

# Be On Alert: Problematic Weed Moving Into Illinois

URBANA, ILL.

**A**maranthus species are among the most troublesome weed species in agronomic production systems. Maintenance questions regarding this species have tended to focus on waterhemp. But Aaron Hager, U of I Extension weed specialist, said move over, waterhemp, Palmer amaranth is in town.

A panel of U of I specialists, including Hager, provided the most current information about crop production, pest management, and economics at the 2012 U of I Corn and Soybean Classic held on Jan. 12 at the I Hotel and Conference Center in Champaign, Ill.

Hager said Illinois farmers have become well acquainted with waterhemp and the challenges caused by this species, but Palmer amaranth is perhaps the most aggressive Amaranthus species with respect to growth rate and competitive ability.

"Palmer amaranth is most common in the southern third of Illinois but, it may be expanding its range northward," Hager said. "The growth rate and competitive ability of this species exceed that of other Amaranthus species. Waterhemp can add close to one inch of new growth per day under good growing conditions, whereas Palmer amaranth can add multiple inches."

Recently, at least one population of glyphosate-resistant Palmer amaranth was confirmed in southern Illinois. Hager said this should raise awareness among Illinois farmers because this example provides additional evidence that resistance to glyphosate can occur in a summer annual weed species that is very competitive with corn and soybeans. It occurs in many fields in the southern portions of Illinois, and Palmer amaranth has dramatically changed farming practices in areas of the mid-south and southeastern United States.

"This species has managed to drastically spread across the southern United States, so what says it won't spread to northern Illinois as temperatures increase," Hager said. "This could become a huge problem, especially as glyphosate resistance is identified."

He said the first step to managing this weed is being able to recognize it. Accurate identification of weedy Amaranthus species can be

difficult because many exhibit similar morphological characteristics.

The cotyledon leaves of Palmer amaranth are relatively long compared with other Amaranthus species. As the plant matures, petioles are two to three times longer than the leaf blade and a watermark may appear. It also has little to no pubescence. It is important to note that Palmer amaranth is a dioecious species,



meaning plants are either male or female, which introduces a great deal of genetic diversity, Hager said.

Emergence, stress tolerance, and growth rate are factors that make Palmer amaranth particularly noxious. Hager said it tends to display a prolonged emergence pattern with higher germination rates at shallow seed depths. Palmer amaranth can tolerate high temperatures and dry soil conditions better than any other Amaranthus species. It has an excessive growth rate, which is evident in southern regions.

These factors, coupled with resistance and competitive ability, create a need for management practices.

"The most consistent management for corn and soybean involve an integrated approach that utilizes soil-applied herbicides, postemergence herbicides and mechanical," Hager said. "The management practices for Palmer amaranth are very similar to those recommended for waterhemp."

Hager said time application can have a significant impact on weed control. It is critically important to remember that Palmer amaranth can grow over one inch per day. Delaying applications of postemergence herbicides is not recommended. △