

# WEED SCIENCE



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# WEED SCIENCE

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William K. Vencill, *Editor*

The Weed Science Society of America publishes original research and scholarship in the form of peer-reviewed articles in three international journals. *Weed Science* is focused on understanding “why” phenomena occur in agricultural crops. As such, it focuses on fundamental research directly related to all aspects of weed science in agricultural systems. *Weed Technology* focuses on understanding “how” weeds are managed. As such, it is focused on more applied aspects concerning the management of weeds in agricultural systems. *Invasive Plant Science and Management* is a broad-based journal that focuses not only on fundamental and applied research on invasive plant biology, ecology, management, and restoration of invaded non-crop areas, but also on the many other aspects relevant to invasive species, including educational activities, policy issues, and case study reports. Topics for *Weed Science* include the biology and ecology of weeds in agricultural, forestry, aquatic, turf, recreational, rights-of-ways, and other settings; genetics of weeds and herbicide resistance; chemistry, biochemistry, physiology and molecular action of herbicides and plant growth regulators used to manage undesirable vegetation, and herbicide resistance; ecology of cropping and non-cropping systems as it relates to weed management; biological and ecological aspects of weed control tools including biological agents, herbicide resistant crops, etc.; effects of weed management on soil, air, and water. Symposia papers and reviews are accepted. Consult the editor for additional information.

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### **On the Cover:**

*Emex australis* seeds have dimorphic morphology. Aerial seeds that form at the leaf axils along the stems (left) have radial symmetry and subterranean seeds that form on the lower section of the crown of the plant (right) have bilateral symmetry and shorter spines. Photo by Dr. Catherine Borger.

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- Occurrence and management of herbicide resistance in annual vegetable production systems in North America. *Nathan S. Boyd, Marcelo L. Moretti, Lynn M. Sosnoskie, Vijay Singh, Ramdas Kanissery, Shaun Sharpe, Thierry Besançon, Stanley Culpepper, Robert Nurse, Harlene Hatterman-Valenti, Elizabeth Mosqueda, Darren Robinson, Matthew Cutulle and Ravneet Sandhu* ..... 515

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