



# David Miller – Wheatsheaf Farming

David Miller is farm manager of 700ha of grade 3 land in Hampshire for three landowners. David runs a traditional rotation of winter rape, winter barley, winter wheat, winter beans, spring linseed and spring barley.



## Companion and Cover Cropping

David has been growing cover crops for eight years and companion crops for five and believes that companion crops in oilseed rape have two uses: to distract cabbage stem flea beetle and to be of benefit with nutritional elements for the rape.

The use of cover cropping is on the minds of many farmers as an important way to improve the output of differing rotations and cropping plans. The need to understand the issues taking place within our soils, in virtually every field we farm, has become an important starting point to address a yield and quality plateau. Cover crops are fast growing annuals which, when planted between two cash crops, have the ability to boost yields as well as deliver financial savings.

The exponential rise in the awareness of cover crops within the arable sector has been driven by the need to find new solutions for worsening problems on many UK farms. Improvements in economies of scale in modern farming systems, compounded by tight rotations, have undoubtedly put pressure on our soils, which needs to be addressed. There is also an increasing requirement for non-chemical solutions for weed, disease and pest problems. Growing cover crops requires a different mind-set as it is function rather than yield that is the focus. When introducing species to the farm where considerations go beyond output, it is important to have good advice around species, varieties, potential long-term volunteer pitfalls, seeding dates, rooting habits and EFA requirements.

### What components do I need in my cover crop?

- Varieties that do not set seed before crop destruction
- Species that do not create a long-term volunteer problem
- Species that have different rooting habits essential for soil structure improvement
- Species with low Carbon: Nitrogen ratio for better nitrogen utilisation
- Species that do not create an extra pest or disease problem
- Create a platform to ease spring drilling, allowing a third crop
- Are allowed as part of the EFA
- Help with soil structure, to allow better water infiltration and soil drying
- Help with increasing organic matter, soil micro flora and fauna

David is heavily interested in soil health, with his main focus on mycorrhizal fungi due to their importance in extending the root area of plants. However, due to brassicas not hosting these fungi, the level of fungi has to be maintained by having living roots of other species present. David therefore establishes an alternative host, such as berseem or crimson clover, and their roots can act as a host for mycorrhizal fungi.

David is keen to try new things, and this year had alternate rows of OSR with spring beans in the hope that they would provide distraction and nutrition. Next year, the farm is trying buckwheat and fenugreek which are supposedly good distractions for flea beetle.

“What farmers do is harvest sunlight – so why would we have nothing growing on our fields during the months we have the best sunlight?”

David doesn't always buy a propriety mix cover crop but experiments with different species to make up his own bespoke mixes. He learns from other like-minded growers who are part of a WhatsApp group and from cover crop enthusiasts and Nuffield Scholars on Twitter.



“Insecticides aren't the answer. If you spray a crop, you may kill off one of the pests but also numerous beneficials. So it may be more helpful to do nothing and give the beneficials a chance.”

David has placed four metre strips around the outsides of fields with pollen and nectar mixes in order to encourage beneficials.

Blackgrass and other weed seeds remain on the surface by practicing no till and therefore no old seeds are brought up to germinate as they would be using tillage.

The cover crops are sprayed with a graminicide in late September in order to take out any cereals as David wants a clean spring barley seed bed. This spray also has the potential to take out some of the blackgrass.

## Slug Control

When David first started in his role, he lost acres of crops to slugs. However, they have since reduced the slug issue through research and looking at other people's work and asking why they had such a problem in the first place. They realised that every time they went through the soil with a tine or moved the soil at all, they disrupted the soil biology. The first thing to recover is always the bacteria and the last thing to recover is the fungi. So, the more they cultivated, the more they tipped the balance to bacteria. It also took out some of the beneficials that predate on slug eggs too. They discovered this by having biological soil tests done on the fields.

There is a project carried out by Wessex Water, looking at pitfall traps in cover crops and stubble. In the stubble they found a few beneficials, but as soon as there was a cover crop, the predators were outweighing the pests. David hopes to replicate this project in his cover crop trial plots this year. The farm is realising that they had created a system where they removed all of the predators, which is why it took several years to get over the slug issues; they needed the predators to build up. “You don't want to completely get rid of the slugs because they are a part of the ecosystem.” David also uses a stubble rake on every acre, which he believes does not have a detrimental effect on beneficials such as beetles because they are not moving the soil as much and if it does, it's a small risk they have to take.

“We are playing Jenga at the moment. We have our stack of blocks and the government are dragging them out all the time, so we need to build a second stack of blocks to see what's possible.”

### POLICY ASKS

- We need more research to understand the life cycles of pests. Where research does exist, we need better knowledge exchange to make growers aware of how to best manage these life cycles.
- We need better incentives to encourage beneficials to move out of margins and into crops to predate pests.

### FOR FURTHER INFORMATION:

[AHDB Cover Crops](#)

[Video: Should this Northumbrian farm grow cover crops?](#)

[Opportunities for Cover Crops in Conventional Arable Rotations](#)

[No-Till: Cover Crops](#)

[Agrovista: Cover Crop Solutions](#)

[Kings Crops: Cover Crops](#)

