

What's New in Turf Weed Control?

*James H. Baird
University of California, Riverside
Department of Botany and Plant Sciences
Riverside, CA 92521
jbaird@ucr.edu*

Turf managers are facing ever-increasing challenges with management of common and exotic weed species. Fewer herbicide active ingredients are available today due to escalating environmental concerns, regulatory requirements, and re-registration costs and processes. Development of new turf protectants including herbicides requires more than 120 separate tests over as much as 10 years at a cost to the manufacturer of approximately \$200 million dollars. Considering that the patent process lasts for 17 years from time of discovery, companies have little time to gain a return on this investment. Characteristics of new and future herbicides include lower use rates, more targeted weed spectrum, and Reduced Risk as defined by the U.S. Environmental Protection Agency (EPA). Reliance on multiple applications of fewer active ingredients increases the likelihood of developing weed resistance. Moreover, many of the herbicide active ingredients available today have single, site-specific modes of action that contribute to the development of herbicide resistant weed biotypes. Resistance to herbicides that inhibit acetolactate synthase (ALS) has been increasing at a faster rate than in any other herbicide group. Most of the newer herbicides registered on turf are ALS inhibitors including the sulfonylureas, bispyribac-sodium, and penoxsulam. The sulfonylureas are a large class of herbicides that provide selective control of cool season grasses including annual bluegrass and perennial ryegrass used for overseeding, sedges, and broadleaf weeds. Bispyribac-sodium is used for selective control of annual bluegrass and rough bluegrass, and penoxsulam provides selective control of broadleaf weeds including white clover and English lawn daisy. A new class of triketone herbicides inhibits plant pigments. Although not yet registered in California, mesotrione is a triketone herbicide that provides selective control of bentgrass and broadleaf weeds in cool season turf. In addition to new active ingredients, manufacturers are developing new formulation technology that increases herbicide efficacy while decreasing solvent carriers. Alternative weed control measures are also being evaluated in light of increasing bans on chemical weed control products. Despite improved technology in chemical weed control, there is no substitute for carefully reading and following the pesticide label, maintaining properly calibrated application equipment, and employing appropriate turf management practices.