UGA Programs for Controlling Ryegrass and Wild Radish in 2019/2020 Wheat

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Ryegrass continues to threaten Georgia's wheat production. Most ryegrass escapes are a result of 1) planting into fields already infested with emerged ryegrass and/or 2) making herbicide applications after the ryegrass is too large to control. However, herbicide-resistant ryegrass has become common with numerous populations being confirmed with resistance to Osprey, PowerFlex, Axial and Hoelon. Ryegrass will likely achieve resistance to herbicides quicker than any other plant, even Palmer amaranth. Aggressive resistance management programs must be implemented; ignoring this warning may destroy long-term sustainability of grain production. Proper management begins by planting into a weed-free seedbed, growing a healthy vigorous crop, identifying ryegrass early (below), making timely herbicide applications (Tables 1 and 4), tillage including deep turning when feasible, crop rotation, and making wise decisions (Table 2).

Growers must avoid treating fields two years in a row with the same or similar herbicide chemistry.

Hoelon & Axial
Similar Chemistry

Osprey & PowerFlex
Same Chemistry

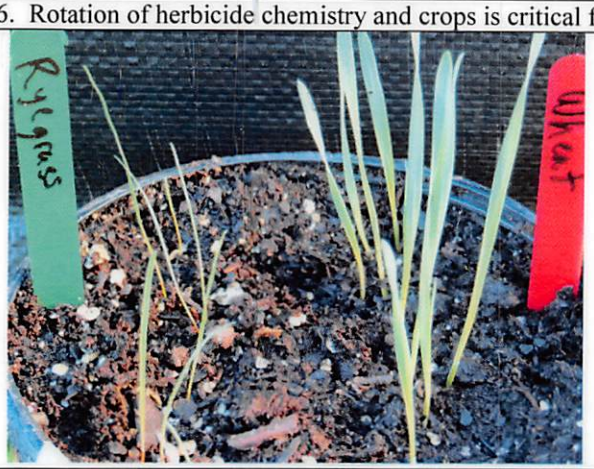
Fierce & Zidua
Same Chemistry

Table 1. Ryegrass Management

Scenario	Stage of Wheat	Herbicide Option	Comments
Emerged ryegrass	Burndown before planting	Roundup followed by Gramoxone	Apply Roundup 7 or more days before planting, follow with Gramoxone at planting. Deep turning is also effective when erosion is not a concern.
After planting; before ryegrass emerges for residual control	80% of seed germinated with shoot at least ½" long through spiking	Zidua 0.75 to 1.25 oz/A	Label prohibits true PRE. Plant wheat seed at least 0.75" deep; do not apply to broadcast seeded wheat. Use rate of 1.0 oz/A is ideal for most soils. *Must be activated before ryegrass emergence for control.*
After planting; ryegrass ¼" or less plus residual control	95% of wheat in spike to 2-leaf stage	Fierce 1.5 oz/A	Apply only in water; no additives. Wheat must be planted 1 to 1.5" deep; do not apply to broadcast seedings. *Use only in fields with resistance as injury can be observed. Avoid sands.*
Ryegrass ≤ 1 tiller	3-leaf through joint	Axial XL 16.4 oz/A, PowerFlex HL 2.0 oz/A, or Osprey 4.75 oz/A	Assuming no resistance and proper herbicide rotation. Add appropriate adjuvant.
Ryegrass ≤ 1 tiller plus residual control	3-leaf through 4-tiller	Axial XL 16.4 oz/A + Zidua 1 to 1.5 oz/A	If ryegrass is not resistant to Axial then excellent postemergence and residual control expected.

Table 2. Critical Thinking Points for Ryegrass Control

1. ABSOLUTELY NO ryegrass emerged when planting. A double knock program is ideal; Roundup fb Gramoxone 5-7 d later.
2. For normal planting and developing wheat, postemergence ryegrass herbicides **should be applied around Christmas**.
3. Do not mix any ryegrass herbicide(s) with 2,4-D, MCPA, Quelex or NITROGEN as antagonism often occurs!!!
4. Zidua must be activated before ryegrass emergence but CAN NOT be applied preemergence.
5. Under no circumstances should any additive be included with Fierce. Fierce must be activated prior to weeds reaching ½ inch.
6. Rotation of herbicide chemistry and crops is critical for long-term sustainability of small grain production.



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EXTENSION

Wild radish is the most problematic broadleaf weed infesting nearly every Georgia wheat field (pictures above). Wild radish seedpods often contaminate harvested grain thereby reducing profits. The seedpod usually does not shatter, but instead, dries down and fragments into small sections. These seedpod sections are very close in size and shape to wheat and are difficult to remove in cleaning (right). Managing wild radish is not difficult if timely management decisions are implemented. Tables 3 and 4 provide management programs while Table 5 includes some critical thinking points.

Table 3. Wild Radish and Other Broadleaf Weeds

Scenario	Stage of Wheat	Herbicide Option	Comments
Radish < 8" diameter, henbit, chickweed, most broadleaves	2- tiller through full tiller	MCPA (12-16 oz/A) + Harmony Extra	MCPA rate based on 3.8 lb/A. 2,4-D could be used to replace MCPA at full tiller wheat. Many Harmony type products are available; select rate based on product selected.
Henbit or chickweed populations emerging early plus wild radish	Harmony Extra (2-lf till jointing wheat) followed by MCPA (2-tiller through full-tiller wheat)		Intense weed densities may need treatment before wheat is large enough for MCPA. Sequential applications may be needed. 2,4-D could replace MCPA in full tiller wheat.

Table 4. Both Ryegrass and Wild Radish

Scenario	Stage of Wheat	Herbicide Option	Comments
Radish < 6" diameter and ryegrass < 1 tiller	3-leaf to joint	PowerFlex HL 2.0 oz/A	Add adjuvant according to label. Harmony Extra can be added to improve broadleaf weed control.
Sequential treatment	Axial XL (3-leaf through 4-tiller wheat) followed by MCPA + Harmony Extra (2-tiller through full tiller)		Apply Axial to control ryegrass. Wait at least 7 days and then apply MCPA + Harmony Extra when wheat is between 2 tiller and full tiller.

Table 5. Critical Thinking Points for Wild Radish Control

1. For normal planting and developing wheat, **broadleaf weeds and ryegrass should be treated around Christmas.**
2. Harmony Extra alone usually only suppresses very small wild radish; poor control is expected when treating larger plants.
3. Numerous products with the same active ingredient as Harmony Extra exist; Harmony Extra Total Sol rate is 0.45 to 0.9 oz/A.
4. 2,4-D is more effective than MCPA on larger weeds but MCPA poses less crop injury potential, so be timely and use MCPA.
5. For a short period after spraying, MCPA offers 2 to 3X more residual radish control when compared to Quelex or 2,4-D.

QUELEX is a new broadleaf herbicide for wheat, barley, and triticale. The label allows it to be used as a preplant burndown treatment for wheat to control emerged weeds prior to, or shortly after planting (prior to emergence). It may also be used as a postemergence tool when wheat is between the 2-leaf to flag leaf stage of growth. Do not apply more than 0.75 oz/A per growing season and no more than 2.25 oz/A per year for both burndown and in-season use. A non-ionic surfactant at up to 0.25% v/v or a crop oil concentrate at 0.5 to 1% v/v should be included with Quelex.

Control of small common chickweed, Carolina geranium, henbit, and horseweed is expected. For radish, it is effective when the weed is small but on larger plants MCPA and 2,4-D are more effective.