



**PROJECT:** Managing the change; sucklers to dairy beef – Assessing the value of slurry and fertiliser

**Key take home messages:**

- The plot with fertiliser applied showed that fertiliser was responsible for the highest grass growth at 4,286 kgDM/ha.
- Applying fertiliser ensured an additional 1.7t/ha more dry matter (DM) was grown in comparison to the control plot which hadn't received any treatment.
- Slurry applied with a trailing shoe realised grass growth of 4,043 kgDM/ha, a difference of 1,438kgDM/ha compared to the control plot.

**The problem:**

In previous years, Cefnllan ran a traditional sucker herd, but Neil wanted to produce more kilogrammes of beef per hectare on a low-cost system from grass and maximise the value of grass in order to reduce feed costs. In addition to this, the farm needed to make more use of the newer grass leys. Neil transitioned from a suckler herd to a dairy beef system with an emphasis on rotational grazing for maximum grass utilisation. With the increase in the price of fertiliser during the past few years, the aim was to increase output from on-farm resources, which included the slurry from the cattle enterprise.

**Purpose of work:**

1. The aim of this project was to investigate and compare different methods of slurry application and to compare grass growth with both slurry and fertiliser.

**What we did:**

The field which is approximately 4 acres had been soil sampled and was split into 8 plots (approximately 38 meters in width and half the field in length) as seen in figure 1.

38m	Fertiliser	Fertiliser - aerated
	Control	Control - aerated
	Slurry - splash plate	Slurry - splash plate - aerated
	Slurry - trailing shoe	Slurry - trailing shoe - aerated

Figure 1. Plot allocation within the project field at Cefnllan.

The slurry pit had been stirred and samples of the slurry from the pit were taken at the start of March 2022 to give an analytical value of the slurry that was in the pit at the time in order to match up with the fertiliser to be spread. A sample of the slurry was also taken on the day it was spread after stirring. The slurry was applied with a major slurry tanker at a rate of 3,000 gallons per acre, with a trailing shoe and splash plate. The fertiliser used was Yara Mila Actyva S (16:15:15) at a rate of 100kg per acre. Half of the field was aerated using an aerator. The control plot received no fertiliser or slurry. The grass on the field was measured on the day of application and was then measured weekly. A cut and weigh method was completed on the day the field was cut for silage with the silage being cut five and a half weeks after application of slurry/fertiliser.

**Outcomes:**

It was decided to measure the plots as four plots, and to see if there was any visual difference between the aerated and non-aerated. No visual differences were seen. The fertiliser used matched as closely as possible to the two samples of slurry taken from the slurry pit.

The grass measurements with the plate meter can be seen in figure 2. On the day of application on 19 April 2022, the grass measurement was 2,090kgDM/ha. It didn't rain for the first two weeks after application, with the slurry still visible on the grass in the splash plate plot for the first two weeks. The farm did receive some rain, with Neil's weather station showing that the farm had received 22.6mm of rain for the first half of May.



**LOCATION:**  
Llangammarch Wells



**FARM:**

Sector: Red Meat

Stock numbers: Growing and finishing 150 cattle annually and 2,000 ewes

Farm size (ha): 105ha

Woodland (ha): 5ha

Crops & ha grown: 30ha roots and 20ha barley

Land management schemes: Glastir

Calving pattern/Lambing months:

Lambing February to April

Grazing system: Rotational grazing

Diversification & innovation:

Slats shed for cattle, Use of Agrinet

(grass management software),

Use of Farmax (decision support

software), Weather station

**FARM OBJECTIVES**

1

Increase annual grass yield by 33%

2

Increase net production (kg of beef produced per hectare) by 50%

3

Increase annual grass utilisation by 38%

4

Increase liveweight gain to 1kg/day at grass



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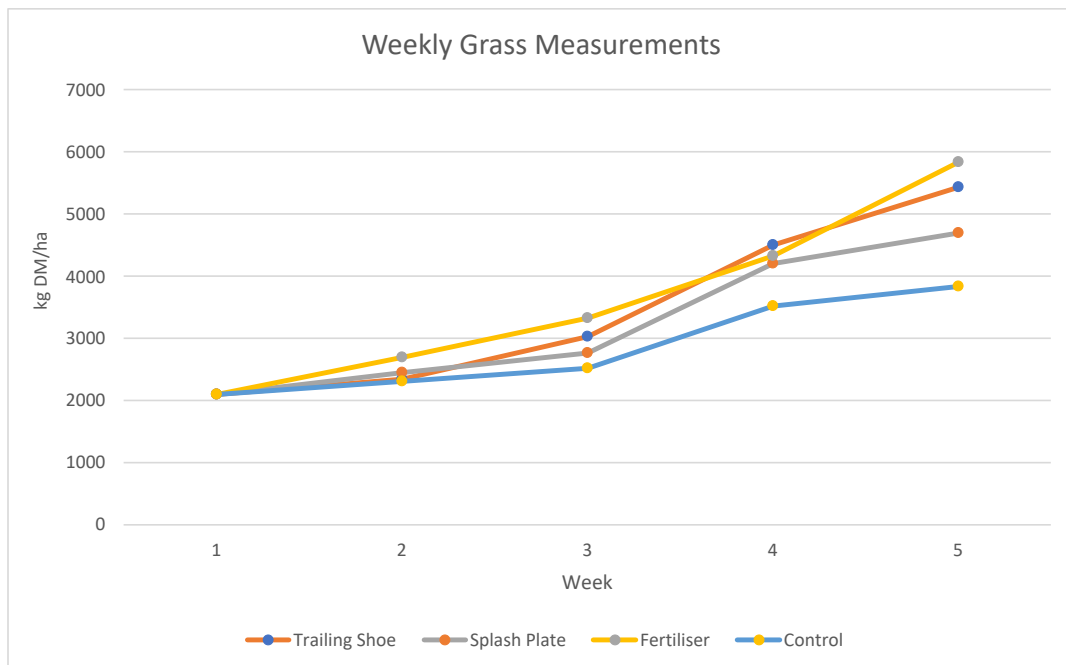


Figure 2. Weekly grass measurements of the different plots.

A cut and weigh method was completed on the plots on the day of cutting, with a huge difference seen between the control and fertiliser, and control and trailing shoe. As seen in figure 2, the greatest grass growth was seen in the fertiliser plot. It was identified that the grass in the trailing shoe plot was consistently thicker than the splash plate plot. The fertiliser showed 4,286kgDM/ha giving an extra 1.7t/ha more DM compared to the control plot and the trailing shoe showing 4,043kgDM/ha, a difference of 1,438kgDM/ha compared to the control plot. With the trailing shoe applying the slurry directly on the soil, this factor could have helped with grass growth, especially in the dry conditions seen during 2022.

Many factors need to be considered and a few of these include cost, availability, weather, method of application and soil health.

**Research into practice /10 how to steps for your farm:**

1. Understand the value of slurry/FYM to your farm enterprise.
2. Ensure slurry samples are taken and analysed on an annual basis.
3. Consider what method of slurry application suits your land best.