**Suckler Beef**

**Clare Leggott, Rectory Farm, Lincoln**

**Farm facts**

Rectory Farm totals 339ha of which 129ha is long term pasture including short term locally rented grazing and 38.3ha is temporary grassland in the arable rotation. The grade 2 land is at 21 metres asl with average rainfall of 580mm and heavy soils which are difficult to cultivate in the spring. The winter sown arable crops in the rotation are established by ploughing due to the increasing challenge of black grass. The 102 continental crossed cows calve between October and June to Hereford bulls to extend the finishing period of cattle throughout the year. The aim is to finish the stock between 18-24 months with two grazing seasons. A key objective of the farm is to link the arable and livestock enterprises. Project activities focused on short-term red clover and vetch leys for silage as part of an arable rotation.

**Red clover at Rectory**

The arable rotation includes a one year short term ryegrass ley, so there was an opportunity to improve the level of crude protein in the forage in the arable ley break by adding red clover to the ryegrass in the seeds mixture. Inspired by the other project farmers, vetch was added to determine whether it could make a practical addition to the mixture. The forage forms part of the TMR for growing and finishing cattle so an improvement in protein in the forage can reduce bought in feed costs. On the heavier land a longer term grass break is sown. Encouraged by the potential of these forage legumes in the one year ley, red clover seed has now been added to a three year ley break in 2014.

**Seeds mixture for the short term one year ley**

- 3kg red clover (AberClaret)
- 4kg hybrid ryegrass (AberEcho)
- 5kg Hybrid ryegrass (AberNiche)

+/- 5kg Vetch (Slovena)

**Establishment tips**

- Soil pH >6, P & K at index 2
- Good firm seed bed
- Shallow drill or broadcast
- Roll to consolidate
- Sow before the end of September

**Tips for baling red clover**

- Cut at early bud stage
- Ensile using an inoculant
- Use rubber roller conditioner and wilt to above 30%DM
- Minimise handling of the crop to reduce losses
- Use 6 layers of wrap and wrap at storage site

**Vetch: common vetch *Vicia Sativa***

CP 16-22%. Deep roots condition soil.

Aggressive establishment.
Claire said, “vetch was very quick to establish even in my heavier soils”.

<table>
<thead>
<tr>
<th>Crop lifetime</th>
<th>1 yr red clover ley</th>
<th>1 yr red clover ley</th>
<th>1 yr grass ley</th>
<th>3 yr red clover ley</th>
<th>Old silage ley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment costs</td>
<td>£/ha</td>
<td>£/ha</td>
<td>£/ha</td>
<td>£/ha</td>
<td>£/ha</td>
</tr>
<tr>
<td>Average yield</td>
<td>t DM/ha</td>
<td>8.6</td>
<td>9.7</td>
<td>10.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Average CP</td>
<td>%</td>
<td>19.6</td>
<td>16.1</td>
<td>12.5</td>
<td>16.1</td>
</tr>
<tr>
<td>Average ME</td>
<td>MJ/kg DM</td>
<td>10.3</td>
<td>10.2</td>
<td>9.2</td>
<td>10.2</td>
</tr>
<tr>
<td>Relative Feed Value*</td>
<td>p/kg DM</td>
<td>13.3</td>
<td>12.0</td>
<td>10.2</td>
<td>13.1</td>
</tr>
<tr>
<td>Average cost</td>
<td>p/kg DM</td>
<td>6.8</td>
<td>5.8</td>
<td>7.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Net forage value</td>
<td>£/ha</td>
<td>474</td>
<td>578</td>
<td>299</td>
<td>817</td>
</tr>
<tr>
<td>Extra protein as 18% CP feed</td>
<td>25kg bags</td>
<td>171</td>
<td>144</td>
<td>76</td>
<td>157</td>
</tr>
</tbody>
</table>

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

Example rations based on the silage protein reduced costs for a 425kg steer growing at 0.9kg day

<table>
<thead>
<tr>
<th>Silage type</th>
<th>Average grass</th>
<th>Ryegrass</th>
<th>Red clover ley</th>
<th>Red clover &amp; vetch ley</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ration cost pence/hd/day</td>
<td>102p</td>
<td>85p</td>
<td>80p</td>
<td>76p</td>
</tr>
</tbody>
</table>

Growing the red clover in a three year ley highlighted the value of a longer ley break at rectory for the arable rotation as blackgrass is a key challenge to arable crops grown. Although hard to quantify, Clare felt that the combination of the deep roots of the red clover and vetches improve the soil structure and soil fertility was improved through nitrogen fixation.

Claire said, “I will be including clover in all my leys from now on”.

Red clover ley with hybrid ryegrass in spring before cutting for silage

Red clover plant with tap root and N fixing nodules

Vetch in the ley before cutting