



## BGS Nutrient Wise Demos Events 2011

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The first events held by the Nutrient Wise Demos, SWARM Hub initiative, project took place at the demo site in Crediton, Devon on June 21<sup>st</sup> and 22<sup>nd</sup>. This project aims to fill gaps in knowledge in an easy to understand and visible way on a range of grassland management issues aimed at increasing profitability through reduced nutrient waste. The project is run by the British Grassland Society and the event was hosted by David Munday on his 350 acre dairy farm. John Morgan from Creedy Associates was the main speaker and the aim of the sessions and demonstrations was exploring ways to improve grassland efficiency.



The first topic covered was using livestock manures on grassland. To optimise the use of manures, it is important to take account of the nutrient values of the material and crop nutrient requirements. In order to aid this process, attendees were issued with a Creedy Associates developed handbook on manure management planning. The importance of regular soil testing and laboratory analysis was stressed as this will enable a better understanding of the pH level and the amount of nutrients available for crop uptake from the soil. Testing slurry and FYM is also worthwhile to enable more accurate nutrient applications and ultimately savings on purchased fertiliser.



Comparing slurry application by injection and splash plate



In the field, two demonstrations were set up to compare the application of 4% dry matter cattle slurry to a grass / clover sward for second cut grass silage. Applications were made using a splash plate and a shallow injector at an application rate of 22m<sup>3</sup>/ha (2000 gal/acre). The importance of timing slurry applications to avoid herbage contamination was discussed as well as the effects on silage quality. The reduced rates of herbage contamination were one of the benefits of the injector machine as the machine parts the grass allowing the slurry to be placed directly on the soil. This method of applying slurry gives an increased fertiliser value as less N is

lost through volatilisation as well as reduced smell and a more even spread. However, there is the capital cost of purchasing the machine to consider, or the increased cost of employing a contractor. It is important to consider the potential savings in applied artificial fertiliser and weigh this up with the potential cost benefits of injecting the slurry.

Soil structure, its importance to crop production efficiency, and options for correction of compaction in an existing sward were also covered. John Morgan remarked that a spade was a very important tool for farmers and that digging holes to examine soil structure before carrying out any remediation was necessary. If compaction is found in soil it is important to note the depth, as different machines and options can be



used depending on the depth. Soil compaction in the topsoil can be remediated by ploughing; or if the field is remaining as grass, the use of a soil aerator may aid soil structure improvement over time. Deeper compaction can be ameliorated by lifting soil from below with a subsoiler or flat lift type machine. A subsoiler machine was demonstrated in the field, although the conditions were less than perfect due to two days of rain prior to the event. The importance of timing operations is critical; the aim being to subsoil when the top soil is moist and the subsoil is dry with the subsoiler set 2.5cm below the compacted layer.



A third demonstration aimed to show different methods of renewing a grass ley. Demo plots were set up in October 2010; one was ploughed and reseeded while the other was direct drilled. The costs for the two operations were discussed with ploughing and reseeded being more expensive than direct drilling, although ploughing can help alleviate structural problems.

The final demonstration aimed to show different methods of establishing white clover in an existing grass sward, and to compare the costs of each approach. Four methods of establishing clover were trialled. These were:

- 3 passes of a grass harrow and then broadcasting seed, with a 4<sup>th</sup> pass of the harrow;
- Drag harrowing the plot, then broadcasting seed;
- Mixing seed with slurry and spreading from the slurry tanker; and
- Direct drilling.

All plots were also rolled. It had not been a straight forward operation to establish the plots; however it was possible to view clover plants in each plot. Lively discussions ensued regarding the costs and benefits of the different methods and what the attendants had tried at home. Consensus from those that had successfully established the required percentage of clover was that it needed to be grazed hard in the early stages in order to not allow the grass plants to shade it out. This may be a method to try in future demonstration plots.

*Funding through the project allows the Nutrient Wise Demos Team to come and duplicate these methods, or try something new on individual farms that have engaged with the project to demonstrate the concept to other farms in the local area. Please contact Jessica Buss in the BGS office on 02476 696600 for more information.*

This project is funded by the Rural Development Programme for England (RDPE) and the European Agricultural Fund for European Development 2007-2013: Europe investing in rural areas

