



PHOTO COURTESY OF MICHAEL F. LUMLEY, CONSERVATION AGRICULTURIST

Where the cover crops ended, the weeds began in this wheat field on Ralph Upton Jr.'s south-central Illinois farm. He has seen similar benefits in his corn and soybean fields, reducing — and in some cases, eliminating — the need for postemergence herbicide applications, and controlling glyphosate- and PPO-resistant marestail.

## Think different

- ▶ Plan cover crop mix for weed suppression as well as soil health.
- ▶ Keep costs down with lower-cost cereal rye and ryegrass.
- ▶ Integrate herbicide program planning with cover crop planning for maximum return.

# Cover crops battle resistant weeds

Get control of tough-to-handle herbicide-resistant weeds with cover crops.

By Jim Ruen

**R**alph Upton Jr. has cut his herbicide costs, controlled herbicide-resistant marestail and waterhemp, improved soil health, and reduced erosion on his south-central Illinois fields. And while the weather impacted his

herbicide program, weed suppression by cover crops kept working.

"Where I had cover crops, I seldom saw weeds," says Upton. "Waterhemp is hitting us real hard. We've had issues in the past, but nothing compared to this year."



Wet, cold weather in April delayed planting until May 10, with additional rain delays keeping him out of the field again until June 1. As a result, Upton planted only 200 acres of corn compared to his normal 800 to 900 acres.

That same weather also led to poor herbicide burndown. After years of relying on glyphosate, he tried alternatives, only to discover apparent PPO as well as glyphosate resistance in waterhemp.

Fields with cover crops aren't immune to waterhemp. "I did get a few coming through, and where I did, I sprayed the field, but I should have spot-sprayed," Upton says. "We had cornfields with a hairy vetch cover crop that we didn't put any herbicide on. Where I had to replant, I did use herbicide, but even there it was on only 8 to 10 acres out of 80."

### **Stifled winter annuals, marestalk**

Mark Anson also reports significant weed suppression with delayed weed seed germination using cover crops. Weed control combined with other benefits justifies Anson Farms continuing to invest in cover crops while looking for ways to reduce other costs. The 20,000-acre operation in southwest Indiana and southeast Illinois has about 65% of its acres in cover crops.

"We find that cover crops control winter annuals really well, and my brother, who does a lot of the spraying, has pointed out fields that used to have heavy marestalk pressure have very few out there," says Anson. "We seeded cover crops in a river bottom field, leaving a 100-foot perimeter bare. The cover cropped area was clean, but the 100-foot perimeter was heavy with weeds."

"We are clearly seeing weed suppression with cover crops," says Larry Steckel, row-crop weed specialist, University of Tennessee. "If you have a good cover crop stand, you don't have to worry about marestalk and winter annuals. Sometimes you

**"We are clearly seeing weed suppression with cover crops. If you have a good cover crop stand, you don't have to worry about marestalk and winter annuals."** — Larry Steckel, weed specialist, University of Tennessee

avoid that extra burndown needed for marestalk, and it's a big help with summer annuals like Palmer pigweed. A decent cover crop stand can delay pigweed 20 to 30 days, which buys time and puts less stress on resistance management."

Steckel notes seeing the most consistent weed control with wheat-vetch, cereal rye-vetch or cereal rye-crimson clover combinations. He admits they can require a two-pass program to terminate, such as dicamba a few weeks before planting and Gramoxone behind the planter.

He also has found that cover crops can complicate preemergence herbicide programs. "Atrazine in corn or metribuzin in soybeans works better than others," says Steckel. "Prowl or Dual seems to hang up on top [of the soil] while encapsulated acetochlor works well."

### **Green planting helps**

Mike Plumer has three years of research (eight replications each year) to back up claims of marestalk suppression with cover crops. "We saw 95% to 98% control," reports Plumer, a consultant with Conservation Agriculture and a former University of Illinois Extension specialist.

"The best control was with 60 to 80 pounds of cereal rye seeded the second or third week of October. You can go lighter and still get weed control if planted early enough to tiller. If you're shooting for full-season weed control of a broad spectrum of weeds, let cereal rye grow until planting. If planting cereal rye into corn stubble, 25 to 30 pounds of nitrogen in fall can increase the

stand, improve growth going into winter and increase growth in the spring, improving weed control."

Upton tries to get vetch planted on soybean stubble by mid-October, even if that means planting a shorter-season soybean variety, as he did this year. He aims to plant 35 to 40 pounds of cereal rye and 10 to 12 pounds of ryegrass on corn stubble by Thanksgiving.

He believes he is getting physical suppression from the rye combination, as well as some allelopathic effect. As he's focused more on weed suppression, he's waited longer to terminate, which adds complications. "To get more biomass, we need to let it grow longer," Upton says. "Increasingly, I will be terminating right at planting with glyphosate on the rye and 2,4-D on the hairy vetch."

### **Prove value to landlords**

This year Upton had too much biomass. Delayed planting allowed up to 25% more biomass than usual. "The planter didn't get set up right to handle it and that affected the stand, which in turn allowed some waterhemp to slip through," he says.

Even with the complications, Upton, like Anson, has no plans to back off on his cover crop program. He is even considering expanding it to rental ground.

"It has been hard to justify the cost on land you may not farm the following year," Upton says. "However, I'm seeing enough weed control and other benefits that I may be able to convince landowners to work with me on it." **CSD**