

# Diss Monitor Farm

**Meeting Title:** Effective manure management

**Date:** 3 December 2019

**Speakers:** Mel Holloway (ADAS), Nerys Wright (AHDB)



## Manure management

- There are four key steps to maximise nutrient use efficiency. These include:
  1. *What does the crop need?*
  2. *What's in the soil?*
  3. *Account for manure nutrient supply*
  4. *Sensibly top up with fertiliser*
- Use the AHDB Nutrient Management Guide alongside regular soil sampling to assess levels and adjust fertiliser accordingly.
- Target soil indices = P Index 2, K Index 2-
- Arable pH optimum = 6.5 and target = 6.7
- The important properties of lime include the: neutralising value (relative % effectiveness of a liming material compared to that of calcium oxide), fineness of sample (increases speed of reaction in the soil), solubility (speed and longevity), reactivity (effectiveness and speed) and relative hardness of parent rock (the harder the material the finer it must be ground).
- The nutrients supplied by 35t/ha of cattle FYM are:

	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
WW crop requirement (8t/ha, straw removed, target indices)	190	65	85
Manure nutrients	25	131	385
Fertiliser requirement	165	0	0
<i>Balance for next crop</i>		<i>+66</i>	<i>+300</i>

**Standard value: £16 + £75 + £161 = £252/ha**

- Consider loss of nutrients and aim to minimise these, both into air and watercourses. Readily available N can be lost either by ammonia volatilisation and nitrate leaching. With liquids, aim to broadcast on a low trajectory or use shallow injection. With fertilisers, urease inhibitors can be used to reduce ammonia losses.
- When selling straw or carrying out muck for straw deals, you should consider:
  - *Baling cost and responsibility*
  - *Carting costs and responsibility*
  - *Grain/straw yield*
  - *Impact on organic matter, P, K, S and Mg levels*
  - *Will chopping straw worsen pest/disease/cause delays?*

- Compaction/OM buffering
- Straw and fertiliser prices
- Calculations to cost out straw can be found below:

## Winter Cereal Straw (grain yield 8t/ha & Straw yield 4t/ha)

Straw sales 4t/ha @ £40/t = £160/ha (£65/acre)

Less Costs / Losses

Baling £58/ha (£23/acre)

Carting £10/ha (£4/acre)

Lost nutrients: phosphate 1.2kg/t @ £0.67/kg + potash 9.5kg/t @ £0.49/kg = £22/ha (£9/acre)

Costs / Losses = £90/ha (£36/acre)

Net Income = £70/ha (£28/acre)

## Cattle FYM

Benefits:

Crop Available Nitrogen 0.6kg/t @ £0.74/kg + Phosphate 3.2kg/t @ £0.67/kg + Potash 9.4kg/t @ £0.49/kg = £7/t

Costs:

Haulage £1.88/t

Spreading £1.50/t

Costs = £3.38/t

Net Value = £3.62/t **19.3t FYM = 1ha straw (7.8t FYM = 1 acre straw)?**

## Poultry Manure

Benefits:

Crop Available Nitrogen 9.8kg/t @ £0.74/kg + Phosphate 17kg/t @ £0.67/kg + Potash 21kg/t @ £0.49/kg = £29/t

Costs:

Haulage £1.88/t

Spreading £1.50/t

Costs = £3.38/t

Net Value = £25.62/t **2.7t manure = 1ha straw (1.1t manure = 1 acre straw)?**

- When considering variable rate manure applications, consider the underlying variability factors, including: soil variability, pests, disease, shade, drainage, exposure, micro-climate and nutrition.

## Take-home messages

- Ensure that you are planning fertiliser applications, taking into account soil sampling results and organic amendments.
- Ensure compliance with both NVZ and Farming Rules for Water guidelines.
- Cost out straw or muck for straw deals, taking into account wider effects on the field and following crops.

## Further information

- [AHDB Nutrient management guide \(RB209\) Section 2: organic materials](#)
- [Testing soil health](#)
- GREATsoils research and publications can be found at [ahdb.org.uk/greatsoils](http://ahdb.org.uk/greatsoils)

### FARMING RULES FOR WATER

Take note of the new Environment Agency Farming Rules for Water. These include:

- Before you use manure or fertiliser you must plan each application
- Undertake soil tests for cultivated agricultural land
- You must not apply fertiliser or manure in certain situations, eg. within 2, (fertiliser) or 10m (manure) of water, spring, wells or boreholes; on waterlogged/flooded/snow covered soil; when the soil has been froze for >12 hours in the past 24 hours
- You must take reasonable precautions to reduce application risk of pollution
- You must not store manure within 10m of inland freshwaters; within 50m of a spring/well/borehole

For full details and information, please visit: [www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution](http://www.gov.uk/guidance/rules-for-farmers-and-land-managers-to-prevent-water-pollution).

## AHDB Beef and Lamb Nerys Wright

- Better Returns Programme contains all of the technical information for producers from AHDB. This aims to improve technical efficiency and promote best practice.
- Current research and development activity for livestock includes: animal health and welfare, animal nutrition, climate change, genetic selection, meat eating quality and safety, systems and cost of production.
- Research project with ADAS currently looking at sustainable beef systems on arable units
- GrassCheckGB publishes growth and quality data weekly throughout the growing season
- Strategic Farms programme exists for the sector working with farms across the country.
- Consumer and market activity is ongoing in this sector.
- Nerys is happy to talk to discussion groups and NFU groups with more information about AHDB work – [nerys.wright@ahdb.org.uk](mailto:nerys.wright@ahdb.org.uk).

### Further information

- [AHDB Beef and Lamb](#)
- [Livestock and the arable rotation](#)
- [CPM Article: Beef up the rotation \(October 2019\)](#)

## AHDB resources

- Understand your business costs with AHDB's benchmarking tool Farmbench at [ahdb.org.uk/farmbench](http://ahdb.org.uk/farmbench)
- Monitoring tools are available at [ahdb.org.uk/tools](http://ahdb.org.uk/tools)
- Sign up to market information and research newsletters at [ahdb.org.uk/keeping-in-touch](http://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](http://ahdb.org.uk/farm-excellence)
- All AHDB events can be found at [ahdb.org.uk/events](http://ahdb.org.uk/events)
- For guidance on how Brexit will impact your business, see [ahdb.org.uk/brexit](http://ahdb.org.uk/brexit)

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