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

Grass Growth

60:40 Rule

Used by farmers, advisors, researchers
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 on farm), weekly 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

Satellite - GPS

Smart Phone

Grazing Allocation

Animal Demand (DM/day)

Dry Matter (%)

Number of Animals

Used by small but growing number of farmers

PastureBase Ireland
Virtual fencing

- 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.

Not commercially available
MooMonitor+

- 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

Used by growing number of farmers for heat detection
IGER grazing behaviour recorders

- Measures grazing behaviour
- Nose band sensor
- Grazing, ruminating, idling

Research only

The Irish Agriculture and Food Development Authority
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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