Cephalosporium leaf stripe in winter wheat

- **Watch out for this emerging disease threat to wheat**
- **Crops on short rotations and shallow cultivations most at risk**
- **Wet compacted soils will also increase disease risk**
- **Use rotation to minimise disease build up**

Cephalosporium leaf stripe is an increasing problem on farms in Scotland where wheat is grown on short rotations. Incidences of the disease have increased in recent years as a consequence of changes in cropping practice and weather patterns, in particular rainfall. This note provides information on the disease to help growers identify the problem and explain the potential economic risks if it becomes established on farm.

**Disease symptoms**

Symptoms usually appear late in the season when the flag leaf is emerging or after heading. Broad vertical yellow stripes appear on the leaves of affected plants starting at the base of the leaf. Surrounding leaf tissue remains healthy and green. Affected leaf tissue will eventually die back and become necrotic and affected tillers will be stunted and die.
the most effective ways to prevent a build up of the problem (Christian et al. 1983). If straw removal is not practical, then deeper ploughing to remove the straw from the root zone may help. There is little data on how long the fungus can survive in the trash and this limits the knowledge required to give advice on the length of cereal breaks required following an outbreak.

**Disease management**

In the USA, some wheat varieties show tolerance to the disease, but none are resistant. There is currently no data regarding tolerance in European varieties. Seed treatments and foliar fungicides also have no effect on the disease.

Removing wheat trash and maintaining a rotation with non cereal hosts is the best method to reduce the disease. Growers of continuous wheat crops are likely to be reluctant to take this action since it breaks the take-all decline, leading to increase in take-all when wheat is re-sown. There is evidence that take-all fungus and Cephalosporium leaf stripe can compete with each other and where Cephalosporium levels do build up, growers are strongly advised to sow a break crop before Cephalosporium leaf stripe causes an economic loss. Oats or any non cereal crop would be acceptable (e.g. oilseed rape, potatoes).

A break from cereals for a minimum of 2 years would be recommended where the disease has increased to a level to cause economic losses. Where this is not possible, a break using a spring cereal will help to reduce the disease, but it can take longer to reduce the inoculum in the soil.

**Specific Issues**

Little data exists on methods to manage the disease in the UK. A new HGCA research project has started which aims to provide new information on the tolerance and resistance of wheat varieties. The importance of agronomic management including the impact of minimum tillage, depth of straw incorporation by ploughing, straw removal or straw burning (where permitted) on levels of Cephalosporium in the root zones will also be measured.

**References and further reading**

Anon The encyclopaedia of cereal diseases HGCA, BASF.


Murray TD (2006), Seed transmission of Cephalosporium gramineum in winter wheat Plant Disease 90 p803-806.


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