



“Moisture conservation is the key to planning cultivation and stubble management.”

Looking beyond blackgrass

Technical Stubble management

Cultivation planning and weed control strategies inevitably get linked together, but with much weed advice really being about blackgrass control, how can farmers adjust their strategy for other grassweeds? CPM investigates.

By Lucy de la Pasture

Cultural controls for blackgrass are etched into the souls of most farmers who have to contend with the weed. But over the years, the very strategies which have helped many get to grips with blackgrass have created a niche for other troublesome grassweeds.

“There’s a template to control blackgrass which is based on later drilling, using spring crops, minimal soil disturbance and a stack of pre-emergence herbicides. Most farmers are aware of this, so we now tend to get more questions about ryegrass and brome,” says Craig Simson of Bayer.

Craig thinks it’s worth going back to basics and look at the germination and life cycles of common grassweeds to consider

the best options when it comes to cultivation and drilling.

“The increase in brome problems is, in some cases, a side-effect of blackgrass control. Usage of spring post-em has reduced because of resistance in blackgrass — consequently there’s no longer any brome control, so many more plants shed seed at harvest. In addition the shift to shallow or zero cultivation can promote a build-up of bromes, although the exact dynamics of this depend on the species.”

Italian ryegrass

Of all the grassweeds, Italian ryegrass is probably the most difficult to control. The system used against blackgrass helps but delayed drilling and spring cropping are not quite as effective, he says.

“Ryegrass germination in spring, and its resistance to a range of chemistry, means farmers require a strategy with a diverse range of cultural and chemical controls.”

John Cussans of NIAB agrees, adding relying on the same methods to control ryegrass and blackgrass isn’t the best strategy. “We need to be very careful because ryegrass seems to have an innate capacity to develop herbicide resistance. The other challenge is that cultural controls, such as delayed drilling, spring crops and ploughing, can all help, but not to the same extent as against blackgrass,” he says.

Stale seedbeds and delayed drilling remain important techniques to reduce ryegrass numbers, but a lot depends on conditions after harvest. If cultivation is used solely or mainly to prompt weed germination, then success of this strategy hinges on having adequate soil moisture.

“Moisture conservation is the key to planning cultivation and stubble management,” says Matt Siggs of Bayer. “Generally speaking, soil may be lacking moisture straight after harvest and moving soil can cause further moisture loss without creating a large flush of weeds. Rolling is an alternative course of action to promote good seed-to-soil and seed-to-straw contact, which will instigate an initial flush of weeds.” ▶



Knowing the species of grassweed present helps decide how much, if any, soil to move and when to move it, says Matt Siggs.

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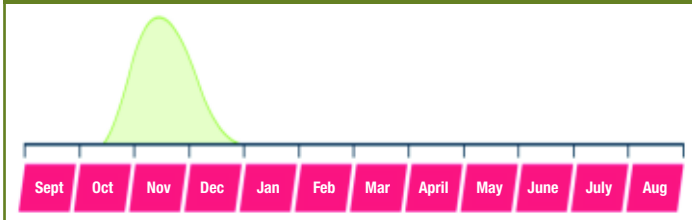
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Germination pattern of Italian ryegrass



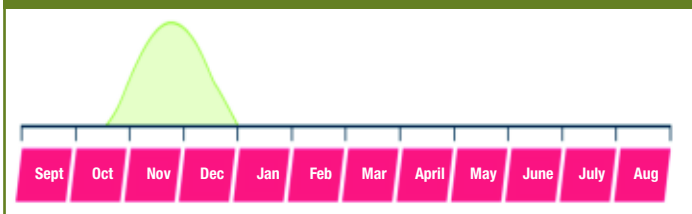
Source: Bayer, 2021

Rye brome germination window



Source: Bayer, 2021

Meadow brome germination window



Source: Bayer, 2021

► Ryegrass, blackgrass, sterile brome and great brome can all be managed with a similar

approach in stubbles. The best course of action is to leave shed seed on or very close to

the soil surface for birds and small mammals to predate on, then remaining seed should be allowed to germinate before spraying before the next crop, he explains.

Glyphosate timing

Rye, meadow and soft brome ripen in sunlight on the soil surface before germinating, so it makes more sense not to hurry in with any cultivations. Waiting about one month after harvest produces an effective stale seedbed when fighting these weeds, says Matt.

To tidy up stubbles or catch crops ahead of drilling, correct timing of Roundup (glyphosate) is essential. "We've found that a four-week gap between destroying any catch crops or dirty stubbles and drilling is ideal. This gives the plant time to die and create a mulch, which helps preserve soil moisture. A second application may be necessary if there's any subsequent germination of grassweeds.

"Attempting to spray then drill in a short window, particularly in

an early-sown crop like oilseed rape can be problematic. Although weeds are dying, they may still be biologically active, in which case they'll be transpiring water away from the germination zone and this can negatively affect crop establishment," he explains.

Roundup rates are also important. Matt recommends 720g/ha for annual grassweeds, increasing to at least 1040g/ha if stubborn perennials are present. Thistles and other hairy-leaved plants are particularly responsive to modern Roundup formulations, which lower surface tension so the glyphosate can spread effectively across and then penetrate the leaf, he claims.

For farmers planning cultivation, there's always the questions of whether you need to move any soil at all. If structure is good, then weed management becomes the main reason to cultivate, but rainfall or rolling may be sufficient to stimulate weeds, advises Matt.

"Sunlight induces dormancy in great and sterile brome, so ►

On the way to zero till

Andrew Williamson has been involved with Bayer's Grass Weed Task Force (formerly Blackgrass Task Force) for the past three seasons. During this time he's continued moving the farm to zero-till using a Sky Easy drill.

"We're heading towards being zero-till, we're not 100% there yet but we're getting close. We're pragmatic about certain things — for example in 2019/20 the conditions were so bad that some cultivation was essential to get crops established. I believe that early on in the journey you have to be flexible, but as the system becomes more established you hopefully have less need to move soil to establish a crop."

Organic manures are another reason for the pragmatic approach. They are used ahead of OSR and require light and shallow incorporation to disturb as little soil as possible.

Cover crops are used ahead of spring crops, but the species mix depends on the sowing date. For August sowing, a cover crop mix is used but if things are delayed until September, Andrew relies on beans and any volunteers to provide the cover needed.

Because the farm is on fairly hilly land in

Shropshire and has comparatively higher rainfall than eastern regions, retaining some ground cover over the winter is important to retain soil structure, condition and biological activity, all of which aids spring establishment, he believes.

Andrew aims to complete autumn drilling by early October. "In the past two seasons, it's been the right decision. From experience, delaying drilling on this farm into late October (for weed or BYDV control) is risky as we may not be able to drill anything at all."

As a result, ahead of autumn sown crops there's a short period of bare ground which can be helpful for grassweed control, he adds.

Andrew has noticed a difference in weed species this season, which he puts down to the weather. "We are seeing some other grassweeds creeping in, such as soft, rye and meadow brome. The current season has also had a big impact," he says. "It was cold in April, so contacts didn't work that well. This was followed by lots of rain in May, which encouraged growth. Leaving these species on the surface and then direct drilling should help with control."

Ryegrass is the single biggest grassweed



Andrew Williamson believes that early on in his journey to becoming no-till, it's been necessary to remain flexible in his approach to cultivations.

problem he faces on the farm, with some resistance to post-em chemistry present. The farm used to grow ryegrass for seed, he adds, which contributed to the wide distribution of this weed.

"We employ a similar strategy for all weeds — based on rotation — and carry out some patch-spraying and rogueing to prevent infestations from getting out of hand."

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Ryegrass germination in spring, and its resistance to a range of chemistry, means farmers require a strategy with a diverse range of cultural and chemical controls, says Craig Simpson.

► light cultivation soon after harvest can be beneficial here to produce a stale seedbed. As brome encroaches from headlands, targeted deep cultivation is worth considering, especially as this is where structural problems are more likely as well."

Eliminating the first flush of brome is important, irrespective of the grassweed species but as it gets later into autumn, it's worth looking closely at the main germination window of different species, he recommends.

"Sterile brome has probably been the most common species and germinates in

Farmers wanted for ryegrass survey

NIAB and Bayer are inviting arable farmers to take part in a nationwide survey to assess the threat from Italian ryegrass.

"Anecdotally, the weed is becoming more of a problem, but we've lacked detail about its spread and overall resistance status," says John Cussans, project lead at NIAB.

"We want to hear from as many farmers as possible about their experience of managing the weed in practice. Even farmers with a relatively minor problem or no ryegrass at all can provide valuable information."

Researchers will also carry out resistance tests on some samples to find out how actives are performing. This follows on from a report published in 2019 which found a small number of ryegrass populations had resistance to key pre-em actives.

The previous research focused on traditional ryegrass hot spots in Kent, Essex and South Yorkshire. Weed scientists were looking for the hardest to control ryegrass so the results



A nationwide survey is looking at the prevalence of ryegrass in the grassweed population and will investigate the resistance status of some samples.

weren't a shock but should be treated as an early warning, says John.

For more information and to take part in the survey: <https://cropscience.bayer.co.uk/italian-ryegrass-seed-test-sampling/>

September and early October, meaning delayed drilling and pre-em herbicides are effective. On the other hand — great brome, meadow brome and rye brome have peak germination in November, so only exceptionally late drilling will

make a difference.

"Where these weeds are a problem, chemistry such as a residual top-up or a contact-acting post-em are likely to be needed to tidy up the situation," he concludes. ■

Look out for emerging grassweed threat

Farmers are being asked to assist in a new study looking at the spread of rat's tail fescue, a grassweed that is already posing problems in France, Switzerland, Spain and Denmark — and is now starting to take hold in England and Wales.

The grassweed species is predominantly a threat in no-till winter cereals and grasses, where it can rapidly form dense carpets and compete with the crop. If it does take hold, rat's tail fescue can cause significant economic damage.

According to project lead, Dr Lucie Büchi of National Resources Institute at University of Greenwich, rat's tail fescue is present in natural habitats in the UK, but its distribution in arable fields is yet unknown.

"For this reason, we're launching a UK-wide survey to better understand the current distribution of this species in the UK, and its association with cropping practices. It's really important we get on top of this before it becomes another blackgrass."

As part of the survey, farmers will be asked to answer questions about their location, soil

type and general agronomy to establish if there's any correlation between these factors and the grassweed's distribution or abundance. This will help researchers identify areas of the country or agronomic practices that may be at higher risk of this species becoming a problem.

Lucie, working with Laura Cook and Richard Hull from Rothamsted Research, is also inviting farmers and agronomists to send the team rat's tail fescue seeds so they can start to study the weed in preparation for its likely spread across the UK.

"We would like farmers that have rat's tail fescue on their land to send us a mature seed sample and we can provide them with instructions for obtaining as good a seed sample as possible," explains Richard.

"We plan to run a series of experiments looking at it may adapt to future climates and to study the differences in the life cycle of wild and natural populations compared with seed collected from farmers' fields."

To aid with identification of the plant, a freely available six-page information leaflet and a shorter three-page identification guide are



Farmers are being asked to take part in a new survey to assess the distribution of rat's tail fescue in arable fields throughout the UK.

available from the survey webpage. The anonymous survey is open until 31 August.

Find the survey at: <https://greenwich.onlinesurveys.ac.uk/vulpia-survey-uk>.



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