

About **Adjuvants**

The right adjuvant mixed with the right herbicide can lead to optimum weed control in post-emergent applications. But how many superintendents know that?

BY LARRY AYLWARD, EDITOR

Word on the golf course is that many superintendents don't realize how adjuvants can improve post-emergent herbicide applications. The right adjuvant selection, combined with your next pesticide application, could significantly improve results. What superintendent wouldn't want that?

Adjuvants are additives that can be mixed with pesticides to improve performance by adding or modifying the pesticide or altering the physical characteristics of the spray solutions. The modifications include improved retention, stick, penetration, spread or altering deposit dry time to improve uptake, according to Jim Reiss, director of marketing for Precision Laboratories in Northbrook, Ill. The term adjuvants comprises a range of chemistries, including buffers, spreader stickers, defoamers, crop oil concentrates, modified vegetable oils, nonionic surfactants and fertilizers.

"The proper adjuvant selection could dramatically influence the performance of a post-emergent herbicide," Reiss says. "But most superintendents have limited knowledge about them."

Superintendents that have knowledge of adjuvants have had success using them. Terry Kennelly, superintendent of DelRay Dunes Golf & CC in Boynton Beach, Fla., says the ammonium sulfate-based adjuvant he mixes with an herbicide improves uptake of the pesticide. It prevents hard water ions from tying up the herbicide, and improves absorption and translocation across cell membranes of certain weed species. "The adjuvant cuts through the cuticle of the plant and helps the herbicide get into the plant quicker," Kennelly adds.

In southern Florida, where the threat of rain is imminent daily, the

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An adjuvant cuts through turf cuticles and helps an herbicide permeate the grass quicker. The end result is better-looking and more healthy turf.

Post-Emergent Herbicides

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adjuvant plays an important role in post-emergent herbicide applications, Kennelly says.

"I'd hate to have a worker spot spraying all day and then have a thunderstorm come through and wash the herbicide away," Kennelly says. "That's when the adjuvant comes into play."

Bart Fox, a senior sales specialist for BASF, says it's usually the more experienced superintendents who use adjuvants. Veteran Doug Hausman, superintendent of Dakota Dunes CC in Dakota Dunes, S.D., fits that bill. He's been using an adjuvant with post-emergent herbicide applications for several years. "[The adjuvant] is the key ingredient for getting quick burndown and great post activity," he says.

Hausman admits he's always been conservative about what

he puts in a spray tank. "Sometimes A plus B equals D, as in disaster," he says. But Hausman now knows enough about adjuvants that he has faith in them.

"We're always fiddling with rates and trying to go with the lowest end possible according to the label," he says. "You can do that with adjuvants."

How can more superintendents learn about adjuvants like Hausman did? Herbicide labels often discuss general adjuvant technology. "But there's a range

of chemistries and huge differences between them," Reiss says.

Superintendents must know exactly what adjuvants to use with certain products, Reiss says. A wrong combination could damage turf. Adjuvants perform different functions. "Today's pesticide technologies have specific needs in specific situations, and it takes specific adjuvant technology to optimize their performance," says Reiss, noting that environmental conditions, application technique and leaf surface barriers are also factors that contribute to performance.

Kyle Miller, a senior technical specialist for BASF, says various herbicide distributors pitch myriad adjuvants with different formulations, which can confuse superintendents. Rick Wohlner, president of Precision Laboratories, says some salespeople and distributors who sell adjuvants need to brush up on the technology.

Superintendents also need to ask more questions about adjuvants, Reiss says. "If a supplier says he has an adjuvant that replaces crop oils, spreaders, stickers and nonionics, a superintendent should say, 'Let me see some data,'" Reiss says.

Hausman's advice is to take matters into your own hands. Try the herbicide and adjuvant combination on an area of your course that can afford to be damaged if the experiment goes awry. "Be conservative until you develop your own comfort factor with an adjuvant, no matter what anybody tells you," he says. ■

What They Do

Adjuvants' functions:

- Chelating, sequestering antagonistic ions
- Buffering
- Emulsifying
- Improving retention
- Wetting
- Spreading
- Altering deposit dry time
- Sticking
- Penetrating
- Transportation

For more information on adjuvants, contact:
www.precisionlab.com/agriculture/index

SOURCE: PRECISION LABORATORIES

The Poop on Post-Emergent Herbicides

We asked superintendents and industry experts to give us their takes on post-emergent herbicides. Here's what they had to say:

Kyle Miller, a senior technical specialist for BASF

Even if you're waging a never-ending war against a noxious weed, you're better off than you were 10 years ago, says Miller, adding that superintendents have plenty of products to choose from for post-emergent control.

"There are so many new options," he says. "Superintendents can use these herbicides to control the tough stuff, like Virginia buttonweed, wild violet and ground ivy."

Doug Hausman, certified superintendent of Dakota Dunes CC

Hausman says he prefers post-emergent herbicide applications and could do without pre-emergents.

"I don't like pre-emergent applications, particularly on bentgrass fairways and tees," Hausman says. "I think they're root pruners. My preference is to go post. That way, you're never treating more than you have to."

But Hausman was forced to change his philosophy when members saw crabgrass on tees and complained about it. Hausman realized that it's difficult for his maintenance crew to constantly scout for crabgrass and treat it. "Obviously, we weren't doing a good job," he says.

So Hausman is using a pre-emergent herbicide on select holes this spring at his in Dakota Dunes, S.D., course.

"We're going to try both," Hausman concedes. "We just can't always be out there to take care of business on a post basis."

Terry Kennelly, superintendent of DelRay Dunes Golf & CC

Overall, Kennelly is happy with the results he sees from post-emergent herbicide applications at his course in Boynton Beach, Fla.

"But I've had one noxious weed that I'm having trouble controlling — tropical signal grass," he says. "It's harder than hell to get rid of."

But Kennelly is not giving in. His recipe for eradication is to spray the weed every 10 days while the bermudagrass is still active.

"Making repeat applications is the best way to go at it," he says. "You have to start a program and commit to it."

Tom Alex, director of golf course maintenance for Grand Cypress GC

Alex wishes for a post-emergent herbicide to control *Poa annua* on his overseeded fairways at his Orlando, Fla., course.

"We're getting extremely high populations of *Poa* after we overseed," he says. "It's a perennial problem."

Alex has tried a pre-emergent herbicide 30 days before overseeding, but with no luck. He's tried to rid the *Poa* after overseeding. "But that's dicey, and this year I frosted some fairways," he says.

The only way to correct the situation is not to overseed one winter and apply an herbicide to eradicate the *Poa*, Alex says. "This is a huge issue [with golf courses] around here," Alex says.

Joe DiPaola, golf market manager, Syngenta

In his discussions with superintendents, DiPaola says post-emergent herbicides are not at the top of their list of concerns.

"I haven't heard any complaints," he says. "They don't have the perfect tool, but superintendents [still] have a fair array of tools."

Tim Cunningham, superintendent, The Country Clubs of Fox Meadow

Cunningham says his biggest problem is with chickweed and clover in fairways. His regular herbicide program allows for low-dose rates in the spring and fall, and really low-dose rates in the summer.

"In the summer, we back down because of the burn potential," Cunningham says. "When I was a bit too aggressive three years ago, I got burned."