

Technology use in grazing management in Ireland



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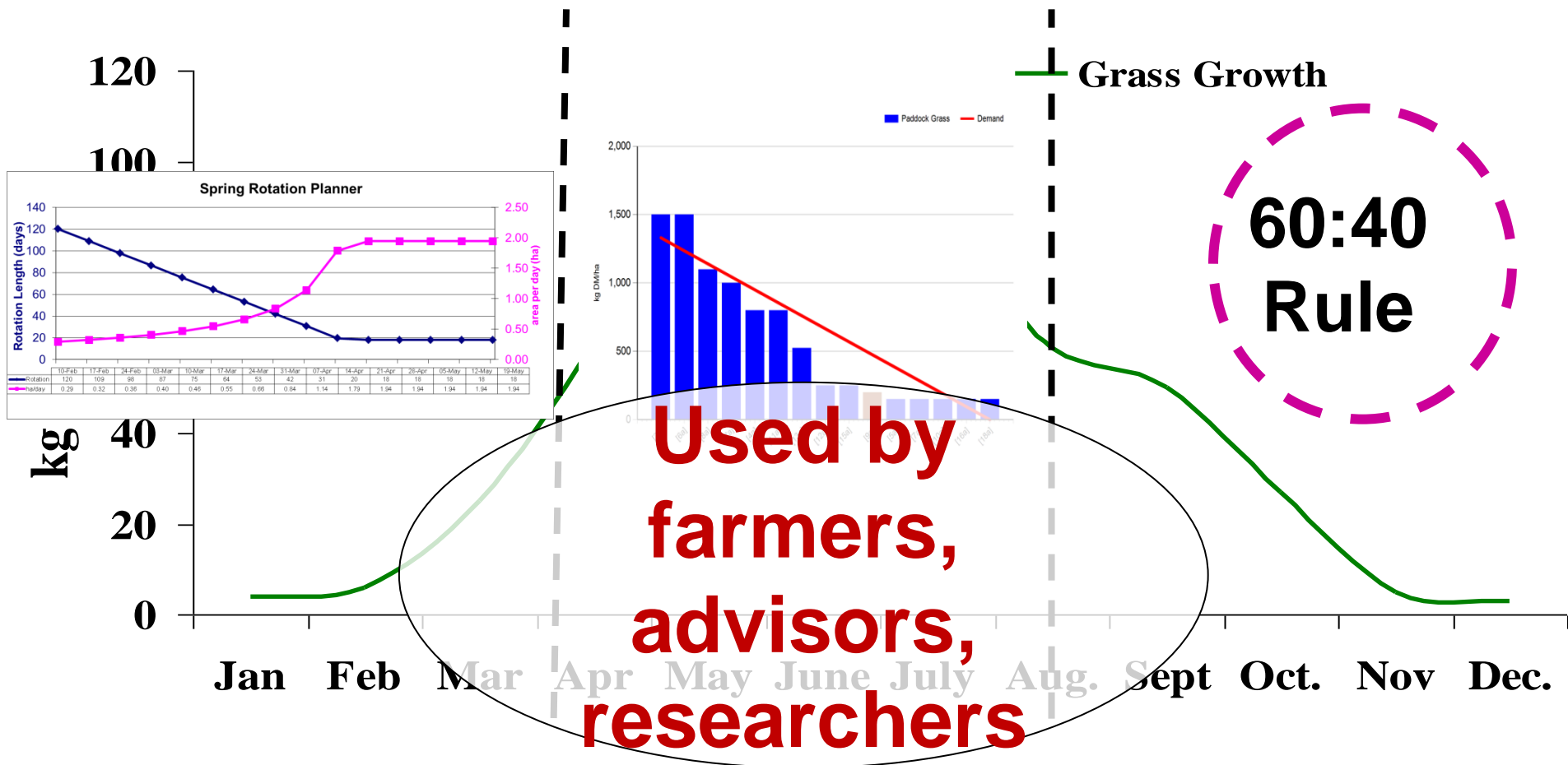
Introduction

- 90% of agricultural land in Ireland is in grassland
- Grazed grass is the cheapest feed for ruminant production systems in Ireland (milk and meat)
- Any increases in production must be from a grass based system
 - Costs
- Grazing management often perceived as complicated and uncertain – but the required skills can be learned and supported by technology
- Incorporating technology into grassland and grazing management can increase confidence around management and decision making

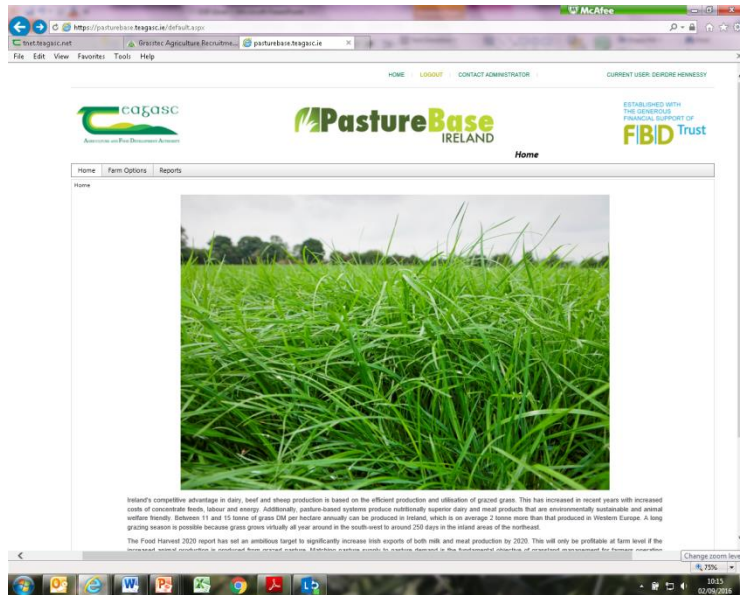
Technology

- Technology is increasingly important in agriculture and in dairy farming
- New technologies are continuously being developed and new grassland Decision Support Tools (DSTs) such as the Grasshopper (McSweeney *et al.*, 2014), cow sensors (Ipema *et al.*, 2014) and virtual fencing (McSweeney *et al.*, 2014)
- Will increase farmers' confidence when it comes to grazing management and herbage allocation

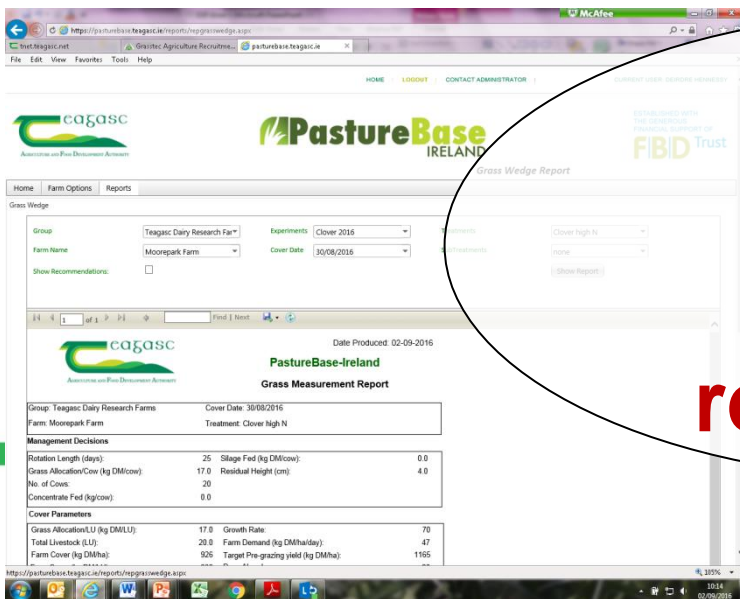
Tools for each season



PastureBase Ireland



- Web based grassland management decision support tool – front end
- Grassland data base – back end
- Data capture by farmer
- Core measurement is pre-grazing herbage mass



Provides farmers with information on farm cover per cow and per ha (grass available to farm), weekly grass growth, identifying surpluses and deficits

Used by farmers, advisors, researchers

Jenquip platemeter



- Rising platemeter – manual or electronic
- Measures sward height
 - pre-grazing
 - post-grazing

**Used by
farmers,
advisors,
researchers**

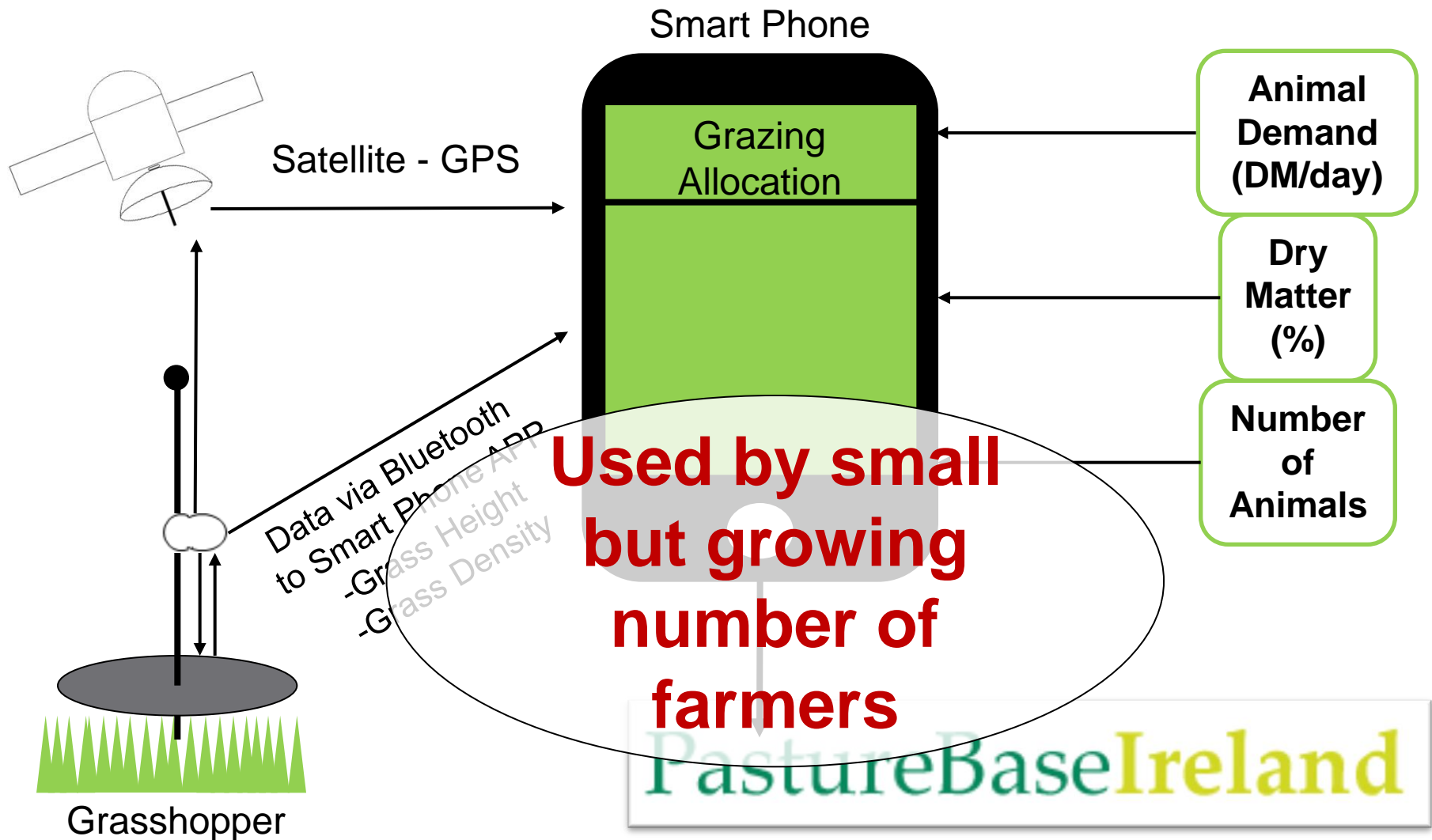


Grasshopper



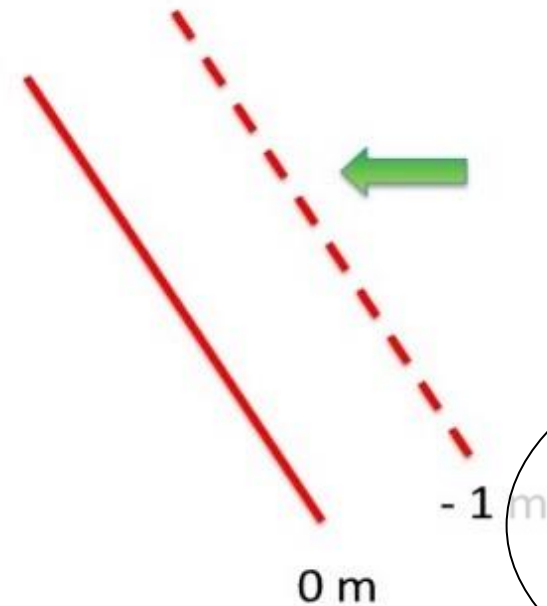
- Georeferenced locations.
- The user can put in the influencing factors and calculate the next area to be grazed.
- The tool measures the biomass.
- The data is transferred telemetric to the smartphone. The app provides the user with the information on grass height etc.

GrassHopper Network



Virtual fencing

Warning --- and
virtual fence — lines



**Not
commercially
available**

- Based on warning stimuli, such as audio cues, and aversive stimuli, such as electric cues, to prevent cows from crossing the virtual fence line.
- A warning line and a virtual fence line was set to ensure that the cows have a choice to avoid the aversive stimuli when hearing the audio cue.

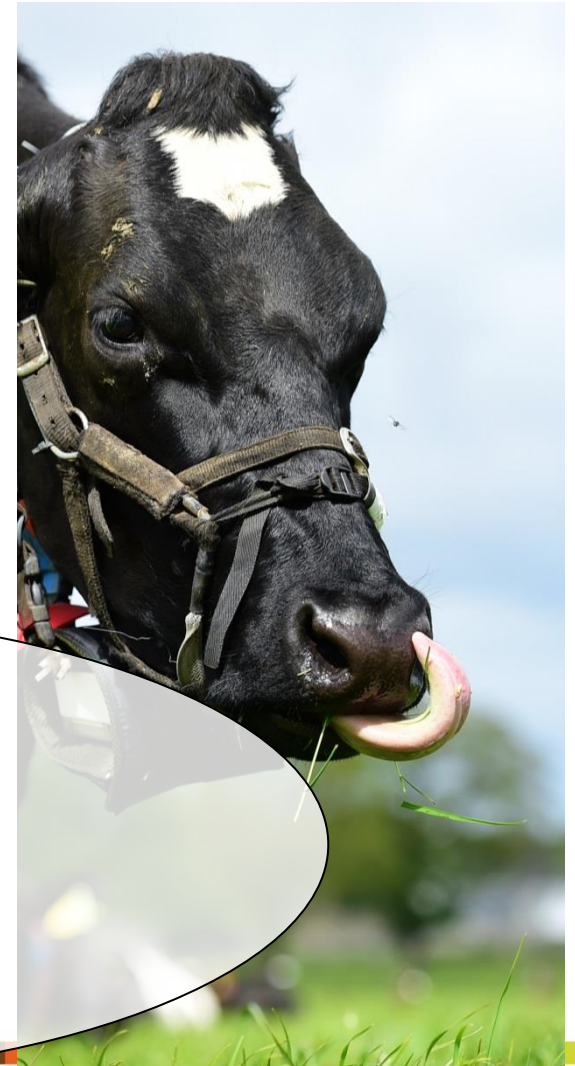
MooMonitor+



**Used by
growing number
of farmers for
heat detection**

- Originally designed for health and fertility monitoring in dairy cows
- Recently started incorporating behavioural traits, enabling continuous monitoring of behaviour
- Commercially available → ultimate management tool
- Multipurpose, practical, cost effective

IGER grazing behaviour recorders



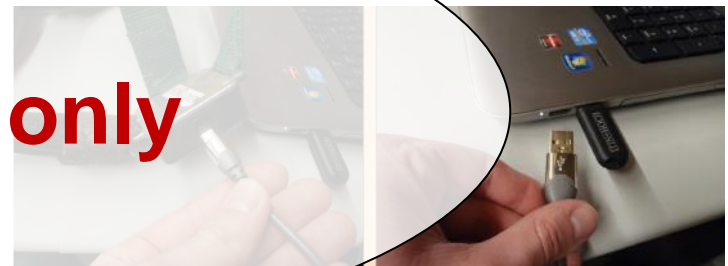
- Measures grazing behaviour
 - Nose band sensor
 - Grazing, ruminating, idling
- Research only**

RUMIWATCH NBS

- Noseband pressure sensor (NBS)
- Measures jaw movements (10Hz)
- Rumination, Eating and Drinking activity
- Developed for research purposes (very accurate but expensive)



Research only



Pedometers



- Information on lameness and movement

Research mainly



Thank you

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