

PESTICIDES

Herbicide failure? It's probably *your* fault

PRE-EMERGENTS

The most common reason why pre-emergence herbicides for grassy weeds fail is that they are applied too late in the growing season. Doug Davis, a research assistant at the University of Maryland, notes that few, if any, pre-emergence herbicides will knock out weeds after their germination. Also, not watering in chemicals within 72 hours of application can keep the herbicide from the germinating seed.

Light and microbial action also will break down the active ingredient, Davis told landscape managers at Turfgrass '88 in Baltimore. Often, a necessary second application is not made, especially with Balan, Dacthal and Team, he adds.

Weather conditions also affect success. A dry spring followed by a moist June and July will delay germination past the pre-emergent's efficacy period. Improper calibration and a disruption of the soil surface, such as from divots, also can work against control.

Davis, therefore, recommends taking these steps toward successful pre-emergence control:

- Apply at recommended rates. This includes proper calibration and measuring of chemical. He suggests applying granular at half rates in two



directions.

- Apply about one to two weeks prior to weed seed germination. In the north, he says, this is generally between May 1 and May 20; in the transition zone March 15 to April 15.

- Water in; do not disturb surface.

- Finally, Davis recommends re-application about six to eight weeks following initial application.

POST-EMERGENTS

Any number of outside influences can decrease the effectiveness of post-emergence broadleaf herbicides, says Tony Koski, Ph.D. at Ohio State.

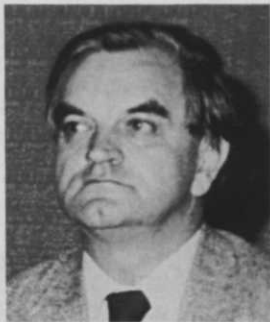
First, is the weed susceptible or tolerant to the herbicide? Key influences on this, Koski says, are:

- herbicide placement;
- herbicide dosage or proper application rate;
- herbicide formulation (either granular or liquid);
- growth stage of the plant (the younger the better);
- degree of absorption and translocation and metabolism of the chemical by the plant;
- pesticide interaction in tank mixing;
- synergistic effects of tank mixing; are combinations better?; and
- enhancement: should an additive such as a wetting agent be mixed in to induce a response?

With tank mixing, antagonism is a possibility, Koski notes. Mixing sometimes reduces efficacy, as in the case of Acclaim! in combination with phenoxys. Physical incompatibilities can result in a chemical settling out of the mix. Chemical incompatibility can reduce efficacy or even form new chemicals. Poor water quality will also affect chemical potential.

The amount of herbicide absorbed also is related to the weather. Hot dry conditions thicken cuticles and close stomata, openings through which herbicides are absorbed. Often, irrigating turf can help if weeds are growing actively. In general, Koski says, moist conditions of spring and fall are best for application timing. Rain and runoff, however, will decrease efficacy.

Koski made these observations at the Ohio Turfgrass Conference.



Jackson



Smiley



Couch

DISEASES

Cause of summer patch finally identified

Researchers at Rhode Island University have identified the causal agent of summer patch disease in Kentucky bluegrass turf.

Previously identified as *Phialophora graminicola* by Richard Smiley, Ph.D., the pathogen is now known to be a species of *Magnaporthe*. *P. graminicola* is a common inhabitant of Kentucky bluegrass

roots, but it is not an aggressive pathogen.

Research on this topic was headed by Noel Jackson, Ph.D., and Peter Landschoot. Smiley, now working at the Columbia Basin Agricultural Research Center in Pendleton, Ore., agrees with Jackson and Landschoot. "It's a remarkable piece of work," says Smiley. "It's a further clarification. I

had identified the existence of a fungus."

This is the latest in a series of theories expounded in the last 20 years on the causes of a group of turf diseases known as fusarium blight (or fusarium blight syndrome). Turf pathologists have long debated the causal agents of the diseases. The de

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