

DR. PATIENCE UKAMAKA ISHIEZE

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Plant Pathology Division,
Department of Crop Science
University of Nigeria,
Nsukka
Enugu State

RESEARCH INTEREST

Horticultural Production/ Pathology
Plant Mycology
Fungal Disease Management
Fungicides
Botanical extracts
Plant microbiomes
Epidemiology of Plant Diseases
Molecular diagnosis of fungal diseases of plants
Plant-Microbe Interactions
Bioinformatics
Artificial intelligence in Agriculture
IoT
Agricultural Robotics

EDUCATION

- PhD** University of Nigeria, Nsukka (Plant Pathology) December 2022
Thesis: *Agronomic assessment and evaluation of susceptibility to diseases and its management on selected cruciferous vegetables in a derived savanna agroecology*
Committee: Professor Gabriel Ihejirika, Professor John Eze (Co-chair), Professor Simon Eze (member), Professor Kevin Ugwuoke (supervisor), Professor Paul Baiyeri (co-supervisor)
- MSc** University of Nigeria, Nsukka (Plant Pathology) January 2016
Dissertation: *Studies on time of time of planting and fungicides spray regime on the management of Phytophthora Blight disease of Cucumber.*
Advisor: Professor Kevin Ikechukwu Ugwuoke
- BSc** University of Nigeria, Nsukka (Crop Protection) November 2010
Second-class upper-division
Dissertation: *Population dynamics of plant parasitic nematodes on homestead banana in a derived savannah agroecology*
Advisor: Professor Paul Kayode Baiyeri

RESEARCH EXPERIENCE

Doctoral Fellow

University of Nigeria, Nsukka

2019-2022

Agronomic assessment and evaluation of susceptibility to diseases and its management on selected cruciferous vegetables in a derived savanna agroecology
Supervisors: Professor Kevin Ugwuoke and Professor Paul Baiyeri

- Performed field experiment to determine the influence of Manure types, rates, and seasonal variation on the yield and disease incidence/severity of cabbage, kale, and cauliflower.
- Isolated diseases from the asymptomatic plants among the three crucifers.
- Performed morphological characterization of the various pathogens Isolated.
- Performed pathogenicity test among the organisms (*Botrytis cinerea*, *Colletotrichum truncatum*, *Fusarium sp.*, *Alternaria alternate*)
- Synthetic fungicides from different families and rates were used to manage (*in vitro*) the five pathogens isolated from the three crucifers.
- Performed field experiments to determine the best dosage and type of fungicides for managing the diseases.
- Performed Pesticide residue assessment on the sprayed crucifer to ascertain the safe limit.
- Teaches and Supervised bachelor students

Graduate student

University of Nigeria, Nsukka.

2012-2016

Studies on time of time of planting and fungicide spray regime on the management of Phytophthora Blight disease of Cucumber

Supervisor: Professor Kevin Ikechukwu Ugwuoke

- Performed Field studies on cucumber in six (6) different months (March-August) covering the early and late planting seasons in Nigeria.
- Isolate and identify the disease organisms from the field
- Performed DNA AND RNA extractions from the suspected *Phytophthora sp.*
- Performed gene expression analysis (PCR& qPCR)
- Performed native gel electrophoresis

Research Assistance

University of Nigeria, Nsukka (Crop Science)

2009-2010

Advisor Name: Prof. Paul Kayode Baiyeri

- Surveyed and extracted Pant parasitic nematodes from homestead bananas
- Identified *Meloidogyne*, *Radophilus*, and *Pratylechulus* species of nematodes

HONOURS AND AWARDS

Principal Researcher; Institution Based Research (IBR), Grant 2024
Tertiary Education Trust Fund (TETFUND) Nigerian Government (TETF/DR&D/CE/UNI/NSUKKA/BR/2024/VOL.I)

The grant of two million naira only to conduct institution-based research on “Surveillance studies, isolation, molecular characterization and in-vitro control using biological fungicides of pepper “ebola” in Nsukka, South-Eastern Nigeria”

TEACHING EXPERIENCE

University of Nigeria, Nsukka. March 2019-Present
Full-time Lecturer, Department of Crop Science

- Teaching a class of 300 undergraduate students in the Faculty of Agriculture, CSC 222 (Principles of Crop Production ‘protection aspect’; CSC 331 (Principles of Crop Protection); CSC 431 (Crop Protection and Pest control); AG 401(Agricultural Product storage); CSC 544 (Postharvest physiology and product storage); CSC 531 (Plant Protection).
- Teaching a class of 50 undergraduate students in plant pathology major CSC 532 (Plant Pathology)
- Teaching a class of 5 Postgraduate students CSC 601 (Advanced Plant Pathology)

PUBLICATIONS

Journal Publications

Ishieze P. U., Ugwu E. A., Ishiwu B., Uzochukwu G. C., Okeke Q.C., and Ugwuoke K.I. (2025). First report of *Fusarium sulawesiense* causing fruit rot on pepper (*Capsicum chinense jacq*) in Nigeria. Nigerian Journal of Crop Science. 10(1) 1-2.

Adewuyi, S.O., Olugbade A.A., Ukwu U.N., Dauda N., Osadebe V.O., **Ishieze P. U.**, Aruah B. C., Fadoju A. B. (2025). Optimizing Sweet Potato Productivity through Precision Propagation by Vine Cutting Position and Variety Synergy in Tropical Nigeria. Current Science Research Bulletin. 2 (10), 305-318.

<https://doi.org/10.55677/csrb/02V02110Y2025>

Ishieze P. U., Baiyeri, P. K., Ugwuoke K.I., and Olajide K. (2024) Response of cauliflower (*Brassica oleracea* var. botrytis) grown in the field to organic waste fortification and cropping seasons. IJROWA, <https://doi.org/10.57647/ijrowa-s7y3-rm56>

Ishieze P. U., Ugwu E. A., Ishiwu B., Uzochukwu G. C., Okeke Q.C., and Ugwuoke K.I. (2024). Mycelia growth of *Colletotrichum truncatum* and *Fusarium verticillioides* on pepper (*Capsicum chinense*) fruits in different media and their impact on the nutritional composition of infected fruits. Agro-Science

Ishieze P. U.

- Journal of Tropical Agriculture, Food, Environment and Extension 23(2)87-96.
<https://doi.org/10.4314/as.v23i2.12>
- Ukwu, U. N., Oburu, B. N., Udochukwu, D. P., Adewuyi, S. O., Muojama, S. O., Osadebe, V. O., Eze I.N., **Ishieze P. U.** & Dauda, N. (2024). Performance of mungbean (*Vigna radiata* L. Wilczek) accessions under intermittent water deficit stress in a tropical environment. *Journal of Applied Biology and Biotechnology*. <https://dx.doi.org/10.7324/JABB.2024.158000>
- Dauda, N., Ugwuagu, S. N., **Ishieze, P. U.**, Ugwuoke, K., Osadebe, V. O., Adewuyi, S. O., & Ukwu, U. N. (2024). Agronomic and disease responses of three watermelon (*Citrullus lanatus* L.) varieties to fungicide spraying regimes in a tropical environment. *Journal of Applied Biology and Biotechnology*. <https://doi.org/10.7324/JABB.2024.163372>
- Ishieze, P.U.**, Amuji, C.F. Ugwuoke K. I, Baiyeri K.P., & Eze M. O. (2023). Comparative Efficacy of Systemic and Combination Fungicides for the Control of *Alternaria* Leaf Spot of Cabbage. *Applied Microbiology*, 3 (3), 906- 914. <https://doi.org/10.3390/applmicrobiol3030062>
- Ishieze, P.U.**, Onah, C. F. & Dauda, N. (2022). Improvement of yield of onion (*Allium cepa*) using different rates of organic manure and sowing seasons in South Eastern Nigeria. *Ilmu Pertanian (Agricultural Science)*, 7(3), 152-159. <https://doi.org/10.22146/ipas.72990>
- Dauda, N., Adewuyi, O. S., **Ishieze, P.U.**, Ugwuoke, K. I. & Ukwu, U.N. (2022). Farmers' unseen enemy: Soilborne pathogens and its management. *Nigerian Journal of Horticultural Sciences*. 26 (4) 96-106.
- Olajide K., **Ishieze P. U.** & Baiyeri, K. P. (2022). Growth, yield, and Nutritional qualities of onion (*Allium cepa* L.) as influenced by different growth media. *Nigerian Journal of Crop Science*. 8 (1) 70-76
- Baiyeri, K. P., **Ishieze P. U.** Kalu, P. C., Okpala, C. V. & Olajide K. (2019). Preliminary investigation of nutritional quality of Saba (*Saba senegalensis*), a wild fruit species obtained from North Central Nigeria. *Nigerian Journal of Crop Science*. 6 (2) 11-16
- Aba, S.C., **Ishieze***, **P.U.**, Eze, S. C. & Ugwuoke K.I. (2018). Controlling phytophthora blight of cucumber (*Cucumis sativus*) in a derived savannah, using different spray intervals of a registered fungicide. *Plant pathology and Quarantine journal*. 8(2): 122–130. <http://dx.doi.org/10.5943/ppq/8/2/3>
- Ishieze, P.U.**, Ugwuoke, K.I., Aba, S.C. (2015). Effect of planting time on phytophthora blight Disease Incidence and Severity on Cucumber (*Cucumis sativus*) in Nsukka, Derived Savannah, Agro Ecology, South Eastern Nigeria. *Journal of plant pathology and microbiology*. 6(11) 1-8. <http://dx.doi.org/10.4172/2157-7471.1000318>

Papers under peer review

Morpho-Molecular Identification of Fungal Pathogens Affecting Pepper (*Capsicum chinense*) and Evaluation of Plant-Based Extracts for Sustainable Disease Management

.The Discover Plant Journal (Nature).

Machine Intelligence in Horticulture: Automating Pest and Disease Detection in Solanaceous Plants. Plant pathology and quarantine journal.

Conference Papers

(Abstract-Reviewed)

Ishieze P. U., Dauda N., and Ezeugwu C.C. (2025). Phylogeny and Molecular Characterization of Bacterial Pathogens Associated with Selected Tomato (*Solanum lycopersicum* L.) Varieties in Enugu State. Proceedings of the 10th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>

Ishieze P.U., Ugwuoke K. I., Baiyeri K.P. and Omeje T.E. (2024). Seasonal Variation, Manure Types, and Rates: Impact on Fresh Leaf Yield and Fusarium rot Disease Prevalence in Kale (*Brassica oleracea* var. *acephala*) Proceedings of the 9th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>

Ishieze P.U., Ugwuoke K. I & Baiyeri K.P. (2024). In-vitro and in-vivo sensitivity assessment of *Botrytis cinerea* isolated from cabbage to five commercial fungicides: efficacy, resistance development, and pathogenicity impacts. 4th International Conference of UNESCO International Centre for biotechnology.

Ishieze, P. U., Ugwu M. T., Ugwuoke K. I., Dauda N., and Baiyeri K. P. (2024) Accessing the impact of mulching, lime application and fungicide treatments on cabbage growth, yield, and grey mold disease incidence: A comprehensive study. 49th Annual National Conference of Nigerian Society for Plant Protection.

Ishieze P. U., Ugwu E.A., Okeke, C.Q., Chukwudi, U.G., & Ugwuoke K. I. (2023). Exploring the influence of growth media on mycelia growth of two fungi and nutritional composition of pepper fruits infected with the fungi: a comparative study. Siirt University and IKSAD Institute, Turkiye organized the 4th International Siirt Conference on Scientific Research.

Ishieze P.U., Ugwuoke K. I & Baiyeri K.P. (2023). Evaluation of fungicide treatments on the control of leaf blight of cabbages caused by *Alternaria brassicicola*. Proceedings of the 48th Annual Conference of Nigerian Society of Plant Protection. <http://nspp.gov.ng>

Ishieze P.U., Ugwuoke K. I & Baiyeri K.P. (2023). Mulching and fungicide supplemented with lime influenced the growth, yield, and Fusarium blight

- disease incidence of kale. Proceedings of the 3rd Annual Conference of Southeast Zonal Biotechnology Centre.
- Ishieze P.U.**, Ugwuoke K. I & Baiyeri K.P. (2023). Compatibility studies of synthetic fungicides on in-vitro control of *Colletotrichum truncatum* isolated from cauliflower. Proceedings of the 8th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Omeje T. E., Ugwuoke K.I., Eze S. C. & **Ishieze P.U.** (2023). Biochar: A vital Bioenergy source for sustainable plant protection in current organic farming systems. Proceedings of the 8th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Ishieze, P.U.**, Ugwuoke K. I & Baiyeri K.P. (2022). Topsoil supplemented with varying proportions of poultry manure, pig slurry, and river sand influenced the seedling emergence and growth of three cruciferous vegetables. 40th Annual Horticultural Society of Nigeria, National Conference
- Ishieze P.U.** & Omeje, T. E. (2021). Utilization of nematophagous fungi for the management of plant-parasitic nematodes. Presentation at 7th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Ishieze, P.U.**, Ugwuoke K. I. & Baiyeri K.P. (2021). In-vitro evaluation of different concentrations of fungicides against fungal isolates of cabbage and kale. 39th Annual Horticultural Society of Nigeria, National Conference
- Omeje, T.E., Awere, S.U., Ezema, R. A. & **Ishieze, P.U.** (2021). Ede Ofe (*Colocasia esculenta*): A potential food crop for nutritional and health security in Nigeria. A review. 39th Annual Horticultural Society of Nigeria, national conference.
- Ishieze, P.U.**, Baiyeri K.P., Ugwuoke K. I, & Dauda, N. (2020). Entomopathogenic fungi: A potential control for insect Pests of Vegetable Crops (Review). Presentation at 38th Annual Conference of Horticultural Society of Nigeria.
- Ishieze, P.U.**, Baiyeri K.P. & Ugwuoke K. I, (2019). Influence of poultry manure rates on proximate composition of common parsley (*Petroselinum crispum*) grown in derived savanna agroecology. Presentation at 6th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Ishieze, P.U.** and Eze S.C. (2018). Comparative analysis of indigenous and advanced technology application in the preservation of tropical and horticultural produce. Presentation at 4th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Omeje, T.E., Ugwuoke, K.I., **Ishieze, P.U.** (2018) Evaluation of Fungicides and fungicides spray regimes on heavy metals deposit in cocoyam leaves (*Colocasia esculenta* L.) in a Derived savannah region of south-eastern Nigeria. Presentation at 5th Annual Conference of Crop Science Society of Nigeria. <http://cssn.gov.ng>
- Ishieze, P.U.**, Baiyeri K.P. & Ugwuoke K. I, (2013). Population dynamics of plant parasitic nematodes on homestead banana in derived savannah agroecology. *Presentation at 2nd Annual Conference of Crop Science Society of Nigeria.* <http://cssn.gov.ng>

Invited Lectures/Talks

Indiscriminate use of pesticides: the pepper farmers' experience and way forward. Annual August Return, A forum organized by Catholic Women Organization, St Jude's Parish, Iheagu, Nru, Nsukka Diocese. August 15- 21, 2024

Fungicides and *Alternaria brassicicola*. Graduate student Colloquium, Department of Crop Science, University of Nigeria, Nsukka. Oct., 10th, 2021

Benzimidazoles and fungicides with multi-site action, in Plant disease management. Faculty of Agriculture Student Colloquium, University of Nigeria, Nsukka. Oct., 15th, 2022

PROFESSIONAL DEVELOPMENT TRAINING

Workshop

Biopesticides in Nigeria: Overcoming Barriers to Commercialization and Scaling Sustainable Solutions. Regional workshop on intellectual property and commercialization of Biotechnology research and innovation organized by the UNESCO International Centre for Biotechnology, University of Nigeria Nsukka, 9th - 10th October, 2024

Intro to R for Plant Pathologists: Part 1, organized by American Phytopathological Society, July 5th - 7th, 2024.

Central Laboratory, University of Nigeria, Nsukka Nov. 8-12, 2022. Hands-on training in Basic Molecular Biology Techniques

Seminars/Webinars

Nigerian Society of Plant Protection 6th Webinar Series- Pest Management in the face of Climate Change July 10th, 2024.

Nigerian Society of Plant Protection South east Webinar Series- Exploring the services of NIMET in advancing sustainable agricultural productivity and excellent environmental management, February 20th, 2025.

PROFESSIONAL AFFILIATIONS

Member, Nigerian Society of Plant Protection	2022-Present
Treasurer, Crop Science Society of Nigeria	2019-Present
Member, Horticultural Society of Nigeria, HORTSON	2020-Present

PROFESSIONAL SERVICE

Peer-Reviewed Articles for:

- Asian Journal of Research in Crop Science
- Notulae Botanicae Horti Agrobotanici Cluj-Napoca
- Nigerian Journal of Biotechnology

- Agrosience Journal of Tropical Agriculture, Food, Environment and Extension

CONSULTANCY

Consultancy Contract for the ATPS Project “Strengthening the Capacity of extension system to use proven knowledge and technologies to sustain equitable Locally IEd adaptation among smallholder farming communities in selected West African Countries (SCALE)”

Consultancy contract/ Trainer for Gender Equality through Sustainable Access to Climate Information (GESCI) Project Group, under Climate Smart Maize Production.

COMMUNITY SERVICE

Department of Crop Science and Technology, Enugu State Polytechnic Iwollo, Ezeagu, Enugu State 2020-Present
Introductory to plant pathology online class for Monotechnic students via Zoom

Linkez Foundation 2022-Present
Provide mentoring for prospective graduate school applicants

LANGUAGES

English: Native Language, Distinguished levels in Listening, Speaking, Reading, and Writing.

OTHER SKILLS AND COMPETENCIES

Python and R programming languages

REFEREES

Prof. Kayode Paul Baiyeri
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Prof. Joel Nwakaire
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