News

PENNSTATE

College of Agricultural Sciences

Information and Communication Technologies

(814) 863-2701

The Pennsylvania State University
106 Agricultural Administration Building
University Park, PA 16802-2602

May 30, 2003

HERBICIDE-RESISTANT WEED MAY INVADE PENNSYLVANIA CROPS

UNIVERSITY PARK, Pa. -- Field crop producers and landscapers across Pennsylvania should be vigilant over the next few weeks for a new strain of super-weed threatening to gain a foothold in the state, according to an agronomist in Penn State's College of Agricultural Sciences.

William Curran, professor of weed science and extension specialist for Penn State Cooperative Extension, warns that surrounding states have been wrestling with a variety of the common annual weed known as horseweed or marestail. This variety, he says, is showing resistance to glyphosate, the active ingredient in many popular herbicides.

"Horseweed is very common in the Northeast -- it's actually a native species in Pennsylvania," Curran says. "It's mostly a problem along roadsides and areas that aren't tilled. Glyphosate is the active ingredient in Round-Up, TouchDown, Glypho-Max and more; it's the primary product used to kill emerging weeds at planting time. If a weed is resistant to glyphosate, it's a huge threat not only to soybeans but to all crops grown with no-till planting techniques."

In 2000, glyphosate-resistant strains of the weed were identified in a few isolated fields on Maryland's Eastern Shore. By 2001, it had moved into about 30 fields. By 2002, it was in many no-till soybean fields in Delaware. It since has been identified in New Jersey, Maryland, Virginia, Ohio, Tennessee, southern Kentucky and possibly as far west as Missouri.

"This year, we're really concerned about this weed getting a foothold in Pennsylvania," says. Curran "It could become an annual summer problem not just for corn and soybean growers, but also for the landscaping industry, where glyphosate-based herbicides are used frequently to kill weeds among bedding plants, in shrubs and on roadsides."

Over the next several weeks, Curran urges farmers, landscapers and others to keep an eye out for horseweed that isn't controlled by the standard application of herbicide.

"I think it's inevitable that it'll be here -- it probably already is, and just hasn't been identified," Curran says. "This weed gets a foothold in no-till continuous soybean crops -- where they grow soybeans in the same field for several years in a row. In Pennsylvania, that's not the norm. Most of the time, our more diverse crop rotations could keep this problem at bay.

"In places where it's a problem -- such as Kentucky and Tennessee -- they're rotating no-till cotton with no-till soybeans, so they're using the same herbicide on different crops. The key to

preventing these kinds of problems is to rotate crops and herbicide families, change modes of action by not using the same herbicide annually, and use nonchemical methods to manage weeds."

Curran says if you suspect a resistance problem, notify your county Penn State Cooperative Extension agent immediately, so that he or she can confirm that a problem exists.

"Investigate the causes and factors," he says. "How big was it at application? What rate or applications were applied? Is there a spray pattern associated with the surviving plant? Are the plants displaying different levels of herbicide injury? Just because you didn't kill the weed doesn't mean it's resistant. In fact, frequently it's not."

Each horseweed plant produces hundreds of thousands of seeds that disburse on the wind like dandelions. Swift action with alternative herbicides and other physical control methods can eliminate the plants, Curran says. Once they go to seed, it's too late.

"We're talking about horseweed today, but there are other weeds that can develop resistance," he says. "There have been some glyphosate performance problems with common lambsquarters and other weeds on Maryland's Eastern Shore and in portions of the Midwest. There have been more resistance problems worldwide with the ALS-inhibitor family -- a different family of herbicides -- than with any other family, and we're just starting to see those problems in Pennsylvania the last two or three years. The bottom line is that overreliance on any pest management strategy will eventually produce problems and possibly failure. Herbicide or pest resistance is just one example that's close to home."

EDITORS: Contact William Curran at (814) 863-1014 (phone) or wcurran@psu.edu (e-mail).

Contact:

Gary Abdullah
gxa2@psu.edu
(814) 863-2708
(814) 863-9877 fax
#167

To read the latest news releases, click on this link.

To read previous months' news releases, click on this link.

If you would like to receive our news releases via electronic mail, send an e-mail message to AgSciNews-L@lists.cas.psu.edu with the word "subscribe" in the SUBJECT, or contact Toni Benner at (814) 863-2701 for more information.

For information about these Web pages, contact:
Eston Martz
Information and Communication Technologies
Penn State's College of Agricultural Sciences
106 Agricultural Administration Building
University Park, PA 16802

(814) 863-3587