



Demonstration Network

Cefngwilgy Fawr: Improving home grown feed value from clovers

The aim of this project is to utilise red and white clover to improve the feed value of the forage as well as reduce the amount of artificial fertilisers used at Cefngwilgy Fawr:

Key performance indicators were set at the beginning of the project:

- Reduce fertiliser applications for each silage crop by 40kgN/ha
- Increase clover content in the fields from <5% to >20%
- Reduce the amount of purchased concentrates by 10%
- Increase lambs finished by 1 September by 10%

Two fields were reseeded in May 2020. One used a mix containing white clover and the other field, red clover. Establishment was slow due to the very dry conditions and this was still evident in early August.

The thistles were weed wiped and by early September the growth rates were looking much stronger. (fig1)

Measurements in August showed average growth rates of 67kgDM/ha/day on the red clover field and 61kgDM/ha/day on the white clover. This contrasts with only 34kgDM/ha/day on the standard permanent pasture. Advice was given to graze the white clover field immediately to maintain quality with at least 200 lambs. The red clover field also needed grazing. Both fields have been grazed until November and then rested over winter and a grazing plan has been established to increase the stocking rate and ensure better utilisation. (fig2)

Figure 1. Establishment of reseed.



Figure 2. A cage in the white clover field used to exclude stock so growth rates can be measured.



Rhiwaedog: Improving efficiency and productivity from grass

The objective of the project at Rhiwaedog is to improve the productivity and efficiency from grass.

Key performance indicators set at the beginning of the project:

- Reduce amount of purchased concentrates by a minimum of 40%
- Increase grass yields by a minimum of 15%
- Increase clover content in the sward by 20%

A trial was conducted during spring 2020 focusing on the benefits of using standard versus protected urea. The outcome of this trial concluded that using protected urea this spring led to an estimated 30% increased grass growth (2,100kgDM/ha from standard urea versus 2,800kgDM/ha from protected urea).

An additional 700kgDM per hectare equates to a financial worth of £42/ha (based on an average grass value of £60/tDM).

Another element of the project compared grass silage yields from plots treated with ammonium nitrate versus protected urea. Grass yield from the plot treated with protected urea was 4,120kgDM/ha, whilst yield from the plot treated with ammonium nitrate was 5,050kgDM/ha. It was determined that using protected urea on silage crops reduced grass growth by around 20%, which was most likely due to prolonged dry conditions breaking down the protective layer on the protected urea.

A multispecies ley was also established in July and germination was assessed in early August. After an initial short graze in August to encourage tillering and control the annual weeds, the first full graze began in mid-September. The lambs are being block grazed and weights monitored. Herbage samples have also been taken to assess quality and mineral levels. A second multispecies ley (more suited to cutting) was established in early September and assessed for germination success.

Figure 3. Multispecies ley at Rhiwaedog prior to grazing (September 2020)



Henbant: Establishing an agroforestry and regenerative agriculture scheme

This project investigated introducing greater biodiversity and more layers of production to a small farm with the aim of using agroecological models to improve land use.

Trees were incorporated into the system with the purpose of providing fruit, grazing and shelter. Pasture land was divided into convenient paddocks with tree rows between the paddocks to utilise space more efficiently. A no-dig market garden was established with considerable planning to ensure continuity of crops for the box scheme.

These are long term investments and while it is anticipated juicing from the apples could bring a profit of £7,500 per year, the farm is still some way off achieving this.

The total annual costs to run the market garden are estimated at £14,110. Based on supplying 40 boxes per week for 25 weeks of the year it is estimated that the market garden could provide a revenue of £14,400. There is significant potential to expand the enterprise.

The initial conclusions are that this type of integrated system offers opportunities for increased income, employment, diversity, social engagement and biodiversity. With diversity comes complexity and management challenges which need to be addressed methodically.



Figure 4. Tree lanes consisting of apples and currants planted to divide up the paddocks.

22
APPROVED LAND
THEMED PROJECTS

working
with

65
FARMERS AND
FORESTERS

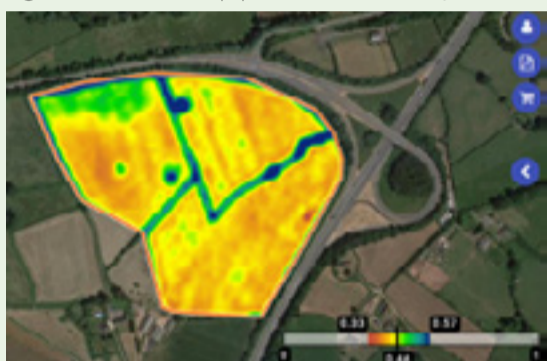


Novel methods for measuring grass growth

Measuring grass growth with rising plate meters is time consuming but important to understand forage availability. However, there are novel methods becoming available for measuring grass growth that is quicker and far easier for the farmer. This project is investigating whether spectral reflectance of grass crops measured by satellite or drone imagery could provide accurate measures of growth in the field. Three farms in south east Wales have chosen different agronomic practices to test whether any differences in grass growth is measured as accurately by the drone and satellite as it is with the plate meter.

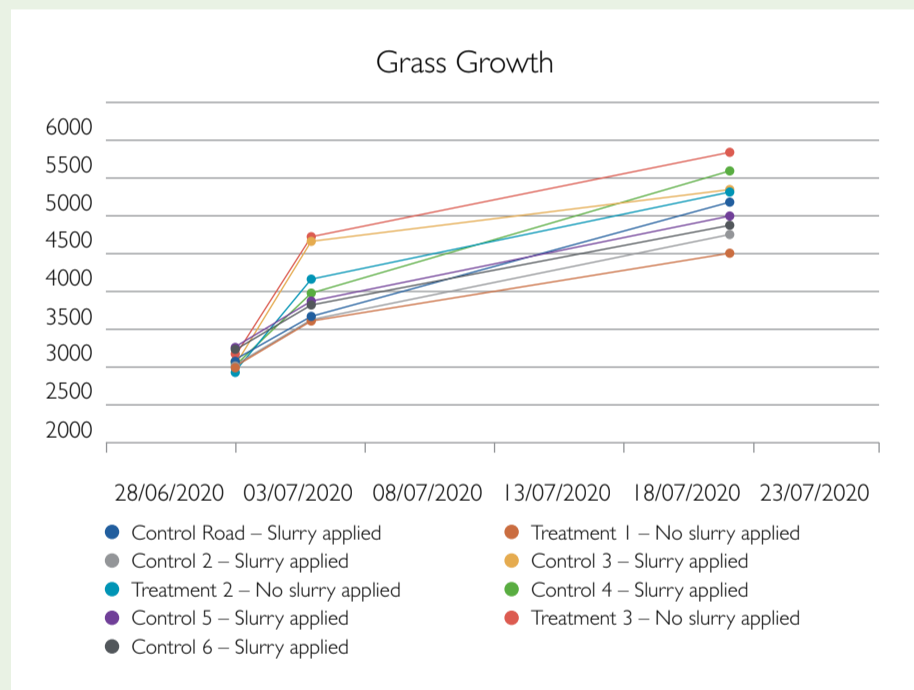
Russell Morgan at Graig Olway Farm, Usk, is taking part in the project and he applied slurry to his silage fields as part of his fertiliser plan.

Figure 5. Satellite map photo taken on 25 June



These satellite maps can pick up on the photosynthetic capability of the plants and small changes correspond to changes in biomass. This photo was taken on the 25 June and coincided with first cut silage.

Figure 6. Grass growth at Graig Olway farm field points



The project also showed that the satellite images were more accurate in detecting differences between the plots than the plate meter was. This is most likely due to the plate meter only relying on five measurements compared to many thousands by the satellite. Further work to be completed next season will look at how the information can be shared with farmers in a meaningful way.



Figure 7 (right). Treatments on Graig Olway field points.

Knowledge Exchange Hub

- BIOCHAR FOR CLIMATE CHANGE: IS IT A VIABLE STRATEGY?
- ORGANIC ARABLE FARMING AND CLIMATE IMPACTS
- LAND MANAGEMENT AND GRAZING FOR UPLAND FARMS: INCORPORATING MORE ENVIRONMENTAL SUSTAINABILITY



55
WEBINARS HELD



1,967
VIEWERS

08/09/2020: Multispecies leys – just the latest trend...or a real opportunity to boost forage quality?

Farming Connect was joined by Chris Duller, a soil and grassland management specialist, to discuss what exactly are multispecies leys, what are the potential benefits and possible problems of using multi-species leys, and also to discuss the establishment and management of multispecies leys. This webinar provided businesses with information needed to decide whether establishing multispecies leys was a sensible option on their farm.

53
BUSINESSES
ATTENDED THIS
WEBINAR

Advisory Service

Number of business who have received support through the Land Categories of the Advisory Service during this period:



47 individuals received one-to-one support through the Land Categories of the Advisory Service during this period.



51 groups made of 179 individuals received support through the Land Categories of the Advisory Service during this period.

Feedback from businesses on delivery of this Advisory service:

“Advisor’s knowledge of subject was fantastic and was happy to spend time explaining soil/sward quality etc. All round excellent service. Enjoyed the experience immensely, will be concentrating on lime application and the use of farmyard manure fertiliser in particular.”

“The recommendations and the advice given will benefit the farm going forward and keeping to regulation standards.”

E-learning

Some of the e-learning courses completed within this period include:

GRAZING SYSTEMS	IMPROVING SOIL HEALTH
WEED CONTROL	PESTICIDE SAFETY

Click [here](#) to visit the website.

Training Courses

Course Name	Number of individuals trained during this period
Rough Terrain Telescopic Lift Truck	25
Chainsaw Maintenance & Cross-cutting	13
Sit Astride ATV's including Loads & Trailed Equipment	9
Chainsaw Maintenance, Cross-cutting, Felling & Processing Trees up to 380mm	4
Sit Astride Conventional Steered	4

