

Craig Abel, Collaborator Full Professor (USDA-ARS Supervisor Research Entomologist)

Refereed Publications since 2002

- Abel, C.A.** and J.M. Tyler. 2003. Registration of DT98-2448 soybean germplasm resistant to defoliating insect damage. *Crop Sci.* 43:1136-1137.
- Abel, C.A.**, R.L. Wilson, and R.L. Luhman. 2003. Pollinating efficacy of *Osmia cornifrons* and *Osmia lignaria* subsp. *lignaria* (Hymenoptera: Megachilidae) on three Brassicaceae species grown under field cages. *J. Entomol. Sci.* 38:545-552.
- Bruns, H.A. and **C.A. Abel**. 2003. Nitrogen fertility effects on Bt delta-endotoxin and Nitrogen concentrations of maize during early growth. *Agron. J.* 95:207-211.
- Ray, J.D., T.C. Kilen, **C.A. Abel**, and R.L. Paris. 2003. Soybean natural cross-pollination rates under field conditions. *Environ. Biosafety Res.* 2:133-138.
- Abel, C.A.** and J.J. Adamczyk. 2004. Relative concentration of Cry1A in maize leaves and cotton bolls with diverse chlorophyll content and corresponding larval development of fall armyworm (Lepidoptera: Noctuidae) and southwestern corn borer (Lepidoptera: Crambidae) on maize whorl leaf profiles. *J. Econ. Entomol.* 97:1737-1744.
- Abel, C.A.** and T.C. Kilen. 2004. Registration of D95-6271 soybean germplasm line resistant to velvetbean caterpillar. *Crop Sci.* 44:1495-1496.
- Abel, C.A.** and M.C. Pollan. 2004. Field resistance of *Bacillus thuringiensis* transformed maize to fall armyworm (Lepidoptera: Noctuidae) and southwestern corn borer (Lepidoptera: Crambidae) leaf feeding. *J. Entomol. Sci.* 38:377-384.
- Willmot, D.B., B.E. Hibbard, L.L. Darrah, L.M. Pollak, K. Montgomery, R.C. Pratt, J.A. Hawk, T. Weldekidan, **C.A. Abel**, and J.E. Foster. 2004. Effect of environment on resistance to the European corn borer (Lepidoptera: Crambidae) in maize. *J. Econ. Entomol.* 97:1745-1751.
- Snodgrass, G.L., W.P. Scott, **C.A. Abel**, J.T. Robbins, J. Gore, and D.D. Hardee. 2005. Effects of early season herbicide treatment of marginal areas near field in the Delta of Mississippi on broadleaf weeds and tarnished plant bug (Heteroptera: Miridae) populations on them. *Environ. Ent.* 34:705-711.
- Abbas, H.K., H.A. Bruns, and **C.A. Abel**. 2006. Influence of Messenger on corn yield and mycotoxins in Mississippi. *Plant Health Progress.* doi:10.1094/PHP-2006-1016-03-RS.
- Abbas, H.K., R.M. Zablutowicz, H.A. Bruns, and **C.A. Abel**. 2006. Biocontrol of aflatoxin in corn by inoculation with non-aflatoxigenic *Aspergillus flavus* isolates. *Biocontrol Science and Technology.* 16:437-449.
- Gore, J., **C.A. Abel**, J.J. Adamczyk Jr., and G.L. Snodgrass. 2006. Influence of soybean planting date and maturity group on stink bug (Heteroptera: Pentatomidae) populations. *Env. Ent.* 35:531-536.
- Snodgrass, G.L., W.P. Scott, **C.A. Abel**, J.T. Robbins, J. Gore, and D.D. Hardee. 2006. Suppression of tarnished plant bugs (Heteroptera: Miridae) in cotton by control of early season wild host plants with herbicides. *Environ. Entomol.* 35:1417-1422.
- Abel, C.A.**, L.C. Adams, and S.R. Stetina. 2007. Sweet potato yield reduction caused by reniform nematode in the Mississippi Delta. *Plant Health Progress.* 10:1094/PHP-2007-1115-01-RS.
- Blanco, C.A., O.P. Perera, D. Boykin, **C.A. Abel**, J. Gore, S.R. Matten, J.C. Ramírez-Sagahon, and A.P. Terán-Vargas. 2007. Monitoring *Bacillus thuringiensis*-susceptibility in insect pests that occur in large geographies: How to get the best information when two countries are involved. *J. Inv. Pathol.* 95:201-207.
- Bruns, H.A. and **C.A. Abel**. 2007. Effects of Nitrogen fertility on Bt endotoxin levels in maize. *J. Entomol. Sci.* 42:35-43.
- Jia F., E.B. Maghirang, F.E. Dowell, **C.A. Abel**, and S. Ramaswamy. 2007. Differentiating tobacco budworm and corn earworm using near-infrared spectroscopy. *J. Econ. Entomol.* 100:759-764.
- Perera, O.P., C.A. Blanco, B.E. Scheffler, and **C.A. Abel**. 2007. Characteristics of 13 polymorphic microsatellite markers in the corn earworm, *Helicoverpa zea* (Lepidoptera: Noctuidae). *Molecular Ecology Notes.* 7:1132-1134.
- Perera, O.P., J. Gore, G.L. Snodgrass, B. Scheffler, and **C.A. Abel**. 2007. Measuring genetic variation of tarnished plant bug, *Lygus lineolaris*, over temporal and spatial scales. *J. Insect. Sci.* 34:450-457.
- Perera, O.P., G.L. Snodgrass, B.E. Scheffler, and **C.A. Abel**. 2007. Characterization of eight polymorphic microsatellite markers in the tarnished plant bug, *Lygus lineolaris* (Palisot de Beauvois). *Molecular Ecology Notes.* 7:987-989.
- Reddy, K.N., H.K. Abbas, R. M. Zablutowicz, **C.A. Abel**, and C.H. Koger. 2007. Mycotoxin occurrence and *Aspergillus flavus* soil propagules in a corn and cotton glyphosate-resistant cropping systems. *Food Additives and Contaminants.* 24:1367-1373.
- Zhu, Y.C., **C.A. Abel**, and M.S. Chen. 2007. Interaction of Cry1Ac toxin (*Bacillus thuringiensis*) and proteinase inhibitors on

- the growth, development, and midgut proteinase activities of the bollworm, *Helicoverpa zea*. *Pesticide Biochemistry and Physiology*. 87:39-46.
- Abbas, H.K., C. Accinelli, R.M. Zablotowicz, **C.A. Abel**, H.A. Bruns, Y. Dong, and W.T. Shier. 2008. Dynamics of mycotoxin and *Aspergillus flavus* levels in aging Bt and non-Bt corn residues under Mississippi no-till conditions. *Journal of Agricultural Food and Chemistry* 56:7578-7585.
- Abbas, H.K., R.M. Zablotowicz, H.A. Bruns, and **C.A. Abel**. 2008. Development of non-toxigenic strains of *Aspergillus flavus* for control of aflatoxin in maize. *Crop Protection Journal* 7:181-192.
- Bellaloui, N., R.M. Zablotowicz, K.N. Reddy, and **C.A. Abel**. 2008. Nitrogen metabolism and seed composition as influenced by glyphosate application in glyphosate-resistant soybean. *J. Agric. Food Chem.* 56:2765-2772.
- Blanco, C.A., O.P. Perera, F. Gould, D.V. Sumerford, G. Hernandez, **C.A. Abel**, and D.A. Andow. 2008. An empirical test of the F₂ screen for detection of *Bacillus thuringiensis*-resistance alleles in tobacco budworm (Lepidoptera: Noctuidae). *J. Econ. Entomol.* 101:1406-1414.
- Blanco, C.A., N.P. Storer, **C.A. Abel**, R. Jackson, R. Leonard, J.D. Lopez, G. Payne, B.D. Siegfried, T. Spencer, and A.P. Terán-Vargas. 2008. Baseline susceptibility of the tobacco budworm (Lepidoptera: Noctuidae) to the Cry1F toxin from *Bacillus thuringiensis*. *J. Econ. Entomol.* 101:168-173.
- Blanco, C.A., A.P. Terán-Vargas, **C.A. Abel**, M. Portilla, M.G. Rojas, J.A. Morales-Ramos, and G. L. Snodgrass. 2008. Plant host effect on the development of *Heliothis virescens* (F.) (Lepidoptera: Noctuidae). *Environ. Entomol.* 37:1538-1547.
- Moar, W.J., R.T. Roush, A.M. Shelton, J. Ferre, S. Macintosh, B.R. Leonard, and **C.A. Abel**. 2008. Field-evolved resistance to Bt toxins. *Nature Biotechnology* 26:1072-1074.
- Reddy, K.R.N., C.S. Reddy, H.K. Abbas, **C.A. Abel**, and K. Muralidharan. 2008. Mycotoxigenic fungi, mycotoxins and management of rice grains. *Journal of Toxicology Toxin Reviews*. 27:287-317.
- Snodgrass, G.L., **C.A. Abel**, R. Jackson, and J. Gore. 2008. Bioassay for determining resistance levels in tarnished plant bug populations to neonicotinoid insecticides. *Southwestern Entomologist*. 33:173-180.
- Snodgrass, G.L., J. Gore, **C.A. Abel**, and R. Jackson. 2008. Predicting field control of tarnished plant bug (Heteroptera: Miridae) populations with pyrethroid insecticides by use of two glass-vial bioassays. *Southwest. Entomol.* 33:181-189.
- Zhu, Y.C., F. Liu, Z. Xu, J. Chang, **C.A. Abel**, and J. Shen. 2008. F₁ screening for resistance gene alleles to Bt cotton in *Helicoverpa armigera*: How to differentiate S and R genotypes. *J. Entomol. Sci.* 43:311-319.
- Abbas, H.K., J.R. Wilkinson, R.M. Zablotowicz, C. Accinelli, **C.A. Abel**, H.A. Bruns, and M.A. Weaver. 2009. Ecology of *Aspergillus flavus*, regulation of aflatoxin production, and management strategies to reduce aflatoxin contamination of corn. *Toxin Reviews* 28:142-153.
- Bellaloui, N., H.K. Abbas, A.M. Gillen, and **C.A. Abel**. 2009. Effect of glyphosate-Boron application on seed composition and Nitrogen metabolism in glyphosate-resistant soybean. *Journal of Agricultural and Food Chemistry*. 57:9050-9056.
- Bellaloui, N., K.N. Reddy, R.M. Zablotowicz, H.K. Abbas, and **C.A. Abel**. 2009. Effects of glyphosate application on seed iron and root ferric (III) reductase in soybean cultivars. *Journal of Agricultural and Food Chemistry*. 57:9569-9574.
- Blanco, C.A., D.A. Andow, **C.A. Abel**, D.V. Sumerford, G. Hernandez, J.D. Lopez, L.C. Adams, A. Groot, B.R. Leonard, R. Parker, G. Payne, O.P. Perera, A.P. Terán-Vargas, and A. Azuara-Domingues. 2009. *Bacillus thuringiensis* Cry1Ac resistance frequency in tobacco budworm (Lepidoptera: Noctuidae). *J. Econ. Entomol.* 102:381-387.
- Blanco, C.A., F. Gould, P. Vega-Aquino, J.L. Jurat-Fuentes, O.P. Perera, and **C.A. Abel**. 2009. Response of *Heliothis virescens* (Lepidoptera: Noctuidae) strains to *Bacillus thuringiensis* Cry1Ac incorporated into different insect artificial diets. *J. Econ. Entomol.* 102:1599-1606.
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- Blanco, C.A., M.G. Rojas, A. Groot, J. Morales-Ramos, and **C.A. Abel**. 2009. Size and chemical composition of *Heliothis virescens* (Lepidoptera: Noctuidae) spermatophores. *Annals of the Entomological Society of America*. 102:629-637.
- Blanco, C.A., A.P. Terán-Vargas, J.D. López Jr., and **C.A. Abel**. 2009. Incidence of *Heliothis virescens* on garbanzo varieties in Northwestern Mississippi. *Southwestern Entomol.* 34:61-67.
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- Wu, X., B.R. Leonard, Y.C. Zhu, **C.A. Abel**, G.P. Head, and F. Huang. 2009. Susceptibility of Cry1Ab-resistant and -susceptible sugarcane borer (Lepidoptera: Crambidae) to four *Bacillus thuringiensis* toxins. *Journal of Invertebrate Pathology*.

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- Blanco, C.A., F. Gould, A. Groot, **C.A. Abel**, G. Hernández, O.P. Perera, and A.P. Terán-Vargas. 2010. Offspring from sequential matings between *Bacillus thuringiensis*-resistant and *Bacillus thuringiensis*-susceptible *Heliothis virescens* moths (Lepidoptera: Noctuidae). *J. Econ. Entomol.* 103:861-868.
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- Yang, Y., Y.C. Zhu, J. Ottea, C. Husseneder, B.R. Leonard, **C.A. Abel**, and F. Huang. 2010. Molecular characterization and RNA interference of three midgut aminopeptidase N isozymes from *Bacillus thuringiensis*-susceptible and -resistant strains of sugarcane borer, *Diatraea saccharalis*. *Insect Biochemistry and Molecular Biology.* 40:592-603.
- Zhu, Y.C., J.Z. Sun, L.L. Luo, X.F. Liu, K.C. Lee, E.J. Mallette, and **C.A. Abel**. 2010. Identification of two haplotypes of cytochrome oxidase sub-unit II (COII) gene of the Formosan subterranean termite, *Coptotermes formosanus* Shiraki (Isoptera: Rhinotermitidae) in southern Mississippi. *Pest Management Science.* 66:612-620.
- Reed, J.T., L.C. Adams, and **C.A. Abel**. 2010. Comparison of three insect sampling methods in sweet potato foliage in Mississippi. *J. Entomol. Sci.* 45:111-128.
- Abbas, H.K., R.M. Zablotowicz, B.W. Horn, N.A. Phillips, B.J. Johnson, X. Jin, and **C.A. Abel**. 2011. Comparison of major biocontrol strains of non-aflatoxigenic *Aspergillus flavus* for the reduction of aflatoxins and cyclopiazonic acid in maize. *Food Additives and Contaminants:* 28:198-208.
- Coates, B.S., D.V. Sumerford, M.D. Lopez, H. Wang, L.M. Fraser, J.A. Kroemer, T. Spencer, K.S. Kim, **C.A. Abel**, R. L. Hellmich, and B.D. Siegfried. 2011. A single major QTL controls expression of larval Cry1F resistance trait in *Ostrinia nubilalis* (Lepidoptera: Crambidae) and is independent of midgut receptor genes. *Genetica.* 139:961-962.
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- Yang, Y., Y.C. Zhu, J. Ottea, C. Husseneder, B.R. Leonard, **C.A. Abel**, R. Luttrell, and F. Huang. 2011. Down regulation of a gene for cadherin, but not alkaline phosphatase, associated with Cry1Ab resistance in the sugarcane borer *Diatraea saccharalis*. *PlosONE.* 6(10):e25783. doi:10.1371/journal.pone.0025783.
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- Zhu, Y.C., Z. Guo, and **C.A. Abel**. 2012. Cloning eleven midgut trypsin cDNAs and evaluating the interaction of proteinase inhibitors with Cry1Ac against the tobacco budworm, *Heliothis virescens* (F.) (Lepidoptera: Noctuidae) *Journal of Invertebrate Pathology* 111: 111-120.
- Abbas, H.K., R.M. Zablotowicz, B.J. Johnson, N.A. Philips, M.A. Weaver, **C.A. Abel**, and A. Bruns. 2013. Association of aflatoxin and fumonisin with infection of corn (*Zea mays*) by common smut (*Ustilago maydis*). *Mycopathologia.* Submitted February 25, 2013. (In ARIS, not sure about its publication status - 7/15/14).
- Abbas, H.K., R.M. Zablotowicz, M.A. Weaver, W.T. Shier, H.A. Bruns, N. Bellaloui, C. Accinelli, and **C.A. Abel**. 2013. Implications of Bt traits on mycotoxin contamination in maize: Overview and recent experimental results in Southern United States. *Journal of Agriculture and Food Chemistry.* 61:11759-11770.
- Bellaloui, N., Y. Hu, A. Mengistu, A. Kassem, and **C.A. Abel**. 2013. Effects of foliar boron application on seed composition, cell wall boron, and seed $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ isotopes in water-stressed soybean plants. *Frontiers in Plant Science.* 4:1-12.
- Coates, B.S., H. Johnson, K.S. Kim, R.L. Hellmich, **C.A. Abel**, C. Mason, and T.W. Sappington. 2013. Frequency of

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- Yang, Y., Y.C. Zhu, J. Ottea, C. Husseneder, B.R. Leonard, **C.A. Abel**, and F. Huang. 2013. Characterization transcriptional analyses of cDNAs encoding three trypsin- and chymotrypsin-like proteinases in Cry1Ab-susceptible and Cry1Ab-resistant strains of sugarcane borer, *Diatraea saccharalis*. *Insect Science* 20:485-496.
- Petzold-Maxwell, J.L., B.D. Siegfried, R.L. Hellmich, **C.A. Abel**, B.S. Coates, T.A. Spencer, and A.J. Gassmann. 2014. Effect of maize lines on larval fitness costs of Cry1F resistance in the European corn borer (Lepidoptera: Crambidae). *J. Econ. Entomol.* 107:764-772.

Jeffrey Beetham, Associate Professor: Veterinary Pathology and Entomology

Refereed Publications since 2002

- Myung, K.S., **J.K. Beetham**, M.E. Wilson, and J.E. Donelson. 2002. Comparison of the post-transcriptional regulation of the mRNAs for the surface proteins PSA (GP46) and MSP (GP63) of *Leishmania chagasi*. *J Biol Chem* 277, 16489-97.
- Beetham, J.K.**, J.E. Donelson, and R.R. Dahlin. 2003. Surface glycoprotein PSA (GP46) expression during short- and long-term culture of *Leishmania chagasi*. *Mol Biochem Parasitol* 131-2, 109-117.
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- Dahlin-Laborde, R.R., T.P. Yu, and **J.K. Beetham**. 2005. Genetic complementation to identify DNA elements that influence complement resistance in *Leishmania chagasi*. *J. Parasitol.* 91-5, 1058-1063.
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- Romine, N.M., R.J. Martin and **J.K. Beetham**. 2013. Computational cloning of drug target genes of a parasitic nematode, *Oesophagostomum dentatum*. *BMC Genetics*, 14:55.
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Sue Blodgett, Chair and Professor

Refereed Publications since 2002

- Hoff, K.M., M.J. Brewer, and **S.L. Blodgett**. 2002. Alfalfa weevil larval sampling: Comparison of the shake-bucket and sweep-net methods and effect of training. *J. Econ. Entomol.* 95 (4) 748-753.
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- O'Neill, K.M., **S. Blodgett**, B.E. Olson, and R.S. Miller. 2008. Impact of livestock grazing on abundance of Miridae and Reduviidae (Hemiptera) in Crested Wheatgrass pastures. *J. Econ. Entomol.* 101:309-311.
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Bryony C. Bonning, Professor and Center Director

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Brad Coates, Collaborator Assistant Professor (USDA-ARS Research Geneticist)

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Gregory W. Courtney, Professor

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Matthew O'Neal, Associate Professor

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Marlin E. Rice, *Collaborator Professor (DuPont Pioneer)*

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