

## **Solar Tents for On-Site Sanitation and Eradication of Rogued, Weedy Plant Propagative Materials**

*James J. Stapleton ([jim@uckac.edu](mailto:jim@uckac.edu)), Statewide IPM Program, UC Kearney Agricultural Center, Parlier, California, 93648*

Solar tents, which are inexpensive, disposable, and nonpesticidal, can be used to inactivate unwanted weed plant propagative materials, on-site. Previous studies with imbibed weed seeds have shown effectiveness, but proof of efficacy on vegetatively propagative material has been lacking. During two field trials in Stanislaus County, in September 2010, solar tents produced diurnal temperature maxima within closed sample bags of 146-172 °F. The mean maximum temperatures within the sample bags were 91-108 °F higher than those of ambient air, and temperatures  $\geq 140$  °F were maintained for 3-6 hours each afternoon during the field trials. Rhizome segments, excavated and excised from a local infestation of johnsongrass (*Sorghum halepense*), were used for treatment evaluation. The rhizomes were completely destroyed following confinement within tents containing a moisture reservoir for three days. Solar tent construction used locally-available materials, similar to those which could be scavenged in many California ecoregions. In sufficiently warm climatic areas and weather conditions of California and elsewhere, similar tents, which employ passive solar energy, can provide a useful alternative for inactivating weed propagative materials. Potential uses include destruction of quarantined, propagative materials following regulatory roguing in remote locations, or routine roguing of limited scale areas to remove invasive weeds.