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# **EDUCATION**

# Ph.D. Soil Ecosystem Phytopathology and Nematology:

 April 2004 - December 2007, University of Bonn, Germany. Dissertation: "Presence and frequency of occurrence of plant parasitic nematodes on coffee (Coffea arabica L, Rubiacea) in Ethiopia and the importance of endophytic microorganisms for biocontrol.

# M.Sc. Nematology:

September 1999 – October 2000, University of Ghent, Belgium.
 Great Distinction. Thesis: "Damage potentials of root-knot nematode, Meloidogyne incognita and Meloidogyne javanica, isolates from Belgium and Ethiopia on tomato and pepper.

### B.SC. Plant Sciences:

 September 1992 – July 1996, Alemaya University of Agriculture, Ethiopia. Thesis:" Evaluation of haricot bean (*Phaseolus vulgaris*).genotypes to angular leaf spot (*Phaeoisariopsis griseola*) resistance.

## PROFESSIONAL EXPERIENCE

- January 2011 present: Director, Nematode Assay Laboratory: Assistant Extension Nematologist, Department of Entomology and Nematology, University of Florida, Gainesville, Florida. Responsible for teaching graduate students, Research, and Extension.
- April 2008 December 2010: Postdoctoral Research Associate, Energy Biosciences Institute, University of Illinois. Responsible for assessing the potential impact of plant parasitic nematodes associated with plants used for biofuels.
- March 2006: Visiting scientist to renowned laboratories of Nematology and plant pathology in different Universities of USA (University of Georgia, North Carolina, South Carolina). Experience sharing and project development.
- **January 2006 December 2007:** Graduate teaching assistant to M.Sc. and Ph.D. students, University of Bonn, Germany. Responsible for assisting and mentoring graduate students.

- August 2004: Visiting scientist to study biogeography and mass production technology of entomopathogenic nematodes at the University of Rutgers, USA. Responsible for developing mass production techniques of entomopathogenic nematodes for insect pest control.
- April, 2004 December, 2007: PhD candidate and Graduate Assistant, University of Bonn, Germany. Responsible for assisting graduate courses and teaching laboratory courses.
- **November 2000 September 2003:** Research Nematologist **II** at the Ethiopian Agricultural Research Organization, Ambo, Ethiopia. Responsible for coordination of national nematology researches.
- August 1998 August 1999: Assistant Research Nematologist I at the Ethiopian Agricultural Research Organization, Ambo, Ethiopia. Responsible for designing and executing nematode management strategies.
- April 1997 August 1998: Junior Research Plant Pathologist at the Ethiopian Agricultural Research Organization, Ambo, Ethiopia. Responsible for conducting crop protection management strategies. Experience

### TEACHING EXPERIENCE

# **Current Graduate Courses at the University of Florida**

- Nematode Systematics and Molecular Phylogeny (NEM 6102): The course focuses on theory and practice of using molecular evidence, particularly DNA sequence data, for addressing diverse systematic and evolutionary questions.
- Nematode Morphology and Anatomy (NEM6101): Train students on the detailed morphology and anatomy of nematodes, emphasizing features that form the basis of identification and classification.
- Nematode Diagnostics (NEM6708): Train students in diagnosis of nematode disorders of plants; expose students to current applied research being conducted in Nematology and related subjects, and to familiarize the students with Integrated Pest Management.
- Nematode ID (NEM6905): Train students in identifying soil dwelling nematodes to species level using morphology and molecular techniques. Taxonomy paper writing.
- Plant Nematology (NEM5707) (Web based, spring 2015): Train students to understand the biology, ecology and pathogenesis of nematodes that cause plant diseases; to understand the morphology, classification, and life histories of plant nematodes; to understand about the effects of nematodes on their host plants.

## <u>Undergraduate courses taught</u>

- Phytopathology: Assisted with all laboratory preparation and activities, created and delivered lectures, assisted with grading. University of Bonn, Germany.
- Introduction to Plant disease: Assisted with course conception, design, and development of discussion material. Responsible for delivering half of the lectures, supervising class discussions, and evaluating student participation to determine grades, Ambo University, Ethiopia.

# Short term trainings taught

- 1<sup>st</sup> international Nematode identification and diagnosis course. September 29 – October 4, 2012. Eskishehir, Turkey.
- Techniques in Electron Microscopy: 2011, University of Florida. Course taught to visiting scientists and graduate students.
- Molecular methods in nematode identification: 2011, University of Florida.
   Course taught to visiting scientists and graduate students.

### **ADVISING AND GRADUATE COMMITTE**

**Awol Seid: 2012-2016:** University of Ghent, Belgium. Research on the biology and management of root-knot nematodes in Ethiopia. **Co-advisor.** 

**David Sekora: 2011- 2013,** University of Florida, M.Sc. candidate, University of Florida. Research on nematode plant resistance. **Major advisor.** 

Jeffery Fedenko, 2012-2015. University of Florida, Research on bioenergy crops. **Graduate committee member.** 

Ruohan Liu: 2011- 2012. M.SC candidate in Entomology. **Graduate committee** member.

**Richard Baidoo: 2011- 2015,** University of Florida, Ph.D. candidate. Research on species distribution, molecular characterization, and management strategies of root-knot nematodes associated with ornamentals in Florida. **Graduate committee member.** 

**Yunfeng Chen**: 2005- 2007, University of Bonn, Research on the effect of land reclamation on the soil nematode community. Research mentor. University of Bonn visiting scientist. Currently working at Institute of Plant Protection and Soil Fertilizer, China.

## SOCIETIES AND PROFESSIONAL MEMBERSHIPS

 Current: American Society of Nematology, European Society of Nematologists, American Phytopathology Society

• Former: Biological Society of Ethiopia, Crop Science Societies of Ethiopia, Crop Protection Society of Ethiopia, Weed Science Society of Ethiopia, and German Phytomedizin Society.

#### PROFFESSIONAL MEETINGS AND WORKSHOPS ATTENDED

- May 1- 10: 4<sup>th</sup> international nematology Congress. Cape Town, South Africa
- September 23 27, 2012: 31<sup>st</sup> international European Society of Nematologists. Adana, Turkey.
- September 22- 23, 2012: 3<sup>rd</sup> international cereal Cyst nematode Initiative workshop, Adana, Turkey
- August 12 15<sup>st</sup> 2012: Society of Nematologists 51<sup>st</sup> annual meeting, Savannah, Georgia.
- July 11- 14, 2010: Society of Nematologists 49<sup>th</sup> annual meeting, Boise, Idaho.
- July 12-15, 2009: Society of Nematologists and soil ecologists 48<sup>th</sup> Annual Meeting, Burlington, Vermont.
- August 1-5, 2009: American Phytopathological Society Annual Meeting, Portland, Oregon.
- September 25 28, 2006: 55<sup>th</sup> German plant protection symposium, Gottingen, Germany.
- June 5 9, 2006: 28<sup>th</sup> Symposium of the European society of Nematologists, Blagovegrad, Bulgaria.
- May, 2005: 57<sup>th</sup> international crop protection symposium, Ghent, Belgium.
- April 13 14, 2005: 33rd Annual Nematology Meeting, Stromkendorf, Germany.
- October 19 20, 2004: Coordinator and principal leader for US-Ethiopia joint international project workshop with the theme: Achieving Sustainability through Grower-Driven Production of Biopesticides, Ethiopia.
- July 8-12, 2002: 3<sup>rd</sup> global taxonomy workshop and project development for taxonomy of small bodied microorganisms, Pretoria, South Africa.
- August, 2002: Coordinator and principal leader for the travel work shop to the cool season food legumes growing regions of Ethiopia led by Ethiopian and Italian researchers.
- January 13-16, 2002: 1<sup>st</sup> international insect nematodes meeting held in Sharm EL Sheik, Egypt.
- May 25-30, 2000: 52<sup>nd</sup> international crop protection symposium, Ghent, Belgium.
- August 4 8: 24<sup>th</sup> international Nematology meeting organized by European Society of Nematologists held in Dundee, Scotland, 1998.

### **GRANTS RECEIVED**

- ✓ 62500: 2014. Evaluation of cucumber seeds coated with *P. penetrans*.
- ✓ \$15,000: *P. penetrans* and root-knot nematode increase for screening
- √ \$10,000: 2013. identification of Pasteuria penetrans clonal lines for the control of root-knot nematodes
- ✓ \$10,000: 2013. Development of growth media to increase *Pasteuria* species under greenhouse conditions
- √ \$9250: 2013. Increasing Pasteuria nishizawae from soil samples collected from Illinois
- ✓ 10,000: 2013. Inoculation methods for *P. nishizawae*
- ✓ \$ 10, 000- 2013. Evaluation of root systems infected by *Anguiana* pacificae
- √ \$8410: 2013. Nematode identification training
- ✓ \$5000 2012. Funding from UF dean for research for a research project 'development of molecular methods to detect root-knot nematodes in Florida'.
- ✓ \$38,000 2012. Funding from Syngenta for a research project 'Genotypic and bio-efficacy/virulence-typing of the Pn-1 formulation'.
- ✓ \$57,000 2012. Funding from Syngenta for a research project 'Determine optimal growth conditions for culturing Pn-1 *in vivo*'.
- √ \$5000- 2012. funding from Alabama University to study the use of Crustacean Wastes high in Chitin Content as a Soil Amendment and Anti-Nematode Agent.
- ✓ Bayer Crop Science: 2011. PI for greenhouse evaluation of alternative nematicides towards the control of root-knot nematodes on squash. \$8,000.
- ✓ German Academic Exchange Service: 2003- 2007. Educational grant to attend a PhD degree program at the department of Soil Ecosystem Phytopathology and Nematology, University of Bonn, Germany.
- ✓ The Charles A. and Anne Morrow Lindbergh foundation; 2003. \$10,580, PI for Rutgers-EARO collaborative research to work on mass production of entomopathogenic nematodes.
- ✓ Flemish University Exchange: 1999 2000. Educational grant to attend Masters of Science at the University of Ghent, Belgium.
- ✓ International Institute Of Tropical Agriculture (IITA): \$10,000, PI to work on the assessment of Enset and Banana weevils and nematodes in Ethiopia.
- ✓ ICARDA: \$10,000, Ethiopian counterparts PI to work on survey of plant-parasitic nematodes associated with cool season food legumes in Ethiopia.

## **PUBLICATIONS**

# **Refereed Research Articles**

- Abdelfattah A. Dababat, Mustafa Imren, Gul Erginbas-Orakci, Samad Ashrafi, Elif Yavuzaslanoglu, Halil Toktay, Shree R. Pariyar, Halil I. Elekcioglu, Alexei Morgounov, **Tesfamariam Mekete. 2014.** The importance and management strategies of cereal cyst nematodes, *Heterodera* spp., in Turkey. Euphytica: DOI 10.1007/s10681-014-1269-z.
- Eyualem Abebe, **Tesfamariam Mekete** and Wilfrida Decraemer. **2014**. E-typing for nematodes: An assessment of type specimen use by nematode taxonomists with a summary of types deposited at the Smithsonian Nematode Collection. Nematology. **DOI:** 10.1163/15685411-00002826
- Chen, Y.F., **Mekete, T.,** Dababat, A., Daub, M., Cao, Z.P and Sikora, R.A. **2014.**Response of nematode communities to reclamation of agricultural soils following degradation through brown coal strip-mining processes. *Helminthologia*, 51, 1: 53 62
- H. D. Lopez-Nicora, Mekete, T., Sekora N. and Niblack, T. L.. **2014**. First Report of the Stubby-Root Nematode (*Paratrichodorus allius*) From a Corn Field in Ohio. Plant disease 98. 8:1164.
- **Tesfamariam Mekete**, Amer Dababat, Nicholas Sikora, Faruk Akyazi, and Eyualem Abebe. **2013**. Identification key for agriculturally important plant-parasitic nematodes: A manual for nematology. Prepared for the International Nematode Diagnosis and Identification Course, Eskisehir, Turkey. CIMMYT pp122.
- Eyualem Abebe, Briana Ferebee, Tarreyca Taylor, Manuel Mundo-Ocampo, **Tesfamariam Mekete**, and Paul De Ley. **2013.** *Neotobrilus nicsmolae* n. sp. (Tobrilidae: Nematoda) and *Chronogaster carolinensis* n. sp. (Chronogasteridae: Nematoda) from Lake Phelps, North Carolina. Journal of Nematology. 45(1): 65 75
- Nyoike, T.W., **T. Mekete**, R. McSorley, E. Weibezahl-Kakarigi, and O. E. Liburd. **2012**. Confirmation of *Meloidogyne hapla* on strawberry in Florida using molecular and morphological techniques. Nematropica 42 (2): 253-259.
- F. Akyazi. M.A. Ansari, B.I. Ahmed. W.T. Crow and **T. Mekete. 2012.** First record of entomopathogenic nematodes (Steinernematidae and Heterorhabditidae) from Nigerian soil and their morphometrical and ribosomal DNA sequence analysis. Nematologia Mediterranea. 45: 95-100.
- H. D. Lopez-Nicora, **T. Mekete**, N. J. Taylor and T. L. Niblack. **2012.** First Report of Lesion Nematode (*Pratylenchus vulnus*) on Boxwood in Ohio. Plant disease, Volume 96, Number 9. Pp. 1385.
- **Mekete, T** & Sekora, N. 2012. A new study of plant-parasitic nematodes associated with energy crops reveals interesting results. First detector News, national Plant diagnostic Network. 7(1).2012

- Nicholas S Sekora, William T Crow, and **Tesfamariam Mekete**. **2012.** First Report of *Meloidogyne marylandi* Infecting Bermudagrass in Florida. Plant disease. http://dx.doi.org/10.1094/PDIS-06-12-0544-PDN. October 2012, Volume 96, Number:10 Page 1583.
- **Mekete,** T., Reynolds, K., Nicora, H., Gray, M.E & Niblack, T.L. **2011**. Distribution and diversity of root-lesion nematodes (*Pratylenchus spp.*) associated with *Miscanthus x giganteus* and *Panicum virgatum* used for biofuels and species identification in a multiplex polymerase chain reaction. Nematology: 13(6), 673-686.
- **Mekete,** T., Reynolds, K., Nicora, H., Gray, M.E & Niblack, T.L. **2011**. Plant-parasitic nematodes are potential pathogens of Miscanthus x giganteus and Panicum virgatum used for biofuels. Plant disease: 95 (4), 413-418.
- Hillnhütter, C., **Mekete, T.,** Reynolds, K., Gray, M., Niblack, T. 2011. Nematode impact on biomass production of *Miscanthus x giganteus* and *Panicum virgatum* in a field experiment. Aspects of Applied Biology 112: 1-4.
- Eyualem, A., **Mekete**, **T**. & Thomas, W. **2011**. A critique of current methods in nematode taxonomy. African Journal of Biotechnology: 10(3), 312-323.
- VAN DEN BERG, E. & **MEKETE, T. 2010**. Short notes on and new records of some Tylenchoidea (Nematoda) from Ethiopia. Nematologea Mediteranea: 38, 211-214.
- **Mekete, T.,** Grey, M.E. & Niblack, T.L. 2009. Distribution, morphological description, and molecular characterization of *Xiphinema and Longidorous* spp. associated with plants (*Miscanthus* spp. and *Panicum virgatum*) used for biofuels. Global Biology and Bioenergy: 1, 257-266.
- **Mekete, T,** Hallmann, J., Kiewnick, S. & Sikora, R.A. 2009. Endophytic bacteria from Ethiopian coffee plants and their potential to antagonize *Meloidogyne incognita*. Nematology: 11(1), 117-127.
- **Mekete, T.,** Sikora, R.A., Kiewnick, S. & Hallmann, J. 2008. Plant parasitic nematodes associated with coffee (*Coffea arabica* I., rubiaceae) in Ethiopia. Nematropica: 38(2), 177-186.
- **Mekete, T.,** Sikora, R.A., Kiewnick, S. & Hallmann, J. 2008. Description of plant parasitic nematodes associated with coffee in Ethiopia. Nematologia Mediteranea: 36, 69-77.
- **Mekete**, T., Gaugler, R., Nguyen, K.B., Mandefro, W., & Tessera, M. 2005. Biogeography of entomopathogenic nematodes in Ethiopia. Nematropica: 35 (1), 31 36.
- Marias, M., **Mekete, T.** & Tied, L.R. 2005. Description of *Helicotylenchus gerti* sp.n. and new records of some of *Helicotylenchus* (Steiner, 1945) from Ethiopia (Nemata: Hoplolaimidae). Journal of Nematode morphology and Systematic: 8 (1), 39 49.

- Nguyen, K.B., **Mekete, T.,** Ugur Gozel, U., Gaugler, R. & Adams, B.J. 2005. *Steinernema yirgalemense* n. sp. (Rhabditida: Steinernematidae) from Ethiopia. Nematology: 6, 839-856.
- Van Den Berg, E., Mekete, T. & Tiedt, L.R. 2004. New records of Criconematidae (Nemata) from Ethiopia. Journal of Nematode Morphology and Systematics: 6, 161 – 174.
- Bogale, M., Speijer, P., **Mekete**, T., Mandefro, W., Tessera, M., & Gold, C. 2004. Survey of plant parasitic nematodes and banana weevil on *Ensete ventricosum* in Ethiopia. Nematologia Mediterranea: 32 (2), 14-26.
- **Mekete, T.,** Mandefro, W. & Greco, N. 2003. Relationship between initial population densities of *Meloidogyne javanica* and damage to pepper and tomato in Ethiopia. Nematologia Meditranea: 31, 169-171.
- Wondirad, M. & **Mekete**, **T.** 2002. Root-knot nematodes in vegetable crops in the central and western Ethiopia. Pest Management Journal of Ethiopia: 6, 37-44.
- **Mekete, T.,** Nicoloe, V. & Maurice, M. 2002. Relationships between initial population density and damage caused by Meloidogyne incognita populations from Ethiopia. Pest Management Journal of Ethiopia: 6, 45 51.

### **Non-Refereed Research Articles**

- **Mekete, T,** Kiewnick, S., Hallmann, J. & Sikora, R.A. 2007. In vitro antagonism of endophytic fungi from coffee (Coffea arabica L.) in Ethiopia towards *Meloidogyne incognita*. Journal of Plant diseases and Protection: (114): 185.
- VAN DEN BERG, E.; **Mekete, T**. & TIEDT, L.R. 2006. Plant-parasitic nematodes in Ethiopia. Abstracts of the 17th Symposium of Nematology. *African Plant Protection:* 12: 38-39.
- **Mekete, T,** Hallmann, R.A., Sikora, R.A., Kiewnick, S. 2005: Biogeography of plant parasitic nematodes in coffee from Ethiopia. Phytomedizin 35(2):70.
- **Mekete, T.** 1998. Nematological research in Ethiopia (Status, achievement, and future direction). Proceedings of the 24th international symposium, Dundee, Scotland. European society of Nematologist Journal of Nematology. European society of Nematologists: 70.

### PROFFESSIONAL MEETINGS AND WORKSHOPS ATTENDED

- ✓ Abebe E, **Mekete T.** 2014. Nematode types: Used or archived? International nematology Congress, Cape Town, South Africa
- ✓ Joseph S, Martins L, Schmidt L, Hewlett T, Watrin C, **Mekete T**. 2014. Creation of *Pasteuria penetrans* clonal lines for study of genetic variation in *Pasteuria* spp. populations relating to host virulence. International nematology Congress, Cape Town, South Africa.

- ✓ Seid A, Wesemael WML, Decraemer W, **Mekete T**, Fininsa C. 2014. Biodiversity of root-knot nematodes (*Meloidogyne* spp.) from major tomato growing areas of Ethiopia. International nematology Congress, Cape Town, South Africa.
- ✓ Sekora NS, Crow WT, **Mekete T**. A knife in the dark: *Meloidogyne* spp. of Florida's golf courses.
- ✓ Baidoo R, **Mekete T,**, Brito JA, Crow WT. Molecular diagnostics of root-knot nematodes on *Pittosporum tobira* in Florida.
- ✓ Sekora D, Huffaker A, Crow WT, Kaplan F, Alborn HT, **Mekete T**. The effect of transgenic endogenous defense elicitors in *Arabidopsis* on root-knot nematodes (*Meloidogyne* spp.).
- ✓ Lopez Nicora, H.D, Mekete, T., Colgrove, A., Bowman, D., Morrison, J., Feltes, D., and Niblack, T.L. 2011. The distribution and abundance of nematodes associated with Corn in Illinois. APS Annual Meeting, August 6- 10, Honolulu, Hawaii.
- ✓ Hillnhütter, C., Mekete, T., Reynolds, K., Gray, M.E. & Niblack, T.L. 2011. Decrease in biomass of energy crops due to plant-parasitic nematodes. Society of Nematologists, 50<sup>th</sup> annual meeting, July, 17-21, Corvallis, Oregon.
- ✓ Mekete, T., Reynolds, K., Nicora, H., Gray, M.E & Niblack, T.L. 2010. Distribution and diversity of root-lesion nematodes (*Pratylenchus spp.*) associated with plants used for biofuels and species identification in a multiplex polymerase chain assay. 49<sup>th</sup> annual meeting, July 12 - 16, Boise, Idaho.
- ✓ **Mekete, T.,** Grey, M.E. & Niblack, T.L. 2009. Plant-parasitic nematodes, potential pathogens of *Miscanthus x giganteus* and *Panicum virgatum* used for biofuels. Society of Nematologists, 48<sup>th</sup> Annual Meeting July 12-15, 2009, Burlington, Vermont.
- ✓ Mekete, T. M. Grey & T. Niblack. 2009. Distribution and diversity of root-lesion nematodes (*Pratylenchus spp.*) associated with plants (*Miscanthus* spp. and *Panicum virgatum*) used for biofuels. APS Annual Meeting, August 1-5, 2009, Portland, Oregon.
- ✓ Mekete, T., Sikora, R.A, Kiewnick, S. and Hallmann, J. Geophytonematology of plant parasitic nematodes associated with coffee. 28<sup>th</sup> Symposium of the European society of Nematologists held in Blagovegrad, Bulgaria, 5- 9 June, 2006.
- ✓ **Mekete**, **T.**, Sikora, R.A, Kiewnick, S. and Hallmann, J. Studies on the communities of endophytic bacteria in coffee from Ethiopia and their in vitro antagonistic potential toward M incognita, 55<sup>th</sup> German plant protection symposium, held in Gottingen, Germany from Sept 25 28, 2006.

✓ Mekete, T. Nematological research in Ethiopia (status, achievements and future directions). 24<sup>th</sup> international nematology meeting held in Dundee, Scotland. 1998.

## **SERVICE- PROFESSIONAL ACTIVITY**

### Service

- Chair, SON Honors and Awards committee
- Ad-hoc reviewer for Journal of Invertebrate Pathology

#### Reviwer

HORTTECHNOLOGY (2011); JOURNL OF AGRICULTURAL SCEINCE (2011); PROCEEDINGS OF THE ROYAL SOCIETY OF BIOLOGICAL SCEINCES (2010); NEMATOLOGY (2009); NEMATROPICA (2009)

#### OUTREACH AND EXTENSION

- ✓ March 16, 2013: Participated in the IFAS open house fair representing the nematode Assay Lab. The event was attended by county representatives, growers, and researchers. During the event we provided free soil testing service.
- ✓ Feb 7- Feb. 18, 2013: We participated at the Florida State fair in Tampa attended by more than 65, 000 people.
- ✓ Oct. 19- Oct. 20, 2013: We participated at the Butterfly fest attended by 3200 visitors.
- ✓ July 11, 2013 the lab participated at the SVP breakfast buzz banner and poster showcase: We presented the Nematode Assay Lab poster during the event
- ✓ In 2013, we reached out to growers and researchers via E-mails, telephone calls and online advice. More than 3500 telephone calls and Email exchanges were made to further strengthen our relationship with clients and researchers.
- ✓ The Nematode Assay Lab now offers a sampling service. The sampling service includes a site visit by an Assay Lab employee, soil sample analysis, and management recommendations by an extension

- nematologist. In 2013, we received sampling and diagnosis request from three growers. In 2014, we planned to expand this service to provide efficient services to our clientele.
- ✓ In October 2013, master gardeners accompanied by their mentor visited the Nematode Assay Lab to see how the lab is a valuable resource for the agriculture industry. During their visit, they learned proper sample collection methods for nematode diagnosis, viewed damage specimens displaying nematode symptoms, and methods in nematode threshold functions.
- ✓ Master gardeners orientations ( every semester)
- ✓ Science fair projects for Floridian 6<sup>th</sup> graders
- ✓ Nematode diagnosis and advise to growers, chemical companies, county extension offices, etc..
- ✓ Media Interview on nematodes of biofuels: the story won more than 80 media agencies including AP, USA today, EUREKA Alert, etc.