Farm facts

Maesllwyni totals 190ha of which 130ha is permanent pasture. Soils are light loam over shale and the farm extends from 43-300m asl with rainfall at round 1000mm. The 750 March lambing Texel X Welsh ewes lamb to a Charollais at 150%. 70% of lambs are finished by August, with the rest by December, grazing on aftermaths. The aim is to finish the calves from 70 suckler cows, with a Hereford bull recently replacing a Limousin. A key objective of the farm is to finish all stock from forage alone in most years and to design a system that minimises labour. Project activities focused on multi species leys for grazing and silage.

Benefits of diverse multi-species (MS) leys

- Includes vigorous short term and more persistent long term high protein forage species.
- A Defra arable legume study highlighted the value of multi species leys as yielding higher than monocultures, and benefitting the following crop through nutrients and weed control.
- An EU ‘Multisward’ project found multi-species leys promoted higher forage intake across all livestock and better animal performance in a range of farm systems.

Multi-species at Maesllwyni

To maximise the yield potential from the limited ploughable land at Maesllwyni, the timing and establishment method of a protein rich multi species ley was explored as part of the sustainable forage protein project. The multi-species seed mix includes Ryegrass, Timothy, Red and White Clovers, Birdsfoot Trefoil and Vetch.

During the project rations based on silage at 11 ME and 19% CP enabled savings of up to £2.50 per ewe of expensive bought-in organic concentrates before lambing.
Silage analyses/establishment costs

The multi species ley was successfully established each year with similar plant counts within the ley regardless of method. The second cut silage in these leys contained significant amounts of red clover. Weed control using a cover crop is also particularly important in an organic system.

### Establishment methods

1. **Sown** at 35kg/ha on 26th July 2012 with a ‘Vicon’ spreader after ploughing, levelling and rolling.
2. **Undersown** at 35kg/ha to naked oats *Lennon* at 98kg/ha on 20 April 2013 after ploughing and cultivation.
3. **Sown** at 35kg/ha on 6 July 2013 under hybrid brassica *Swift*.
4. **Undersown** with barley/vetches or naked oats on 3 May 2014 at higher altitude than in 2013

### Seeds mixture

- 5 kg (o) Diploid Intermediate Perennial Ryegrass (AberDart)
- 3 kg (o) Tetraploid Late Perennial Ryegrass (AberBite)
- 2.4 kg Diploid Late Perennial Ryegrass (AberAvon)
- 2.0 kg Diploid Intermediate Ryegrass (AberMagic)
- 1 kg Timothy (Presto)
- 0.25 kg Crimson clover
- 0.5 kg Birdsfoot trefoil (Leo)
- 4 kg Vetch (Slovena)
- 1.1 kg Red clover (Aber Claret)
- 1.0 kg White Clover (AberPasture, AberAce, AberConcorde, AberHerald).

(o)= organic seed at 65% of the mixture (70% 2014)

### Winter grazing ewes

The value of winter grazing for ewes was explored as it is an opportunity to save bought in feed costs. Ewes were grazed at 300 m above sea level before coming down to lamb in March. The grassland during this autumn–winter period reached 11.5 ME, 24% CP and had a D value of 73 with a relative feed value of £163/tDM. These figures were reflected in the excellent ewe condition at lambing.

### Protein forage crops at Maesllwyni

<table>
<thead>
<tr>
<th>Crop lifetime</th>
<th>Establishment costs £/ha</th>
<th>Average yield t DM/ha</th>
<th>Average CP %</th>
<th>Average ME MJ/kg DM</th>
<th>Relative Feed Value p/kg DM</th>
<th>Average cost p/kg DM</th>
<th>Net forage value £/ha</th>
<th>Extra protein as 18% CP feed 25kg bags £/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>£/ha</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>632</td>
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<tr>
<td>MS reseed</td>
<td>604</td>
<td>6.6</td>
<td>19.0</td>
<td>18.6</td>
<td>13.5</td>
<td>6.1</td>
<td><strong>632</strong></td>
<td><strong>189</strong></td>
</tr>
<tr>
<td>MS US Oats &amp; Vetch</td>
<td>637</td>
<td>11.1</td>
<td>19.1</td>
<td>18.6</td>
<td>13.4</td>
<td>4.7</td>
<td>965</td>
<td>299</td>
</tr>
<tr>
<td>MS ley US Barley &amp; Vetch</td>
<td>637</td>
<td>9.8</td>
<td>18.6</td>
<td>18.6</td>
<td>13.4</td>
<td>5.4</td>
<td>786</td>
<td>231</td>
</tr>
<tr>
<td>MS US Forage Rape</td>
<td>614</td>
<td>9.7</td>
<td>19.2</td>
<td>19.2</td>
<td>13.7</td>
<td>5.4</td>
<td>810</td>
<td>240</td>
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<tr>
<td>Long term organic pasture</td>
<td>639</td>
<td>6.0</td>
<td>13.0</td>
<td>10.0</td>
<td>10.9</td>
<td>9.3</td>
<td><strong>97</strong></td>
<td><strong>-</strong></td>
</tr>
</tbody>
</table>

* AHDB Dairy RFV - barley @ £135/t, rapeseed meal @ £216/t

**PROS**

- 1st cut silage earlier
- Bulky first cut
- High yield and quality of 2nd cut
- Aftermath available to graze
- Weed control during establishment

**CONS**

- Low yield of 1st cut if old ley.
- No reseed silage in 1st year
- Cutting date later
- Risk of poor establishment if cover crop too competitive
- Low yield of 1st cut if old ley
- Risk of poor establishment of ley if brassica too aggressive