1