Three Sheep Farm Walks to be held in January

Feeding and managing pregnant ewes for a good lambing

Dealing with poorer quality forage after a difficult season will be amongst the issues tackled at a series of events organized jointly by AFBI, AgriSearch, CAFRE and the NSA. The first of these farm walks, all with a 2 pm start, are with Ian Buchanan, Dungiven (15 January), then Francis and John McHenry, Moss-side (16 Jan) and Alan Montgomery (17 Jan).

The latest research findings of on-farm research will be highlighted at the events pointing the way forward on feeding and managing ewes over the last 2-months of pregnancy. CAFRE advisors will deal with concentrate feeding regimes to complement a range of forage types and quality. Issues such as mineral, as well as energy and protein supplementation, will also be addressed to help ensure ewes lamb down in good form with lambs with plenty of vigour.

AgriSearch NI Farmer Funded Research

afbi Agri-Food and Biosciences Institute

cafre College of Agriculture, Food & Rural Enterprise

NSA

SHEEP FARM WALKS

Tuesday 15th January
Ian Buchanan & Family, 58 Magheramore Road,
Dungiven, BT47 4SW

Wednesday 16th January
Francis & John McHenry, Knockmore House
Knockmore Road, Moss-side, BT53 8QG

Thursday 17th January
J H Montgomery & Partners,
76 Downpatrick Road,
Killough, BT30 8LJ

Farm walks start at 2pm – All welcome

Well known Sheep Farmer Ian Buchanan from Dungiven will host the first Sheep Farm Walk on Tuesday 15th January 2013 at 2pm

Alan Montgomery from Killough, Co Down will host the final farm walk

Each of the host farmers participates in on-farm research with AFBI Hillsborough funded by DARD and AgriSearch. The producers will share the findings of the programme on ewe feeding and management. Staff from AFBI Veterinary Sciences Division will be on hand to discuss the control of liver fluke and stomach and intestinal worms, taking on-board recent monitoring results from farms across Northern Ireland.

Francis & John McHenry will host the second Sheep Farm Walk on Wednesday 16th January 2013 at 2pm

Finally, simple recording schemes to select replacements for prolificacy and easier lambing will be featured on the days.

A warm welcome is extended to all sheep producers to attend these events (all signposted from the nearest village/town). For biosecurity, please wear clean clothes and footwear.

Massive Turnout at Dairy Farm Walks

Over 100 farmers attended each of the recent dairy farm walks organised by AgriSearch, AFBI and CAFRE.

The first farm walk was held on the farm of Cathal and Conor Casey near Cloughmills in County Antrim. They farm 130 Holstein-Friesian dairy cows on 72 hectares in addition to a poultry enterprise. The herd yields 9,250 litres / cow on 2,700 kg concentrate and is operated on a winter calving system.

The second farm walk was held on the farm of Brian & Jonathan Matthews near Donacloney. They farm 140 Holstein-Friesian cows on 89.6 hectares. Their herd yields an average of 7,750 litres / cow/ year on 2,400kg concentrate. They also have a cereal enterprise.

The final farm walk was held on the farm of Adrian, Clarence and Aaron Houston near Plumbridge. They farm 120 Holstein-Friesian cows on 222 hectares (all of which is classified as SDA) as well as a significant sheep and beef enterprise. The herd currently averages 7,250 litres / cow / year on 2,500kg of concentrate.

Host farmer Cathal Casey explaining his farming operation

FRESH COW CONCEPT

One of the key messages from AFBI researchers at the farms walks is that the majority of health problems occur within 3-4 weeks post calving. This is due to the many stress factors that the cow is subject to at this time including:

- Physical and Social Stress associated with calving, regrouping and new milking routine (heifers)
- Dietary Stress caused by a change from a high forage diet to a high concentrate diet
- Metabolic Stress reflected in negative energy balance, lower immunity, metabolic disorders and ultimately poor fertility.

The 'fresh cow concept' has been proposed as a strategy by which to overcome some of these difficulties, with this concept examined in two recent experiments at Hillsborough. The concept involves a delayed build up of concentrates in early lactation, combined with lower dietary protein levels. This has the potential to achieve the following three effects:

- Stimulates rumen function by having more forage in the diet
- Slows down the rate of increase of milk production
- Reduces the extent of negative energy balance

The first group sets off at the Casey farm walk

The AFBI research showed that implementation of the fresh cow concept resulted in higher forage intakes throughout early lactation, which in turn led to improved rumen health (less dilated abomasums etc). There was no effect on overall milk yield or composition. Energy status of the cows was improved however this was not reflected in improved fertility. This concept is now being examined through a Research Challenge Fund study on five Northern Ireland dairy farms (400 cows).

DRY COW FEEDING

All three farmers were co-researchers in a Research Challenge Fund study looking to compare a number of dry cow management strategies. This involved 10 farms with a total of 1,200 dairy cows over 2 years. Three nutritional treatments were examined. The first group was fed forage and concentrates for the entire dry period, the second group was fed concentrates for the last three weeks only and the final group were fed forage only (no concentrates). Cows with a "higher" body condition score at dry-off lost more condition pre- and post-calving. Dry period nutrition had no effect on loss of body condition pre- or post-calving. There was no effect of body condition score at dry-off or nutritional treatment on fertility.

One startling statistic coming from the research is that of all the cows dried off at a condition score of 2.25 or lower 21.7% were culled in the first 60 days of the subsequent lactation.

Key messages for dry cow feeding:

- Target body condition score at calving should be 2.75 (2.5 – 3.0)

AFBI Dairy Research Scientists Conrad Ferris & Ryan Law

Brian Matthews with daughter Naomi and son Jonathan on their farm at Donacloney which hosted the recent Agrisearch RCF Dairy Farm Walk.

Photograph: Columba O'Hare

- It is very difficult to put body condition on cows during the dry period so cows should be dried off at target body condition score for calving.
- Forage quality is important – poor silage quality will reduce dry matter intake
- With good quality forage, concentrate feeding during the dry period is of little benefit for most cows.
- Dry cows need good quality housing – just like milking cows
- A quality dry cow mineral should always be fed!

WINTER FEEDING 2012/13

CAFRE advisers dealt with the issue of fodder quantity and quality.

The importance of winter feed efficiency

Winter feeding and the efficiency with which a winter feed programme is managed has a major impact on the cost of milk production and the overall profitability of a dairy enterprise.

The key points to consider include:

1. Know the value of all forage on your farm
2. Batch cows into yield groups for TMR feeding
3. Set the blend feed level in the wagon to meet the energy demand of the lowest yielding cow in the group
4. Target concentrate feeding to early/ peak lactation cows

One of the groups of farmers at the Matthews farm walk near Donacloney

5. Ensure cows are not overfed in late lactation

How best to cope with fodder shortages

Many NI farms are short of forage this winter, a legacy of 'summer 2012'. If you think you are short of silage now is the time to act not in February when you are in the last link of the silo.

Two young farmers listen attentively at the Matthews farm walk

Advice was given on how to calculate not only how much silage you have but also how much you will need. If a shortfall exists you can then decide how best to stretch limited silage stocks. For most farmers one option is to immediately cull any 'problem' cows – 14 such cows culled today could 'save 100 tonnes of silage between now and turnout.

High yielders should have access to the best silage available but bulling heifers, dry cows and springing heifers can all be fed 'reduced silage' diets by either incorporating straw in the diet or by feeding some form of forage replacer.

Jason Rankin (Project Manager, AgriSearch), Aileen Lawson (Senior Policy Officer, Ulster Farmers' Union)
and Ian McCluggage (Head of Dairy Advisory, CAFRE)

Booklet published highlighting results from study on 10 NI dairy farms

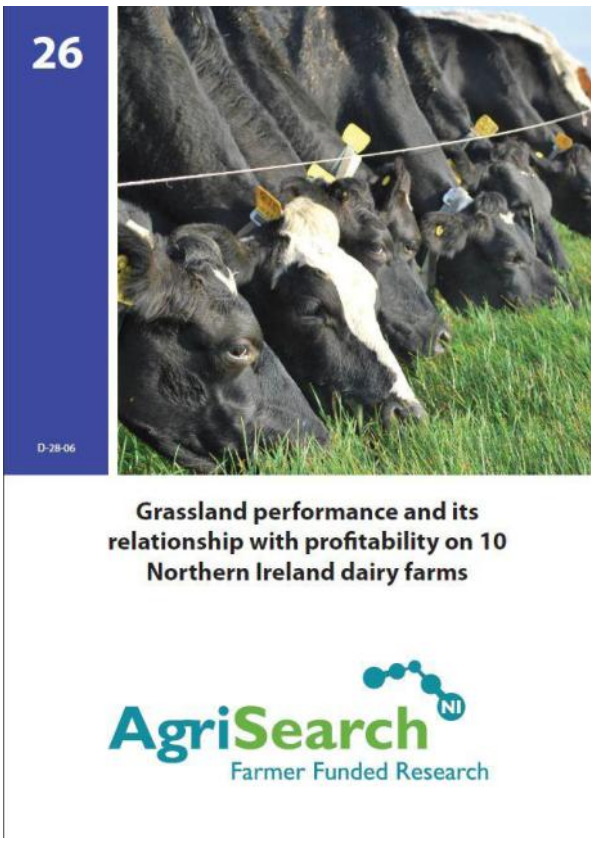
The results from a major three year project involving 10 Northern Ireland dairy farms were published by AgriSearch recently. This project was established to identify relationships between grassland performance, cow performance and farm profitability. The ten farms were selected to provide a geographical spread around Northern Ireland, and a wide range of performance levels, including:

- herd size (74 – 187 cows)
- milk sold per cow per year (4,910 – 8,700 litres/cow)
- concentrates fed (760 – 2,550 kg/cow/ year)
- milk production from forage (2,260 – 4,550 litres/cow/year).

Physical and financial performance within the ten farms was monitored throughout the three years. This involved monthly measurements of grassland performance during the grazing season, while physical and financial records were collected at the end of each year. The key messages from this project are:

1. Increasing scale is not necessarily associated with increased profit per cow. Provided costs are controlled, medium sized family run dairy farms within Northern Ireland are, and can, remain profitable and have a viable long term future.
2. Profitable milk production is not driven by maximising milk output per cow. A wide range of production systems can be profitable provided a high level of technical efficiency is achieved.
3. Timely turnout in spring will help ensure that grass swards are properly grazed during the first grazing cycle and enable pre- and post-grazing herbage mass targets to be achieved.
4. Grazing grass at the optimum growth stage will result in higher intakes of higher quality pasture, higher milk yields, less herbage wastage and higher quality regrowths. Grazing poor quality pasture can result in a loss of income of up to £1.25 per cow per day.
5. Each 1,000 litre increase in milk from forage is associated with an increase in profitability of £120/cow. Grassland farms in Northern Ireland should seek to improve milk from forage through improved grassland management, improved silage quality and improved concentrate use efficiency.

The contribution of all the farmers involved for access to their farms and their information during this project is acknowledged and also thanks to staff from CAFRE Greenmount for assistance with visiting the farms and collecting the Benchmarking data. This booklet is available to download from the AgriSearch website. Hard copies are also available on request.



Importance of selecting bulls on EBV's stressed at conference

At the recent CAFRE Greenmount Centenary Beef Conference held in conjunction with AFBI and AgriSearch Norman Weatherup stressed the importance of selecting bulls on Estimated Breeding Values (EBV).

Many producers buy a bull on looks alone and this allows for some assessment of locomotion, length, soundness, condition etc. However, it is impossible to tell by looks alone:

- How easily his calves will be born
- How quickly they will grow
- Whether his progeny will be lean or fat
- How milky his daughters will be
- How fertile his daughters will be

These characteristics are determined by his genetics and the tools to measure genetics have been around for some time in the form of Estimated Breeding Values (EBVs).

There are two genetic evaluation systems in use in the UK, namely Breedplan and Signet. Both systems show a bar chart deviating from a vertical central line which is the current breed average. Anything to the right is better – the further to the right the higher the EBV. Anything to the left is worse than breed average.

Speakers at the Beef Seminars held at Enniskillen and Greenmount Beef Seminars
Sam Chesney (Beef Farmer, Kircubbin), James Campbell (Chair), Norman Weatherup (CAFRE), Simon Frost (Beef Farmer, Peak District), Steven Morrison (AFBI), Francis Lively (AFBI), Albert Johnston (CAFRE)

There are four vital EBV's to be checked in a bull to produce replacement heifers, namely;

- Milk – to ensure a heifer will have sufficient milk to rear a calf.
- Calving ease direct – a dead calf will never make a replacement heifer.
- Calving ease daughters - to ensure that a bull's daughters will give birth to their progeny easily.
- Scrotal circumference – to ensure that a bull's daughters will be more fertile and will reach puberty earlier.

Packed house at CAFRE's Enniskillen Campus

Other traits that should also assessed are:

- Eye muscle area – 50% of the bull's progeny will be male so it is important that they meet market specification. On the other hand, excessively muscled females tend to have poorer fertility and increased calving difficulty.
- Growth – again moderate rather than extreme values are desirable so that progeny reach market specification without increasing the mature weight of the herd which increases maintenance and reduced efficiency.
- Fat depth – in some cases it may be desirable to have more fat (although this will appear on the left hand or undesirable side of the graph). Ideally a suckler cow should gain condition cheaply at grass and lose some condition in the winter months. Very lean animals may not be capable of this.

A section of the audience at the Greenmount Beef Seminar

EBVs to check in a bull to mate with replacement heifers are calving ease direct, birth weight and gestation length.

It should be noted that calving ease figures for a young

bull will be based on the mid-point of his parent's EBVs. This means that his figures may change over time as more performance data from his relatives and progeny become available. However, if a young bull is purchased by a commercial farmer, it is unlikely there will be any progeny information available and the potential for his calving ease figures to change is reduced. On the other hand an older bull that has been widely used for AI and has sired many calves will have a calving ease EBV with a high accuracy, i.e. unlikely to change. Therefore, if calving ease is a really high priority, an older, widely used AI bull with proven calving ease is more likely to be a suitable choice than gambling on a young bull.

EBV's to be checked in a bull to produce slaughter stock:

- Calving ease direct – a dead calf can never be sold
- Carcase weight – higher values means a heavier carcase
- 200 and 400 day weight – higher values mean faster growing animals
- Eye muscle area / muscle depth – higher values means increased muscularity
- Fat depth – select higher values for crossing with lean type cows and vice versa.

Summary

Select a bull based to mate with replacement heifers based on calving ease, birth weight and gestation length EBVs

Select a bull to produce replacement heifers based on EBVs for milk, calving ease daughters, scrotal circumference and calving ease direct.

Select a bull to produce slaughter stock based on EBVs for carcase traits, fatness and growth.

Agriculture Students at Greenmount Campus attending the Beef Seminar

Low-input forages booklet published

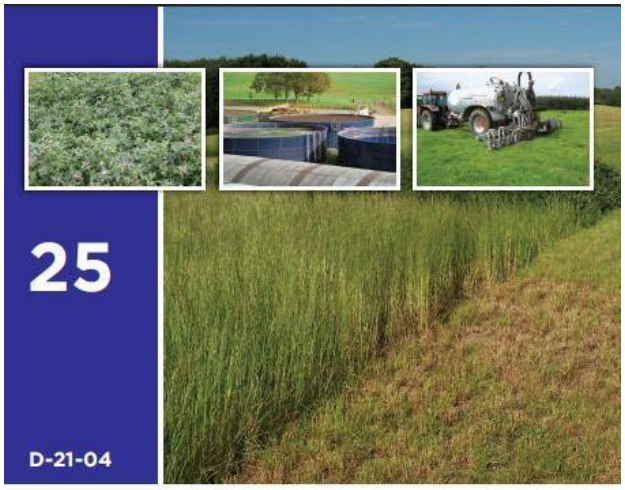
The Winter Fair saw the launch of a new farmers booklet based on the results of a four year study examining the effect of applying cattle slurry as the sole source of nutrients on the yield and persistency of seven perennial forage crops. The booklet is available to download from the AgriSearch website. Hard copies are also available on request.

The seven forages involved were diploid, tetraploid, hybrid and Italian ryegrass, a low input grass mixture, red clover and a mixture of ryegrass and white clover. Once established, each forage species was treated with one of four levels of slurry (0, 34, 60 and 89 m3/ha/year: 0, 3000, 5300, and 7900 gallons/acre/year), with herbage harvested 3 or 4 times per year.

The main findings were:-

- At the highest level of slurry application, the diploid and tetraploid ryegrasses produced approximately 12 t DM/ha/year, the hybrid ryegrass, low input mix and the grass/clover mix approximately 13.5 t DM/ha, while the red clover and Italian ryegrass produced in excess of 14 t DM/ha/ year over the four years of the experiment.
- When no slurry was applied, the red clover produced the highest average annual yield (13.8 t DM/ha), with the grass/clover the next highest (11.3 t DM/ha). Red clover consistently achieved the highest annual yield when no slurry was applied.
- The clover forages had a lower response to slurry nitrogen than the grass-only forages. The amount of atmospheric nitrogen fixed by the clover swards decreased with the application of slurry.
- Soil potassium content decreased rapidly when no slurry was applied, however it remained relatively constant with the two highest slurry application rates (60 and 89 m3/ha). This demonstrates that slurry nutrients alone can sustain soil potassium levels for swards under a continuous cutting management regime.

This study concluded that slurry as the sole source of nutrients (89 m3/ha/year) was able to sustain long term yields (Year 4) of between 8.9 and 11.6 t DM/ha across the range of forages examined, while maintaining soil nutrient status. When no nutrients were supplied, grass/clover swards and red clover swards were able to sustain long term yields (Year 4) in excess of 9.2 t DM/ha due to fixation of atmospheric nitrogen.



BovIS user guide now available to download

The user guide for the Bovine Information System (BovIS) is now available and can be downloaded by clicking here.

Dr Steven Morrison (AFBI)

Dr Steven Morrison of AFBI, Hillsborough introduced the 300 farmers attending the Greenmount Centenary Beef Seminars in Enniskillen and Greenmount to the new BovIS on-line bench marking tool which has been developed by AFBI and co-funded by AgriSearch and DARD.

The seven major Northern Ireland abattoirs accounting for 90% of the annual Northern Ireland kill, submit carcass information to the BovIS database every night, this is cross-referenced with animal data downloaded from APHIS.

Producers can access their data through the DARD rural portal. Key benchmarking data can be generated relating to reproductive performance of beef cows, and the growth and carcass quality (both dairy and suckler bred). This easy to use system enables each producer to view information such as tag number, carcass weight, fat class, conformation and carcase growth rates from animals they have recently had killed within one of the seven participating meat plants.

BoVIS has great potential to assist beef herd management where sire information is recorded when animal births are registered on APHIS Aside from being able to track the performance of offspring from different dams and sires, each producer will be able to benchmark the performance of their cattle against producers rearing similar animals. This valuable information can be used by the producer to evaluate their breeding, management and production system.

The system not only allows producers to compare the performance of breed types or breeds, but also compare animal performance during different time frames.

Over the coming months CAFRE will be providing training to ensure farmers get the most from the system but the system is now live and available to all producers registered for DARD on-line services.

BovIS

Bovine Information System

Carcass Benchmarking Tool User Guide

Calves fed larger weaning concentrate pellets exceed MLC growth targets from weaning to 12 weeks old

Take Home Message: Using a 6 mm early weaning concentrate pellet may permit earlier weaning and thus reduce calf rearing costs.

Increasing calf rearing pellet size from 3 mm to 6 mm could make earlier weaning possible and reduce calf rearing costs according to Harper Adams University College's Simon Marsh, after carrying out a study to compare the effect of feeding either a 3 mm or 6 mm early weaning concentrate on the performance of artificially reared dairy-bred bull calves to 12 weeks.

"We found that overall performance was good and the calves fed the 6 mm pellet exceeded the MLC target for rearing calves to 12 weeks of 115 kg and recorded a significantly higher daily live weight gain (DLWG) from weaning to 12 weeks old. They gained an extra 6.7 kg in live weight from start to 12 weeks," he said.

Concentrate intakes from start to weaning were also significantly higher with the 6 mm pellet and overall the calves consumed an extra 21.9 kg more per head.

"So it could be assumed that the increased concentrate intake resulted in the improved DLWG with the calves," he told delegates at the British Society of Animal Science's annual conference.

In pursuit of early dry feed intakes with artificially reared calves, it has been traditional in the UK to manufacture a pelleted calf starter feed using a small extrusion die (between 2.5 and 3.5 mm). This is significantly smaller than the pellet size used for adult ruminants (6-8 mm). But there are economic consequences for both the calf rearer and the feed producer.

For the rearer, achieving a higher concentrate intake could enhance rumen maturity and minimises growth retardation at and around weaning. For the feed manufacturer the time lost in the feed mill due to extrusion press die changes increases production costs.

"The improved intake that we saw with the larger 6 mm pellet would minimise growth check at weaning and enhance rumen development. The 6 mm pellet fed calves had a higher, but non significant, last rib girth measurement and this is an indication of rumen growth and development," said Mr Marsh.

"Many commercial calf rearers wean calves when they are eating 1 kg of concentrates per head per day and it could therefore be possible to wean earlier with a 6 mm pellet and reduce calf rearing costs," he added.

Full details: Marsh SP, Lingham T: "Effect of early weaning concentrate pellet size on the performance of artificially reared dairy-bred bull calves."

This article is taken from Animal Bytes a website run by the British Society of Animal Science which is funded by AgriSearch and other UK agricultural levy organisations. Its objective is to provide short and incisive 'bytes' of information on topical themes and current research within the field of UK Animal Science.

www.animalbytes.org

Results of three cross-breeding studies summarised in farmers booklet

Agrisearch recently published their 24th Farmers booklet which is titled 'A comparison of the performance of Holstein-Friesian and Jersey crossbred cows across a range of Northern Ireland milk production systems'.

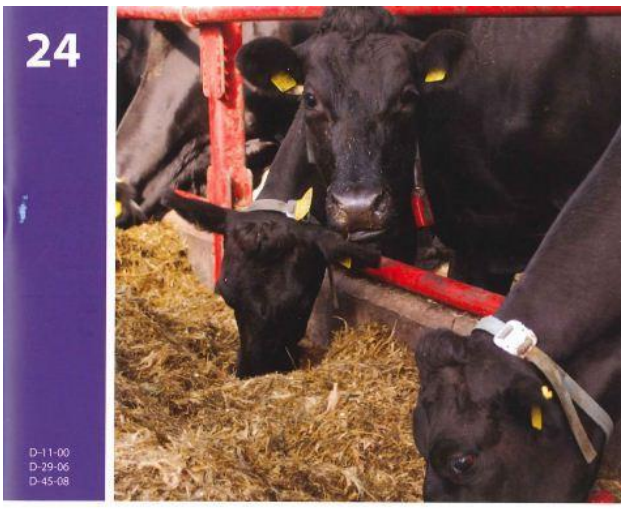
This booklet summarises the main findings of three different AgriSearch co-funded research projects. Two of these studies were undertaken at Hillsborough by Elaine Vance as part of her PhD. The third study was conducted on 11 local dairy farms and involved approximately 200 Holstein-Friesian dairy cows and 200 Jersey crossbred cows.

This latter study commenced in 2000, when crossbreeding was undertaken on the 11 farms, with the project commencing in earnest three years later when the first crossbred cows calved on these farms.

Crossbreeding continued on these farms for a further two breeding seasons. The study finished in 2012 when all cows had completed four lactations on the study.

Some of the key findings from these studies were as follows:

- When calving for the first time the incidence of stillbirths was 8% for Jersey crossbred cows and 12% for Holstein-Friesian cows. When calving for the second time there was no difference between breeds in the proportion of calves born dead.
- Crossbred cows tended to be between 40 and 60 kg lighter than Holstein cows, although food intake did not differ between breeds.
- Jersey crossbred cows produced milk with a substantially higher fat and protein content than Holstein cows.
- When managed within low-moderate concentrate input systems (less than 2.0 t concentrate/cow/lactation), crossbred cows produced 5–10% less milk than Holstein cows. However, the yield of fat plus protein was largely unaffected by breed.
- When managed within a high concentrate input system (3.2 t concentrate/lactation) Jersey crossbred cows produced 1568 litres less milk than the Holstein cows, while the fat plus protein yield of the crossbred cows was 66 kg less than for the Holstein cows. This difference was due to the crossbred cows using part of the



additional nutrients consumed for body tissue gain, rather than for milk. This suggests that Jersey crossbred cows are not best suited to very high input systems.

- Somatic cell counts of the Jersey crossbred cows tended to be similar, or slightly higher than for the Holstein cows. Heterosis for somatic cell count is normally very low. Nevertheless, Jersey crossbred cows had a lower incidence of mastitis than the Holstein cows.
- Compared to the Holstein cows, the Jersey crossbred cows had improved fertility in most of the studies, and this is likely due to hybrid vigour.
- Within the on-farm study, which was conducted across four lactations, crossbred cows had improved longevity, with 48% of crossbred cows and 38% of Holstein-Friesian cows surviving until the end of the fourth lactation. When extrapolated to give life-time survival, on average Holstein -Friesian cows survived for 3.6 lactations while crossbred cows survived for 4.8 lactations.
- An economic analysis of the production data collected from the on-farm project indicated that net profit was £39/cow/year (7%) higher with the Jersey crossbred cows.

Booklets can be downloaded from the AgriSearch website. Alternatively hard copies are available on request.

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