

PALMER PIGWEED CONTROL



March, 2019

by Matt Hagny



Cover crop overrun with Palmers. Good luck trying to control them in the following corn crop on this field!

Some farmers still seem to be a bit too relaxed yet in their approach to Palmer control. But this threat isn't going to be easily overcome, like marestail and many other weed-resistance problems have been. One reason is that Palmers are obligate outcrossers—the male and female flowering parts are on completely separate plants ('dioecious'), thus they cannot self-pollinate (which is a rarity in the plant kingdom*). This results in far higher genetic diversity being maintained, and in new, strongly advantageous traits (such as herbicide resistance) sweeping across entire regions quickly.

In combination with pollen that can travel dozens of miles, and tiny seeds that hitch rides on almost anything (including bird GI tracts), and the ability to produce enormous amounts of seed by each female plant, Palmers are an explosive situation. Along with a plant type that can grow 8-ft tall, and being extremely well-adapted to hot & dry conditions (it's native of the desert Southwest), and you have a formidable opponent.

Palmers are now resistant to all but two post-emerge options, paraquat and Liberty. If this species develops resistance to those, we're in really deep water. No other weed is resistant to so many things, and develops and spreads resistance as fast as Palmers (except perhaps waterhemp in the Corn Belt, another dioecious species with worrisome characteristics). No other weed is as aggressive in growth habit and seed production in summer crops. Now do you understand why I think 100% control of Palmers should be the goal? I have clients who are well on their way on this—to the point that sometimes no post-emerge herbicides are needed in the beans (just a little roguing).

And, if you think I'm too alarmist, consider that land values/rents in the Deep South are strongly affected by Palmer pressure. With only two MOAs remaining consistently effective for post-emerge control, it's likely to get worse before it gets better (there are some new MOAs and technologies in the pipeline, but not much in the next few years).

Many of you have [read about this study](#) by now—that Palmer pigweeds at a KS location are now confirmed resistant to both 2,4-D and dicamba applied post-emerge. But this is merely confirming what I and others have been saying since last summer or prior ([see newsletter](#): the Palmers aren't dying from 2 timely applications of dicamba in Xtend beans, and are surviving and setting seed), and what I've been warning about for years (over-use of certain MOAs would cause more resistance to develop).

Further note that the KSU article also mentions Palmers being resistant to the shoot-inhibitor metolachlor, as well as post-emerge PPOs (I had suspected Palmer resistance to post-emerge PPOs had occurred several yrs ago already). This is on top of the widespread Palmer resistance to ALS chemistries, atrazine (pre & post), glyphosate, and post-emerge HPPDs (Callisto, Laudis, etc) in KS.

So if you're planning on controlling Palmers in your 2019 crops with post-emerge dicamba products (including Status in corn), you might be in for a rude awakening. These have been surviving all along, but usually escaped notice as they stayed below the crop canopy, but still set seed—every generation is more resistant and more vigorous, so we'll soon—perhaps this year—have dicamba-resistant Palmers towering above the crop, having shrugged off the onslaught of dicamba.

My advice is do everything possible so that you aren't relying on dicamba (or 2,4-D, or HPPDs, or glyphosate) post-emerge for Palmer control this year. If your corn hybrids are LibertyLink, use Liberty + atrazine (and whatever else you want or need that doesn't antagonize Liberty) post-emerge, along with a HPPD (e.g., Callisto) pre-emerge plus dicamba preplant or pre-emerge (soil-applied dicamba is still effective on all Palmer biotypes, but it's only good for a short time—one or two rains—although higher rates help this somewhat).

For soybeans, applying the max rate of sulfentrazone for your soil type (0.37# a.i./acre for fine-textured soils above 2% OM) is the absolute best money spent, and is one of the gentlest herbicides on soybeans so long as it gets rained in before you seed the beans (otherwise, it's risky, especially at the higher rates). For cleaning up the escapes, Liberty in LL/Enlist beans works well (and I have some tricks to make it work far better). For Xtend beans, you can apply dicamba preplant or pre-emerge. In the eastern half of KS, fomesafen is labelled, and a considerable help if used before Palmers emerge (you may want to use less than the full rate, depending on crop rotations). Beyond this, you're down to shoot-inhibitors (Zidua, S-metolachlor, Warrant, Outlook) which are less bang for the buck than the other options, but may be necessary for moderate to high Palmer pressure, or if you have no post-emerge control options.

If you have a good, thick cover crop of cereal rye (or other winter cereal, such as triticale or barley) out in your fields ahead of the no-till beans, this can work as well as (or even better than) some herbicides—but hardly ever is it sufficient on its own, especially not if the cover crop is thin in places. (And certainly not if your planter or drill does any significant soil disturbance.)

Another help is getting to canopy sooner. For soybeans, this means narrower rows (10-inch instead of 20, etc), although I'm reluctant to run the extra openers unless there's a thick mat of cc rye ahead of the beans. For beans directly into corn or milo stalks (no cc rye), I'm reluctant to trample any more stalks or compact the soil more by running extra openers, especially south of I-80 on upland. We have too much issue with erosion already.

So, good luck in the Palmer battle this season, and if you want more details on herbicide choices, see the [Feb 2019 Crop Health Workshop booklet / webinar](#), co-hosted with Leland Baxa, who has as much experience as I do on herbicides, and together we do a good job of sorting thru all the choices. (Note: I'm also available for personalized consulting for your operation—I don't think I'm overbooked for 2019 as of now.)

*Only 6% of plants are dioecious. Tall waterhemp, common waterhemp, and Palmer amaranth are all dioecious, and are all part of a subgroup of *Amaranthus* that originated in N. America (all 10 spp. of *Amaranthus* native to N. America are dioecious).