Mark P. Culik
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Education:

Ph.D., Plant and Soil Sciences, Entomology concentration, West Virginia University, 1995
Dissertation: Effects of Pasture Management Factors on Red Clover Root and Stand Characteristics and Observations of Seasonal Crawling Activity of Root-Feeding Insect Pests of Red Clover

M.S., Entomology, West Virginia University, 1985
Thesis: A Survey of Collembola and Acari Inhabiting the Soil of Reclaimed Surface Mines in Monongalia County, West Virginia

B.S., Agriculture, University of Delaware, 1981
Double Major: Entomology-Plant Pathology and Plant Science

Professional Interests:

I have broad research interests in entomology and ecology, including integrated pest management, taxonomy, and the interrelationships of biodiversity and sustainability, with current specific interests in the ecology of invasive pests and beneficial insects such as parasitoids and predators, and biological control of pests.

Work Experience:

Visiting Scientist. 1999-present. Instituto Capixaba de Pesquisa, Assistência Técnica e Extensão Rural – INCAPER (Espírito Santo State Rural Research and Extension Organization), Vitória, Espírito Santo, Brazil. Currently conducting research to support development of IPM practices for production of crops such as pineapple with emphasis on identification of scale insect pests and their natural enemies. Research on papaya IPM including evaluation of effects of integrated and conventional management practices on soil fauna (Collembola) and identification of pests (Acari, Cicadellidae, Aleyrodidae, Coccoidea). Research to study effects of organic and conventional agricultural practices on soil organisms including systematics and identification of soil microarthropod (Collembola, Acari) species present in Espírito Santo.

Consultant Entomologist. 1998-1999. Morgantown, WV. Provided family level identifications of a diverse variety of insects collected in University and USDA research projects.

Program Specialist-Pest Management. 1995-1998. Extension Assistant. 1993-1995. West Virginia University, Morgantown, WV. Responsibilities included pesticide use assessment and response to pest and pesticide information requests. Responsible for West Virginia National Agricultural Pesticide Impact Assessment Program (NAPIAP) activities including developing survey forms, collecting and tabulating responses, and analysis, summarization, and reporting of pesticide use information on crops such as apple, alfalfa, and tobacco. Assisted with IPM programming and training (forages, greenhouse etc.) and pest (plant disease and arthropod) identification and management recommendations.

Work Experience cont.:

Graduate Research Assistant. 1989-1993. West Virginia University, Morgantown, WV. Managed field work for an interdisciplinary research project: Interrelationships of red clover management systems, insect injury, and *Fusarium* infection. Responsible for scheduling, arranging for, and assisting with appropriate harvesting and sampling for the four-year project. Assisted with turf pest research.

Biological Laboratory Technician (Insects). 1986-1988. USDA-ARS Stored Product Insects Research Laboratory, Savannah, GA. Assisted with monitoring insect populations of stored grain (collection and processing of samples; identification of insects collected). Established insect cultures suitable for laboratory studies. Conducted experiments to determine effects of environmental factors such as grain quality on pest insects.

Graduate Research Assistant. 1982-1985. West Virginia University, Morgantown, WV. Assisted with pest control studies on turfgrass, alfalfa, corn, cattle, and poultry. Helped set up test plots, apply experimental pesticides, sample plots, and record data.

Orchard IPM Scout and Technician. 1982. WV Farmers Coop. Assoc., Martinsburg, WV, and West Virginia University Tree Fruit Expt. Farm, Kearneysville, WV. Monitored pests in 200 acres of private apple and peach orchards as part of an IPM program. Assisted with orchard pest management studies; maintained/monitored pheromone traps, applied experimental pesticides.

Agricultural Research Technician. 1977-1978. DuPont Chemical Company, Newark, DE. Responsible for weekend maintenance (care of plants) of two research greenhouses, and assisted with field work including preparation of material for planting, maintenance of field research plots, and collection of samples.

Professional Presentations:

Brazilian Entomological Society (SEB) Meeting, 2006, 2004.
Congresso Brasileiro de Pesquisas Cafeeiras, 2006
Entomological Society of America Annual Meeting, 2020, 2013, 2005, 2002, 1995, 1994, 1992, 1990.
Entomological Society of America Southeastern Branch Annual Meeting, 2010.
International Congress of Entomology, 2016, 2008, 2004, 2000.
LIV Annual Meeting of the Interamerican Society for Tropical Horticulture, 2008.
Papaya Brasil (International Papaya Symposium), 2015, 2011, 2009, 2007, 2005, 2003.
Simpósio de Pesquisa dos Cafés do Brasil, 2019.
University of Florida Center for Tropical Agriculture Potential Invasive Pests Workshop, 2010.
VI International Pineapple Symposium, 2007.
VIII Seminário Brasileiro de Produção Integrada de Frutas, 2006.
XX Congresso Brasileiro de Fruticultura, 2008.

Computer Experience: SAS (Statistical Analysis System); Word, Excel, PowerPoint, etc.

Citizenship: US and Brazilian

Foreign Languages: Portuguese, French (Native Language: English)

Honors: Gama Sigma Delta

Publications:

Moura, R.D.; De Castro, L.A.M.; Culik, M.P.; Fernandes, A.A.R.; Fernandes P.M.B.; Ventura, J.A. Culture medium for improved production of conidia for identification and systematic studies of *Fusarium* pathogens. Journal of Microbiological Methods 173:105915.

Culik, M.P.; Ventura, J.A.; Martins, D.S. 2019. Evaluation of a bait for ant management in tropical fruit crops in Espírito Santo, Brazil. Acta Horticulturae, 1239:173-176.

Martins, D. dos S.; Fornazier, M.J.; Peronti, A.L.B.G.; Culik, M.P.; Souza, C.A.S.; Taques, R.C.; Junior, J.S. Zanuncio; Queiroz, R.B. 2019. *Maconellicoccus hirsutus* (Hemiptera: Pseudococcidae) in Brazil: recent spread, natural enemies, and new hosts. Florida Entomologist, 102:438-443.

Ventura, J. A.; Lima, I. de M.; Martins, M.V.V.; Culik, M.P.; Costa, H. 2019. Impact and management of diseases in the propagation of fruit plants. Revista Brasileira de Fruticultura, 41:1-13.

Zanuncio-Junior, J.S.; Fornazier, M.J.; Andreazza, F.; Culik, M.P.; Mendonça, L. de P.; Oliveira, E.E.; Martins, D. dos S.; Fornazier, M.L.; Costa, H.; Ventura, J.A. 2018. Spread of Two Invasive Flies (Diptera: Drosophilidae) Infesting Commercial Fruits in Southeastern Brazil. Florida Entomologist, 101:522-525.

Fornazier, M. J., D. dos S. Martins, C.A.S. Souza, M.P. Culik, J.M.A. Chipolesch, D.L. Fornazier, P.S.F. Ferreira, J.C. Zanuncio. 2017. Invasion of the main cocoa-producing region of South America by *Maconellicoccus hirsutus* (Hemiptera: Pseudococcidae). Florida Entomologist 100: 168-171.

Culik, M.P., J.A. Ventura, D. dos S. Martins. 2017. Evaluation of bait for integrated pest management (IPM) of ants associated with mealybugs and mealybug wilt disease of pineapple in Espírito Santo, Brazil, 2016-2017. Pineapple News 24:12-14.

Culik, M.P., J.A. Ventura, D. dos S. Martins. 2016. Range expansion of the invasive insect *Greenidea* (*Trichosiphon*) *psidii* (Hemiptera: Aphididae) in the Neotropical Region. SpringerPlus 5:734.

Culik, M.P., J.A. Ventura, D. dos S. Martins. 2016. Use of baits for integrated pest management (IPM) of ants, pineapple mealybugs, and mealybug wilt disease of pineapple in Espírito Santo, Brazil. Pineapple News 23:20-21.

Martins D. dos S.; J.A. Ventura, R. de C.A.L Paula; M.J. Fornazier; J.A.M. Rezende, M.P. Culik, P.S.F Ferreira, A.L.B.G. Peronti, R.C.Z de Carvalho, C.R. Sousa-Silva. 2016. Aphid vectors of Papaya ringspot virus and their weed hosts in orchards in the major papaya producing and exporting region of Brazil. Crop Protection. 90:191-196.

Culik, M.P., D. dos S. Martins, J.A. Ventura., V.A. Costa. 2014. The invasive gall wasp *Quadrastichus erythrinae* (Hymenoptera: Eulophidae) in South America: is classical biological control needed? Biocontrol Sci. Technol. 24:971-975.

Martins D.S., Fornazier M.J., Culik M.P., Ventura J.A., Ferreira P.S.F., Zanuncio J.C. 2014. Scale insect (Hemiptera: Coccoidea) pests of papaya (*Carica papaya*) in Brazil. Ann. Entomol. Soc. Amer. 1-8 DOI: 10.1093/aesa/sau010.

Culik, M.P., M.J. Fornazier, D. dos S. Martins, J.S. Zanuncio Junior, J.A. Ventura, A.L.B.G. Peronti, J.C. Zanuncio. 2013. The invasive mealybug *Maconellicoccus hirsutus*: lessons for its current range expansion in South America and invasive pest management in general. Journal of Pest Science 86:387-398.

Culik, M.P. and J.A. Ventura. 2013. Two new species of midge (Diptera, Cecidomyiidae) predators of scale insects (Hemiptera, Coccoidea). Journal of the Entomological Research Society, 15(2)103-113

Roda, A., Francis A., Kairo M.T.K., Culik M. 2013. *Planococcus minor* (Hemiptera: Pseudococcidae): bioecology, survey and mitigation strategies. pp. 288-300 in J. Peña (Ed.), Potential invasive pests of agricultural crops. CABI, Wallingford

Culik, M.P. and J.A. Ventura. 2013. A new species of cecidomyiid (Diptera, Cecidomyiidae) predator of scale insect (Hemiptera, Coccoidea) pests of pineapple. Acta Phytopathologica et Entomologica Hungarica, 48:129-134.

Publications cont.

Culik, M.P., D. dos S. Martins, J.S. Zanuncio Junior, M. J. Fornazier, J.A. Ventura, A.L.B.G. Peronti, J.C. Zanuncio. 2013. The invasive hibiscus mealybug *Maconellicoccus hirsutus* (Hemiptera: Pseudococcidae) and its recent range expansion in Brazil. Florida Entomologist 96:638-640.

Culik, M. P. and J. A. Ventura. 2012. A new species of cecidomyiid (Diptera, Cecidomyiidae) predator associated with scale insect (Hemiptera, Coccoidea) pests of coffee. J Entomol Res Soc14:9-13

Martins DS, JA Ventura, RCA Lima, MP Culik, H Costa, PSF Ferreira. 2012. Interaction between *Papaya meleira virus* (PMeV) infection of papaya plants and Mediterranean fruit fly infestation of fruits. Crop Protection, 36:7-10.

Culik MP, DS Martins, JA Ventura. 2011. New distribution and host records of chalcidoid parasitoids (Hymenoptera: Chalcidoidea) of scale insects (Hemiptera: Coccoidea) in Espírito Santo, Brazil. Biocontrol Sci. Technol. 21:877-881.

Culik, M. P., V. R. S. Wolff, A. B. G. Peronti, Y. Ben-Dov, J. A. Ventura. 2011. Hemiptera, Coccoidea: distribution extension and new records for the States of Espírito Santo, Ceará, and Pernambuco, Brazil. Check List 7:567-570.

Culik, M. P., J. A. Ventura, L. M. de Almeida, G. H. Corrêa. 2011. Feeding by the coccinellid *Psyllobora rufosignata* (Coleoptera: Coccinellidae) on the Asian grapevine leaf rust fungus *Phakopsora euvitis* (Basidiomycota: Uredinales). Biocontrol Science and Technology 21:235-238.

Culik, M.P. and J.A. Ventura. 2009. New species of *Rhinoleucophenga*, a potential predator of pineapple mealybugs. Pesquisa Agropecuária Brasileira 44:417-420. http://www.scielo.br/pdf/pab/v44n4/a13v44n4.pdf

Culik, M.P. and J.A. Ventura. 2009. Scale insects (Hemiptera: Coccoidea) of pineapple in the State of Espírito Santo, Brazil. Acta Horticulturae 822:215-218. http://www.actahort.org/books/822/822_26.htm

Culik, M.P., D. dos S. Martins, J.A. Ventura, V.S. Wolff. 2008. Diaspididae (Hemiptera: Coccoidea) of Espírito Santo, Brazil. Journal of Insect Science 8(17)1-6. http://www.insectscience.org/8.17/i1536-2442-2008-17.pdf

Culik M.P., D. dos S. Martins, J.A. Ventura, A.L.B.G. Peronti, P.J. Gullan, T. Kondo. 2007. Coccidae, Pseudococcidae, Ortheziidae, and Monophlebidae (Hemiptera: Coccoidea) of Espírito Santo, Brazil. Biota Neotropica 7(3)61-65.

Culik, M.P., D. dos S. Martins, P.J. Gullan. 2006. First records of two mealybug species in Brazil and new potential pests of papaya and coffee. Journal of Insect Science 6(23)1-6. http://www.insectscience.org/6.23

Culik, M.P., D. dos S. Martins, J.A. Ventura. 2006. Collembola (Arthropoda: Hexapoda) communities in the soil of papaya orchards managed with conventional and integrated production in Espírito Santo, Brazil. Biota Neotropica 6(3)1-8.

Kondo T., P.J. Gullan, J.A. Ventura, M.P. Culik. 2005. Taxonomy and biology of the mealybug genus *Plotococcus* Miller & Denno (Hemiptera: Pseudococcidae) in Brazil, with descriptions of two new species. Studies on Neotropical Fauna and Environment 40:213–227.

Culik, M.P. and P.J. Gullan. 2005. A new pest of tomato and other records of mealybugs (Hemiptera: Pseudococcidae) from Espírito Santo, Brazil. Zootaxa 964:1-8. http://www.mapress.com/zootaxa/2005f/zt00964.pdf

Martins, D. dos S. and M.P. Culik. 2005. Occurrence of the green leafhopper of papaya, *Solanasca bordia* (Langlitz) (Hemiptera: Cicadellidae), in Brazil. Neotropical Entomology 34:131-132.

Culik, M.P. 2004. First record of *Zaprionus indianus* (Diptera: Drosophilidae) in the state of Espírito Santo, Brazil. Drosophila Information Service 87:32-33. http://www.ou.edu/journals/dis/DIS87/Research/R1.pdf#Culik

Culik, M.P. and D. dos S. Martins. 2004. First record of *Trialeurodes variabilis* (Quaintance) (Hemiptera: Aleyrodidae) on *Carica papaya* L. in the state of Espírito Santo, Brazil. Neotropical Entomology 33:659-660.

Martins, D. dos S., M.P. Culik, and V.R. dos S. Wolff. 2004. New record of scale insects (Hemiptera: Coccoidea) as pests of papaya in Brazil. Neotropical Entomology 33:655-657. http://www.scielo.br/pdf/ne/v33n5/22691.pdf

Culik, M.P., D. dos S. Martins, and J.A. Ventura. 2003. Índice de artrópodes pragas do mamoeiro (*Carica papaya* L.). INCAPER, Vitória, Espírito Santo, Brazil. 48 pp.

Publications cont.

Culik, M.P. and D. Zeppelini Filho. 2003. Diversity and distribution of Collembola (Arthropoda: Hexapoda) of Brazil. Biodiversity and Conservation 12:1119-1143. http://www.springerlink.com/content/j5uq7l13048782k4/fulltext.pdf

Culik, M.P., J.L. de Souza, and J.A. Ventura. 2002. Biodiversity of Collembola in tropical agricultural environments of Espírito Santo, Brazil. Applied Soil Ecology 21:49-58.

Potapov, M. and M. Culik. 2002. A new species of *Folsomia* (Collembola: Isotomidae) from Brazil, with notes on foil-setae in the *fimetaria* group. Pan-Pacific Entomol. 78:69-73.

Baniecki, J.F., R.M. Wallbrown, and M.P. Culik. 1998. Resistance and yield of transgenic and other corn hybrids under virus disease pressure, Mason Co., WV, 1997. Biological and Cultural Tests. 13:16.

Baniecki, J.F. and M.P. Culik. 1997. Usage of newer pesticides by apple, alfalfa, and tobacco growers. West Virginia University Extension Service. Morgantown. 37 pp.

Baniecki, J.F., R.M. Wallbrown H.R. Scott, and M.P. Culik. 1997. Resistance and yield of corn hybrids under virus disease pressure, Mason Co., WV, 1996. Biological and Cultural Tests. 12:13.

Baniecki, J.F. and M. Culik. 1996. Pesticide usage on turf of West Virginia: 1994 survey summary. West Virginia University Extension Service. Morgantown. 18 pp.

Baniecki, J.F., R.M. Wallbrown, H.R. Scott, and M.P. Culik. 1996. Resistance and yield of corn hybrids under virus disease pressure, Mason Co., WV, 1995. Biological and Cultural Tests. 11:11.

Baniecki, J.F. and M. Culik. 1995. Pesticide usage on turf of West Virginia: 1993 survey summary. West Virginia University Extension Service. Morgantown. 18 pp.

Culik, M.P. and J.E. Weaver. 1994. Seasonal crawling activity of adult root-feeding insect pests (Coleoptera: Curculionidae; Scolytidae) of red clover. Environ. Entomol. 23:68-75.

Throne, J.E. and M.P. Culik. 1989. Progeny production and duration of development of rusty grain beetles, *Cryptolestes ferrugineus* (Stephens) (Coleoptera: Cucujidae), on cracked and whole corn. J. Entomol. Sci. 24:150-155.

Culik, M. and L. Deharveng. 1986. First records of the marine intertidal collembolan *Xenylla affiniformis* (Hypogastruridae) for North America. Entomol. News. 97:201-202.

Culik, M. and J. Najt. 1986. Ecomorphosis in *Folsomia elongata* MacGillivray, 1896 (Collembola: Isotomidae). J. Kansas Entomol. Soc. 59:395-397.