

UGA Programs for Controlling Ryegrass and Wild Radish in 2018/2019 Wheat

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Ryegrass threatens Georgia 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 threatens Georgia's ability to effectively grow wheat and other small grains. Numerous Georgia populations have been confirmed to be resistant to Osprey, PowerFlex, Axial and Hoelon. Ryegrass will achieve resistance to herbicides quicker than any other plant, even Palmer amaranth. Aggressive resistant management programs must be implemented; ignoring this warning will destroy long-term sustainability of grain production. Proper management begins with a healthy vigorous crop, early identification of ryegrass (below), 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
Contain Same Chemistry**

Table 1. Ryegrass Management

Scenario	Stage of Wheat	Herbicide Option	Comments
Emerged ryegrass	Before planting	Roundup before planting	Follow with Gramoxone at planting if needed. Tillage, especially deep turning, can be effective.
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. <i>Must be activated before ryegrass emergence.</i>
After planting; ryegrass ¼" or less plus residual control	95% of wheat in spike to 2-leaf stage	Fierce 1.5 oz/A	<u>Apply only in water; no additives.</u> Wheat must be planted 1 to 1.5" deep; do not apply to broadcast seeded wheat. <i>New label, limit acres. Do not apply on sands. Must be activated before weeds reach ½".</i>
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. Be certain to use proper rate with formulation selected.
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 wheat. A double knock program is ideal; Roundup fb Gramoxone 5 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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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 <u>at full tiller wheat</u> . Many Harmony type products are available; select rate based on product selected.
Henbit or chickweed populations emerging early plus wild radish	Harmony Extra (2-1f 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 <u>full tiller wheat</u> .

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.
After planting; ryegrass, wild radish, henbit 1/4" or less	95% of wheat in spike to 2-leaf stage	Fierce 1.5 oz/A	<u>Apply only in water; no additives.</u> Wheat must be planted 1 to 1.5" deep; do not apply to broadcast seeded wheat. <i>New label, limit acres. Do not apply on sands. Must be activated before weeds reach 1/2"</i> .
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. Zidua and Fierce are new products; limit acres treated. FOLLOW LABEL CLOSELY.
6. **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. Apply at 0.75 oz/A + Crop Oil or NIS to actively growing wheat from 2-leaf to flag leaf which is a much wider window of application when compared to 2,4-D and even MCPA. Label claims control of common chickweed, Carolina geranium, henbit, horseweed, and wild mustard. Research so far, which is limited, shows similar radish (<8") control compared to 2,4-D with less crop injury potential; 2,4-D may be more effective on larger radish. Thus for larger radish and other weeds, a mixture with Harmony Extra or MCPA may be in order (research in progress, limit tank mix use until experienced).