

Curriculum Vitae

Raul A. Ruiz Ph.D
Geneticist

USDA, APHIS, PPQ
Mission Lab

Edinburg, TX 78541

voice: 956-205-7675

email: raul.a.ruiz@aphis.usda.gov

Education

- 2010 (May) PhD degree in Entomology, The Pennsylvania State University: University Park, PA.
- 1999 (Dec.) M.S. degree in Biology, University of Texas-Pan American: Edinburg, Tx.
- 1987 (May) B.S. degree in Chemistry, University of Texas-Pan American: Edinburg, Tx.

Employment

01/2001 to present. Geneticist GS440-12, USDA APHIS PPQ Edinburg, Tx. Responsible for the development and implementation of technologies for the detection, identification, and differentiation of plant pests/pathogens utilizing DNA, RNA, proteins, or other chemical compounds. Conduct methods research both individually and a member of a team, and am responsible for providing leadership and technical advice as well as planning and conducting methods development for plant pest/pathogen detection and differentiation using molecular biology. Through experimentation, I rigorously validate or verify protocols, techniques, technologies, or reagents developed outside the Agency for use in APHIS programs. I manage cooperative agreements and consult on the science developed by contractors and cooperators.

Recent Funding

Project Lead USDA APHIS Project Code M7M02 FY 2015 \$129,000
Project Lead USDA APHIS Project Code M7M02 FY 2014 \$108,000
Project Lead USDA APHIS Project Code M7M02 FY 2013 \$70,000
Project Lead USDA APHIS Project Code M7M02 FY 2012 \$58,600
Project Lead USDA APHIS Project Code M7M02 FY 2011 \$67,050

Recent Cooperative Agreements

Cooperative Agreement 14-8130-0300-CA \$105,000 with UTRGV
Cooperative Agreement 13-8130-0300-CA \$53,000 with UTRGV
Cooperative Agreement 09-8100-1051-CA \$11,000 with Penn State
Cooperative Agreement 08-8100-1051-CA \$55,000 with Penn State
Cooperative Agreement 07-8100-1051-CA \$80,000 with Penn State

Selected Publications

Scally, M., Fritzie, I., Thomas, D.B., Ruiz-Arce, R., and Barr, N.B. Resolution of inter and intra-species relationships of the West Indian fruit fly *Anastrepha obliqua*. Molecular Phylogenetics and Evolution. (*In-publication*).

Ruiz-Arce, R., Barr, N. B., Owen, C. L., Thomas, D. B., & McPheron, B. A. (2015). Phylogeography of *Anastrepha ludens* Inferred with mtDNA Sequencing. *Journal of economic entomology*, 108(3), 1324-1336.

Barr, N.B., Ruiz-Arce, R., and K. Armstrong. (2014). Estimating the source population and movement of fruit flies using molecular methods. *In* Trapping Tephritid Fruit Flies: Lures, Area-Wide Programs, and Trade Implications.

Barr, N., Ruiz-Arce, R., Obregón, O., Leon, R. D., Foster, N., Reuter, C., & Vacek, D. (2013). Molecular Diagnosis of Populational Variants of *Anthonomus grandis* (Coleoptera: Curculionidae) in North America. *Journal of economic entomology*, 106(1), 437-449.

Ruiz-Arce, R., Barr, N. B., Owen, C. L., Thomas, D. B., & McPheron, B. A. (2012). Phylogeography of *Anastrepha obliqua* Inferred with mtDNA Sequencing. *Journal of economic entomology*, 105(6), 2147-2160.

Wu, Y., Li, Y., Ruiz-Arce, R., McPheron, B. A., Wu, J., & Li, Z. (2011). Microsatellite markers reveal population structure and low gene flow among collections of *Bactrocera cucurbitae* (diptera: Tephritidae) in asia. *Journal of economic entomology*, 104(3), 1065-1074.

Islam, M. S., Ruiz-Arce, R., & McPheron, B. A. (2011). Microsatellite markers for the West Indian fruit fly (*Anastrepha obliqua*) and cross species amplification in related pest species. *Conservation Genetics Resources*, 3(3), 549-551.

Farris, R. E., Ruiz-Arce, R., Ciomperlik, M., Vasquez, J. D., & DeLeón, R. (2010). Development of a ribosomal DNA ITS2 marker for the identification of the thrips, *Scirtothrips dorsalis*. *Journal of Insect Science*, 10.

In Preparation

Ruiz-Arce, R., Barr, N.B., Todd, T.N., Virgilio, M., and De Meyer, M. Molecular Tools for Capturing the Worldwide Genetic Diversity and Their Utility in Source Estimations for the Mediterranean Fruit Fly, *Ceratitidis capitata* (Diptera, Tephritidae).

Virgilio, M., Barr, N.B., Todd, T.N., De Meyer, M., and Ruiz-Arce, R. Population Structure in Worldwide Collections of Mediterranean Fruit Fly, *Ceratitidis capitata* (Diptera, Tephritidae).

Ruiz-Arce, R., Md S. Islam, M. Aluja, and B. A. McPheron. Genetic variation in *Anastrepha obliqua* (Diptera: Tephritidae) in geographic collections from the Mexican state of Veracruz.

Selected Professional Presentations

Ruiz-Arce, R., Todd, T.N. Results of multilocus source estimation analyses of historical US captures of medfly (*Ceratitis capitata*). Entomological Society of America Annual Meeting, Portland, OR., November 2014.

Ruiz-Arce, R., Todd, T.N. Results of multilocus source estimation analyses of historical US captures of medfly (*Ceratitis capitata*). Entomological Society of America Annual Meeting, Austin, TX., November 2013.

the West Indian fruit fly *Anastrepha oblique* collected in Jamaica using mitochondrial markers. 52nd Annual Meeting of the Caribbean Division of the American Phytopathological Society (APS-CD), April, 2012, South Padre Island, Texas.

Ruiz- Arce, R., N. Barr, and M. De Meyer. Molecular tools for the pathway analysis of *Ceratitis capitata*. Poster. Eighth International Symposium on Fruit Flies of Economic Importance. Valencia, Spain. October 2010.