

Brigg Monitor Farm meeting report

Summer meeting and farm walk

16 June 2019

Speaker: Stephen Tuer (North Yorkshire grower)

Gander Farm, Hibaldstow

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



Meeting summary

- Cropping at the Monitor Farm has been heavily influenced by a combination of drought and pressure from cabbage stem flea beetle (oilseed rape) and black-grass (wheat)
- Severity of black-grass was linked to level of cultivation
- Where spring crops are to follow a cover crop, it is important to leave a long enough gap between destroying the cover crop and drilling
- In some situations high yields of oilseed rape can be achieved through late sowing and low seed rates
- One of the key factors in allowing this to work was soils with a high organic matter content achieved through a long history of manure application
- Attention to detail was similarly important in achieving consistently high yields, e.g. drilling only when soil conditions are right

Monitor Farm update

Colin Chappell

- Crop of oilseed rape ploughed up mid-April – after most of the inputs
- Failure due first to water shortage, then cabbage stem flea beetle, then pigeons
- Power harrowed to break up Kerb then direct drilled with spring barley
- Winter wheat variety Crusoe drilled – cultipress used to get rid of cracks in soil
- Power harrowed ground has more black-grass (see photographs below)
- Less cultivated ground has less black-grass



Remains of 2019 OSR crop



Low soil movement black-grass; winter wheat variety Crusoe



Subsoiled, cultipress, drilled



Sub-soiled, power harrowed, rolled, drilled

Should we be growing OSR?

- What to grow instead of OSR – options tried in 2018/19:
 - Linseed, combined on 26 Feb 2019, then burnt
 - Peas (combining) yielded only 0.71 t/ha



Combining linseed, 26 February



“How not to grow peas”

Achieving consistent yields – How a North Yorkshire grower makes it work

Stephen Tuer (runner up in Yield Enhancement Network competition 2017)

Farm background

- Heavy clay soils in North Yorkshire
- Ex-dairy farm; now livestock comprises 1200 sows producing a lot of pig slurry
- “Background to the farm’s good soil fertility is livestock”
- Lessons are being learnt from further south on black-grass and so far it is not a big problem

Rotation

- Winter wheat, winter wheat, winter barley, OSR
- OSR every four years
- History of manure and grass in rotation
- Very high yield potential due to location (northerly, late harvest) and soil fertility

Yields (t/ha)

	Average	Peak
Wheat	11.0	16.0
Barley	9.0	12.0
OSR	5.5	7.2

Factors contributing to high yields

- History of muck and slurry application
- Reducing level of soil movement
- Flotation tyres
- Controlled vehicle trafficking
- Tramlines fixed by RTK
- Slurry applied to barley stubble, then stale seedbed
- Late sowing (early September)
- Low plant populations of big sturdy plants
- Delayed N applications

Crop nutrition

- A lot of spring N is applied as slurry
- Use of dribble bar allows precision application
- 30 kg/ha pig slurry is used as starter fertiliser
- 40 kg N applied at flowering
- Although some inorganic N is used, most is from slurry
- “Pigs are our fertiliser factory”

Drilling/cultivation

- First move away from combination drilling and ploughing 10 years ago
- Tried one or two other systems with variable results
- Cultivator drilling found to produce reliable results over last 8 years
- OSR is drilled in the first week in September when rain is forecast
- Minimum soil movement
- Target is 35 seeds/m² in moist soil in stale seedbed
- All done over 24 – 36 hours
- Double Cambridge rolled at 90° if soil is dry
- Aim is to get plants equal distance apart

Combining

- Using new style vario header on combine otherwise a lot of seed is lost
- Double side knife also helps to reduce seed loss

- With a lower plant population and delayed N the crop is more likely to stay standing
- Late desiccation using glyphosate

History of award-winning crop, 2017 Harvest (Runner-up in Yield Enhancement Network competition)

- Plenty of slurry
- Final plant population 10 plants/m²
- Thin crop produced by cabbage stem flea beetle and slugs
- Dry, mild winter helpful – crop continued to grow
- Huge plants with many branches (average 9) allowing light right down into the crop
- “Oilseed rape is better at surviving than we think”

The future

- Planning to introduce spring cropping because black-grass is likely to become more of a problem
- Spring beans and spring barley will be grown following cover crops
- The rotation will be widened to OSR one year in seven
- “The current approach is too stressful”

Farm walk

A record of some of the discussion points

Pesticide handling facility

Stalled for two reasons:

- Planning to build a classroom to accommodate the increasing number of children visiting the farm
- Discovered that, although said to be “OK in miniscule amounts, liquid fertiliser can deactivate a biobed.” This needs further investigation and the new facility is unlikely to be completed before next summer

Spring wheat after cover crop

- Grown instead of second wheat on site where cover crops were seen in last November’s meeting
- Canadian hard red wheat, variety Faller (large flag leaf)
- Drilled early April
- Crop is shorter on areas where cover crops have been – why? Suggestions:
 - Cover crops were destroyed only a week before drilling. The gap between spraying off and drilling needs to be a lot longer, ideally two months although can depend on soil type, but it is important to allow time for the soil to dry out
 - Also could be a N effect – N is being used to break down the cover crop
 - Overall pleased with the way the field has responded to the cover crop

Spring barley

- Second spring crop; follows spring barley
- Good crop as long as it stays standing
- Some wild oats – need rogueing
- What should go in next - what about spring peas?

- Don't direct drill peas here because it is heavy land so in danger of foot rot – peas can't tolerate wet. Would be better with beans; or possibly another barley.
- Is three spring crops enough [to deal with black-grass]? Probably – but should use zero tolerance with black-grass; there is evidence that the reason black-grass is so successful is its ability to fit the pattern you are in; don't leave the odd one.

Wildlife area

Grass and pollen/nectar mix with wild flower area behind

Winter wheat (small area on site of direct drilling trial:1 ha)

- Drilled late – 15th November
- Contains large areas of black-grass especially at the far end
- Instead of taking to harvest, the crop is to be forage harvested (tomorrow); not everyone in the group thought this was the best idea; however the majority did – it is important to stack cultural controls to prevent black-grass seed return
- The drill used needs to go on stubbles; the problem is you need a big tractor whereas ideally you would use a light one
- Soils here are better due to minimum disturbance
- What should go in next after the winter wheat? Suggestions:
 - Direct drill a cover crop, low seed rate to give a crop that is not too thick
 - Cash crop
 - Two cheap cover crops - sunflowers first; spray off after flowering when pollinators have gone; then a winter cover crop
 - Use one-pass drilling to keep minimum disturbance
 - Sunflowers are deep rooting and do not harbour pests

Find out more – Links to AHDB information sheets or research

[Machinery cost calculator](#)

[AHDB nutrient management guide \(RB209\)](#)

[GREATsoils](#)

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