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High wheat prices make it essential to plan an effective wheat disease control strategy. Rarely has there been such a chance to reap the benefits, while new chemistry – available in 2011 for the first time – adds a new dimension and a new opportunity.

Plan what you want to do, based on maximising yields; this is important because in the current climate it will simply be a false economy to chase savings. But you may need to add extras or change doses as the season goes on to protect the yield you're after.

What diseases should you focus on early on?

★ The T0 timing (before growth stage 30 – ear at 1cm) is all about septoria and the rusts. Septoria is always going to be a target at this stage and rusts will be in some years. For 2011, rusts will also be a target at T0 because of the rust susceptibility of many varieties. The hard winter may have delayed the epidemic, but some crops came out of the winter with rust already present. This would have been there all winter, rather than new infections.

The advantage of the T0 spray is there is flexibility in its timing – it is not closely linked to leaf emergence. The T1 timing is much more critical. This is aimed at controlling septoria on leaf three, which is emerging at this time. This often matches GS32 (second node detectable), but not always – you really need to dissect out leaves and make sure it is leaf three that is emerging.

Although leaf three only contributes about 8% of the yield of the crop, it is critically important because any septoria established on this leaf (especially its tip) overlaps with the emerging flag leaf and leaf two at GS37. So any mistakes in controlling septoria on leaf three can make controlling it later on much more difficult.

The T1 timing is also important for rust control, preventing yellow rust in particular getting established early in the crop canopy.



BARRY WYLES

Wheat price rise increases the value of fungicides

Fungicide planning in wheat is about maximising yields, rather than just keeping disease at bay

What diseases should you focus on at later timings?

★ T2 is the most important timing in wheat. This is the spray that controls disease on the top two leaves, not just the flag leaf. The timing (GS39 – flag leaf fully visible) has come about because it's a compromise timing that gives you excellent protectant control on the flag leaf, along with good control of disease on leaf two. These top two leaves contribute about 70% of the crop yield so they are vitally important.

The T3 is a mixed bag now. Traditionally, it was a top-up for septoria control on the flag leaf plus some ear blight (fusarium) control. But with the new SDHI/triazole mixtures potentially being used at high rates on the flag leaf,

additional septoria or rust control becomes less important.

Provided high rates of a robust mix are used at T2, then maybe the ear spray becomes just about controlling fusarium and rusts on the ear. Meanwhile, if you are growing feed varieties, then perhaps you don't need to spray at all.

Golden rules

- ★ Timing is key – if an application is delayed, adjust the dose
- ★ Have a strategy, and then tweak it as the season progresses
- ★ Protect the yield – be prepared to add extra inputs rather than save cost

How does timing influence disease control?

★ All fungicides perform best as protectants, so early treatment is usually best. Too early, before the target leaves have emerged, however, is as bad as too late, when the disease is established.

Ideally, the target leaf is fully emerged, but has not yet been infected with disease.

The leaf will get a complete dose of the applied fungicide that can do its ideal job of protecting against infection.

The later you spray, the higher the dose required to eradicate infections already established in the leaf. Eventually you are so late that you will not control the disease at all.

What are the essential chemical components?

★ Triazoles will continue to be the foundation for all fungicide programmes. These give you the eradicant control of septoria that allows the standard timings to be used. Without triazoles, we could not use our conventional timings.

At T0, the twin targets of rust and septoria mean a mixed chemistry approach is the best course of action – usually this will be a triazole and chlorothalonil. The latter is there to give you added insurance against septoria if your T1 spray gets delayed for whatever reason, and can also be used at T1, but it is not really a component of T2 sprays.

The new SDHIs will add to rust and septoria control. Like the strobilurins, they add value to programmes through their physiological effects – greening and preventing stress impacts. Always use them in mixtures and sequences to avoid the risk of resistance developing.

What extras do you need to build in and when?

★ Strobilurins are still a useful addition – they have very good rust

activity and additional greening effects late in season. They do different things to the SDHIs and it may be that two- or three-way mixes can be used at the T2 timing. On high-yielding sites where water is not limiting, their anti-senescence effects can give extra days of greening. During grain filling, you can get more than 0.25t/ha per day extra yield, provided the crop is still green (see the Strobilurins Academy on p12-13).

If fusarium is a target, specific earwash mixes should be based on prothioconazole, metconazole, tebuconazole or epoxiconazole.

Mildew is less of a problem nowadays, but late-drilled wheats on organic soils can still cause problems. Fungicide resistance is limiting the activity of many specific mildew products so it is advisable to mix products. Specific mildew products such as proquinazid and metrafenone are best in protectant mode, so best used early before the disease becomes too established.

Test your knowledge

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

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*According to HGCA, The Wheat Disease Management Guide, 2009