IWMPRAISE — H2020-SFS-2016-2017/H2020-SFS-2016-2. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 727321

Crop rotation and diverse cropping systems

A diverse cropping system with rotations of different annual and perennial crops, and changes between autumn and spring sown crops will result in a diversification of the weed population.

DID YOU KNOW?
Crop rotation is the single best IWM tool against homogeneous and problematic weed populations

Readiness for use: **Efficacy:**

How it works

Propagation of a broad variety of specific weed species can be prevented by choosing a suitable crop rotation. If few weed species develop in high numbers, it is more likely that control will be deficient, and this may in turn lead to problems with resistance. To plan a healthy crop rotation with high weed management efficacy, it is important to have an extensive knowledge of the potential weed species. A diverse crop rotation is also an essential tool to revert a weed problem back to a normal, diverse weed flora if resistance in the weed population have evolved.

- Weed species are adapted to different growth regimes and to the life cycles of the different crops where they appear. To plan a good and healthy crop rotation, the life cycle of the weeds needs to be taken into account
- Winter annual weeds are adapted to germinate in the autumn and synchronized with winter cereals, e.g. black grass (*Alopecurus myosuroides*). Spring annual weeds follow the cycle of spring crops e.g. fat hen (*Chenopodium album*), and others again can occur both as winter and spring annual weeds e.g. chick weed (*Stellaria media*)
- A shift between annual/perennial crops and spring/autumn sown crops will ensure that weed seed production is reduced or avoided due to the frequent shifts that doesn't favor their germination, growth and seed production.
- Find and detect the weed species that are present in your rotation, and evaluate if you need to swap crops in order to prevent or control weeds. And remember to keep the weeds guessing about the next crop in the rotation.

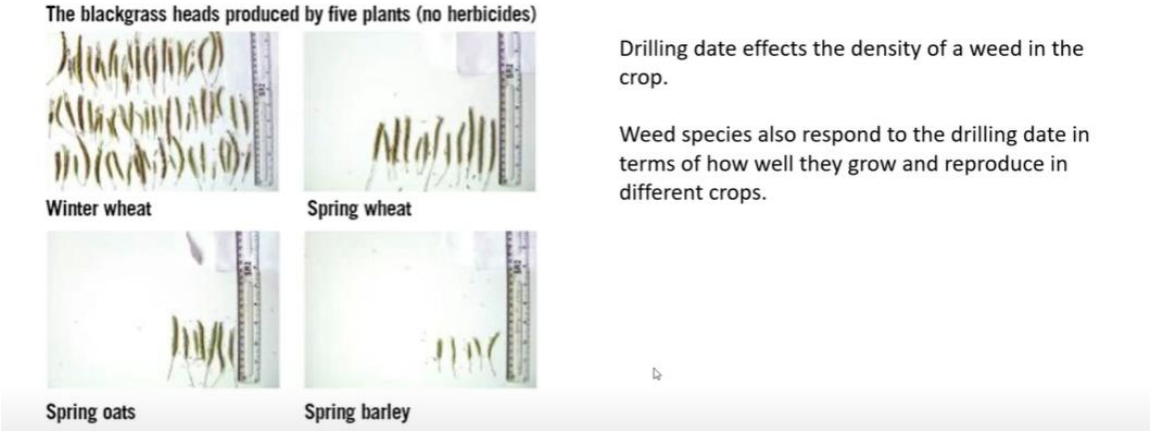

Figure 1. Blackgrass heads produced by five plants in different cereal crops. From John Cussans, NIAB, video 1.

Read more:
Video: Cussans, 1: Rotations: Spring cropping – how it works
Video: Cussans, 2: Changes to rotations: Spring cropping – in detail
AHDB: The encyclopaedia of arable weeds

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