

# Dereham Monitor Farm Meeting Report

Meeting 11: Summer Open Day

Date: 5 June 2018

Location: Field House Farm, Swanton Morley



For more information, visit: [cereals.ahdb.org.uk/dereham](http://cereals.ahdb.org.uk/dereham)

## Meeting Summary – Key Messages

- Using a try-out on-farm can help to inform key decisions – the cover crop and establishment try-out has shown visible comparisons by monitoring through the season, as well as through the final yield results and comparisons with costings.
- Use a spade to look at soil structure, areas of compaction, rooting, earthworms and more. The [Think Soils manual](#) provides a good reference for looking at soil structure and if you would like to monitor your earthworm numbers, find out how to [here](#).
- To chop or to bale your straw is a key consideration this year, given the season and high prices. Use the [decision tree](#) (p.4) to aid field-by-field decisions and calculate the pros and cons of nutrient removal using [this leaflet](#).

## Dereham YEN 2018

The group visited the YEN (Yield Enhancement Network) field for this year. The key facts for the field are:

- **Variety:** Siskin
- **Drilled:** 27 September 2017 at 160kg/ha
- **Ear numbers:** 580/m<sup>2</sup>
- **N applied:**
  - o March = 66 kg/ha
  - o April = 84 kg/ha
  - o May = 93 kg/ha
  - o End of May = 30 kg/ha
  - o **Total** = 270 kg/ha of N

- **Fungicide programme:**

- T0: Missed due to weather
- T1: 1.2 Adexar + Mn + Phorce + PGR
- T2: 1.7 Librax
- T2.5: 1.0 Bravo + Bo + Mn + Mg + Bridgeway

The soil analysis results for the field showed a “High” soil health index. This was followed by a leaf tissue test was done on 16/05/2018 and the table to the right shows the results. Micro-nutrient treatments were added to the plot, to reflect these results.

Analysis	Result	Guideline	Interpretation	Comments
Nitrogen (%)	4.54	3.00	Normal	Adequate level.
Phosphorus (%)	0.33	0.30	Normal	Adequate level.
Potassium (%)	2.45	3.50	Low	PRIORITY FOR TREATMENT.
Calcium (%)	0.44	0.40	Normal	Adequate level.
Magnesium (%)	0.11	0.12	Slightly Low	Consider foliar applications of MAGNESIUM
Sulphur (%)	0.12	0.25	Very Low	PRIORITY FOR TREATMENT.
Boron (ppm)	3.0	6.0	Low	Consider treatment with Boron.
Copper (ppm)	6.1	7.0	Slightly Low	Consider foliar applications of COPPER.
Iron (ppm)	99	50	Normal	Adequate level.
Manganese (ppm)	52.2	35.0	Normal	Adequate level.
Molybdenum (ppm)	0.28	0.10	Normal	Adequate level.
Zinc (ppm)	19.4	25.0	Slightly Low	Consider foliar applications of ZINC.

## Cover crop and cultivations try-out

This field was split to look at the effect of a cover crop and cultivations in front of a crop of beans. The field was split into three: cover crop; no cover crop and ploughed. The cover crop and the beans were then either direct drilled or cultivated first.

The cover crop seed was the Kings Economy Power Mix and drilled on 26 September 2017.

### Plot Information and Costings

Plot	Cover Crop	Autumn Min-till Tined Cultivation	Autumn Plough	Spring Min-till Tined Cultivation	Cost/ha
1	✓	✓	-	✓	£246
2	✓	✓	-	-	£193
3	✓	-	-	✓	£193
4	-	✓	-	✓	£156
5	-	✓	-	-	£103
Rest of Field	-	-	✓	✓	£166

Costs per hectare: Cover crop seed and drilling = £40; Drilling = £50; Ploughing = £63; Min-till Tined Cultivation = £53

### Field results

Analysis of the field on the Open Day showed a difference between the plots in terms of establishment of the beans.

#### Cover crop and cultivation:

- Roots getting through the cultivated layer
- The cover crop followed by Topdown in the autumn plot (2) was less porous than the one with spring Topdown in addition (1), which meant it would have less oxygen and less water holding capacity.

#### No cover crop and cultivation:

- More natural aggregation with less working of the soil
- More worms
- Roots down well
- More nodulation on bean crop

#### Ploughed area:

- Little residue found on surface, but distinct layer of residue at ploughed line
- Dug well
- Very little straw to soil contact at residue layer
- Anaerobic layer found under the ploughed layer, where roots were not able to get through.



In this field, we also discussed tyre pressures – ideally these would be less than 10psi; ultimately down to 6/7/8psi. At this level, roots are then able to go through. If pressures are at 12-14psi, roots then start to struggle.

Capillary action was also talked about with the group. At field capacity, all movement of water is by capillary action. If you have fine soil over coarse, this creates a barrier between the two and restricts water movement. Aim to avoid creating this when cultivating – this had been seen in the field over the winter, where ploughing had left a fine tilth on top that was very wet over the winter. Aim for the tilth to be as coarse as possible and the change from fine to coarse spread over a good depth of soil.

### Direct drilled field

The group also visited the direct drilled field, where it was evident that the levels of organic matter were adding to enhanced soil structure, lots of worms, good rooting and good soil resilience and trafficability following the winter.



#### Philip Wright's top tips for effective zero-till:

- 1) Ensure the land is freely draining (if not, fix the problem first)
- 2) Grow roots all the time through the year

## Find out more – Links to AHDB information sheets or research

[Think soils](#)

[How to count earthworms](#)

[Get more for your straw](#)

[Assessing the nutrient content of straw](#)

[Cover crops – Farmer experiences](#)

[The effect of tyre pressure on your soil](#)

For more information on soils, visit [ahdb.org.uk/greatsoils](http://ahdb.org.uk/greatsoils)



## Further Information

For details about the Dereham Monitor Farm and past meeting information, please visit: [cereals.ahdb.org.uk/Dereham](http://cereals.ahdb.org.uk/Dereham).

### Winter Meeting Dates 2018 to 2019

- Tuesday 27 November 2018
- Tuesday 18 December 2018
- Tuesday 22 January 2019
- Tuesday 26 February 2018

All meetings will start at 9am with a bacon roll at Beetley Village Hall, High House Road, Beetley, Norfolk, NR20 4BX.

**For more information contact:** Teresa Meadows

E: [Teresa.Meadows@ahdb.org.uk](mailto:Teresa.Meadows@ahdb.org.uk)

M: 07387 015465

 [@CerealsEA](https://twitter.com/CerealsEA)

**To find out more about Farmbench, AHDB's benchmarking tool, contact:** Holly Howsam  
E: [Holly.Howsam@ahdb.org.uk](mailto:Holly.Howsam@ahdb.org.uk) M: 07767 001543

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