

Along with nitrogen, fungicides are the most responsive inputs in winter wheat and changes should not be made to their use until wheat prices drop to £50/tonne, writes Chris Bean, technical director for UAP in Kent.

In fact, if anything, crop values, variety mix and changes in disease susceptibility mean that many farmers would benefit from spending a little more per hectare.

While the UK climate will continue to ensure that Septoria tritici remains the biggest yield robber for most wheat growers, the advent of a new strain of yellow rust has reduced the resistance ratings of Oakley, Robigus, Solstice, Gallant, Viscount and Ketchum. With Hereward, Einstein, Duxford also at significant risk, and given that the new rust strain caused significant problems in some of those varieties last year, this should help focus decision-making this spring. In addition, the South East can suffer, particularly late in the season from brown rust and as shown in 2007, in the right conditions can strike much earlier. Again, Solstice, Gallant, Ketchum, Hereward and Einstein as well as Claire, Alchemy, Zebedee and Cordiale are all high risk for brown rust.

In many of these high yielding but relatively dirty varieties, four spray programmes starting at T0 are becoming the norm especially where wheat is being grown for a quality end market and Fusarium mycotoxin issues are important.

Starting the season with a well chosen T0 such as Capalo (epoxiconazole + fenpropimorph + metrafenone) used at around a quarter rate sets up the remainder of the programme by significantly reducing disease inoculum which has survived the winter. Most wheat crops in the South have moderate to high levels of Septoria and in the higher risk varieties, yellow rust and brown rust were easy to find pre Christmas. While recent frosts may have slightly slowed the rusts' development, it will not have stopped it and will have little effect on Septoria. This early season approach not only eases timing pressure at T1 (which can be difficult due to weather and other factors) but can also have a significant positive impact on yield. Results in UAP trials since 2000 have shown a mean response of close to 0.5t/ha even in a "low" disease year like 2009 with varietal responses varying from 0.3t on Viscount to 0.8t on Solstice and 0.9t on Oakley.

T0 applications should be timed at leaf four emergence which for most crops in this

Winter wheat fungicide programs in 2010



Septoria



Yellow Rust

part of the world will occur between the 3rd week of March and the 1st week of April dependent upon variety and drilling date.

T1 applications will follow two to three weeks later at leaf three emergence and should generally be based on a triazole and chlorothalonil mixture (e.g. Kestrel + Prairie) to provide general disease control – certainly septoria and probably yellow rust and brown rust as well (dependent on variety). As with all fungicide applications, it is important to ensure that dose rates used are realistic rather than hopeful – in most varieties given the potential yield response from a programme of 25%+ then at T1 the dose should be a minimum of 60% of the label rate.

Dose rate is also important as T1 application usually needs to last around 28 days until flag leaf (leaf 1) emergence, usually around 3rd week of May. Of the two major fungicide timings, flag leaf (T2) generally provides the greatest response – and is therefore the point at which the yield threat is the greatest. Consequently, higher rates are the norm and Kestrel at 0.75L (prothioconazole + tebuconazole) or Prosaro at 0.9L (prothioconazole + tebuconazole) are the products of choice.

Dependent upon disease risk and situation these would be mixed with either Prairie (chlorothalonil + propiconazole) or Jenton (pyraclostrobin + fenpropimorph). The latter would be the case where the variety was at a greater risk of brown rust and would be used at 1.0L/ha. In situations of high risk, the use of chlorothalonil should be avoided at T2 because it can significantly reduce the uptake of systemic materials such as triazoles and strobilurins, reducing the speed of activity and capping yield potential of the variety.

A variation on this T1 and T2 approach would be with milling wheats, or feed wheats on more fertile sites. UAP trials

over the last seven years have shown a consistent benefit to using Jenton at both T1 and T2 mixed with Kestrel or Prosaro not only in terms of improving overall disease control and yield, but also in the case of milling wheats by significantly increasing protein levels by one per cent plus. This has led to a big advantage in terms of saleability of the grain and value by reaching the desired 13% bread making premium. In addition, it has had a significant impact on Nitrogen levels left in the soil post harvest.

As ever, the decision around a T3 application is driven by a number of factors. Firstly, in feed wheats it may just be a case of topping up Septoria and Yellow Rust control as a result of an inadequate T2 application or resurgence in disease levels due to a change in the weather. In other varieties there may also be a need to enhance brown rust control. Finally, where a crop is destined for bread making, biscuit making or export, then it may be necessary to target Fusarium species especially Fusarium graminearum in order to reduce mycotoxin levels.

Product choice and timing is again vital. Early to mid anthesis is the best time to apply a fungicide and research is showing that a product based on prothioconazole (e.g. Kestrel) will give the best overall control of all diseases at this stage and particularly the Fusariums. However, it is important to maintain dose rate otherwise mycotoxin control will be compromised. Research at Harper Adams also supports findings from local trials work that mycotoxin levels are further reduced by using a product such as Kestrel or Prosaro at T1 and T2 demonstrating that Fusarium graminearum builds up in the crop and doesn't just arrive at flowering! While the final level of infection is highly dependent on damp, not necessarily wet weather at this point, it is virtually impossible to forecast the problem, so it is often necessary to make an application as an insurance against the problem. While mycotoxin control is important, yield benefits of 0.25 to 0.5t/ha are common. Further work has shown the importance of coverage of the glumes late on. Silicon based wetters such as SP057 have improved both disease control and yield at this late stage.



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