

Diss Monitor Farm

Meeting Title: Headland management

Date: 5 November 2019

Speakers: David Purdy (John Deere), Mark Wood (Clay Farms)



Rookery Farm Trials

Richard Ling has a variety of trials being undertaken on the farm, which will be followed through during the Monitor Farm programme. These include:

- Headland management try-out – see separate information leaflet
- Catch crops – looking at establishment, yield with the use of catch crops between harvest and establishment of following wheat crop. See picture 1.
- OSR Companion crop trial – Does establishing an OSR crop with buckwheat and clover make a difference to CSFB pressure, yield, N content etc?
- CSFB control – tried rolling at different times of day and night for better control



Catch crops

AHDB Companion crop trial



Soil health and the machinery interface David Purdy

- High risk environments are where you have high axle loads, higher tyre pressures, wet soil conditions, loosened weaker soils and heavier soils.
- First pass of a vehicle causes 85-90% of the compaction
- In most agricultural rotations, trafficking is across 70% of the field
- The ideal bulk density is "50% stuff", 50% pore space. Compaction causes the restriction of water and nutrients to plant roots and less habitats for soil biology.
- What can we do?
 - Axle loading – as the axle load goes up, compaction goes deeper
 - Moisture content – as this increases, soils can withstand less weight
- How deep will the compaction go? Working on moist soils, below are the axle load v depth of compaction:



- 4t <30cm (<125hp)
- 6t <40cm (<150hp)
- 10t <50cm (>300hp + & combines)
- 15t >60cm+ (combines and larger machines)
- How much weight do I need and where do I put it? Don't carry more weight than required – each 1 tonne of additional unrequired ballast = 1 litre extra fuel usage hr.



- Weight transfer:



Take-home messages

- Increasing vehicle axle weights is affecting compaction at depth in our soils – you don't have to do much to the soil the shut down infiltration rates.
- Compaction in the topsoil is dominated by tyre pressure; compaction in the subsoil is dominated by axle load weights. However, modern tyre technology can compensate for weight – choosing the right tyre and setting them at the right pressure is really important.
- Keep axle weights below 6 tonnes where possible
- Ensure the correct power to weight ratio and correct 60:40 balance
- Keep tyre pressures at or below 10psi in the field
- Keep turns as wide as possible
- Ensure training of key operators

Further information

- Find out more about the headlands trial at Strategic Cereal Farm – West at ahdb.org.uk/farm-excellence/squabhall
- [Testing soil health](#)
- GREATsoils research and publications can be found at ahdb.org.uk/greatsoils

Identifying and managing underperforming areas of fields Mark Wood, Clay Farms

- There is a difference between variable rate and precision farming
- The best first thing to do is to get a tape measure out and measure your tramline – are they right for what they should be? Is your machinery set-up correctly?
- Whichever route you go down has to be right for you and the equipment that you've got.
- Variable rate farming
 - Putting the old hedgerows back in!
 - How do you start? A baseline is needed to get started.
 - The start might depend on the money that you have available, but you could always try a smaller area.
 - What is your aim? It is important to decide on your aims – are you going to push or limit? Identify the existing variation – can use Google Earth to do this, which is free, give your staff a piece of paper and ask them to annotate the maps or use yield maps.
 - Variable rate farming could start with P and K, but can also link to seed, nitrogen
- For Clay Farms, the first 5 years cost £16/ha, but benefits included: increase in yield, reduction in P, less variation, cheaper sources of products, a more even crop from using variable-rate seed.
- Don't underestimate the management time involved in the set-up

Take-home messages

- Mark's precision farming tips include:
 - Talk to the people that you trust to get their opinion
 - Take time to get it right from the start
 - Think about what you're trying to achieve
 - Investigate other areas before you start/make use of existing data and records

AHDB resources

- Understand your business costs with AHDB's benchmarking tool Farmbench at ahdb.org.uk/farmbench
- Monitoring tools are available at ahdb.org.uk/tools
- Sign up to market information and research newsletters at ahdb.org.uk/keeping-in-touch
- Find out what's going on at other Monitor Farms and Strategic Farms at ahdb.org.uk/farm-excellence
- All AHDB events can be found at ahdb.org.uk/events
- For guidance on how Brexit will impact your business, see ahdb.org.uk/brexit

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