Keep eyes open for Palmer amaranth

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Abstract
Currently Palmer amaranth is known to be present in five Iowa counties (Harrison, Fremont, Page, Lee and Muscatine). The similarity of Palmer amaranth with waterhemp greatly complicates finding new infestations, especially early in the season (Figure 1). In the vegetative stage many characteristics within the species are indistinguishable. The long petioles on Palmer amaranth are a good trait to differentiate, although occasionally waterhemp exhibits this trait. The only foolproof method is to examine the flowers of the two species.

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Keep eyes open for Palmer amaranth

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Currently Palmer amaranth is known to be present in five Iowa counties (Harrison, Fremont, Page, Lee and Muscatine). The similarity of Palmer amaranth with waterhemp greatly complicates finding new infestations, especially early in the season (Figure 1). In the vegetative stage many characteristics within the species are indistinguishable. The long petioles on Palmer amaranth are a good trait to differentiate, although occasionally waterhemp exhibits this trait. The only foolproof method is to examine the flowers of the two species.
Figure 1. Seedlings of Palmer amaranth (left) and waterhemp (right)

Palmer amaranth is characterized by long terminal branches on the inflorescences that may reach lengths up to three feet (Figure 2). However, some male waterhemp plants produce long flowering branches easily mistaken for Palmer amaranth from a distance. Examining the individual flowers is the only foolproof method of distinguishing many waterhemp and Palmer amaranth. Female Palmer amaranths have long bracts (1/4”) that extend well beyond the other floral parts (Figure 3). As the plants mature, these bracts become sharp and painful to the touch. The bracts of waterhemp plants do not extend beyond the other floral parts. Redroot and smooth pigweed have long bracts, but both of these species have hairy stems.

Figure 2. Long inflorescences of Palmer amaranth.
While we are only aware of five Iowa counties with infestations, we are confident there are other infestations in the state. In 2014, a single Palmer amaranth was found growing in a raised garden bed at a lake home on Clear Lake. No other plants were found in the area, and the homeowner was unaware of the source of soil used to fill the raised bed. The extremely low odds of encountering this random plant convince us that Palmer amaranth is much more widespread than we are aware.

Figure 3. Flowers of Palmer amaranth and waterhemp.

Early detection and rapid response to invasive plants is the most effective and economical way of dealing with new weed threats. Most Palmer amaranth infestations in Iowa should be small enough at this time to eradicate with a focused effort. The similarities of waterhemp to Palmer amaranth complicate detecting new infestations, this is why it is so critical to remain vigilant at this time of year. Please contact Bob Hartzler or Meaghan Anderson if you encounter any ‘odd’ Amaranthus species suspected of being Palmer amaranth.

Category: Weeds

Tags: palmer amaranth, waterhemp

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Bob Hartzler is a professor of agronomy and an extension weed specialist. He conducts research on weed biology and how it impacts the efficacy of weed management programs in corn and soybean. Bob also teaches undergraduate classes in weed science and weed identification.

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