

# Management Suggestions for Glyphosate-Resistant Italian Ryegrass

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Problems with glyphosate-resistant (GR) Italian ryegrass escalated during 2016 in Mississippi. In my opinion, last year was the worst to date for this weed. The reasons why can be debated, but the fact is GR Italian ryegrass has spread at an alarming rate across Mississippi, especially considering Italian ryegrass seed are not spread by wind.

Across the Mississippi Delta, the weather over the 5 to 6 weeks has allowed for extensive field preparations for 2017 behind corn, soybean, rice, and even cotton in some cases. The lack of rainfall during September and early October also prevented excessive weed germination following harvest. The best chance for reliable GR Italian ryegrass control is with residual herbicides applied in the fall. The following paragraphs contain management suggestions for 2016-17.



Field infested with glyphosate-resistant Italian ryegrass

## **Apply residual herbicides when weather permits between mid-October and mid-November.**

In years past, research has demonstrated that September or early-October is too early to apply a fall residual herbicide for GR Italian ryegrass. Fields should not be treated with a fall residual until at least the latter half of October to maintain control through the fall emergence window, which usually ends during mid-December. In previous years, applications in early-November provided excellent GR Italian ryegrass control until spring burndown. Most fields are currently so dry that at least one rainfall event is needed prior to application of fall residual herbicides, which will greatly improve efficacy. The probability of good days for field work decline later in the fall, so monitor the 10-day weather forecast over the next couple of weeks and apply a residual herbicide as appropriate.

Boundary, Command, s-metolachlor, trifluralin, and Zidua have performed most consistently for controlling GR Italian ryegrass. S-metolachlor or Zidua could be utilized in fields that will be planted to corn, cotton, or soybean the following year. Boundary may be

safely applied if the field will be planted in corn or soybean, and trifluralin could be utilized in fields slated for cotton or soybean. In fields where the 2017 crop will be rice, Command (2 pints per acre) is the only fall residual herbicide option.

**Control emerged GR Italian ryegrass in the fall with aggressive tillage or application of paraquat.**

None of the residual herbicides available for GR Italian ryegrass offer postemergence activity. Should the current weather pattern change and GR Italian ryegrass begin emerging, these emerged plants must be controlled before the residual herbicide is applied. If the field has not already been tilled in preparation for next year, then the first flush could be destroyed during that tillage operation. When relying on tillage to control emerged GR Italian ryegrass, pay close attention to the clods behind the disk. To completely kill GR Italian ryegrass seedlings, the clods must be crumbled and not just turned over. Emerged GR Italian ryegrass will survive on the clods if they are not sufficiently crumbled.



GR Italian ryegrass emerging from the underside of overturned clod.

Destroying GR Italian ryegrass with tillage in the fall may require an additional, unplanned pass across the field, so controlling emerged plants paraquat may be a better option. Because GR Italian ryegrass seedlings are small, the paraquat rate does not need to be as high as required in the spring. Paraquat is recommended at 1 lb active ingredient/acre in the spring while 0.5 to 0.75 lb active ingredient/acre should be sufficient to control GR Italian ryegrass in the fall. Paraquat may be tank-mixed with Boundary, Command, s-metolachlor, or Zidua. If you choose to use trifluralin and emerged GR Italian ryegrass has been completely destroyed by tillage, then paraquat should not be required.

Regardless of how you choose to control emerged GR Italian ryegrass in the fall, this is an absolutely critical component of the management plan and should not be overlooked. The effective fall residual herbicides will not kill even the smallest emerged GR Italian ryegrass seedlings. Escapes of just a few scattered one- to two-leaf seedlings in October will tiller and expand into large clumps in the spring, potentially resembling herbicide failure.

**Manage GR Italian ryegrass on ditch banks, turn rows, and field borders.**

Where GR Italian ryegrass was only present on the turn rows or edges of the field last year, spot-treating these areas is a practical way to save on herbicide cost and possibly prevent the problem from becoming more severe in the future. You may choose to wait and spray field borders and turn rows with clethodim (Select Max or various two-pound clethodim products) or paraquat after GR Italian ryegrass emerges. Another option would be treating these areas with a residual herbicide in the fall. Either of these practices could be an economical option in fields not completely covered with GR Italian ryegrass. Be cautious if you choose to spot-treat areas with a residual herbicide. Italian ryegrass has extremely stiff straw that does not rapidly deteriorate, so it is not uncommon to see GR Italian ryegrass residue complete with seed still standing in the fall. This seed from the previous year can be spread by a combine or it may spread into the field where land planes or dirt buckets were utilized.



In fields with severe GR Italian ryegrass infestations, management must include both fall and spring control tactics. One benefit of fall management, whether it is a residual herbicide application or tillage, is keeping the GR Italian ryegrass population low enough for good spray coverage during spring burndown. For a comprehensive GR Italian ryegrass control program, see Mississippi State University's [Information Sheet 1359](#) "Herbicide Programs for Managing Glyphosate-Resistant Italian Ryegrass".