

Fighting a mighty weed

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Weeds are pesky in any situation. Now, imagine a weed so troublesome that it has mutated to resist multiple herbicides. Palmer amaranth, a member of the pigweed family, is spreading across states and growing in strength. If farmers and weed scientists cannot find a new solution, crop yields could decline substantially, according to an article in *Chemical and*

Engineering News (C&EN), the weekly news magazine of the American Chemical Society.

Scientists are calling Palmer amaranth a "game changer" because of its ability to quickly develop resistance to herbicides, including the mainstay, glyphosate, Senior Business Editor Melody Bomgardner writes. Unlike other weeds that have developed resistance, amaranth does not pay a "fitness penalty" for the adaptation but instead thrives and produces new generations of resistant plants. A single female Palmer amaranth can make up to 1 million seeds. The weed outcompetes crops for sun, water and nutrients, with the potential to drastically reduce yield for crops such as corn and soybeans.

Because the [weed](#) is so versatile and spreads so rapidly, scientists are working to discover solutions fast. They want to identify the genes or mechanisms that cause resistance, which could lead to more specific recommendations for herbicides. Unlike most weeds, Palmer amaranth is dioecious, with both male and female plants. Experts could someday introduce modified weeds with pollen that produces only male plants, which could eventually cause the population to crash. For now, to keep the [noxious weed](#) under control, farmers are encouraged to use a combination of pre- and post-emergent herbicides, as well as alternative strategies, such as planting winter cover crops and implementing crop rotation approaches.

More information: "Palmer amaranth, the king of weeds, cripples new herbicides," [cen.acs.org/business/specialty ... eeds-cripples/97/i31](https://cen.acs.org/business/specialty.../weeds-cripples/97/i31)

Provided by American Chemical Society

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