

## ICT tools for Grazing Management

### Description of Work

#### ICT grazing technologies

Current research at Moorepark is focusing on the development of an ICT tool to capture data automatically from a 'rising plate meter' with GPS technology and mapping capabilities. There are 4 partners involved in the project, 3 research organisations in Ireland (Teagasc), France (Institute de l'Elevage) and Switzerland (Agroscope) and an SME in Ireland (TrueNorth Technologies, Co. Clare). The 'GrassHopper' is now developed and calibrated for measurement of grass height against the New Zealand plate meter, the *Jenquip*. The next stage of this work focused on prediction of grass dry matter yield (DMY) in a paddock using the grass height measurement. This was conducted over the grass growth season of 2015. The objective is to develop an equation to predict grass DMY for any given set of conditions across the parameters of season, variety, and DM content.

#### Paddock mapping and precise allocation of grass

A package to survey paddocks and display paddock maps with real-world coordinates in real time is also developed, so a specific paddock map may be displayed on the SMART phone. The grass height and/or yield data of that paddock may then interact with data such as grass DM, number of cows and grass DM to be allocated /cow. The resultant calculations will indicate the fence line position on the phone screen, which would provide the intended grass allocation for the cow herd.

#### Virtual fence technology

This technology provides the advantage of not requiring any physical fencing components to contain animals in a specific area. In place of fencing, GPS localisation, wireless networking and motion planning are combined to create an invisible fence line.

### International Context

The work associated with the Grasshopper is at the forefront of research in this area – and may be considered as leading.

The work on the VF may be lagging the work being conducted in Australia. The concept is being tried in Internationally and indications are that Teagasc work would be in parallel with some others.

### Opportunities

In the Teagasc work, more focus would be required on the animal behaviour element and it would benefit from working with another group and waiting to see the results of current work in Australia.