

Researchers validate new technique for rapidly diagnosing herbicide-resistant weeds

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As the number of weed populations resistant to multiple herbicides continues to soar, it is clear that better tools are needed to help growers rapidly diagnose resistance issues. With more timely access to

information, they can take earlier, proactive steps to keep resistant weeds from spreading.

A recent article in the journal *Weed Science* describes a new rapid "leaf-disk [assay](#)" that uses chlorophyll fluorescence emissions to determine whether a [weed](#) is resistant to various systemic and contact herbicides. In contrast to time-consuming and labor-intensive greenhouse screenings and [population](#) studies, leaf-disk assay results are available in about 48 hours.

In a recent research study, scientists were able to use the fluorescence technique to rapidly detect resistance to glyphosate, dicamba and fomesafen in broadleaf and grass weeds, including Palmer amaranth, waterhemp, kochia and goosegrass.

The assay clearly separated populations susceptible to herbicides from those that are highly resistant. It exhibited less sensitivity, though, in identifying populations with lower levels of resistance.

Though further work is needed to fine-tune the new test for greater precision, researchers say it holds great promise.

"In addition to the speed, the leaf-disk assay requires fewer [technical skills](#)," says Chenxi Wu, research scientist at Bayer CropScience. "That means more weed science labs will be able to use the technique to identify multiple resistances efficiently—helping growers take more immediate and informed actions."

More information: Chenxi Wu et al, A nondestructive leaf-disk assay for rapid diagnosis of weed resistance to multiple herbicides, *Weed Science* (2021). [DOI: 10.1017/wsc.2021.15](https://doi.org/10.1017/wsc.2021.15)

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