

IS IT WEED RESISTANCE OR JUST PERSISTENCE?

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Many growers and managers have remarked lately that they are spending more money and time but certain weeds seem to be increasing in their production venues. Some suggest that the herbicide is not doing its job and that the weeds must be resistant. Weed tolerance that is inherent and resistance which can be induced by selection pressure and subsequent reproduction coupled with persistence, a result of either partial tolerance or the weeds ability to propagate between major cultural operations within the crop growth cycle, can often lead to shifts in vegetation inventories. In most of these cases we are dealing with herbicide chemistries that have presented low risk of resistance developmental potential and the inventory shifts appear to be locally driven by cultural selection pressures as these “escape” weeds are just as susceptible if addressed and treated at the proper time and stage.

Vegetation management is an integrated system that is venue based but must encompass a weed definition or management philosophy that recognizes crop culture and reproduction as selection criteria that lead to either resistance or persistence. A ten point series of management criteria for annual crops are presented and two of these escape management and crop residue management are illustrated to show how these can be used as reinforcement in a planned vegetation management program.

Future selection pressures from crop culture are going to arise in the San Joaquin valley as we move to more permanent bed culture, from buried drip and controlled traffic systems, and more potential reliance on less herbicide chemistry due to an increased use of engineered herbicide-tolerant crops (EHTC's) such as Round-up Ready and Liberty-Linked products. Regulatory restraints on tillage and application with newly implemented suggestions in the San Joaquin valley from the Air Pollution Control District will further confound management. Record keeping and flexible management with reinforcing weed control practices to prevent propagation will be necessary with these added constraints and restraints. The question of resistance or persistence is moot if we take every opportunity to interrupt weed life-cycles.