

BATTLING PESTS



With agriculture as Ohio's No. 1 industry, helping farmers, growers and producers stay efficient and productive is an important goal for researchers at The Ohio State University's Ohio Agricultural Research and Development Center. Stopping pests — diseases, insects or weeds — is one way Ohio State scientists are continually working to help Ohio farmers increase crop yields and profitability while producing safe, healthy foods and food products.

FIGHTING FUSARIUM HEAD BLIGHT IN WHEAT

Wheat growers now have an online tool to help guide fungicide application decisions to combat one of the most economically important wheat diseases in Ohio: Fusarium head blight, also called head scab.

Using the Fusarium Risk Assessment Tool available at the Fusarium Head Blight Prediction Center (wheatscab.psu.edu), growers can determine the risk for scab and decide whether to use a fungicide to control it.

This tool is important for growers, as head scab isn't scoutable for the purpose of making fungicide application decisions. By the time growers see the disease in their fields, it's too late for them to manage it with a fungicide, say Ohio State plant pathologists.

Scab causes vomitoxin contamination of the grain, making the grain unfit for human or animal consumption. More than 2 parts per million vomitoxin in the grain can cause the grain to be priced down or rejected. Therefore, just a 10 to 15 percent scab

Pierce Paul with wheat



infestation can cause more than a 50 percent crop loss.

The scab forecasting system uses temperature and relative humidity to calculate scab risk, determining whether there is a high, moderate or low risk for the disease.

More: go.osu.edu/scabtool

GAINING ON OHIO'S GIANT RAGWEED

Growers have long wanted to know what's causing the spread of a weed that's plagued corn, soybean and cotton crops for more than 30 years.

Now, thanks to Ohio State researchers who are working with a team of investigators from six universities and the U.S. Department of Agriculture's Agricultural Research Service, growers are gaining insight into how giant ragweed proliferates and how to manage it.

Giant ragweed is a fast-spreading, increasingly herbicide-resistant weed that has impacted crop fields in the east-central U.S. Corn Belt, including north of the Ohio River in Indiana and western Ohio.

The research team found that giant ragweed populations are highest in fields managed with minimum tillage, planted continuously with soybean crops, and treated with multiple herbicide applications (i.e., more than one application per growing season). They also found it is prevalent in crops near noncrop areas populated with



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giant ragweed, as well as in crop fields with large populations of seed-burying earthworms.

With this knowledge, researchers say growers can help reduce ragweed's spread by managing its presence in nearby noncrop areas, as well as by using a more diverse rotation of crop species, tillage intensity and herbicide sites of action to increase season-long control and select against herbicide-resistant biotypes.

STOPPING PALMER AMARANTH'S SPREAD

Ohio State weed scientists are working to stop the spread throughout Ohio crop fields of a glyphosate-resistant weed that has devastated many cotton and soybean fields in Southern states. In many cases, entire fields have had to be mowed down.

Palmer amaranth, also known as "pigweed on steroids," has been reported in 13 Ohio counties as of late 2015. That's a marked increase from 2012, when the weed was found in only one county in the state.

Unless farmers work diligently to stop its growth, the weed could have a devastating impact on crops. Palmer amaranth is difficult to manage because it requires multiple applications of herbicide and has to be treated when it is less than 3 inches tall. It can grow 3 inches daily, and it can release nearly one-half million seeds per plant.



Emilie Regnier with giant ragweed

Palmer amaranth entered Ohio fields through manure from local livestock fed contaminated cottonseed products from the South. The noxious weed can also be spread by water and farm equipment previously used on a contaminated field. Because of Palmer amaranth's fast growth, herbicide resistance and ability to destroy entire crops, Ohio growers have to be vigilant to prevent it from spreading statewide.

Ohio State weed researchers are helping to stop Palmer amaranth's spread by educating dealers, agronomists and farmers about its identification and management. Farmers are also being

advised to scout their fields for Palmer amaranth, and if it's found, to eradicate the weed before it goes to seed.

In addition, grain and animal producers, as well as feed and equipment dealers, are being advised to stop importing combines from Palmer amaranth-infested areas, and to stop using cotton-based feed products from these areas. Lastly, Ohio State specialists are recommending that growers use free Ohio Department of Agriculture testing of all cover crop seed for the presence of Palmer amaranth seed prior to planting.

More: u.osu.edu/osuweeds

Mark Loux with Palmer amaranth

