"Soil & Suckler Fertility" theme for Farm Walk

"Soil & Suckler Fertility" is the theme for a Beef Farm Walk being organised jointly by AgriSearch, AFBI and CAFRE on the farm of Thomas Moorhead,
23 Kilnacolopagh Road,
Aughafatten, Broughshane,
Ballymena, BT42 4LN
on Wednesday 7th May at 2pm.

Host Farmer—Thomas Moorhead

As the name suggests the two main topics for the event revolve around fertility of both stock and soil. AFBI will discuss the benefits of calving heifers down at 24 months, as well as the results of a pilot study on suckler heifer synchronisation conducted in partnership with Genus, Zoetis and AI Services. The use of EBV's and BovIS to improve your herd's genetics will also be illustrated.

As Greenmount College based Dr Norman Weatherup notes good grassland management lies at the root of suckler success.

Improved grassland performance begins with the soil as swards cannot reach their potential if ground is too acidic or does not have adequate nutrients. In addition many nutrients in artificial fertiliser are not available if ph is low. The very basics of good farming most folk cover in their first weeks at ag college, but basics that must never be forgotten

Thus Tom Moorhead samples soil regularly with the results showing a wide variation with different fields needing different management and fertiliser applications. Some fields do not require any lime yet others require 4.5 tonnes/ha of ground limestone (2 tonnes/acre).

Some silage fields will require fertiliser containing P to maximise crop yield, but other land can have P and K requirements met with slurry.

Thus it is important not to purchase fertiliser containing P unless a need has been proven by soil analysis. A too simple one-size-fits-all fertiliser purchasing policy will not suit every field on a farm.

Paddocks

Grass grown, but not used is sheer costly waste so paddock grazing systems maximise animal performance and sward utilisation by closely matching grass supply with animal demand.

Topics to be discussed, along with when is reseeding justified or vital, this coming Wednesday.

Those planning to view this impressive farm and suckler herd are requested to take bio security precautions.

Dedicated Dairy Farmer Sought

AGRISEARCH, the Northern Ireland Agricultural Research and Development Council, is offering a forward thinking milk producer an interesting and unusual opportunity.

"We are seeking an independent farmer representative to join our Dairy Advisory Committee, which plays a key role in identifying research projects of potentially great practical value to producers, "explained AgriSearch project manager Jason Rankin.

"Serving on the Dairy Advisory Committee involves only four meetings a year, but offers a unique insight into how scientists working with farmers can improve milk industry competitiveness.

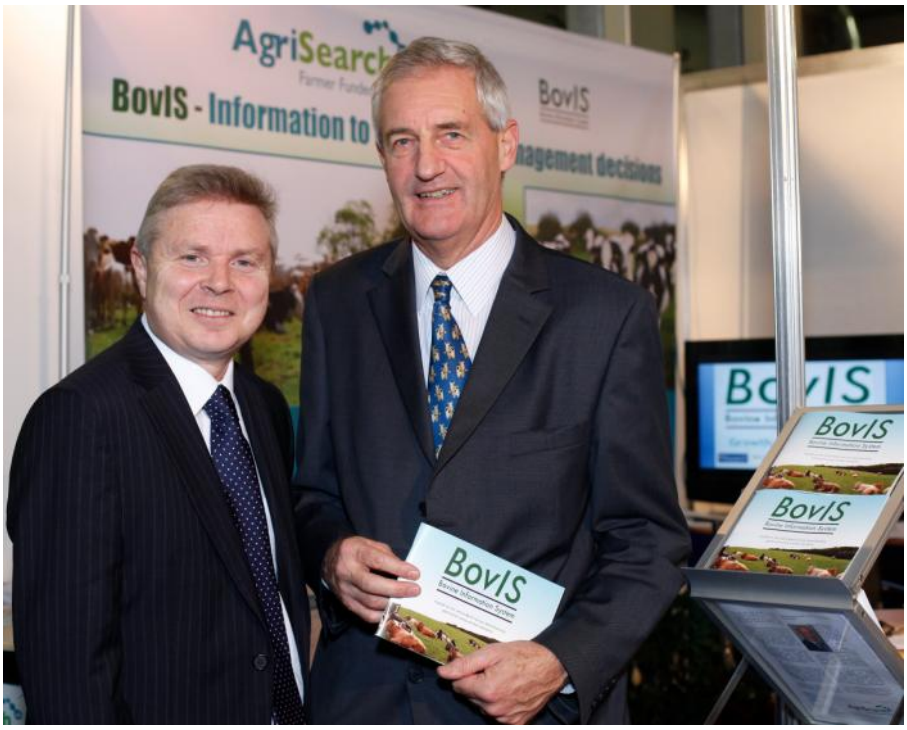
"Those on the committee not only influence how funds are allocated for research, but themselves learn from fellow farmers and researchers. This is role for an enthusiastic milk producer interested not only in the business of running their own farm more efficiently, but in farming affairs far beyond their own townland, as AgriSearch is now involved with European consortia developing large scale Horizon 2020 projects.."

This unpaid appointment, apart from travelling expenses, is for three years and applications should be made by Friday, 23rd May.

For an informal chat on this interesting opportunity contact Jason Rankin, tel; (028) 8778 9770, who can also forward a simple application form. Alternatively an information pack and application form can be downloaded by clicking here.

BovIS User Guide Launched

A user guide to the Bovine Information System (BovIS) carcass benchmarking application, developed by AFBI through DARD and AgriSearch funding, is now available from AgriSearch.

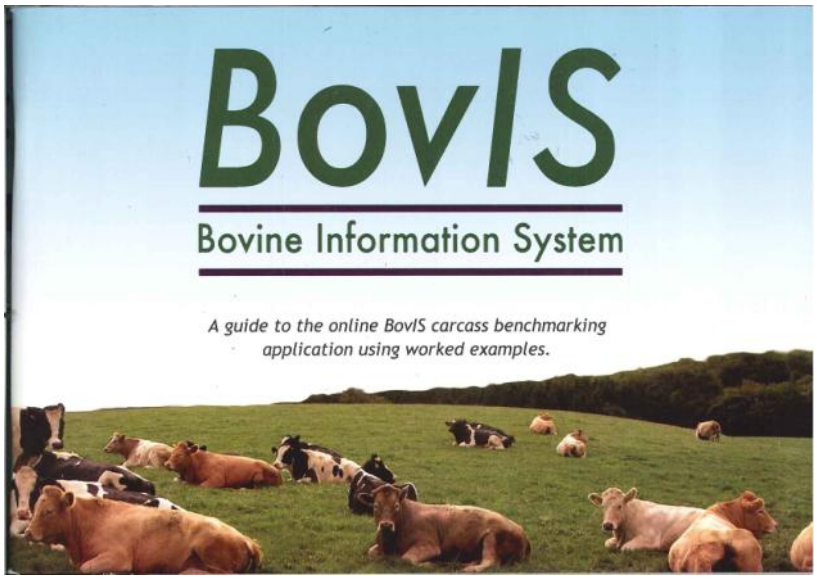


James Campbell, Chairman, AgriSearch, and Noel Lavery, Permanent Secretary, DARD, view the new BovIS User Guide

The BovIS database merges information from both APHIS and meat plants to produce material of real practical value in monitoring livestock performance. The online carcass benchmarking application can be used by individual farmers to review and, if they wish, benchmark, the performance of their finished cattle in terms of growth rates and carcass quality. The tool is accessed through DARD on-line services using the same login details as for other on-line services such as APHIS.

The tool can be used to make a wide range of comparisons such as between different years, breeds and terminal sires. You can also compare your cattle's performance to that of the top 10% of Northern Ireland herds based on daily carcass growth rate.

The user guide provides clear worked examples as to how to get the most out of the BovIS carcass benchmarking application, as well as providing target slaughter ages and daily carcass gains for a range of cattle types.



Copies of the BovIS user guide can be downloaded here, alternatively a hard copy can be requested by sending an email to info@agrisearch.org

AgriSearch PhD Student Anne Richmond Graduates

Anne Richmond who is from Ballymoney, Co. Antrim, has recently graduated from Queen's University Belfast with a PhD having previously graduated from the University of Dundee with a BSc (Hons) degree in Biology. Anne's PhD was funded by AgriSearch and conducted primarily at the Agri-Food and Bioscience Institute (AFBI) Hillsborough, research was also undertaken at the CAFRE Hill Farm (Glenwherry) and on farms at Carnlough in Co Antrim and Feeny in Co Londonderry. Her thesis was entitled 'An investigation of methane emissions from beef cattle grazing contrasting upland and lowland vegetation types'.

Dr Anne Richmond PhD

Anne's research found that cattle grazing upland vegetation were found to produce lower absolute amounts of methane (g/d) than those consuming lowland vegetation, but cattle consuming lowland vegetation had greater dry matter intakes (DMI) and live-weight gains (LWG). There was no significant difference in methane g/kg DMI between cattle grazing upland and lowland vegetation.

The studies indicated that DM intake is a significant driver of methane production by beef cattle. There were significant differences in methane emissions (when expressed as g/kg DMI) between housed cattle offered upland and lowland vegetation but any difference between vegetation types ceased to be significant when methane was expressed as g/kg digestible DMI. However, cattle consuming upland vegetation had significantly greater methane emissions per unit of LWG (kg/d) than cattle consuming lowland pasture.

Across all of the studies conducted, there were no breed (suckler vs. dairy origin) differences between cattle for DM intake, absolute methane emissions, LWG or methane emissions expressed as % of gross energy intake.

Additional research reinforced the usefulness of GPS collars when used in conjunction with vegetation measurements,

maps, and visual observations to monitor animal distribution, grazing behaviour and identify the diet selection by cattle grazing on heterogeneous upland pastures. These data showed that cattle grazing on heterogeneous pasture spent disproportionate amounts of time in areas dominated by grass and young rush rather than in dense mature rushes and spindly mature vegetation with a high level of dead material.

Holstein Friesians steers, as by-products of the dairy herd, could be useful as 'grazing agents' to control invasive grasses to enhance the biodiversity of some areas. Strategies to mitigate methane emissions from grazing cattle on the upland are currently limited and require further investigation. AgriSearch selected Anne's investigations for support as being of value to farmers in Northern Ireland where 70% of farmland is designated as LFA.

Dr Richmond is currently completing a temporary assignment at AFBI Hillsborough whilst currently seeking a more permanent post in the agri-food and environmental sector.

Sheep Lameness Guides Launched

Battling lameness in your flock and needing guidance as to why a particular ewe has foot problems and which treatment is best?

Then the free sheep lameness guide just launched by AgriSearch in association with the LMC and AFBI is a must have! This very practical, pocket sized publication helps producers diagnose the cause of lameness in sheep, identify treatment and prevention options as well as follow best practice for foot bathing and foot trimming. Booklets are available free from AgriSearch on phone: (028) 8778 9770 Email: info@agrisearch.org or from CAFRE Beef & Sheep Advisors.

Designed to fit in the pocket and stand up to use outside as you work with sheep this ring bound booklet combines photographs with bullet points on each possible cause of lameness . Even those in sheep a lifetime cannot but benefit from having this farmer friendly guide to hand.

Surely one of the most useful, brief and to the point booklets to hand in recent years this publication is not for your bookshelf. Rather it belongs in the top pocket of anyone working with their ewes

AFBI vet Jason Barley helps launch the 'Diagnosis and Treatment of Lameness in Sheep' illustrated booklet produced in association with the LMC and AgriSearch.

Total Confinement versus pasture systems — What does the science say?

Dr Gareth Arnott
(AgriSearch funded Dairy Research Fellow at Queen's University Belfast)

There is currently increasing interest in the use of total confinement and zero-grazing dairy systems. Many producers are looking to capitalise on a strong and expanding global dairy market. However, maintaining growth in the UK dairy sector is a major challenge, particularly with land availability being a considerable limiting factor. In this environment, many dairy producers are questioning what the best production system for their situation is.

To help inform this debate, AgriSearch, the organisation which administers the dairy levy within Northern Ireland, are funding a literature review entitled "Total Confinement vs. Pasture Systems: What does the science say?" This project, conducted jointly by researchers at the Institute for Global Food Security at Queen's University Belfast and dairy scientists at the Agri-Food and Biosciences Institute, is reviewing global dairy science literature to examine the advantages and disadvantages of total confinement and pasture systems. A holistic approach will be used to assess the production, health and welfare, economic and environmental implications of each production system. To date, 196 relevant studies have been identified and results are still being collated. However, a number of major themes have already emerged.

The primary benefits of total confinement systems arise from the high levels of cow management that can be achieved. Within these high input systems, cows typically attain higher levels of performance (increased milk and milk solids yield). These systems can also enable more consistent management of the diet, resulting in increased dry matter intake, thus combating negative energy balance and helping to maintain body condition. In addition, cows are not exposed to adverse weather conditions, nor is the land damaged by poaching. However, costs of production within total confinement systems are typically considerably higher than within pasture-based systems. Indeed, it is only with larger herds that the benefits of economies of scale can really be achieved. This raises the related issue regarding attitudes to herd size, with the idea of 'mega -dairies' proving controversial in the UK.

On the other hand, grass is the cheapest feed available and systems incorporating pasture are less costly and typically achieve higher profitability (per litre and per cow) when compared with similarly sized herds in total confinement systems. Furthermore, studies

have shown that the profitability of pasture based systems is less variable, and can more readily accommodate fluctuations in milk price, with producers facing less income risk. A decreased reliance on purchased feed combined with lower production costs make pasture systems less vulnerable to volatility in commodity prices. Lower financial risk is likely to become an increasingly important advantage in a post quota globalised market where volatility is likely to increase.

Additional important benefits of systems incorporating pasture may include; improved health (decreased lameness, mastitis, mortality and culling rates), increased cow welfare (increased comfort / lying behaviour, and decreased aggression), improved reproductive performance and fertility, improved milk composition (e.g. milk FA profiles with potential positive human health benefits), and lower environmental impacts, including greenhouse gas emissions. These are considerable benefits. However, there are still significant challenges to making pasture based systems work. High levels of grazing management are required to meet the nutritional needs of lactating dairy cows. Indeed, for modern high producing North American type Holsteins pasture alone cannot meet their genetic potential and an element of supplementary feeding is required.

Preliminary results clearly indicate there are advantages and disadvantages of each system.

Could it be that with the conventional UK system of winter housing and seasonal pasture, producers are already adopting a 'best of both worlds' approach? It is also worth noting that the majority of consumers (95% in a recent UK study) do not think it is acceptable to keep cows permanently housed indoors. Surely this represents a marketing opportunity for the UK with its current clean, green producer image. Other countries are already embracing this approach, with grazing in the Dutch dairy sector being encouraged by premiums from dairy companies and recent industry announcements supporting systems incorporating outdoor grazing, while other countries (e.g. Finland and Sweden) have regulations that mandate access to pasture. Is it sensible for the UK dairy industry to put its positive pasture based image at risk by a move to total confinement systems?

The dairy industry is at a cross roads in terms of translating 'sustainable intensification' goals into reality and some see a move to total confinement systems as inevitable. However, initial results of this review, with full results due in summer 2014, highlight there are still considerable benefits of incorporating pasture grazing into production systems. Ultimately this is more than a scientific question, with the choice of system depending on individual circumstances, ethics, policy and personal views on the meaning of 'sustainable intensification'.

A full report and farmers' booklet will be published in early summer.

Large Crowds Flock to Sheep Farm Walks

Close to 500 farmers attended a series of four Sheep Farm Walks across Northern Ireland organised by AgriSearch, AFBI and CAFRE on the 21-24 January.

Farmers attending the farm walk at Joe & Seamus Maginn's

Each of the host farmers first outlined their breeding strategy. Joe Maginn's farms mostly Blackface ewes on common grazing grounds in the Mournes, 1,000-3,000 ft above sea level, together with 90 suckler cows. He also uses 30 ha of lowland and 40 ha of LFA. The key objectives of Joe's breeding policy are to breed durable ewes from within the flock with the capacity to increase numbers of lambs weaned per ewe and improve lambing ease. Close to 90 visiting farmers particularly enjoyed the opportunity they were given to view Joe's Blackface ewes, Swaledale and Blackface rams as well as crossbred ewes obtained as part of the AFBI trials. Farmers expressed particular interest in knowing more about the origins and benefits of using Belclare and Highlander sire breeds to obtain replacement ewes. Seamus Maginn replied that he was most satisfied with his pure Blackface and Swaledale x Blackface ewes, and that the other breeds did not seem to cope as well with hard hill conditions. Most of the ewes from their flock are lambing outdoors in April.

AFBI Sheep Scientist Aurélie Aubry
Pictures at Sam Wharry's, Carnlough

Aurélie Aubry from AFBI explained that poor ewe fertility and lamb growth performance were the main constraints on profitability of hill production systems in NI. AFBI have been evaluating two contrasting replacement breeding strategies on their upland co-researcher farms (of which Joe is one) to introduce maternal traits, whilst still delivering high lamb output to market specifications. A criss-cross strategy uses Blackface and Swaledale rams, aimed at 'hard' hill areas and a three breed rotational breeding strategy is aimed at more 'green' hill areas, the latter being also investigated on lowland flocks. The three breeds currently investigated are Highlander

Farmers listen attentively at John Martin's farm walk

(for easy care), Texel (for carcass traits) and Lleyn or Belclare (for prolificacy). The highest weaning rates in the upland trial so far were achieved by the Swaledale and Highlander crosses, with little difference in ewe performance between the two breeding strategies examined. All breed types (except Texel cross) achieved good efficiencies of 0.88-0.97 (kg lamb weaned per kg ewe), about 15-20% higher than pure Blackface ewes. Work is ongoing to assess lifetime performance of these crossbred ewes, with the expectation to obtain efficiencies close to a good target of 1 kg of lamb weaned per kg of ewe body weight.

The Hillsborough Management Recording Scheme for 2014 was launched at the farm walks. The objective of this scheme is to identify ewes in commercial flocks suited to easier-care systems and to breed replacement sheep that will require less intervention at lambing in the future. Each of the farmers attending was given a lambing book to record lambing ease, mothering ability and lamb viability. Lamb weights are then recorded at weaning. The recording books can then be returned to AFBI who will produce a report for the farmer ranking ewes within the flock on a scale of 0-100, thus providing a simple tool to help them select their replacements from the best ewes. Seamus Maginn and other co-researcher farmers present on the day shared their experience of using such a scheme and insisted on the importance of selecting ewes and rams based on performance records rather than just the looks. One lambing book is needed to record lambing data from 50 ewes. Additional books can be requested from Jennifer Meeke at AFBI Hillsborough Tel: 028 9268 1577, jennifer.meeke@afbini.gov.uk. If you need any other information please contact Aurelie Aubry at AFBi Hillsborough on 028 9268 1554 or aurelie.aubry@afbini.gov.uk.

A new sheep lameness guide was also launched at the farm walks. This booklet will help farmers better diagnose the cause of lameness in sheep, identify the treatment options, know how to prevent the conditions and follow best practice for foot bathing and foot trimming. Booklets will shortly be available from AgriSearch (Tel. 028 8778 9770 Email: info@agrisearch.org) and from your local CAFRE Beef & Sheep Advisor. Jason Barley from AFBI's veterinary sciences division gave the farmers present a run down on the common causes of sheep lameness and how best to treat them. He emphasised that in most cases routine trimming of all feet is unnecessary and can be counter-productive.

Jason Barley also spoke on good practice with regard to the treatment of liver fluke in sheep. The choice of the right product is vital. He also highlighted the importance of using the correct dose rate and checking your drenching equipment for accuracy.

Eilieen McCloskey
CAFRE

Eileen McCloskey from CAFRE highlighted the importance of getting your winter diets right. Appropriate feeding in the last 6 weeks of pregnancy will pay dividends later. Initially influencing birth weight and milk production, in turn lamb growth rate and eventually lamb weaning weight. Silage analysis is a vital first step in identifying the type and amount of concentrates that are needed. Producing high quality silage can cut the amount of concentrate required by 50%. Eileen also demonstrated the importance of identifying a ewes feeding requirements depending on their litter size, and body condition score. Visiting farmers expressed particular interest in Seamus' feeding regime at this time of year, with questions relating to the type of feed blocks used for both his single and twin-bearing ewes.

Ciaran Hamill, Business Technologist at CAFRE, reviewed physical and financial performance on benchmarked hill farms, highlighting the variation between farms and the significant impact the technical issues discussed earlier can have on the financial performance of a sheep enterprise. The benchmarking service allows farmers to compare their performance with others but more importantly to monitor their own progress from year to year.

Ciaran Hamill (CAFRE) highlights the important role of benchmarking in monitoring farm performance

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