

MOHAMMED QUARSHIE

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My broad research interests lie in plant-insect interactions, chemical ecology and insect pest management within agroecosystems, with a focus on monitoring and managing insect populations through the use of existing tools and the development of innovative Integrated Pest Management (IPM) strategies. I am particularly interested in promoting sustainable pest management practices.

EDUCATION

University of Georgia, Athens, GA, USA

August 2023 - Present

Graduate Research Assistant

Master of Science in Entomology

Master's Thesis: Ecophysiology of maize weevil response to Temperature and Moisture

- Objectives: Determine the thermal tolerance (CT_{max}) and preferences of maize weevils, including sex-based differences. maize weevil moisture-driven feeding behavior and reproductive success. Investigate maize weevil behavioral responses to varying maize kernel moisture

Advisor: Shayla Salzman, Ph.D.

Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana

2015 - 2019

Bachelor of Science, Agriculture

Undergraduate Thesis Title: Efficacy of Linalool Against Maize Weevil in Stored Maize

- Objective: Reduce damage caused by maize weevil through the judicious use of linalool (Monoterpene) as a maize grain protectant

- Result : The application of linalool in all tested dosages offered some protection against maize weevil infestation.

Thesis Supervisor: Professor Enock A. Osekre, Dean, Faculty of Agriculture, KNUST, Kumasi, Ghana.

PROFESSIONAL EXPERIENCE

- Graduate Research Assistant, Salzman Lab, Department of Entomology, UGA, August 2023-Present

- Junior Entomology Research Assistant under Prof. Enock A. Osekre, KNUST, 2018 - 2019

- Head of Department for Agricultural Science, Integrated Community Centre for Employable Skills, 2019 - 2020

- Science and Mathematics Specialist, 2014 - 2015

RESEARCH INTEREST

Sustainable management of arthropod pests, insect ecology, and chemical ecology

PUBLICATION

Mohammed Quarshie*, Seth Kwame Asare, Samuel Ewusi Dadzie, Goerge Mbata and Enoch A. Osekre: Toxicity and protectant potential of linalools (Monoterpenoid) against *Sitophilus zeamais* Motschulsky (Coleoptera: Curculionidae) infestation in stored maize. (*Journal of Entomology and Nematology*)

Received 18 March 2024; Accepted 23rd May, 2024

Published in August 2024

CONFERENCE PRESENTATION

Mohammed Quarshie*, Seth K. Asare, Enock A. Osekre, Efficacy of linalool (monoterpenoid) against *Sitophilus zeamais* Motschulsky (Coleoptera: Curculionidae) on Stored Maize Grains, **2024 Georgia Entomological Society Meeting, Jekyll Island, GA, April, 2024** - presentation of 10 minutes

CERTIFICATIONS AND LICENSES

Valid Georgia Driver's License

PROFESSIONAL MEMBERSHIP

HONORS AND AWARDS

- | | |
|--|------------------------------------|
| The Foundation Fellowship - 500 dollars | <i>January 2024- April 2024</i> |
| • Most Outstanding and Innovative Student of the Year, KNUST, Kumasi, Ghana. | <i>September 2018 - May 2019</i> |
| • Most Outstanding Leadership Performance, KNUST, Kumasi, Ghana. | <i>September 2017 - April 2018</i> |

RESEARCH EXPERIENCE

Research Assistant/Entomologist *August 2023 - Present*
Salzman Lab, Department of Entomology, University of Georgia

- Designed and conducted experiments on thermal tolerance and moisture preferences of *Sitophilus zeamais*, utilizing advanced techniques such as temperature gradient assays and moisture preference assays to study insect behavioral and physiological responses.
- Collected data on weevil behavior, thermal tolerance, and developmental success, performed statistical analyses, and compiled comprehensive reports.

Entomologist *August 2022 - May 2023*
AMAATI Company Limited, Tamale, Ghana

Achievements :

- Successfully developed community monthly and annual work plans for IPM activities
- I successfully identified and created a partnership with relevant NGOs and institutions that can provide capacity building and support to Fonio and or Millet Farmers
- I worked closely with government partners to ensure IPM fieldwork are undertaken in compliance with district rules and regulations
- Provided materials and facilitated training programs to ensure quality technical messages on various models reached all the target beneficiaries
- I monitored insect-feeding behavior, insect physiology, plant-insect interactions, and insect-feeding biology
- I weighed, formulated, and applied experimental and commercial insecticides to millet and fonio pest targets and their habitats

Entomologist *February 2021 - August 2022*
Ameen Sangari Farms Limited, Palm Fruit Production, Jukwa, Cape-Coast, Ghana

Achievements :

- Enhanced farm supervision on core responsibilities
- I supervised the application of combined pest and disease control techniques
- I successfully conducted IPM of oil palm and cashew training assignments in the Jukwa community
- I trained 59 farmers on the avoidance of discriminating pesticide usage
- I kept the plantation clean by removing all insect breeding grounds
- I educated farmers on the development of pest-tolerant oil palm variety

TEACHING EXPERIENCE

Agricultural Science / Head of Department, Agricultural Department *July 2019 - August 2020*
Integrated Community Centre for Employable Skills (ICCES), Ejura Ghana

Achievements :

- After a teacher-led lesson, I made students evaluate their knowledge with a peer and using of real-world scenarios and problem-solving activities
- I informed and taught 542 students about Agricultural literacy and Agricultural sustainable goals
- As the head of the Agricultural Science Department, I provided continuing professional development support to students and other Agricultural Science teachers.
- I led, managed, and developed the Agricultural Science department to ensure it achieves the highest possible standards of excellence in Agricultural Science leadership and extension education
- I assessed student learning styles and used the data to develop educational activities
- I made sure student conduct was managed in line with the Student Code of Conduct and the student handbook

MENTORING EXPERIENCE

Organized free tutorials for freshmen

Supervised undergraduate research

Taught Science and English basic school students and prepared them for their final exams

Aided in the development and execution of science, English, adult education, and community initiatives