



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Palmer Amaranth Control Strategies

These are notes from a phone conversation I had with Larry Steckel, weed specialist at U. of Tennessee. (Mark Loux, OSU Extension Weed Specialist, August 2016)

With regard to the fields that have been bushhogged, where there are still plants that will recover and produce seed:

- Gramoxone is generally good at desiccating plants but will not stop viable seed production where plants already have a developed seedhead.
- the time between development of seed and seed maturity is short – less than a week – and this shortens as daylength decreases.
- aggressive tillage is the best option to finish destroying plants with seedheads – something that chops the remaining plants up well.

With regard to future management:

- grass cover crops are extremely helpful – can reduce populations in the spring/early summer
- wheat is a good choice, since it is essentially a cover. Palmer can emerge in the wheat where the stand is not thick enough. For double-crop soy, apply Gramoxone/metribuzin/Dual right after wheat harvest, then plant LL soybeans
- alfalfa is tough – not good POST choices to control palmer or waterhemp, and even with mowing, Palmer can produce seed low to the ground. But apparently cows will eat Palmer amaranth.
- Moldboard plow best at burying seed and reducing future populations, but even more shallow tillage buries at least some of the seed so that it can't germinate. Probably overall easier to manage in tilled seedbed versus no-till.
- herbicide programs in corn offer chance to use some herbicides not used in soybeans, and can be effective. But they can have a tendency not to last long enough and plants with seed can be evident at harvest (and cannot be seen in mid to late season since corn hides them)
- LibertyLink soybeans best option. Adding some Flexstar (or generic) to POST Liberty apps can help especially with larger plants. Combination of glyphosate and Liberty usually at least a little better than Liberty alone also. Window of POST application is when Palmer plants are less than 3 inches tall.
- Ideal also to add residual herbicide to the first POST Liberty app to reduce additional emergence and possibly eliminate need for second POST Liberty app. Zidua has worked best, but can also use metolachlor (Dual etc) or Warrant.

With regard to resistance:

- South is wearing out the PPO inhibitors (FLexstar, Cobra) as populations develop PPO resistance. Getting no residual activity from fomesafen and not working near as well POST. Also have reduced activity from Valor and Authority products due to this.
- We assume it is all resistant to glyphosate and ALS inhibitors
- resistance to glufosinate (Liberty) suspected in NC

PRE herbicides (before or at planting):

- in order of longevity – Valor > Authority > metribuzin
- have started using combinations of a Valor or Authority product with metribuzin to improve control
- Fierce/Fierce XLT good
- can add metolachlor, Zidua, etc to PRE applications also, but better used in first POST app

With regard to new technology:

- Dicamba and 2,4-D need to be applied to small plants - 2 to 3 inch – so the basic principles of the herbicide system are the same as in LL soys
- Enlist soybeans have the advantage that can use combination of 2,4-D plus Liberty, which is very effective
- In TN this year, growers were (illegally) applying dicamba at rates of 24 to 32 fl oz to get adequate control – lower rates didn't work

The basic herbicide programs:

Corn – start with strong residual product at planting, then follow with POST when Palmer plants are small. POST should ideally be mix of two herbicides with activity on emerged Palmer, along with residual activity. POST examples – Liberty + atrazine; Callisto + atrazine

Soybeans – start with strong residual product at planting, then follow with POST Liberty or Flexstar when plants are less than 3 inches tall. Add Zidua, metolachlor, or Warrant to first POST app. Follow with second POST of more Liberty or Cobra as needed when new plants are small.

Mark Loux, OSU Extension Weed Specialist
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