
BIOGRAPHICAL SKETCH

NAME Choe, Dong-Hwan		POSITION TITLE Associate Professor / Associate Extension Specialist in Urban Entomology		
EDUCATION/TRAINING				
INSTITUTION AND LOCATION		DEGREE	YEAR(s)	FIELD OF STUDY
Department of Entomology University of California, Riverside, CA, USA		PhD	2009	Entomology
Department of Entomology University of California, Riverside, CA, USA		MS	2005	Entomology
Department of Agricultural Biology Korea University, Seoul, Korea		BA	2002	Agriculture

Experience and Research Focus

My research focuses on three major areas: urban entomology, insect behavior, and chemical ecology. In particular, my research has focused on exploring innate and learned behaviors of economically or environmentally important insect species to develop more effective integrated pest management (IPM) programs. I use manipulative laboratory studies to investigate how the behaviors of pest insects can be exploited to improve management and to develop novel management techniques. I also test the feasibility of these new techniques in real-world conditions. I draw upon my expertise in behavioral ecology, experimental design, chemical ecology and analytical chemistry to illuminate the biology of target insects, and to inform the design of new approaches for control. In addition to the bioassays involving chemistry, physiology, behavior, and toxicology, the effort to incorporate the behavioral information of target species into the working IPM program often requires extensive design, manufacturing, and testing of devices in the field.

Positions and Employment

7/2018 - current	Associate CE Specialist and Associate Professor Entomology / UC Riverside
11/2011 – 6/2018	Assistant CE Specialist and Assistant Professor Entomology / UC Riverside
11/2009 - 10/2011	Postdoctoral Researcher Environmental Science, Policy, and Management / UC Berkeley

Memberships, Honors and Awards

01/2005 - current	Member. Entomological Society of America.
2020	Medical, Urban, and Veterinary Entomology Award. Entomological Society of America, Pacific Branch (PB ESA)
2013	Early Career Chair in Urban Entomology. UC Riverside.
2008	Bayer Young Scientist of the Year Competition (2nd place)
2008	Selected as one of the "40 Under 40" future leaders of the pest management industry by Pest Management Professional Magazine

Presentations (selected from last four years)

08/2020	Wash-off Potential of Pyrethroids after Use of Total Release Foggers, ACS Fall 2020 Virtual Meeting & Expo (American Chemical Society). Online presentation.
05/2020	Field Demonstration of Different Argentine Ant Treatment Protocols: Spray & Bait. UCR Urban Pest Management Conference. Online presentation.
11/2019	The use of hydrogels for baiting pestiferous insects. Annual Meeting of Entomological Society of America. Entomological Society of America. St. Louis, MO.
10/2019	Cracking the Code: Unlocking the Secrets to Developing an Effective Bait for Yellow Jackets. NPMA PestWorld 2019. San Diego, CA.
11/2018	The use of volatile essential oils to improve heat treatments for the western drywood termite. 2018 ESA, ESC, and ESBC Joint Annual Meeting. Vancouver, BC, Canada.
08/2018	Chemical ecology of Argentine ant and its implication for practical pest management. Annual Meeting of International Society of Chemical Ecology (ISCE). Budapest, Hungary.

- 05/2018 Use of a biodegradable hydrogel to deliver aqueous bait to control Argentine ants (Hymenoptera: Formicidae) in residential settings. National Conference of Urban Entomology (NCUE). Cary, NC.
- 05/2018 Residual Efficacy of Several Pesticide Products for Bed Bugs on Contaminated Surfaces. National Conference of Urban Entomology (NCUE). Cary, NC.
- 11/2017 New approaches in urban IPM: Case studies on Argentine ant and drywood termite. Entomological Society of America Annual Meeting. Denver, CO.
- 07/2017 Chemical ecology of bed bugs (Heteroptera: Cimicidae) in their microhabitats. 9th International Conference on Urban Pest. Birmingham, UK.
- 09/2016 Urban pest ant management with a minimal impact on the environment. International Congress of Entomology. Orlando, FL.
- 08/2016 New innovations in urban pest management. Pest Summit 2016. Singapore Pest Management Association. Singapore.
- 05/2016 Pheromone-assisted techniques to improve Argentine ant management in urban settings. National Conference of Urban Entomology. Albuquerque, NM.

Publications (selected from last four years)

- Dery, M., K. Arriola, C.-Y. Lee, and D.-H. Choe. 2020. Ontogenesis of aldehyde pheromones in two synanthropic bed bug species (Heteroptera: Cimicidae). *Insects*. 11(11), 759. <https://www.mdpi.com/2075-4450/11/11/759>
- Ko, A. and D.-H. Choe. 2020. Development of a lateral flow test for bed bug detection. *Sci. Rep.* 10: 13376. <https://doi.org/10.1038/s41598-020-70200-0>
- Tay, J.-W., D.-H. Choe, A. Mulchandani, and M. K. Rust. 2020. Hydrogels: from controlled release to a new bait delivery for insect pest management. *J. Econ. Entomol.* 113: 2061-2068.
- Wilson Rankin, E. E., J. M. Cecala, N. H. Pineda, Q. Y. Lu, E. Pelayo, and D.-H. Choe. 2020. Differential feeding responses of several bee species to sugar sources containing iridomyrmecin, an Argentine ant trail pheromone component. *J. Insect Behav.* 33: 83-90.
- Perry, D. T. and D.-H. Choe. 2020. Volatile essential oils can be used to improve the efficacy of heat treatments targeting the western drywood termite: evidence from simulated whole house heat treatment trials. *J. Econ. Entomol.* 113: 2448-2457.
- McCalla, K., J.-W. Tay, A. Mulchandani, D.-H. Choe, M. S. Hoddle. 2020. Biodegradable alginate hydrogel bait delivery system effectively controls high-density populations of Argentine ant in commercial citrus. *J. Pest. Sci.* 93:1031-1042.
- Perry, D. T. and D.-H. Choe. 2020. Volatile essential oils can be used to improve the efficacy of heat treatments targeting the western drywood termite: evidence from a laboratory study. *J. Econ. Entomol.* 113: 1373-1381.
- Choe, D.-H., E. Paysen, L. Greenberg, K. Campbell, and M. Rust. 2019. A closer look: Argentine ant control. *Pest Control Technology*. October issue: 131, 132, 134, 135.
- Choe, D.-H., K. Campbell, M. S. Hoddle, J. Kabashima, M. Dimson, and M. K. Rust. 2018. Evaluation of a hydrogel matrix for baiting western yellowjacket (Vespidae: Hymenoptera). *J. Econ. Entomol.* 111:1799-1805.
- Welzel, K., S. Lee, A. T. Dossey, K. R. Chauhan, and D.-H. Choe. 2018. Verification of Argentine ant defensive compounds and their behavioral effects on heterospecific competitors and conspecific nestmates. *Sci. Rep.* 8: 1477
- Merrill, K. C., C. L. Boser, C. Hanna, D. A. Holway, I. Naughton, D.-H. Choe, and E. E. Wilson Rankin. 2018. Argentine ant (*Linepithema humile*) eradication efforts on San Clemente Island, CA, USA. *West. N. Am. Naturalis.* 78: 829-836.
- Tay, J.-W., M. Hoddle, A. Mulchandani, D.-H. Choe. 2017. Development of an alginate hydrogel to deliver aqueous bait for pest ant management. *Pest Manag. Sci.* 73: 2028-2038.
- Rust, M. K., D.-H. Choe, E. Wilson-Rankin, K. Campbell, J. Kabashima, M. Dimson. 2017. Controlling yellow jackets with fipronil-based protein baits in urban recreational areas. *Int. J. Pest. Manage.* 63: 234-241.
- Welzel, K., Choe, D. 2016. Development of a pheromone-assisted baiting technique for Argentine ants (Hymenoptera: Formicidae). *J. Econ. Entomol.* 109: 1303-1309.