



2014 Orchard Pest and Disease Management Conference



The 88th Conference is pleased to
announce our keynote speaker:

Stephen Welter

Vice President for Research and Dean
of Graduate Affairs,
San Diego State University

Keynote Address:

A Tale of Two Systems:
Social and Technical Evolution
of Mating Disruption Systems
in the Western US and the
WODPM



Hilton Portland, Portland, Oregon
January 8-10, 2014



Biology/Phenology

***Drosophila suzukii* Population Estimation**

Vaughn Walton, Nik G. Wiman, Samantha L. Tochen, Daniel T. Dalton, Peter W. Shearer, Christopher A. Hamm, Hannah J. Burrack, Alberto Grassi, Claudio Ioriatti, and Gianfranco Anfora
Department of Horticulture, Oregon State University, Corvallis, OR

Keywords: temperature-dependent matrix model, risk, life table, spotted wing drosophila, *Drosophila suzukii*

Abstract: Spotted wing drosophila (SWD), *Drosophila suzukii* Matsumura (Diptera: Drosophilidae: Drosophilini) is a global pest attacking ripening small and stone fruits. Laboratory studies were conducted to determine temperature-dependent survival and fecundity of SWD. A temperature-dependent matrix model using these data was applied to determine if population pressure of *D. suzukii* could be predicted based upon environmental conditions. As an example, different pressure levels were found in two distinctly different seasons in the Willamette Valley of Oregon. The model was also applied to determine the effects of population factors such as regional climatic differences, microclimates, bacterial infection and parasitism. The population model is an additional tool for SWD risk-prediction. Pest management practitioners can make timely management decisions as the crop ripens using this model. The limitations and benefits of using this model are discussed.