**Burn-down Control of Tough Weeds in Grapes with Flazasulfuron.**
Kurt J. Hembree* and James Schaeffer, University of California Cooperative Extension, Fresno, CA. *kjhembree@ucanr.edu

Weed control with postemergence herbicides can be challenging for grape growers in California, given the diversity of weeds and their sensitivities to the various herbicides, the need for ample equipment and labor to be able to treat in a timely manner, the presence of herbicide-resistant species, and the type of trellis system used, which influences canopy development and the ability to spray the weeds without injuring the grapevine foliage or fruit. While it would be ideal if we could treat emerged weeds and kill them the first time without having to re-spray, this is not always the case. Failures in postemergence herbicide activity often come down to late spray timing and/or lack of weed sensitivity to the materials used. In particular, *Conyza canadensis* (horseweed), *C. bonariensis* (hairy fleabane), *Urtica urens* (burning nettle), and *Epilobium brachycarpum* (panicle willowherb) are difficult to control with postemergence herbicides alone, particularly when glyphosate is used. In most cases, these weeds require combinations of pre- and postemergent sprays to be managed effectively. Flazasulfuron (Mission) was recently registered for use in grapes in California and is known to have preemergence activity on some key weeds, including *Conyza* spp. However, little is known on the postemergence activity of flazasulfuron on hairy fleabane and other problematic weeds. Two field trials were conducted in 2014 to evaluate the effect of flazasulfuron as a postemergence treatment in grapevines to kill well-established horseweed, hairy fleabane, burning nettle, and panicle willowherb. In both trials, flazasulfuron was used in combination with glyphosate, flumioxazin, and glyphosate + flumioxazin and compared to a grower’s standard treatment of glyphosate alone. For each trial, treatments were arranged in a Randomized Complete Block design with three replications. Herbicides were applied using a CO₂-pressurized backpack sprayer with 8004 spray nozzles in a spray volume of 39 gpa. Ammonium sulfate and a methylated seed oil were added to all treatments. In the first trial, combining flazasulfuron plus glyphosate gave 95-99% control of established horseweed and hairy fleabane plants, regardless of size or age. Control was similar when flumioxazin was added to this mix. Glyphosate applied alone only provided 20% control of horseweed and hairy fleabane and adding flumioxazin to the glyphosate only marginally improved control to 30%. In the second trial, combining flazasulfuron with glyphosate gave 99-100% control of burning nettle, panicle willowherb, and hairy fleabane. Adding flumioxazin to this mix controlled these weeds completely. As in the first trial, glyphosate used alone did not provide effective control, giving 40%, 43%, and 67% control of burning nettle, panicle willowherb, and hairy fleabane, respectively.