



ROTATIONS AND WEEDS IN THE UK

Around 3.9 million hectares of land area in the UK are utilised for arable cropping, growing a mixture of wheat, barley and other cereals, oil-seed rape, potatoes, sugar beet, vegetables and fruit. Arable farming in the UK is highly efficient, but often uses intensive production methods. Consequently there are large environmental costs associated with arable farming, such as soil erosion, declines in biodiversity and pollution. In intensive cereal rotations, problem weeds are also increasingly common, as the repeated use of herbicide leads to resistance evolving, and the continuous production of cereal allows competitive grass species to proliferate.

DID YOU KNOW?

A single black-grass (*Alopecurus myosuroides*) head may produce over one hundred seeds.

TRAFFIC-LIGHT SYSTEM

In order to manage problem weeds more sustainably, farmers are developing new rotation systems to balance environmental concerns and food production.

One new idea is the “Traffic light system”, which balances crop rotations to control black-grass (*Alopecurus myosuroides*), a highly productive weed (Figures 1 and 2). Andrew Ward, a Farmer in Lincolnshire, explains. “On the cropping side, we have changed a lot in the last 5 years. Rotation is very flexible and revolves around black-grass pressure. In Red fields (with a heavy black-grass burden) we grow oil seed rape (OSR) and spring barley for two years each. In Amber fields (not so bad) it is 4 years of sugar beet, followed by winter wheat or winter barley. In Green fields (with very low black-grass pressure), it’s a cycle of Sugar beet, spring barley, OSR and winter wheat.”

The positives of such an approach are clear. “We have weed-free fields that lead to high-yield crops,” says Andrew. “The only negative is keeping on top of it all!”

FURTHER RESEARCH

The use of rotations to control grass weeds requires more research to explore its lasting effects. For example, repeated use of spring crops may select for spring-germinating weed populations.



Figure 1 - Maturing black-grass heads (*A. myosuroides*)



Figure 2 - Black-grass in flower

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