

## Area Crop Report 1/6 – 1/10

### Avoid the Waterhemp Woes

Redroot, palmar, pigweed, waterhemp (most common in our immediate area), Chinaman's greens; whatever you may call it, *Amaranthus* species are the driver weed for a vast majority of our regional location and across the Midwestern Corn Belt. So why is it so hard to suppress and/or control them? Where do you even start.

First off, it takes 3 years for a seedbank to be reduced 50% and nearly two decades to achieve a 99% depleted seed bank, so they're persistent. Having very small seeds, they don't have enough energy to germinate from deep in the soil like a cocklebur seed would, so that's a plus. Except, a single female plant can produce up to half-a-million plus seeds when there is no competition. Not so much a plus. Typically, seedlings emerge from soil depths less than one inch as it takes high soil temperatures and sunlight to promote germination. Considered a "desert plant" they prefer soil temps from 86-104F, but can germinate at 68F and below having been found as early as March. This correlates to a considerably long growth window through most of, if not all, a growing season. They also prefer fertile soil beds, nutrient rich in N, P, and K. Nitrate will stimulate germination of the species by making seeds more sensitive to light, as an equivalent of 0.01 seconds of sunlight will increase germination. So, as we fertilize row crops, we are simultaneously promoting enhanced pigweed growth. Once emerged, exponential growth occurs. Pigweeds can grow 2-3 inches a day under ideal conditions, expanding 2 growing points on a small seedling into fifty plus in a matter of hours to days. Chemical control efforts are most common, but are inconsistent and becoming (if not already) resistant. As species cross contaminate, they share genes that have 162 confirmed cases of resistance across all pigweed species, herbicides, and U.S. states.

So how do we suppress, and ideally control, a constantly evolving weed species? **Start clean, keep it clean.** Mechanical tillage is one option dependent on your IWM (Integrated Weed Management) strategy and farming practices, i.e. no-till. Agronomically appropriate crop rotations and planting cover crops are cultural management strategies to be considered and implemented. However, the most common approach is chemical control. A multi-faceted chemical program with a pre-plant/preemergence residual application followed by a post application(s) with multiple modes and sites of action roughly 2-3 weeks later would be ideal (always read and heed the label for effective half-life concentrations, soil persistency, etc.). If chemical control is a key component of your IWM program, remember the old saying "If you don't put down a pre, don't call me!"



Redroot pigweed typically has egg-shaped leaves with wavy margins and small, dense hairs on the stem.



Palmar amaranth leaves are diamond-shaped and petioles are longer than the leaf blade.



Waterhemp leaves are long and linear with branches thinner than palmar amaranth.

***“Never fight until you have to. But when it's time to fight, you fight like you're the third monkey on the ramp to Noah's Ark... and brother, it's startin' to rain.”***

**Tim Kennedy**