

Integrated Approach to Managing Herbicide Resistance

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“Man’s mind stretched by a new idea, never goes back to it’s original dimensions.” Oliver Wendell Holmes said it so well. Managing herbicide resistance requires not only an integrated approach, but also a whole new perspective on managing unwanted vegetation.

Integrated Vegetation Management (IVM) when properly followed, will in itself, manage herbicide resistance.

The State of California has adopted this definition of IVM:

“A strategic approach to preventing pests from reaching unacceptable levels by selecting and applying the most appropriate combination of available pest control methods (including biological, cultural, mechanical, and chemical) for a given site or pest situation in ways that minimize economic, health and environmental risks.” In order to properly follow IVM practices, one must completely understand the above principles. All vegetation management programs must be based on 4 critical elements, the 4 “E’s” of IVM. Environment, Effectiveness, Efficiency and Economics are considered equally in all IVM situations.

Biological control is far too basic in California. Australia has us beat down under when it comes to biological programs that are successful. Here in California it’s embarrassing to see the insectaries cranking out insects that have not shown to provide economic results by themselves, yet they are selling these while customers are not seeing acceptable levels of control. It is paramount that more research efforts are directed at Biological vegetation management here in California.

Other technologies such as cultural and mechanical are used with increasing costs. Re-vegetation and Habitat Manipulation techniques are increasingly being found to be effective, especially in Invasive Weed Management programs.

IVM works but you must be Actively Involved. Nature is too smart to be ultimately manipulated by your once or twice a year visit. The site must be reviewed and follow-up is critical to the success of any IVM program. Arm Chair PCAs writing recommendations without proper site and environmental review is part of the problem.

Develop Best Management Practices (BMPs) that include elements such as early scouting and proper weed I.D. Water quality, proper calibration, and adequate coverage issues can all lead to failures in weed control programs and preclude resistance potentials.

Rotate your tools; all tools in IVM should be included when possible. Annual rotation of herbicides prevents establishment of resident species populations. Changing herbicides, both foliar and pre-emergent, provides opportunity for changing mode-of-action, another principle in reducing resistance.

Think outside the box...Are you on a treadmill? If you are doing the same thing year in and year out, you may be part of the problem. Look to new ideas, such as mulching, re-vegetation, habitat manipulation, free-space landscaping with selection of desired species, and many other new techniques being applied in IVM and you may be amazed at the increase in effectiveness and decrease in costs.