

Effect of Green Waste Compost and Tomato Pomace Soil Amendments on Weed Seed Inactivation with Biosolarization. Kate Hernandez^{1*}, Dlinka G. McCurry¹, Ruth M. Dahlquist-Willard¹, and James J. Stapleton². ¹University of California Cooperative Extension Fresno County, Fresno, CA; ²Statewide Integrated Pest Management Program, UC Kearney Agricultural Research and Extension Center, Parlier, CA. *kt.hernandez@hotmail.com

Weed pests pose a formidable problem for farmers without the help of fumigants and herbicides. Biosolarization, or solarization with soil amendments such as compost or other sources of organic matter, has the potential to increase the utility of solarization for weed control by reducing the time and/or temperature regimen needed to achieve mortality of weed seeds and other soilborne pests. The effect of biosolarization on seeds of black mustard (*Brassica nigra*) and black nightshade (*Solanum nigrum*) was evaluated as a sustainable alternative to pesticides. A field trial was performed in Parlier, California, using solarized and nonsolarized soil amended with tomato pomace (2.5% or 5% w/w), and green waste compost (2% w/w) combined with tomato pomace (2.5% or 5% w/w) to test weed seed inactivation efficacy. Solarized treatments with both compost and pomace amendment, as well as pomace alone, had nearly 100% mortality after 7 days, as opposed to treatments without amendments and treatments that were not solarized. Tetrazolium testing confirmed that nongerminated weed seeds were dead and not dormant. These results indicate that control of certain weeds with biosolarization can be achieved in much less time than is normally required for solarization without soil amendments (usually 6-8 weeks).