Using new strobilurin fungicides on cereals

Characteristics of new strobilurins
The new strobilurins give more effective control than older strobilurins and result in higher yields when disease pressure is high.

Trifloxystrobin (Twist) is absorbed onto leaf surfaces and can be re-distributed to leaves that emerge after spraying through rain or movement of surface moisture. It does not move within the leaf.

Picoxystrobin (Acanto) is also absorbed onto leaf surfaces and can be re-distributed to new leaves. It is also systemic within the leaf, increasing the protection of newly-emerged leaves.

The movement of trifloxystrobin and picoxystrobin makes each of them particularly suited to timings when not all of the target leaves have emerged.

Pyraclostrobin (Opera – in mixture with epoxiconazole) moves relatively little. This characteristic, coupled with its strong curative activity against Septoria, makes it suitable to include with the main flag-leaf spray in wheat.

The range of diseases controlled and differences in the movement characteristics of strobilurins determine decisions on their appropriate use.

Strobilurins in mixtures
All strobilurins should always be used in mixture with another fungicide, usually a triazole. This improves disease control, particularly of Septoria tritici, where curative activity is needed to control disease present in the leaf before treatment.

Epoxiconazole (Opus) is the most effective triazole to use in mixture with strobilurins against Septoria.

Fungicide resistance
Mixtures also help to protect against resistance developing in the fungus, so prolonging fungicide life. Wheat mildew resistant to strobilurin fungicides is now common in the UK. Barley mildew resistance, much less common, is increasing.

Disease control effects
Yield responses to fungicides were low in 2001, although disease levels allowed efficacy to be determined. In previous seasons crops treated with strobilurin plus a triazole yielded more than those treated with a triazole only. Generally, yield responses with newer strobilurins have been higher when disease pressure was high.

Action:
- Consider using new strobilurin fungicides, especially when disease pressure is high.
- Always use a strobilurin in mixture with a triazole fungicide.
- Do not rely on strobilurins alone for mildew control.
- Ideally apply a strobilurin / triazole mixture with good eradicant activity before disease has established on upper leaves.
- Apply no more than two strobilurin-containing sprays to any crop.

If you are unsure about any of the suggested actions, or want them interpreted for your local conditions, consult a professional agronomist.
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Summary
Trifloxystrobin (Twist) is more effective against Septoria tritici than azoxystrobin (Amistar), but is less effective against yellow rust. It controls net blotch and Rhynchosporium on barley.

Picoxystrobin (Acanto) is very effective against net-blotch and Rhynchosporium on barley. In wheat, it gives similar levels of disease control to azoxystrobin, but has stronger eradicant activity.

Pyraclostrobin (in mixture with epoxiconazole in Opera) has very good curative activity against Septoria tritici and is effective against rusts. It controls barley diseases.

Figure 1 indicates control when disease is present within the leaf when spray is applied. Pyraclostrobin has good curative activity. Picoxystrobin and trifloxystrobin have better curative activity than azoxystrobin.

Figure 2 indicates control when the spray is applied before the disease has infected the leaf - protectant activity.

Comparison of the two figures shows that all products were more effective if applied before disease had established. Under low disease pressure all gave good disease control, even at half label recommended dose. Higher doses were needed for good disease control on disease-susceptible varieties, under high disease pressure.

Figure 1. Curative activity against Septoria tritici (2001 trials)

Figure 2. Protectant activity against Septoria tritici (2001 trials)