

Corn Rotation On Fields With Heavy Glyphosate-Resistant Palmer Amaranth Seed Bank

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What is the best herbicide for corn that is being planted into fields with overwhelming Palmer amaranth soil seed bank? There are two key aspects to manage heavy GR Palmer infestations in corn. First is to use at least two herbicides with good activity on Palmer amaranth. The second is to use these herbicides in a split application.

The number one herbicide combination used on corn in Tennessee is atrazine and glyphosate. In 2008, Eric Prostko (et al.) at the University of Georgia confirmed atrazine and glyphosate resistance in the same Palmer amaranth plant. Utilizing a glyphosate and atrazine tank-mix on fields with a huge Palmer seed bank greatly increases the probability of finding a Palmer pigweed in our state resistant to both atrazine and glyphosate. We cannot afford for that to happen.

That is why we must use at least two modes of action effective on Palmer pigweed in corn. Fortunately there are many herbicides in corn that will control Palmer applied pre, post or both. Some of these include Dual Magnum, Frontier, Harness, Callisto, Laudis, Armezon, Impact, Status, 2,4-D, simazine and, of course, atrazine. Because there are so many herbicides that can be used in corn that can control Palmer amaranth it really matters more how they are applied than which herbicides are used. In general, the herbicides should be applied in some kind of split application. Some producers

are not aware that traditional pre herbicides in corn like Bicep, Lexar, Harness Extra, Degree Extra, etc. can be applied post emergence in corn. They can be applied post and they provide better pigweed control applied in this fashion. A good method is to apply 1/3 of the labeled rate for the soil type pre emergence and then follow up early post emergence with the other 2/3 of the labeled rate. This typically provides the most consistent pigweed control. Moreover, the newer premixes that contain a bleacher herbicide like Halex GT and Capreno work very well post emergence in corn after atrazine, simazine or Verdict has been applied pre emergence. Be advised that the bleaching mode of action based herbicide premixes provide the best control on Palmer when atrazine is mixed with them.

Unfortunately, Palmer amaranth control does not end there even if weed control early in the corn growing season was successful. Corn can hide late emerging Palmer pigweed. Anywhere light can hit the ground expect Palmer to emerge once the herbicide has played out. In areas where the corn is thin Palmer can emerge as early as June and will grow 6' tall and produce a lot of seed. Later as the corn is drying down Palmer amaranth will emerge well into September or later and even small Palmer can produce some seed. Therefore weed control must be maintained even after corn harvest. This can be accomplished with tillage or a herbicide. Regardless of how it is done the only way to reduce the soil seed bank is to minimize the Palmer pigweed seed production throughout the entire year. Δ

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