

## Seed ID – Palmer Amaranth

### Editorial

*Amaranthus palmeri* can be spread by agricultural products like feed, mulch, seed and equipment as well as wildlife, in particular ducks and geese.

Most seed companies that work across state lines ask for an “all states noxious weed exam.” Only a few states currently classify Palmer amaranth as a noxious weed. Lab reports may state Amaranth species, or pigweed, due to the inability to definitively differentiate the species visually.

Along with resistance to multiple classes of herbicides Palmer amaranth is a prolific seed producer making an ounce of prevention worth a pound of cure.

Inspecting production fields, equipment and storage facilities under NAISMA’s Weed Free Forage program would be one way to address the challenges of post-harvest weed seed exams in the lab.

**Regardless of the method of analysis it is impossible to test the entire lot of seed in question. Identify the risk and manage your seed products pre and post-sale to help slow the establishment of Palmer amaranth in your sales territory.**

Doug Miller, Illinois Crop Improvement Association

It is a misnomer that Palmer amaranth can be definitively identified by visual analysis of the seed. The NRCS website lists 49 *Amaranthus* species. Other weedy members of the genus include smooth pigweed, redroot pigweed, Powell amaranth, spiny amaranth, tumble pigweed, prostrate pigweed and waterhemp. These amaranths have similar seed morphology requiring additional analysis to definitively differentiate seed to the species level.

However, seed analysts are being asked to analyze samples of feed, seed, and other agricultural commodities originating from areas where Palmer amaranth is common. Currently the seedling growout method is the most readily available technique for identification to the species level. Molecular testing of leaf tissue samples can be performed (University of Illinois) and the direct testing of *Amaranthus* seeds has been validated and is now available. Time, space and cost make any identification technique an added investment to seed testing.

The cotyledon leaves of Palmer amaranth are relatively long compared with other *Amaranthus* species. Like all weedy *Amaranthus* species in Illinois, the true leaves (those produced after the cotyledon leaves) of Palmer amaranth have a small notch in the tip. The stems and leaves have no or few hairs and the stems feel smooth to the touch. Leaves are alternate on the stem and are generally ovate or egg-shaped with prominent white veins on the underside. As plants become older, they often assume a poinsettia-like appearance and sometimes have a white or purple chevron on the leaves. Leaves are attached to the stem by petioles that are usually as long, or longer than, the leaf.

*Guidelines for the Identification and Management of Palmer Amaranth in Illinois Agronomic Crops 2013 Aaron G. Hager*



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## Palmer Amaranth – *Amaranthus palmeri*



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