

Sept 10, 2022

Late Season Scouting for Water Hemp and Palmer Amaranth

Have you been scouting your fields for weed escapes yet? Based on some reports in the county, water hemp is out there in several places. So far, no reports of Palmer amaranth have come in yet, but that does not mean it is not out there as well.

Waterhemp and Palmer amaranth plants that have escaped POST applications or emerged after are now starting to develop mature seed. Be aware these plants can produce upwards of one million seeds per plant in certain situations. When it comes to the management of these weeds, the best offense is a good defense. Anything we can do from now through harvest to prevent seed from being deposited into the soil seed bank will pay dividends down the road.

According to Alyssa Essman, visiting assistant professor in OSU weed science, at this point in the season, there are limited options for control beyond scouting and hand pulling. She warns, just a few plants left in the field can lead to a total infestation within a few years. Viability of waterhemp and Palmer amaranth seed is greatly reduced after 3-5 years. Some diligence over a couple of growing seasons can drastically reduce populations. Aside from tremendous seed production, fast growth rates, and lengthy emergence windows, what makes us most nervous about these weeds is their tendency to develop herbicide resistance.

She notes that in other states, waterhemp has exhibited the ability to resist up to seven different herbicide sites of action, and Palmer amaranth can now resist up to nine. Resistance to more than one site of action within a single population is not uncommon. Metabolic herbicide resistance may increase the prevalence of populations with resistance to multiple herbicide groups. To date, Essman says Ohio seems to be a bit behind states to the south and west in terms of resistance issues, though experience would tell us it's only a matter of time.

OSU weed science has a number of resources that can be helpful for scouting, including a pigweed ID guide, pigweed management fact sheet, and YouTube videos that cover assessment for seed maturity. More helpful information on the management of pigweeds can be found on the OSU weed science website : <https://u.osu.edu/osuweeds/super-weeds/palmer-amaranth/>

Over the years, Dr Mark Loux, OSU Weed specialist, has shared these scouting tips for late season water hemp and Palmer amaranth detection and management:

- Take some time now into late summer to scout fields, even if it's from the road or field edge with a pair of binoculars. This would be a good time to have a friend with a drone that provides real-time video, or your own personal satellite. Scouting from the road is applicable mostly to soybean fields, since corn will often hide weed infestations.

- Walk into the field to check out any weeds that could be Palmer amaranth, waterhemp, or are otherwise mysterious. If you need help with identification, send photos to me (nye.1@osu.edu), or pull plants and bring them to me to help identify them.

- Where the presence of Palmer amaranth or waterhemp is confirmed, check to see whether plants have mature seed (in Palmer infestations these are the rough female seedheads), by

shaking/crushing parts of the seedhead into your hand or other surface that will provide contrast. Mature seed will be small and very dark.

- Plants without mature seed should be cut off just below the soil surface, and ideally removed from the field and burned or composted. Plants with mature seed should be cut off and bagged (at least the seedheads) and removed from the field or removed via any other method that prevents seed dispersal through the field.

- If the Palmer amaranth or waterhemp population is too dense to remove from the field, some decisions need to be made about whether or how to mow or harvest. Harvesting through patches or infested fields will result in further spread throughout the field and also contaminate the combine with weed seed that can then be dispersed in other fields. Realizing it is a tough decision, it might be necessary to consider: 1) not harvesting areas of the field infested with Palmer amaranth or waterhemp, and instead mowing several times to prevent seed production, and 2) harvesting the infested field(s) after all other fields have been harvested, and cleaning the combine thoroughly before further use. This also applies to any infestations that are discovered while harvesting.

- Scout field borders and adjacent roadsides, areas that flood or receive manure application, and also CREP/wildlife area seedings. The latter can become infested due to contaminated seed produced in states where Palmer amaranth and waterhemp are endemic and not considered noxious. Reminder - ODA will test any seed used for these purposes for the presence of Palmer amaranth.

Please feel free to contact Tony Nye (nye.1@osu.edu) (937) 382-0901 for assistance in identification of subject weeds. You may also feel free to reach out to Alyssa Essman (Essman.42@osu.edu, 614-247-5810) for questions regarding this topic or other concerns related to the identification and control of weeds.



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