



PROJECT: Increasing utilisation from grazed grass and milk from forage on an all-year-round (AYR) dairy system

Key take home messages:

- The difference between 60% utilisation and 85% of the average tonnage grown on a similar sized unit to Erw Fawr (54ha) (10.9tDM/ha) is 2.71 tonnes/ha. This equates to a potential £9,244 worth of grazed grass that could be utilised based on the whole grazing platform
- Combining increased utilisation and growth could potentially equate financially to £27,117.45 a year.

The problem:

One key aspect to improve at Erw Fawr was the total yield from forage and grazed grass from their 250-strong all-year-round calving (AYR) Holstein herd. In the past, Ceredig has run two groups of cows, split into high and low yielders around an established paddock system. However, buffer feeding restricted grass intakes and often left higher residuals than the desired 1,500kgDM/ha. There is an opportunity to improve the assessment, interpretation and utilisation of the grass available.

Purpose of work:

1. Increase yield from homegrown forage from 1,700 litres at start of the project in 2019 to 3,000 litres by the end of the project.
2. Increase utilisation of grazed grass

What we did:

The focus of the project during the autumn of 2019 was to map the infrastructure and input the grazing platform on AgriNet grass management software. A platometer was used by farm staff up to the end of November 2019 to ensure the last round of grazing by the low yielders allowed for a spring wedge ready to turn out again early in March 2020. High yielding cows up to 150 days in-milk were housed all year round, ensuring valuable and quality grass silage and maize to be utilised efficiently into milk. Likewise, only quality grazing and concentrate in the parlour was offered to cows scanned in-calf from March until November. The objective was to increase yield from grazed grass through relatively easy practical tweaks in management, grazing behaviour and grass measurement.

Outcomes:

One of the main aims of the project at Erw Fawr was to increase the utilisation of grazed grass, and by doing so, reducing concentrate costs and reliance on silage. Many top grazing operators achieve over 90% utilisation whilst some set-stocked units would achieve 50%, regardless of the amount of grass grown.

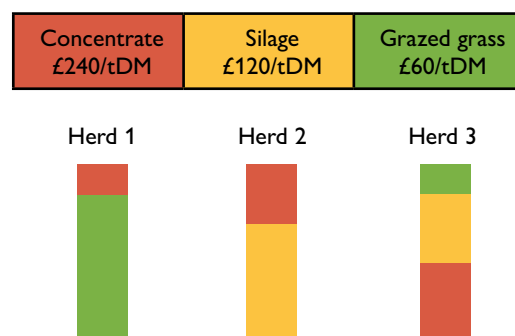


Figure 1. The cost ratio of concentrate, silage and grazed grass usually follows a 3:2:1 ratio in terms of £/tDM.

Herd 1: The cows' ration is based on grazed grass and topped up in the parlour with concentrate.

Herd 2: The cows' ration is based on high-quality silage and topped up with concentrate.

Herd 3: The cows' ration is based on concentrate and silage, with some grazing in the summer months.

Using the low yielders at Erw Fawr as an example, the ration has been based on a situation similar to Herd 1 where grazed grass makes up the main portion of the ration at 17kgDM/cow/day with concentrate fed at 5kgDM/cow/day. This not only keeps the cost of feeding based on a £kgDM/cow low, it also promotes better grazing behaviour from the cow and better grass regrowth. The example shown in Herd 3 where the Total Mixed Ration (TMR) has a larger proportion of concentrate and silage compared to grazed grass, won't facilitate good grazing behaviour, effective utilisation or grass regrowth.

A combination of good weather and good quality of first round grazing led to a group average of 30 litres and 2.3kg of milk solids per day, based on 6kgDM of concentrate fed



LOCATION:
Holyhead



FARM:

Sector: Dairy

Stock numbers & breed: 300 pedigree Holsteins plus 250 followers

Farm size (ha): 192ha

Crops & ha grown:

Homegrown maize and wholecrop

Calving pattern/Lambing months:
All-year-round calving system

Grazing system: Paddock grazing

Diversification & innovation:

- Using LoRaWAN sensors to improve production efficiency – specifically targeting slurry and fertiliser application timings to maximise silage quality.
- Using AgriNet grass management software to increase grass utilisation.

FARM OBJECTIVES

1

Using technology to measure and monitor

2

To improve dry cow transition



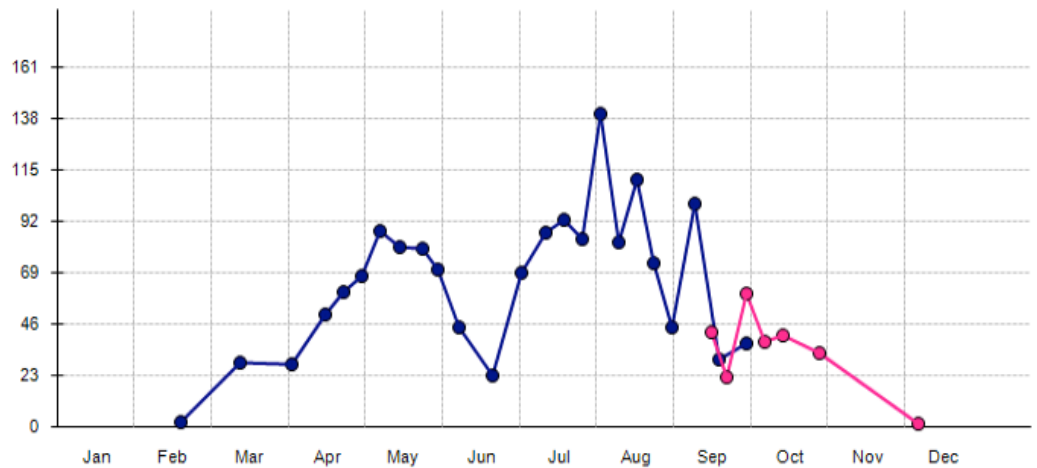
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during two milkings in the parlour, along with 15kgDM of grass. As the weather warmed up and the cows' grazing behaviour improves, Ceredig aimed to reduce the concentrate for the low yielding group, further increasing the proportion of milk from grazed grass and reduce overall concentrate costs. By August 2020, Erw Fawr was achieving a notable 8.8 tonnes per hectare of dry matter (DM).

During 2020, individual paddock performance varied significantly. Some paddocks achieved growth of over 16tDM/ha and poorer performing paddocks produced under 10tDM/ha. Assuming the value of a tonne of dry matter of grazed grass is £60/tonne, the growth difference would be the equivalent of £360/ha.

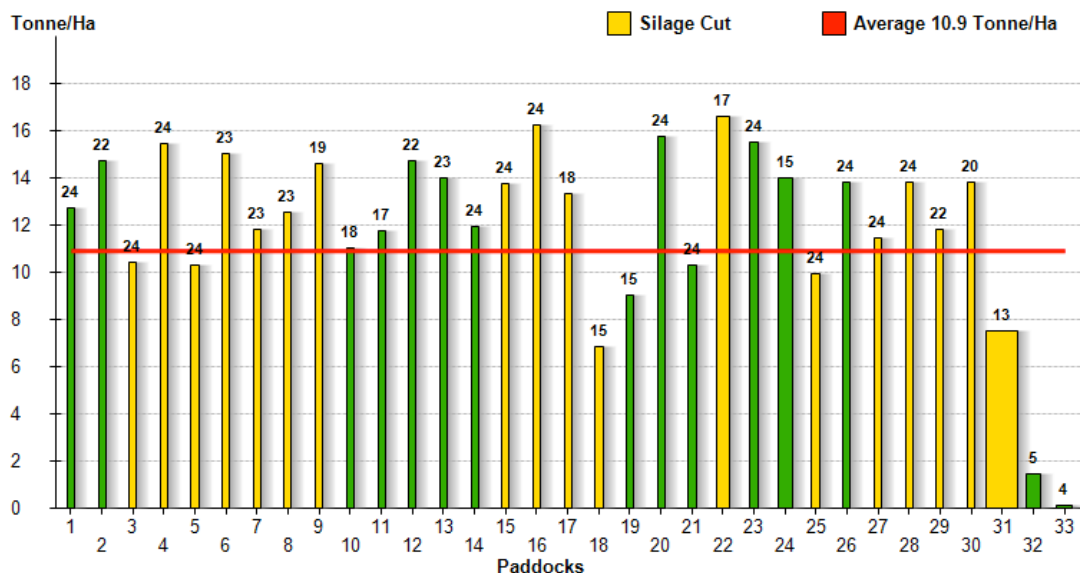
Figure 2. Daily grass growth kgDM/ha/day from September 2019 (pink) to October 2020 (blue)

Grass Growth in kgDM/Ha/day



Equally important is the effective utilisation of this additional grown grass. For example, the difference between 60% utilisation and 85% of the average tonnage grown on a similar sized unit to Erw Fawr (54ha) (10.9tDM/ha) is 2.71 tonnes/ha. This equates to a potential £9,244 worth of grazed grass that could be utilised based on the whole grazing platform. Combining increased utilisation and growth could potentially equate financially to £27,117.45 a year.

Figure 3. Average tonnes of grass DM grown and individual paddock performance (18/02/2020 -28/09/2020)



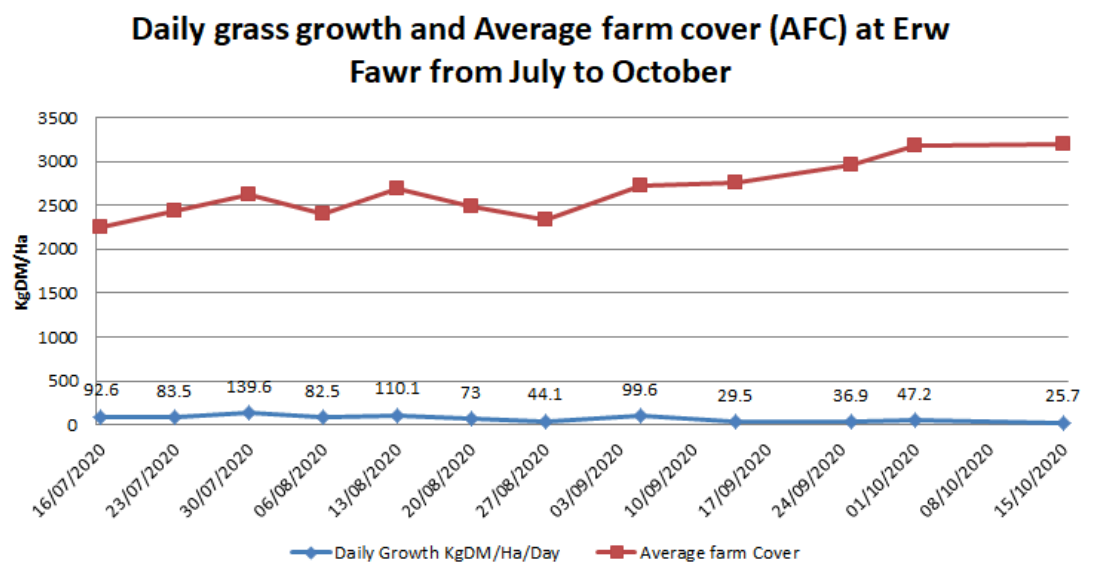


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After a dry May and June, excellent grass growth in July and August meant surplus grass was available for silage making. Paddocks were able to be taken out of the grazing rotation and made into high-quality round bales. Fields grazed were immediately fertilised and a dribble bar was used to place slurry directly on to the soil, minimising ammonia losses and allowing for a quick grazing turnaround. Sustainable soil management practices post grazing at Erw Fawr has allowed the annual farm cover (AFC) to be maintained and indeed increase through the month of October.

Growth rates in September and October on occasions exceeded what is expected at the time of year; however the impact of poor, wet weather can be seen from the larger variability in daily growth between the first and second week of September (99.6kgDM down to 29.5kgDM). With an AFC of over 3,000kgDM/ha at the end of October, it means that surplus grass is available over November and well into December to graze youngstock, without the need for housing.

Figure 4. Growth and AFC during the second half of the grazing season, approaching the last round of grazing.



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

1. Start by mapping the infrastructure and inputting the grazing platform on to suitable software.
2. Measure grass regularly in order to plan ahead for grazing and silage allocation.
3. Keep a close eye on costs – aim to reduce costs where possible by making the most out of grass.