Italian ryegrass glyphosate resistance testing 2025

In Spring 2025, ADAS will be carrying out free, targeted resistance testing of Italian ryegrass (*Lolium multiflorum*) populations surviving glyphosate application prior to drilling a spring crop.

The testing window will be from the 10th February to the 30th April.

This document contains instructions on how to access the testing and identify, collect and send your sample.

1. How to access the testing?

If you are seeing Italian ryegrass plants survive glyphosate application(s) and you suspect you have glyphosate resistant Italian ryegrass please contact your agronomist in the first instance to discuss the case. In the event you do not have an agronomist you should contact your Bayer Crop Science representative. Note testing is not restricted to Bayer glyphosate products.

Your agronomist and/or the Bayer representative will send you a questionnaire that must be completed and sent to ADAS alongside the sample – this is to understand the field background and resistance risk.

What to look out for? Healthy Italian ryegrass patches or individual plants besides dead ones following a glyphosate application. A whole field failure is less likely to point to resistance.

Send the sample alongside your completed questionnaire as a parcel to:
Weeds Team, ADAS Boxworth, Cambridge, CB23 4NN.
Samples without an attached form will not be tested.

We recommend using a guaranteed 48-hour delivery service. To ensure delivery within the same week, aim to post on a Monday or Tuesday.

2. How will the samples be tested?

High risk samples identified from the questionnaire will be tested for glyphosate resistance using a quick-test. Samples will be potted up and sprayed with appropriate glyphosate doses.

Test results will be reported back to the farmer/advisor several weeks after spraying so that action can be taken if needed.

Both a sensitive standard population and resistant standard population will be used in the test as validation.

Such rapid testing has been shown to be effective at identifying high-risk populations that need further investigation BUT does not automatically mean that glyphosate resistance is present at a field scale. This testing is thus a first step to identifying potential cases of resistance. Suspect populations will be followed up with additional testing.

3. How will results be reported?

ADAS will report back with photos of the results and will place your sample into one of three categories. Recommendations for next steps will be provided.

Category	Description	Implications
1. No indication that resistance is developing *(low risk sample)*	The sample tested was highly controlled by glyphosate (equivalent to a sensitive standard population).	Failure of glyphosate in the field is due to other causes (growth stage, dose e.t.c). Continue monitoring as advised.
2. Early indications resistance may be developing (*medium risk sample*)	The sample tested was partially controlled by glyphosate (control is somewhere between the sensitive and resistant standard populations).	Testing has raised cause for concern that resistance is developing in-field. Close monitoring advised, reduce reliance on glyphosate where possible.
3. Strong indications of resistance (*high risk sample*)	The sample tested was poorly controlled by glyphosate (equivalent to a resistant standard population).	Resistance highly likely – immediate action required to prevent plants from setting seed.

4. Italian ryegrass identification

This testing will be restricted only to Italian ryegrass plants. Identification tips are provided below.

- Short blunt ligule 1-2mm.
- If present, small, clasping auricles.
- Undersides of leaves are a glossy green.
- Leaves finely pointed and hairless.
- Often a purpling/red colour at the base of the stems.
- Can be confused with perennial ryegrass – but leaves are rolled in the shoot of Italian ryegrass but folded in perennial rye grass.
- More ID tips on the Bayer website: *https://cropscience.bayer.co.uk/agronomy-id/grass-weeds/italian-rye-grass*

Italian ryegrass (left) tends to have lighter green 'glossy' leaves whereas black-grass (right) tends to have duller blue-green leaves.

5. How to collect samples?

1. Carefully pull out actively growing Italian ryegrass plants from suspect patches.
2. Shake off the soil slightly but that a clump remains and the roots aren't damaged.
3. If they are large you can trim off the tops (so that there is at least 10cm shoot left).
4. Place into a plastic bag (*Do not wash plants or put water into the bag*) and seal.

5. Ideally collect at least 30 plants per field (if tillering) or 50 plants (for smaller weeds). If you don't have enough, dig up clumps and send what is available.

Send to **Weeds Team, ADAS Boxworth, Cambridge, CB23 4NN** alongside completed glyphosate triage questionnaire.

Aim to collect and send plants at the beginning of the week so plants are received within the same week and do not dry out. If collecting on a Friday place in a fridge over the weekend and send on the Monday.