



Weed Resistance Management

Resistance is the inherited ability of a population to survive and reproduce following repeated exposure to a dose of herbicide normally lethal to the wild type. Resistance may also be induced by such techniques as genetic engineering or selection of variants produced by tissue culture or mutagenesis.

“It is not a herbicide, trait or glyphosate problem. It is a management problem. We are creating the system for resistance to evolve.”

— Mike Owen, Iowa State University weed management specialist, in the Iowa Farmer Today

Reasons for Proactive Management:

- Preserve crop yield potential.
- Save money compared to reactive measures.
- Prevent the need for dramatic, short-term shifts in farm practices.
- Protect herbicide options for future operations.

Why is Herbicide Resistance Important?

Herbicide resistance:

- Requires changes in weed/crop management practices.
- Increases the cost of weed management.
- Reduces viable herbicide options.
- Decreases yield potential and income.

The number of weed species with one or more forms of herbicide resistance continues to increase.

Proactive Management Tips

1. Start Clean – Any emerged weed can become an immediate concern.
2. Diversify your practices – mechanical, cultural, biological and chemical
 - Mechanical: tillage (pre-plant, in crop cultivation, post harvest)
 - Cultural: crop rotation, plant population, row spacing, cover crops, fertilizer placement
 - Chemical: Use several herbicides with different modes of action and overlapping control (each herbicide is active on the target weed/weeds).

3. Use multiple herbicides with different mechanisms of action (mixes, sequence, across seasons)
 - Mixes – These options can provide the flexibility to choose the best fit or combinations for local agronomic operations.
4. Equipment hygiene – Slow the spread of herbicide-resistant weeds and weed seeds.
5. Control escapes – Monitor fields often. Hand weed, if needed.
6. Integrate and diversify.
7. Stick with the plan – Use the full recommended herbicide rate and anticipate making the following decisions:
 - Seed varieties (plant clean, certified seeds) and supply
 - Equipment needed
 - Fertilizer needs and availability
 - Weed management,
 - Proper application timing.

