

Cover crops for improved soil health

Farmer Experience 2
Summer 2016

AHDB
CEREALS & OILSEEDS



Richard Reed

B L Farms Ltd

Location:
North Northumberland

Soil type:
Loam over clay

Rotation:
Recently increased from a four/five year to six with OSR and beans a sixth each. Wheat, winter and spring barley complete the rotation

“ I’m confident that by introducing cover crops, we are going to improve our soil health and structure. ”



Cover crop mix.

Why did you start including cover crops in the rotation?

I started using cover crops as I became progressively aware that we have been detrimental to our soils for some time. I have recognised that that we must start to care for our main asset better for the future of the business. Soils and their structure have changed dramatically over the last 20 years. We used to be a mixed farm, including grass in our rotation. An almost continuous cereals regime including ploughing has almost wiped out all organic matter.

I have observed that where there has been some green cover in a field, compared to bare ground, trafficking and cultivations has been improved.

I’ve often heard that a healthy soil will produce healthy plants, healthy people and animals, so I aspire to be like that. I want to see more worms and life in the soil, improve water infiltration, increase nutrient availability, increase organic matter and carbon, reduce tillage, stop applying P and K and reduce the amount of pesticides we use. I’d like to see our farm move to a hybrid organic-type farm where inputs are better targeted and we move away from the blanket application we currently use.

What are you doing?

We sowed our first cover crops on 7 September 2015 into wheat stubble that had been chopped. Around 25% of the farm is baled, mainly for use in the biomass boiler. The rest is chopped and no FYM has been applied in the last ten years. Four seed mixes were trialled across a 9 ha area of a field, and we also included cover crops on part of the headlands to see if this helps with obvious compaction. The field had been cultivated to a depth of 200 mm with a one-pass minimum tillage disc and tine cultivator. Cover crops were drilled with a tine drill. No rolling was done. As the drilling date was later than planned, the crop didn’t require anything other than 2.5 litres of glyphosate prior to drilling spring barley after the cover.

The four mixes comprised:

- 2.5 ha vetch, red clover and Egyptian clover
- 1 ha black oat and vetch
- 1 ha black oat and berseem clover
- 5 ha “mixture mix” of tillage and oil radish, vetch, berseem clover, black oats and phacelia

How are you measuring the changes?

We have left an area of the field as a control to see if any yield or quality differences are identified in the spring barley. We have a weighbridge, so we hope to cut representative areas and monitor results.

What has worked well?

We have already observed the increase in soil health throughout the winter. The number of worms is obviously higher anywhere there is a green cover, compared to bare stubble or cultivated ground.

The black oats did not suffer any slug attacks and the mixture mix survived well.

The cover crop area always dug up with a spade better than the control area.

What hasn't worked?

So far, the biggest disappointment has been the impact of slugs on the clover. I didn't roll the fields and this won't have helped the almost total destruction of clover by slugs.

Allocating time to establishing what can be an expensive seed well at a busy time is also going to be a challenge. We used our best ground for the first year to see the full potential of the crops and I doubt they would look as good on our heavier ground. Until more results come through, I will be using a home-grown cheap mix for seed.

The weather hadn't allowed the field to dry out as hoped and, when drilling, the area not cover-cropped looked drier and finer behind the drill compared to the cover crop areas. Was this because the soil was more exposed to the sunlight? The field was also more compact where the cover crop had been sown and travelled on compared to the non-cover crop area. Was it machinery plus the huge rainfall over the winter?

Further information

Richard Reed hosts the Berwick Monitor Farm. For more information, email the local AHDB Manager: judith.stafford@ahdb.org.uk or visit cereals.ahdb.org.uk/monitorfarms

Drilling expensive seed at a busy time is a challenge. Use a home-grown cheap mix as an alternative.



Soil under stubble and cover crops.

Cover crop mix of oil and tillage radish, European oats, phacelia and forage rye.



Mix of oil and tillage radish, European oats, phacelia and forage rye.



Black oats and vetch mix, vetch eaten by slugs.

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