

Alternative forage systems for marginal land

Are alternative seed mixtures more suited to the high rainfall conditions, poor soil quality and low input systems?

Multi species (MS) mix		
Variety	Variety Type	Kg/Acre
AberPaddock	Meadow Fescue	1
Presto	Timothy	1
AberZeus	PRG Int dip	2
AberLee	PRG late dip	4
AberGain	PRG late tet	2
AberPasture	White Clover Blend	1
AberChianti	Red Clover	0.5
AberClaret	Red Clover	0.5
AberNiche	Festulolium	2
Tonic	Plantain	0.6
Puna II	Perennial Chicory	0.4

Conventional ryegrass/white clover mix		
Variety	Variety Type	Kg/Acre
AberChoice	PRG late dip	3
AberWolf	PRG int dip	2
AberGain	PRG late tet	3
AberZeus	PRG int dip	3
AberBite	PRG late tet	2
Presto	Timothy	1
AberPasture	Medium white clover	1

The issue: Welsh landscapes vary significantly in soil quality and fertility. Understanding the effectiveness of different sward compositions will allow a more efficient, targeted approach to sowing grass on marginal land.

The project: At the end of summer 2018 a 4-5 ha field on each farm was split into two and reseeded with 50% multi species ley and 50% ryegrass and white clover ley (control). The project will assess the following:

- establishment success
- forage production and quality
- stock performance
- ley persistence
- invertebrate populations

The project is ongoing until December 2020.

Trial sites: Three upland farms near Bridgend – Gellifeddgaer, Gilfach and Bryn Chwith. The fields in the trial are between 100m – 260m in altitude.

Key findings to date (February to November 2019)

- Total dry matter recorded under cages – shows greater output from the multispecies ley at two of the farms. But as a project average, the increase in dry matter production with multispecies (MS) is only 4%. All sites grew more forage in the spring and autumn on the multispecies leys.

Dry matter produced (kgDM/ha)			
	Ryegrass/Clover mix	Multi species mix	Percentage difference
Gellifeddgaer	8807	11160	30%
Gilfach	9152	9283	8%
Brynchwith	8412	6859	-23%

NB: Poorer and wetter soil conditions at Brynchwith and less attention to grazing height is predicted to be the reasons behind the lower MS ley DM production. A silage cut was taken from both plots at Gilfach in June, and this may be the reason behind a lower DM production compared to Gellifeddgaer.

- Animal performance on the multispecies ley was as good, and sometimes better than the control. Gilfach recorded growth rates of **119g/day** on the control ley vs **125g/day** on the multi species ley over a four week period. Gellifeddgaer recorded a greater difference of **188g/day** on the control ley and **212g/day** on the multi species ley (13% improvement).
- The farmers reported increasing performance the longer the lambs remained on the multispecies ley – suggesting there may be an ‘acclimatisation period.’
- The swards will continue to be monitored in 2020 to assess herbage production and quality as well as animal performance.



“Plantain has been the most dominant variety in the MS ley with chicory there in small numbers and red clover just hasn’t established well. By experimenting with different mixtures farmers will soon find out what works and what doesn’t on their farms. Hopefully this project will increase our knowledge of MS leys and highlight that they should be considered as an option when re-seeding.”

Chris Duller, Soil and grassland specialist