ARE YOU ON BOARD FOR THE BLACK-GRASS BATTLE?

WE'RE BRINGING TOGETHER EXPERTS IN THE FIELD TO TACKLE FARMING'S BIGGEST ENEMY.

BASF
We create chemistry

MEET OUR EXPERTS

NEIL FULLER

Soil Health Expert

Neil grew up on a small farm in Lincolnshire and studied soil science at Newcastle University, where he graduated with a B.Sc. (Hons) in Agricultural and Environmental Sciences. Specialising in soil biochemistry and microbiology, Neil started a private consultancy company in 1986, delivering practical advice on soil management, nutritional agronomy and biological farming systems.

Neil's Expertise

His services have been engaged on a wide range of farming, food and nutrition projects around the world. Building on the principle that soil quality is the cornerstone of sustainable farming, much of Neil's time has been devoted to developing analytical techniques for assessing soil health and evaluating practical methods of improving soil quality. Neil's experience is based on extensive trials programmes, often run in conjunction with commercial farming operations.

Neil has been instrumental in the formulation, demonstration, evaluation and technical support of innovative biological technologies. From Nitrogen-fixing seed coatings to live microbial crop protection agents, that enhance soil fertility, support plant health and deliver nutrient-rich food. Having spent a lifetime wandering the planet, digging holes and talking to plants, Neil is currently developing a virtual agronomy platform, using special sensors to monitor soils, plants and animals from aircraft.

Soil Health

Weeds, like all plants, thrive and re-produce in different soil conditions. Understanding more about your soils will help you win the fight against weeds and encourage strong healthy crops by providing the right growing conditions.

A soils health is the capacity of soil to function as a living system. Healthy soils maintain a diverse community of soil organisms that help to control plant disease, insect and weed species. Soil health is influenced by the dynamic interactions that occur between the physical, chemical and biological components of the soil. Measuring soil health is therefore crucial in order to keep these interactions in balance.

Cultivation practices

Soils with a high clay content and poor structure, and soils that maintain high water content, will favour black-grass. To assist cultivation practices designed to improve black-grass control, soil physical conditions can be improved by applications of organic matter and Gypsum. Organic materials such as manures, composts and digestants stimulate biological functions that influence soil aggregate formation and move soils towards a more aerobic state. This is often associated with an increase in Nitrogen and Phosphorous mineralisation that can encourage arable crops to establish quicker and become more competitive. Gypsum can be used to similar effect, in terms of soil aggregate formation, particularly in soils with a high Magnesium content.

Soils with high Magnesium and high pH are more likely to require Gypsum. In order to accurately identify both the right material to use, and the application rate required, more in-depth soil analysis may be required. Soil conductivity mapping can be used to target applications relative to clay content.

Cover cropping

Cover cropping can be an effective soil improvement option that assists black-grass control, both in the short term and over the course of the rotation. A cover crop establishing in the stubble of a previous combinable crop, will provide a degree of competition for emerging black-grass, while driving root mass and Carbon in to the soil, to promote biological process that build and maintain soil structure. In soils with high black-grass densities, cover crops could be established with lower seed rates, to assist the efficacy of herbicides used to desiccate and destroy the cover crop and the black-grass emerging within it. At high seed rates, cover crops will have more impact on soil conditions and nutrient re-cycling, but may reduce the ability of herbicides to penetrate the canopy and hit the black-grass. The timing of cover crop destruction relative to establishing the following arable crop can have a major influence on both black-grass control and the establishment, growth rate and yield of the arable crop.

While stale seedbeds and cover crops can be used to promote black-grass germination and control, the timing and management of these techniques provide effective evolutionary stress on black-grass. Given the broad germination and dormancy characteristics of black-grass, cultural and chemical control strategies run the risk of effectively selecting against black-grass with low dormancy and early germination, inducing a shift in black-grass population dynamics towards higher dormancy and later germination. To combat this, cultural controls need to be considered over the entire rotation, and should be integrated with appropriate use of selective pre and post-emergence herbicides.

DISCOVER INFORMATION AND ADVICE IN 8 KEY WEED CONTROL AREAS. READ MORE AND JOIN IN FOR FREE AT BASFREALRESULTS.CO.UK/AWC