

Saltburn Monitor Farm meeting report

Meeting 5: Summer meeting

Speaker: Steve Townswend (Soil First Farming, Monitor Farm steering group member)

Date: 24 May 2018

Location: Barns Farm, Skelton

For more information, visit: cereals.ahdb.org.uk/saltburn



Meeting summary – key messages

- Crops sown by direct drilling are showing improvements in brome control
- Changing to a direct drilling system doesn't need to be expensive
- Direct drilling can lead to establishment at lower seed rates
- Cover crop roots create can water drainage channels very effectively
- Winter beans bring harvest forward and provide an alternative in the rotation for tackling brome
- Winter beans need to be established ideally by early September

Review of the year

Aims at the outset

- Improve the soil structure and nutrient content of the block of land previously in continuous wheat
- Deal with a serious brome problem
- Do this by moving to direct drilling and changing the rotation

What have we learnt?

- Brome has improved we still can't drill early enough
- Over-riding factor – improve soils but the system still has to be profitable

Changing the rotation

- Winter barley had to be taken out because of weeds. This was replaced with spring barley but this put pressure on the oilseed rape so winter beans were introduced. Should the rotation be extended beyond three years?
- Buying in straw would be an opportunity to import more carbon but this has not been done because of the risk of bringing in black-grass. The soil type here would be a black-grass haven

Changing the drill system

- No till does not have to cost a lot
- The Monitor Farm purchased a second hand drill for less than £13,000
- For cereals it works with 10 inch rows because this cuts down soil movement and for OSR it is changed to 20 inch rows

Advantages of the tine drill

- It is simple
- The Metcalf openers produce little disturbance
- The tines cultivate the important bit, i.e. the tilth around the seed
- Tines handle straw whereas discs can tend to push it into the ground
- It takes little pulling (you can pull it with 20 hp/m and here a 150 hp tractor is used)
- It allows drilling where it would not have been possible previously
- The second hand value of the drill will probably be more than the farm paid for it

Cultivating and soil organic matter

- Soil disturbance leads to loss of carbon from the soil through oxidation
- If we are serious about improving soils we need to stop cultivating as deeply
- It is good farming practice to build organic matter in soils – this builds carbon
- You probably have a cow's weight of soil biology per acre and these need feeding
- Building organic matter will allow you to cut back N fertiliser and therefore to cut N bills
- This is not possible with a plough
- The number one pollutant in our rivers is topsoil
- Bare soil in the summer goes backwards
- Over winter stubbles are exactly the same
- The livestock under the soil have nothing to eat and they need feeding

Grower experiences in the Monitor Farm group

1. Comparing 20 years' ploughing (and combination) with reduced tillage

Ploughing + combination

- After 20 years soils were not in as good condition as at the start
- In the UK generally yields haven't increased
- Where yields have increased soils have been deteriorating
- This system is not sustainable

Reduced tillage

- Soils are more alive, with more worms
- More workable
- No pooling
- This system has been further helped by keeping out of the fields when it is wet

2. Reducing tillage over 15 years

- The result of thinking about it and changing over time
- Yields have not reduced
- You need to want to do it
- The cost in the conventional system was not sustainable
- Establishment is now possible at lower seed rates than ploughing would have allowed
- Direct drilling facilitates cost management on a much bigger scale

Making the change to direct drilling

- Leads to more consistent low-cost farming once you get through the adoption phase
- No-one likes change but with this everything changes
- Make the change gradually to spread the risk
- If you plough one year in four you press the reset button

Find out more – Links to AHDB information sheets or research

[Identification and control of brome grasses](#)

[Opportunities for cover crops in conventional arable rotations](#)

[Field drainage guide](#)

[Getting the most from your machinery Machinery cost calculator](#)

[Machinery for farming or farming for machinery? Webinar](#)

[An introduction to soil biology](#)

[Understanding soil biology video](#)

[PR576: Improvement of soil structure and crop yield by adding organic matter to soil](#)

For more information on soil, visit ahdb.org.uk/GREATsoils



Next meeting

Date: 8 November 2018

Location: GRUFC, Belmangate, North Yorkshire TS14 7BB

For more information or to find out more about Farmbench, AHDB's benchmarking tool,

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