

Franklin Y. Quarcoo
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EDUCATION

August 2009

Doctor of Philosophy

Department of Entomology and Plant Pathology
Auburn University, Alabama.

Major: Entomology

Area of Emphasis: Behavioral toxicology of subterranean termites

May 2006

Master of Science

Plant and Soil Sciences Department
College of Agricultural, Environmental and
Natural Sciences, Tuskegee University,
Alabama

Major: Plant and Soil Sciences

Area of Emphasis: Pest profiles of sweetpotato cultivars.

March, 2001

Bachelor of Science

College of Agriculture Science
Kwame Nkrumah University of Science and Technology
Kumasi, Ghana.

Major: Animal Science

EMPLOYMENT HISTORY

Post Doctoral Research Associate in Entomology

Department of Agricultural and Environmental Sciences, Tuskegee University, 2009-
Present.

Graduate Research Assistant

1. Department of Entomology and Plant Pathology, Auburn University, 2006-2009.
2. Department of Agricultural and Environmental Sciences, Tuskegee University, 2003-2005.

Project Executive

Youth and Social Enterprise Fund, Ghana, 2001- 2003.

Integrated Science Instructor

Zebilla Secondary-Technical School, Zebilla, Ghana, 2000- 2001

RESEARCH EXPERIENCE

1. Principal Investigator: Performance of selected botanicals and biopesticides against foliage feeding insect pests of egg plant, okra, pepper, long bean, waterleaf, and three edible *Amaranthus* spp, April 2011- Present.
2. Co-Investigator: Level of pesticide residues in fruits and vegetables sold at farmers markets in Alabama, September 2009 - Present.
3. Co-Investigator: Level of pesticide residues in fruits and vegetables sold at farmers markets in Alabama, September 2009 - Present.
4. Principal Investigator: Relative performance of five organic insecticides (with different modes of action) against cowpea insect pests, May 2010-Present.
5. Graduate Research Assistant: Performance of Indoxacarb and Chlorantraniliprole against eastern subterranean termites in houses (structures). Department of Entomology and Plant Pathology, Auburn University, December 2006 - August 2009.
6. Principal Investigator: Temperature-driven variation in toxicity of non-repellent insecticides against subterranean termites. Department of Entomology and Plant Pathology, Auburn University, December 2007 - March 2008.
7. Graduate Research Assistant: Ebeling choice box studies on the performance of different bait compounds against German cockroaches. Department of Entomology and Plant Pathology, Auburn University, August - December 2007.
8. Principal Investigator: Effects of indoxacarb and fipronil on the walking and tunneling abilities of subterranean termites. Department of Entomology and Plant Pathology, Auburn University, June 2007 - November 2007.
9. Graduate Research Assistant: Field study on the relative efficacy of selected pesticides against monogyne fire ants. Department of Entomology and Plant Pathology, Auburn University, May 2006 - August 2007.
10. Principal Investigator: Indoxacarb: effects of concentration and duration of exposure on the onset of abnormal behaviors in termites. Department of Entomology and Plant Pathology, Auburn University, January - May 2007.
11. Principal investigator: Behavioral response of subterranean termites to different classes of non-repellent insecticides. Department of Entomology and Plant Pathology, Auburn University, January - December 2006.
12. Graduate Research Assistant: Relative susceptibility of selected cowpea varieties to cowpea weevil (*Callosobruchus maculatus*), green stink bug (*Acrosternum hilare*), and the leaf-footed bug (*Leptoglossus phylloplus*). Department of Agricultural and Environmental Sciences, Tuskegee University, May 2003-December 2004.
13. Graduate Research Assistant: Effect of time of planting on the susceptibility of selected cowpea varieties to field and storage pests, Department of Agricultural and Environmental Sciences, Tuskegee University, May 2003-December 2004.

Dissertation/thesis research

1. Behavioral toxicology of the eastern subterranean termite, *Reticulitermes flavipes* (Kollar) (Isoptera: Rhinotermitidae). PhD dissertation research. Department of Entomology and Plant Pathology, Auburn University, August 2008-August 2009.

2. Sweetpotato pest profiles in selected counties in Alabama and inferences on the role of environmental factors. M.S. thesis research. Agricultural and Environmental Sciences Department, Tuskegee University, May 2004- May 2005.

TEACHING AND EXTENSION EXPERIENCE

University level courses taught

PLSS 513 – General Entomology and Introduction to IPM (Tuskegee University)

PLSS 540- Integrated Pest Management (IPM)

High School level courses taught

Chemistry (Zebilla Secondary-Technical School, Ghana)

Integrated Science (Zebilla Secondary-Technical School, Ghana)

Extension experience

1. Acting Integrated Pest Management (IPM) Extension Specialist, Tuskegee University Cooperative Extension Program (TUCEPT), 2009- present.
2. Facilitator/project coordinator, Community Water and Sanitation Project (CWSP) - Youth and Social Enterprise Fund, Ghana, 2001-2003.
3. Facilitator/project coordinator, Village Infrastructure Project (VIP) - Youth and Social Enterprise Fund, Ghana, 2001-2003.

SCHOLARLY AND CREATIVE ENDEAVORS

Quarcoo, F., Hu, X.P., and Appel, A.G. 2012. Effects of non-repellent termiticides on the tunneling and walking ability of the eastern subterranean termite (Isoptera: Rhinotermitidae). *Pest Management Science*.doi: 10.1002/ps.3302.

Quarcoo, F., Appel, A. and Hu, X.P. 2010. Effects of indoxacarb concentration and exposure time on onset of abnormal behaviors, moribundity, and death in eastern subterranean termite. *Journal of Economic Entomology* 103:762-769.

Quarcoo, F., Appel, A., and Hu, X.P. 2010. Descriptive study of non-repellent insecticide-induced behaviors in *Reticulitermes flavipes* (Isoptera: Rhinotermitidae). *Sociobiology*. 55: 1-10.

Jackai, L.E., Sosinski, B., Jackson, D.M., Sorenson, K.A., Bonsi, C.K., Addo-Bediako, A. Ali, R., Tameru, B., **Quarcoo, F.**, and Alvarez M.N. 2006. Occurrence and intra-specific variation of sweetpotato weevil (Brentidae: Coleoptera) in relation to its potential spread in southern United States of America and the Caribbean. *Acta Horticulturae (ISHS)* 703:197-204.

Presentations at Professional Meetings and Seminars

Quarcoo, F. 2011. Insect Pest Management in Organic Farming Systems. Hands-on Training in Organic Farming for Extension Professionals in the South East, May 17-18, Tuskegee University Kellogg Conference Center, Tuskegee, Alabama.

Quarcoo, F. 2011. Status of integrated pest management in black belt counties in Alabama and effects on food safety. ARD Biennial Meeting, Atlanta, Georgia

Quarcoo, F. 2011. Integrated Management of Armyworms and Colorado Potato Beetles in Vegetable Production. 119th Annual Farmers conference, February 17-18, Tuskegee University Kellogg Conference Center, Tuskegee, Alabama.

Quarcoo, F. 2010. Behavioral Toxicology of Subterranean Termites. Seminar Series: Department of Agriculture and Environmental Science, Tuskegee University, September 22, Milbank Hall, Tuskegee, Alabama.

Quarcoo, F. 2010. Integrated Pest Management. Sustainable Agriculture Field Day, Tuskegee University Cooperative Extension Program, September 30, Mary Starke Harper Hall, Tuskegee, Alabama.

Quarcoo, F. 2010. Integrated Management of Pests. 118th Annual Farmers conference, February 17-19, Tuskegee University Kellogg Conference Center, Tuskegee, Alabama.

Quarcoo, F. 2008. Effects of non-repellent insecticides on tunneling and walking abilities of *R. flavipes* workers (Isoptera: Rhinotermitidae). Entomological Society of America (ESA) Annual Meeting November 16-19, Reno-Sparks Convention Center, Reno, Nevada.

Quarcoo, F., Song D., and Hu, X.P. 2006. Effects of concentration and exposure period to indoxacarb on the onset of abnormal behaviors in eastern subterranean termites (Isoptera: Rhinotermitidae). Entomological Society of America (ESA) Annual Meeting December 10-13, the Indiana Convention Center, Indianapolis, Indiana.

TRAINING AND RESEARCH CAPABILITIES

Training received:

1. Curriculum development for 4H science students (Huntsville, Alabama).
2. Course alignment for higher academic performance (Tuskegee University).
3. Technical writing/proposal writing (Auburn University).
4. Trials of candidate termiticides in forest settings (Auburn University).
5. Trial of candidate termiticides in structures (Auburn University).
6. Correct ways of controlling rodents (Auburn University)
7. Controlling the German Cockroach (Auburn University)
8. Use of bait systems to control termites (Auburn University)
9. Rearing of animals in controlled environments (Auburn University).
10. Occupational safety:
 - (a) Safety precautions and handling of emergencies in laboratory settings (Auburn University)
 - (b) Proper handling of hazardous materials (Tuskegee University).
11. The design of experiments involving living organisms (Tuskegee University).
12. Design of field experiments (Tuskegee University).
13. Assessment of insect diversity and population dynamics in crop environments.

Research capabilities and interests

1. Performance of IPM tactics such as use of trap crops in the control of insect pests.
2. Performance of organic insecticides (especially biopesticides and botanicals) against insect pests.
3. Weather-driven pest population dynamics.
4. Effect of pest management practices on pesticide residues on food products.
5. Insect toxicology
 - (a) Toxicological studies (with emphasis on toxicity of pesticides).
 - (b) Behavioral response of insects to insecticides
 - (c) Performance of novel pesticides (new chemistries) and novel pest control/management methods
6. Behavioral biology and ecology of insects
7. Control of urban and structural pests such as termites, ants, cockroaches, and bedbugs.
8. Performance of biopesticides and efficacy of novel pest control methods.
9. Use of non-chemical approaches to pest management e.g. ecological management of the crop environment (i.e., tillage practices and irrigation).
10. Performance of non-repellent insecticides against subterranean termites

COMPUTER SKILLS AND SOFTWARE KNOWLEDGE

Microsoft office suite 2009

The SAS system

STATVIEW

SigmaPlot

@Risk (Risk analysis software)

DIVA GIS

PROFESSIONAL MEMBERSHIPS AND AWARDS

Professional Memberships

Member of Entomological Society of America since November 2005.

Executive Member (Historian) of Gama Sigma Delta since May 2012.

Awards

George Washington Carver Society Scholarship, Tuskegee University, 2005.