

Pushing the barley renaissance

A well-planned barley disease strategy will reap rewards come harvest

Simon Oxley
Senior pathologist
SAC



Barley is back in favour, riding high on the crest of rising cereal prices. But it's quite a different crop than it was five years ago – varieties are high-yielding and respond well to fungicides, with two-row types pushing as good yields as six rows. Growers are also spoilt for choice with chemistry to tackle diseases.

So with such responsive varieties, an armoury that can deliver serious value and a grain market that will reward your efforts, it's time to stop dismissing barley as your Cinderella crop. Treat it like royalty and watch it perform.

What diseases should you focus on?

★ Rhynchosporium is the major wet weather disease in barley. Transferred from seed or crop debris, it causes scald-like lesions on the leaves, which can coalesce around the axial causing leaf death. The disease spreads mainly by rain splash, but condensation and fog can also carry it through a crop.

For other diseases there's something of a North-South divide. Net blotch and brown rust are more common in the South. Net blotch shows as brown stripes or netting on the leaf, while brown rust infection appears as orange-to-brown pustules.

Ramularia is more of a problem in the North and Scotland. This looks like net blotch, but lesions are usually surrounded

by a yellow halo. Warm, humid conditions in the crop will favour powdery mildew, seen as white pustules on the leaf and stem.

Which are the key timings?

★ A crop that harbours a lot of infection over the winter could benefit from a T0 spray in the early spring. This would be before growth stage 30 (ear at 1cm). In the past, you could expect a 0.2t/ha yield response, but 0.6-0.7t/ha benefit from a T0 has been found in the past two years. If there is little disease in the crop, you are unlikely to benefit much, however.

T1 is the main timing, at GS30-32 (before second node detectable). It is the best opportunity in barley both to eradicate the disease that is present and to protect new growth. You should, therefore, plan for the majority of your disease control spend to be focused here. But timing is critical, with emergence of leaf three the ideal stage to spray.

The other key timing is T2, GS39-49 or up to awns-peeping stage. If you have a malting crop, ear emergence is often the cut-off stage for fungicides. Check labels for these restrictions, and don't rely on this timing for an application if your contract won't allow it. Otherwise, this is a useful timing to protect against ramularia or if net blotch or brown rust threaten to flare up.

In spring barley crops, you may have just one opportunity to spray, given the rapid spurt through the growth stages the crop will take. The most responsive timing for mildew-



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resistant varieties is boot stage – flag leaf fully visible but before awns emerge.

The problem with a single spray is that going too early leaves upper leaves exposed. Too late and a lot of disease may already be present. High-quality malt growers should, therefore, aim to fit two sprays in before awn emergence for best results.

How does timing influence disease control?

★ The main difference here is whether you have a spring or winter crop. In winter barley, you will be chasing disease that has developed over the winter, so the emphasis will be on eradication, especially early on in the spray programme. But you need to think forward and protect new growth, too. This underlines the importance of getting the timing right at T1 – the goal is for a clean environment for leaf three and beyond.

In spring barley, protection is the name of the game. Since the crop develops later, it may be

exposed to high levels of disease from nearby winter barley crops. So the most successful strategy will be broad-spectrum control that anticipates disease issues.

What are the main chemical components?

★ The good news in barley is that growers are currently spoilt for choice. There are some very strong products in the armoury in all the main groups, and most offer broad-spectrum control. It is important to make best use of all of these, for the sake of both efficacy and to keep a lid on resistance.

Triazoles are the key components of eradicator activity. This makes them the base component of the T1 spray in winter crops. Strobilurins are very much major players in barley – there is resistance in net blotch (see Strobilurins Academy on p12-13), but they currently have good activity on rhynchosporium and are still the product of choice for rust control.

The new SDHI chemistry

has an important role to play in barley, particularly for protecting new growth. The best way to use these products is complementary to triazoles within a programme, targeted to where high-value protection is needed and always within a robust mix.

What are the extras you need to build in?

★ Chlorothalonil is a useful extra, particularly as part of an anti-resistance strategy at later timings. Don't rely on it for net blotch or rust control, but partnered with SDHIs it is effective on rhynchosporium and ramularia.

Cyprodinil is a product that has fallen out of favour, but again is a useful partner with SDHIs, and offers control of eyespot. It has also been a useful component at T0 in winter barley with a morpholine fungicide.

Always be on the lookout for mildew, and be prepared to build in extra control measures if conditions or crop growth favour the disease. Specific mildew fungicides fall into two

SDHI products in barley

- ★ Tracker – boscalid + epoxiconazole
- ★ Siltra Xpro – bixafen + prothioconazole
- ★ Bontima – isopyrazam + cyprodinil
- ★ Seguris – isopyrazam + epoxiconazole

Golden rules

- ★ Start early – unlike wheat, GS31 is the key timing in winter barley
- ★ Don't skimp on doses – current crop returns make robust treatments worthwhile
- ★ Use mixtures and sequences – there's a good choice and it will help fight resistance development

Trials demonstrate that T1 is the key timing for barley disease control.

camp: eradicator, including fenpropimorph and spiroxamine, and protectants, such as metrafenone and proquinazid. Cyflamid is also effective against mildew, providing both eradicator and protectant activity.

Mildew-susceptible spring barley varieties will require treatment as soon as the disease develops. Some varieties, including Optic, show adult resistance to mildew and an early treatment should be sufficient. Others, such as Forensic, are susceptible throughout the season and may require further treatment.

Be aware of the vulnerability of your variety to other diseases, too. The market often dictates what varieties you grow, rather than their disease resistance, especially when growing malting types. Optic also has a low score for rhynchosporium, for example.

Test your knowledge

- ★ Turn to page 19 or go to www.fwi.co.uk/springfungicides

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