SDHI fungicides: Which one should you choose?

BASF's Adexar has joined Bayer's Aviator Xpro and Syngenta's Seguris in the SDHI starting line-up for 2012. Is there a favourite, asks **Louise Impey**?

The new crop of SDHIs including Adexar, Aviator Xpro and Seguris have made an impressive step forward in septoria control, says NIAB TAG's Stuart Knight.

Three years of trials have shown that all the new SDHIs offer improved protectant activity on septoria, good brown rust activity and have a contribution to make on yellow rust, when compared to their azole components alone, says Stuart Knight, director of crops and agronomy at NIAB TAG.

"They're going to be very valuable," he predicts. "The field performance of triazoles has slipped gradually and we now have some new chemistry which offers clear advantages over the existing choices."

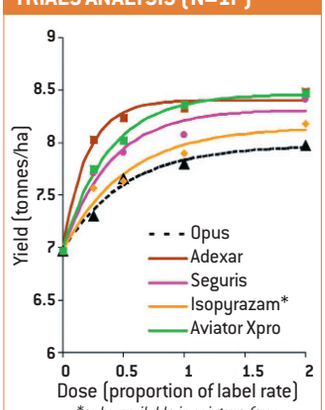
For all three newcomers, the big step forward is in septoria control, he stresses. "That won't come as a surprise to those who've done their homework. In protectant mode, they are hard to separate."

But in an eradicant situation (see graph), HGCA-funded data indicates that Adexar and Aviator Xpro are stronger than Seguris. "Adexar does seem to be the most effective when really pushed, but Aviator comes very close. Seguris is a bit weaker in this particular scenario."

Yield response data reflects this rank order, he adds. "We've seen greater curvature on the Adexar line (see graph below) when the HGCA results are put on a graph, which shows that it has more dose flexibility than the others."

On yellow rust, the outcome has been different, so the order is slightly changed, notes Mr Knight. "Remember that the triazoles are still performing very well on rusts and we have the strobilurins too. So the SDHIs are an additional mode of action, rather than an improvement."

YIELD DATA 2009-2011 – OVER TRIALS ANALYSIS (N=17)



*only available in mixture form

Although all three come close and will do a good job, the HGCA data shows that Seguris and Adexar are more active than Aviator on yellow rust. "And again the yields match the performance ranking."

Bixafen mixes, also containing tebuconazole, will be on the market, confirms Mr Knight. "So where strong yellow rust activity is called for, they could be a better choice."

If brown rust is a concern, the good news is that there is plenty of help at hand, from both new and existing products, he continues. "We've got a good range of fungicides. The SDHIs all bring improved activity."

They also offer a useful reduction of powdery mildew, he says. "They're not a complete solution, but they make a contribution."

David Ellerton of Hutchinsons says that although the main use of the SDHIs will be at the T2 timing, trials conducted by the company have looked at their use at other timings.

"They're new on the scene and we're still trying to work out how to get the best from them," he explains. "So our trials have looked at T1, T1 and T2, and T2 applications."

He says that T2 will be the dominant timing for SDHIs, but believes that there could be a benefit from their use at T1 in some situations.

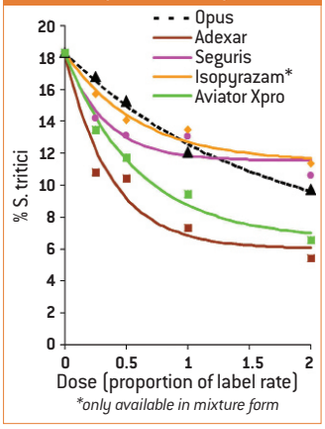
"Certainly, Tracker or Chord, which contain boscalid, have a strong T1 position, with their good eyespot activity and fit on second wheats. Growers shouldn't forget that it's also an SDHI."

He can also see a place for Aviator and bixafen mixes, such as Sparticus (which includes tebuconazole), at T1, as the prothioconazole component also offers good stem-base disease control. "And the bixafen gives you extra persistence on septoria, as well as curative control. So it might have a part to play."

Seguris could feature too, he suggests, as growers are unlikely to be in a curative septoria situation at T1.

"We know that isn't its strength.

SEPTORIA – ERADICANT ACTIVITY (2009-2011)



According to David Ellerton the main use of SDHIs will be at the T2 timing.

But it does offer persistence on rusts and septoria, so might have a role on first wheats at T1. In our trials, it gave a 0.7t/ha yield increase at this timing."

At T2, there's a clear winner if you want curative septoria control, notes Dr Ellerton. "Adexar is the best, followed by Aviator, then Seguris.

"We've all had a chance to see the HGCA data, but you must remember that the results are based on a single application and the products are being stretched to their limit."

Where you aren't in a curative situation, the three fungicides are much closer in their performance, he stresses. "If we have another low disease year, we won't see big differences between them."

In Hutchinsons trials, the best yield response of 2t/ha from a T2 spray came from a mixture of Brutus + Imtrex (fluxapyroxad), both at 2 litres/ha, he reports.

"That's not very surprising. Brutus is the strongest triazole combination on the market and Xemium is the strongest SDHI. Putting them together, with the formulation advantage, gives a cracking mix."

But it comes at a price, he acknowledges. "You can juggle with rates to address this. But be aware that as you increase the rate of Xemium, the yield increases accordingly. Where we used both components at 1 litre/ha, there was about 0.3t/ha less yield."

The same is true of Aviator, he adds. "We did some work in Kent on the impact of the SDHI dose on yield with bixafen mixes. As the rate went up, from 0.75 litres/ha to 1.25 litres/ha, so too did the yield."

If the worst happens this season, his advice to growers is to use ➜p70

ACTIVE INGREDIENTS

Adexar - epoxiconazole + fluxapyroxad
Aviator Xpro - bixafen + prothioconazole
Chord/Tracker - boscalid + epoxiconazole
Sparticus - bixafen + protnioconcade + tebuconazole
Brutus - epoxiconazole + metconazole
Intrex - fluxapyroxad
Ceriax - epoxiconazole + fluxapyroxad + pyraclostrobin

Differences between SDHI fungicides was marginal in 2011 trials.

Adexar or Xemium mixes if they are in trouble with septoria by the flag leaf timing. "They will get you out of a hole."

He does, however, sound a note of caution about the use of Adexar. "We've all seen that it is the most dose responsive of the new fungicides. And we know that in a low disease year, using half the recommended rate, or 1 litre/ha, does a very good job."

But a half rate application means that the crop is receiving a very low dose of triazole, he warns.

"That could just be tempting fate. We need to protect the SDHIs as they are at risk of resistance developing. Don't forget what happened to the strobilurins."

He also adds that the last couple of years haven't allowed a close look at Adexar in a bad disease situation. "If we have a high disease situation this season, using 1 litre/ha won't be enough. It could also jeopardise the future of the SDHIs."

Bob Mills, technical manager with Frontier Agriculture, says that any differences between the three new fungicides were very marginal in the company's 2011 trials.

"We are looking at them again this year," he notes. "To date, the evidence seems to favour their use at T2. And at that timing, it is very difficult to pull out a clear winner from the results to date."

Mr Mills accepts that Adexar might be slightly better on curative control of septoria than the other two. "If you've got yourself in a mess, either through wrong product choice or poor spray timing, then it would be the right direction to take.

"Otherwise, they're all going to give better septoria control than triazole combinations do and some additional rust activity."

Also approved for 2012 is Ceriax, which contains Adexar plus pyraclostrobin, he reports. "It's an all-singing, all dancing option, which has worked very well in our trials."

Used alone, it is applied at 1.5 litres/ha, which is half the label rate of 3 litres/ha, he says. "That still gives you a half rate of all three components, so it isn't leaving any of the chemistry exposed. That's very important with the new chemistry."

He believes there could be a place for some of the SDHIs at T1, although he points out that boscalid has a particular strength at this timing. "None of the new ones are as good as boscalid on eyespot."

However, in a first wheat situation, where just foliar disease control is being sought, they could have a place, he accepts.

"But they are all at a price premium, so including one of them at T1 will put your fungicide costs up. The only way to reduce the cost is to reduce the rates, which means that you lose any yield advantage.

"So it isn't a convincing argument."

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PARTNER PRODUCTS

* Whether to use one of the multi-site protectant fungicides, folpet (as in Phoenix) or chlorothalonil (as in Bravo), with an SDHI, has provoked fierce debate among researchers and manufacturers.

In Ireland, where septoria strains with reduced sensitivity to all the triazoles have been detected, the advice is to always include a multi-site product at T1 and T2.

"We see them as essential," says John Spink of Teagasc. "The curativity of triazoles has been reduced and we need to keep the SDHIs working well."

To date, no resistance to the SDHIs has been detected, he confirms. "Monitoring of boscalid and isopyrazam has been done. We have a narrow, sensitive septoria population."

In England, current thinking is that a multi-site protectant should be included at T0 and T1, with the jury still out about T2. "From a resistance point of view, including a multi-site protectant material is a good thing," says Jonathan Blake of ADAS.

He adds that there is some evidence to suggest that adding folpet (as in Phoenix) to an SDHI won't result in any antagonism.

"But that isn't the case with chlorothalonil. As a result, Bayer advises that they shouldn't be mixed with the bixafen products."

Dr Ellerton says that there is lots of evidence to suggest that adding chlorothalonil to bixafen makes the situation worse. "There's a definite antagonism and you do see a drop off in performance. But both Seguris and Adexar have shown positive responses. So they aren't all the same, which is why you should take advice."

He believes that, in most situations, a multi-site protectant won't be needed at T2. "If you make them an essential part of the armoury at T0 and T1, you should be covered."

Stuart Hill, technical development manager of Makhtesham Agan, believes folpet can be mixed with the SDHIs, without any problem.

"Work done in Scotland last year showed that it's a useful partner to the SDHIs at T2. Growers should be thinking about using multi-site fungicides at each stage of the programme, to protect the future. They cost very little to include."

Dave Ranner of Syngenta believes that it often makes sense to have a multi site protectant in the programme at T2, especially in the west of England and in Ireland.

"It's insurance," he says. "If your main disease target is septoria, then there's a good argument for including one. There won't be any antagonism with Seguris."