



St. Joseph
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Have You Heard of Palmer Amaranth?



USDA has learned that Palmer amaranth (*Amaranthus palmeri*), an invasive weed, may have infested some newly-seeded (2016) conservation plantings across the upper Midwest. Palmer amaranth is highly competitive, and in fact, is the most competitive of the pigweed species. It grows rapidly and one plant can produce a quarter-million seeds.

Why the concern?

Palmer amaranth is a very fast growing weed that has spread out of native areas. Populations have developed resistance to multiple classes of herbicides with different modes of action, including glyphosate, making it very difficult and expensive to control, especially on productive farmland. It also is a highly competitive weed, and has been shown to be the most competitive of the pigweed species. Palmer amaranth has an extended germination and emergence window, rapid growth rates and high water use efficiency, and it produces large quantities of seed. It is a very prolific seed producer, producing up to 250,000 seeds from one plant.

Palmer amaranth has a fast growth rate of approximately 2–3 inches per day and commonly reaches heights of 6–8 feet, greatly inhibiting

productive crop growth. Yield losses have been reported up to 91% in corn and 79% in soybeans. The weed can also compete with and decrease other agricultural crop production.

Palmer amaranth can also be toxic to livestock animals due to the presence of nitrates in the leaves.

What can you do?

As landowners and farmers, be proactive in identifying palmer amaranth on your property to prevent establishment. Familiarize yourself with the identification of this species, and actively search for it in your crop fields, borders, ditches, conservation lands and around dairies.

If you suspect Palmer amaranth on your property, immediately call your local county extension agent and/or crop consultant to report it and get recommendations for control. Avoid entering areas where the plant is suspected or confirmed. If you must enter an infested area, always clean

vehicles, equipment and clothing prior to exiting the area that has come in contact with the weed. Be certain machinery is clean when moved field to field.

If planting grasses and flower mixes for conservation plantings, use only local reputable sources to ensure native plants are compatible with the area's climate. Obtaining a seed laboratory report before purchasing a seed mix is recommended. Reject any seed lots which have "pigweed" or "amaranth" as a weed component unless the pigweed seed has been genetically tested to not be Palmer amaranth. Palmer amaranth seed is visually indistinguishable from other amaranth seed. Limit soil disturbance and utilize cover crops, like cereal rye, to prevent and help suppress weed infestations. Hay may also be planted to help provide protection against this weed.

How do you identify Palmer amaranth?

- Palmer amaranth is a summer annual that commonly reaches heights of 6–8 feet, but can reach 10 feet or more.

- Green leaves are smooth and arranged in an alternative pattern that grows symmetrically around the stem. Leaves are oval to diamond-shaped. There is a small, sharp spine at the leaf tip. Some Palmer amaranth leaves have a whitish V-shaped mark on them. Not all plants display this characteristic.

- There are separate male and female plants.

- Palmer amaranth looks similar to other pigweeds such as common waterhemp, redroot, and smooth pigweeds.

- Redroot and smooth pigweeds have fine hairs on their stems and leaves. Palmer amaranth and waterhemp do not have these hairs.

- The stalk connecting a leaf to the stem of Palmer amaranth is longer than the length of the leaf. For common waterhemp, the stalk connecting a leaf to the stem will only be half the length of the leaf.

- Seedhead spikes on female Palmer amaranth plants are much taller, up to 3 feet long, and more prickly than waterhemp, redroot and smooth pigweed spikes. Palmer flower heads are sharp and prickly to the touch with bare hands.



GRAZING BITES

I would still promote grazing for short periods, keeping the animals moving and never grazing closer than three to four inches whenever possible. If the forages start getting ahead of you, consider making

By Indiana NRCS

I can't believe how much forage growth we have already had this year. It seems early, but it is only about ten or twelve percent ahead of last year now. I've already heard from a few people asking the best way to try and keep it under control. My wife, who is a bit vertically challenged, already thinks it is getting tall when she has to move or put up a new stretch of temporary fence. With warmer days and certainly no shortage of water, forages are growing fast and do appear out of control!

You will probably note, as you walk or drive your ATV around the fields, that there may be differences in growth. The reasons for those differences can vary but include irregularities in fertility, last autumn's stop grazing heights, soils, compaction, rest after grazing, and the forages themselves. I don't have time to cover all of those today, but will cover what I can.

One of the problems, with quick early growth, if you want to consider it a problem, is competition. If you have over seeded or frost-seeded legumes into the pasture, you need to somewhat keep their competition at bay. Those fields need to be grazed enough to keep existing forages, mainly grass, from competing too much with the legume seedlings for light. All of this can be accomplished by keeping the livestock moving and not staying in any paddock too long. If the paddock was grazed down tighter last fall, especially pre dormancy, then that will help.

If you don't like weeds, and I'm not especially fond of some of them, competition is really a good thing and an excellent tool to help control them. The more you keep the ground covered and maintain enough growth to help prevent new weeds from emerging, the more control you will have on them. Good healthy growth and cover is always a good thing, so maintain that cover and don't overgraze. Keep at least three to four inches of growth at all times on most cool-season forages; that's the shortest height you leave behind, not the tallest!

Most forages have already surpassed normal start grazing heights (six to eight inches for most tall cool-season forages such as fescues and orchardgrass). Having a good root base, which starts the previous fall, and maintaining adequate residual is important to protect the soil from excessive compaction, especially when you are having as much rain as some areas have been getting lately. More growth and more residual, means more resilience. Dang, I've already gotten off on a tangent.

Okay, getting back to controlling runaway grass! There is some advantage to grazing early as long as you use some "animal" control, especially in a rotated grazing system. Starting early and making sure to maintain minimum grazing heights for the forages is really the critical issue, but it also helps to keep the forages from getting too far ahead of you before you graze them again. Staging forages helps you keep more of the paddocks in better condition longer, with less need of haying or clipping. Those fields that had more rest and more leftover forage will be ready earlier, and the tighter grazed fields will be ready later.

the paddocks slightly larger and grazing the areas for shorter periods of time letting the animals top graze to help slow down seed head production some. The goal should be to maintain as much pasture as possible in what I've referred to in the past as "stage two" growth; quality vegetative leafy growth prior to seed head production. This quality forage with good intake will ensure good growth on growing animals, milk for lactating animals, and also help to flatten the growth curve some, providing quality forages a little longer into the season.

Any fields that have to be "skipped" can be clipped for later use, cut for hay or baleage, or left as is for maintenance animals. You need to try and keep the paddocks as vegetative as possible for growing animals. If you wait too long to re-graze them you may get frustrated quickly in trying to play catch-up. It's better to skip one and deal with it later. Not applying too much fertilizer, especially nitrogen, in the early spring will help keep this furious growth under a little more control.

Let's talk about those three options a little more. First, the forage could be clipped at early seed head and as high as needed to help maintain quality a little longer. This also satisfies those who don't like to deal with seed heads and certainly is aesthetically pleasing.

Second, they could also be mown for hay. Most producers do need some hay and certainly mowing it earlier rather than later means higher quality forage and probably more potential for increased regrowth. Producing high quality hay depends upon cutting the forage plant at a vegetative stage and then getting enough dry sunny days to allow the plants to dry. The frequent rains we have been receiving is good for forage growth, but they also hinder quality hay production. Too much hay is cut at full bloom or a mature stage of development. As any grass or legume plant matures, quality declines in terms of crude protein, energy and digestibility. Hay harvest also removes nutrients that will need to be replaced.

Third, those fields could also be left standing and allowed to mature, creating a good carbon base. Then, as needed, they can be strip grazed with maintenance animals, such as dry cows allowing them to graze the best and leave the rest. If grazed with high density for short periods, they will lay unconsumed forages on the ground which will help in the long run to improve soil health by feeding the microbes, and increasing diversity.

Quite often there is no set ideal grazing pattern or set timeframe in trying to maintain quality forages. It is instead rather more of a game with changing rules, tactics, and plays to try and overcome the challenges of the season. Every year is different. We need to be prepared with more than one tool in the toolbox. When forages are growing fast, rotate fast. When forages are growing slower, graze slower. Maintain as much as possible in vegetative form and deal with the excess wisely.

Keep on grazing!



Photo by USDA NRCS



Keep it covered, please!

If you're trying to make your soil healthier, you shouldn't see it very often. In other words, soil should always be covered by growing plants, their residues, or a combination of the two.

Keeping the soil covered all the time makes perfect sense when you realize that healthy soils are full of life and that the microorganisms living in the soil have the same needs as other living creatures. They need food and cover to survive.

When you have a vegetative cover on the soil, especially a living cover, you offer those microbes both food and shelter. Some scientists say when you till the soil and remove crop residues, the effects are as devastating to soil microbes as a combination of an earthquake, hurricane, tornado, and forest fire would be to humans.

From the perspective of the living creatures within the soil, a tillage tool like a chisel shank has the effect of ripping the ground like an earthquake; removing residue is like a tornado ripping the roof off a house; uncovered soil can be drenched and whisked away by gushing water and wind like that of a hurricane—or scorched in the hot sun like an out-of-control fire.

Stop the splash, harvest the benefits

When a falling raindrop explodes as it hits bare soil, it dislodges unprotected soil particles, and begins the process of soil erosion. Cover crops and plant residue prevent that violent splash on soil, protecting soil aggregates from being pounded by falling raindrops.

Safe from disintegration by the hammering energy of raindrops, the structure of healthy soils remains intact, which prevents soil crusting. In this protective environment, water infiltrates the soil and becomes available to plant roots.

A mulch of crop residues or living plants on the soil surface also suppresses weeds early in the growing season, giving the primary crop a competitive advantage. This is especially the case if the cover crop is rolled prior to planting the main crop because the entire soil surface is covered and protected.

Cover crops can build moisture reserves far better than row crops can by themselves. Cover crops open pores and small channels in the soil for better water infiltration, and the organic matter they build helps retain both moisture and nutrients.

The cool, moist soil of cover crops also provides favorable habitat for many organisms that decompose residues and recycle nutrients for the next crop. Providing a good habitat for these organisms can increase residue decomposition, and improve nutrient cycling, by up to 25 percent.

Beyond cover, living roots offer much more

While it's easy to see the importance of giving the soil protection above the ground, it's not always as easy to recognize benefits living covers provide below the surface.

Through their roots, living plants offer soil microbes their easiest, most reliable food source. Because these soil microbes need a consistent food source throughout the year to thrive, cropping plans that include crop rotations with cover crops throughout the growing season (or perennial grasses and legumes) can help sustain them year-round.

Every soil organism has something it eats...and something that eats it. Each organism and each bit of plant residue is important to the complex food web under the soil surface. While each source of microbial food is important to a balanced food web in a healthy soil, there is no better food for soil microbes than the sugars exuded by living roots.

Living plants maintain a rhizosphere, an area of concentrated microbial activity close to the root. The rhizosphere is the most active part of the soil biology because it is where the most easy-to-eat food is available for microbes. It's also critical for plant growth and health, because those microbes, in turn, provide essential nutrient cycling for crops.

Because living roots provide the easiest source of food for soil microbes, growing perennial crops or long-season cover crops is the key to feeding the foundational species of the soil food web—so they'll be healthy and ready to perform throughout the primary growing season.

Cover Saves Scarce Water

Extreme temperature changes and high winds characteristic of the semiarid, short-grass prairie of the Great Plains can have drastic and devastating effects on exposed soil. In the High Plains sub-region of the Great Plains, more than 65 percent of the soil must remain covered to limit evaporation of water.

Bare soil heats up quickly in direct sunlight; and the hotter it gets, the faster water evaporates from it. In this rainfall-limited area (average annual rainfall is 10-20 inches), maintaining soil cover is a key to profitable agricultural production.

The combination of high winds and hot temperatures wastes water if soils aren't covered. However, ground cover (both living and residues) limits the drying effect of wind, shades the soil from hot sun, and traps snow during winter. All of which add up to more water infiltrating into the soil and less evaporating into the air.

To learn more about soil health visit www.nrcs.usda.gov.

St. Joseph County Soil And Water Conservation Partnership



What's Going On...

Events hosted by the St. Joseph County SWCD & Our Partners in Conservation



July

- 3rd** - County Holiday - SWCD staff will be out of the office all day
- 4th** - Independence Day - Office Closed
- 9th** - Purdue Extension Beginning Farmer: Veteran Tours. All military veterans & active duty personnel invited! Tuttle Orchard, Greenfield, Register at: <http://bit.ly/2r7JVx7>
- 18th** - Monthly Board Meeting Open to the Public 7 PM **LOCATION:** Alligator Room Centre Township Library at Kern and Miami Roads in South Bend - 1150 Kern Road South Bend, IN 46614

August

- 4th-20th** - Indiana State Fair
- 12th** - Purdue Extension Beginning Farmer: Veteran Tours. All military veterans & active duty personnel invited! Crowl Cattle, Lafayette, IN Register at: <http://bit.ly/2r7JVx7>
- 15th** - Monthly Board Meeting Open to the Public 7 PM **LOCATION:** Alligator Room Centre Township Library at Kern and Miami Roads in South Bend - 1150 Kern Road South Bend, IN 46614
- 16th** - River-Friendly Farmer Award Ceremony, Indiana State Fairgrounds, Indianapolis, IN

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Are you ready to "GO GREEN" and help us save money and natural resources? We can deliver your "Conservation Kaleidoscope" newsletter by email ... Give us a call or send us an email and tell us you'd like to "GO GREEN" THANK YOU!!!!