



Managing Troublesome Crop Weeds: Current Practices

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Weed management practices have been changing rapidly over the last several decades in response to herbicide resistant crop technologies, adoption of no-till farming, herbicide resistant weeds, and other factors. As management practices change, certain troublesome and herbicide resistant weed species can flourish. In 2015, Virginia crop growers were surveyed about how they have been dealing with changing weed populations. This bulletin reports the results of that survey, providing information about what management practices are being used to control troublesome and herbicide resistant weeds.

Which weeds?

Six different herbicide resistant weed species have been confirmed in Virginia, and each of these species was reported in our survey. The most common and troublesome species were Palmer amaranth (*Amaranthus palmerii*), horseweed (*Conyza canadensis*), and common ragweed (*Ambrosia artemisiifolia*), all resistant to glyphosate products such as Roundup®. Most are also resistant to ALS-inhibiting or Group 2 herbicides. Growers reported these glyphosate resistant species across wide swaths of Southside and Eastern Virginia (Figure 1), and, while not present in every field, they spread from field to field through tillage and harvesting equipment, animals, contaminated seed, and other methods. Also reported in the survey were triazine-resistant (Group 5) common lambsquarters (*Chenopodium album*) and redroot pigweed (*Amaranthus retroflexus*), and ALS-inhibitor resistant common chickweed (*Stellaria media*).

In addition to confirmed herbicide resistance, many growers also reported having difficulty with uncontrolled weeds in many fields. A list of these grower-reported “most-troublesome” species in several cropping systems can be found in Figure 2. It is important to note the distinction between herbicide resistant weeds and weed escapes. These escapes can be caused by herbicide application at the incorrect growth stage or other application errors.

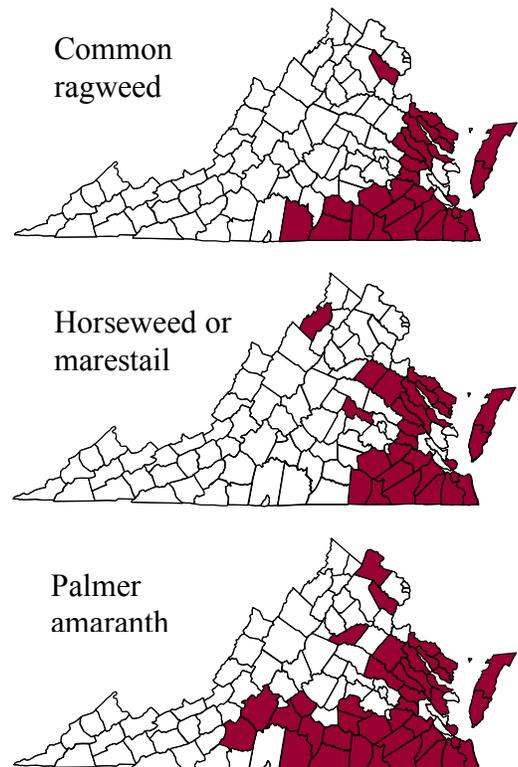


Figure 1. 2017 county locations of glyphosate-resistant common ragweed, horseweed, and Palmer amaranth, as reported by growers in a 2015 survey and Extension Specialists.

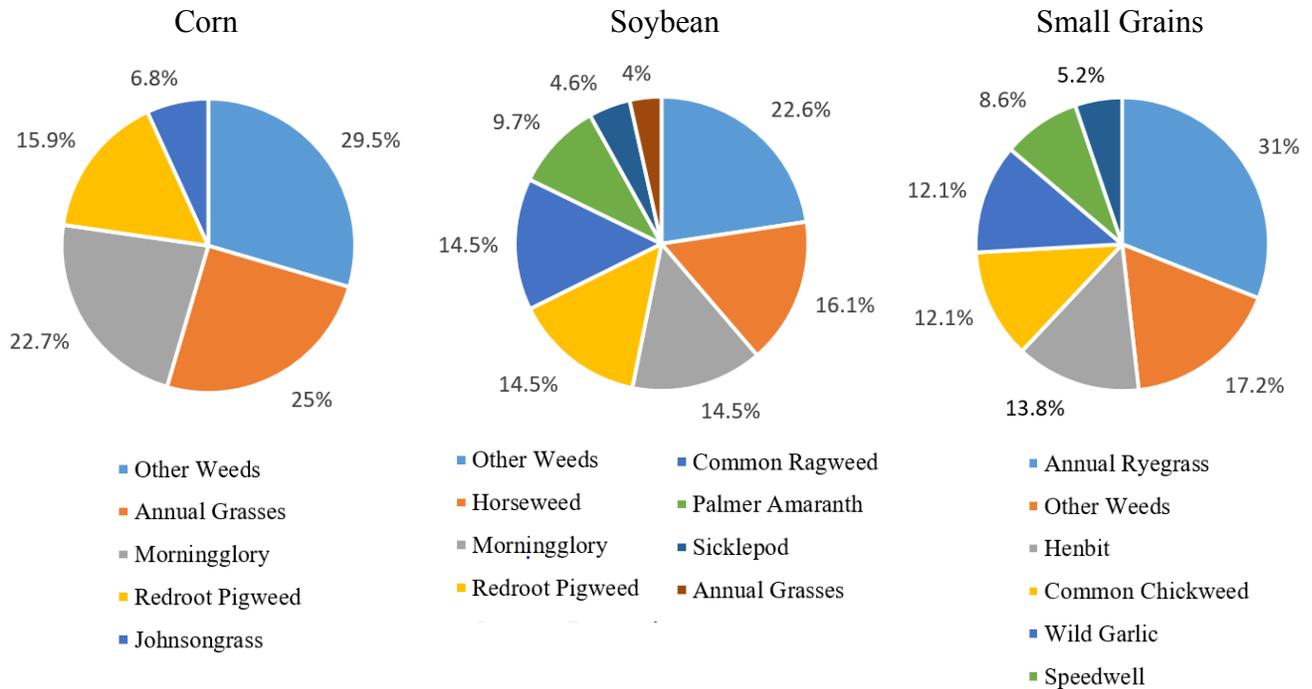


Figure 2. The most problematic non-herbicide resistant weeds in Virginia grain cropping systems, as a percentage of the total number of reports by surveyed growers.

Changing Management Practices

Virginia growers have been progressive in using new herbicide technologies. Over 80% of growers reported using some combination of Roundup Ready® and LibertyLink trait systems. In general, many specific weed management practices have been changing over the years in response to changing weed communities and herbicide resistance. A complete collection of these changes, as reported in our survey, can be found in Figure 3. Notable changes include an increase in the use of multiple and rotating herbicides and a re-adoption of tillage for weed control. Also notable was the continued, widespread use of best management practices like crop scouting, cleaning equipment (to prevent weed seed spread), and crop rotation. Some less-widely-adopted management practices, including crop destruction techniques and harvest weed seed controls, could be emphasized in future Extension communications.

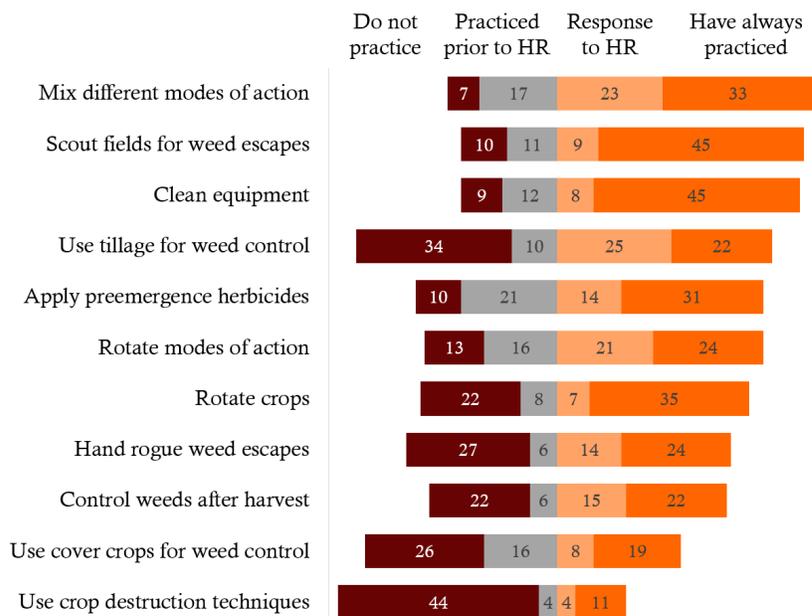


Figure 3. Use of various weed management practices in response to herbicide resistance, as a percentage of growers surveyed.