Dear Colleagues

On behalf of the National Youngstock Association (NYA) I am pleased to welcome you to their 1st annual conference at Hartpury College, Gloucestershire.

The National Youngstock Association was formed this year to help tackle avoidable losses incurred by beef and dairy producers due to deaths and ill health among youngstock. The NYA is an independent, not-for-profit professional association whose information and initiatives are open to individuals working in all aspects of youngstock breeding and rearing, and we would be keen to hear from anyone who would like to get involved with this exciting new initiative.

The conference has been designed to provide a forum for the exchange of information about health, welfare and profitable management of young cattle. Following a plenary session which everyone attends the conference splits into four streams (Practical approach to..., Health and Disease, Fertility and Nutrition) and you are free to attend whichever session you choose.

In between the sessions, refreshments will be served in the trade area where you have the opportunity to chat to a selection of different companies all working with or providing goods and services relevant to youngstock rearing. We look forward to welcoming you to the NYA conference.

Tim Potter

Dr Tim Potter BVetMed PhD MRCVS
Veterinary Co-ordinator for the National Youngstock Association
## Conference presentations summary

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Mortality and Growth on UK dairy farms

Dairy heifers represent the future of the herd. The aim of every dairy farmer should be to rear healthy, well grown individuals with excellent fertility that are well equipped to join the herd at first calving. Such animals are then more likely to achieve their full lifetime potential, by leading a long and productive life.

The successful rearing of the required numbers of heifer replacements annually is a key factor in profitable dairy enterprises. Unfortunately, the frequency and causes of losses during the rearing period are often poorly documented. On UK farms, on average 8% of calves are born dead, 15% of live-born heifers die during the rearing period, and 19% of those which do calve for the first time are culled or die in their first lactation. On average, less than half of live-born heifers reach third lactation.

Heifers should calve for the first time at 2 years of age - this minimises rearing costs by reducing the period before the animal becomes productive. Furthermore, well grown animals which calve at 23 to 25 months go on to perform well in the herd. To calve with adequate body size at 23 to 25 months of age, it is necessary to set growth rate targets, and weigh animals regularly during the rearing period to ensure they are meeting the desired target. On UK farms, the average growth rate up to 6 months is 0.77 kg per day, but shows extreme variability from 0.49 to 1.02 kg per day. Almost one quarter of heifers grow at less than 0.6 kg per day – and these animals subsequently calve at older ages.

This presentation will highlight the wastage of potential replacement heifers and the wide variation in growth rates observed on a selection of UK dairy farms.
**Plenary session 2**

**Presenter**: Andrew Brown

**Managing dairy youngstock to achieve lifetime performance**

Andrew Brown, Steven Morrison and Alistair Carson Agri-Food and Biosciences Institute Hillsborough, Northern Ireland

**Introduction**

Good husbandry and stockmanship are crucial for successful youngstock rearing. As herd size increases on many dairy farms, greater demands are placed on developing successful rearing enterprises which can be managed with less labour available. This paper outlines some of the key areas when rearing dairy youngstock and provides information to help rear heifers to maximise lifetime performance.

**Importance of calf health**

Calf ill health and mortality represent a significant cost to the dairy industry, both in terms of direct veterinary costs associated with treating sick animals and losses associated with poor performance and death of animals. Analysis of the health and performance of dairy calves at AFBI Hillsborough found calves that had scour or pneumonia pre-weaning had reduced growth which in many cases stayed with the animal until they entered the dairy herd. Calves that had pneumonia and in particular repeat treatments for pneumonia produced 300+ litres less milk in their first lactation. The data highlights the need to firstly minimise the incidence of calf health problems through vaccination, biosecurity and good colostrum management but it also highlights the need to prevent repeat cases of pneumonia.

**Recent research on calf nutrition**

Over the last 20 years, recommendations for the pre-weaned calf have been to offer 500-600 g per calf per day of a milk replacer containing 20-23% crude protein, together with access to ad libitum concentrates and water. Recently, research from North America has questioned the approach of restricted milk feeding and proposed that higher feeding levels should be adopted in a bid to accelerate growth (up to 1 kg/day) in the pre-weaning period. These higher growth rates can theoretically be achieved by feeding 900 to 1200 g of high protein (up to 30%) milk replacer. To evaluate the merits of such feeding systems in a controlled manner, a series of collaborative studies were undertaken at AFBI Hillsborough and Teagasc, Grange. Relative to calves offered 500-600 g milk replacer per day, calves offered higher levels of milk replacer per day grew significantly faster during the milk feeding period. However, differences in live weight and body size recorded at weaning for calves on the higher level of milk replacer disappeared within the first year and there were no beneficial effects on milk production during the first or second lactations. Increasing the protein content of the milk replacer above 23% had no short or long-term effects on performance.

**Targeted Growth**

Body size targets for Holstein-Friesian dairy herd replacements have been developed from a range of research studies carried out at AFBI Hillsborough over recent years. The main findings of this work are summarised as follows:

- **Milk production.** Heifers reared to calve at heavier (620 kg) compared with moderate weights (540 kg) produced 800 litres more milk in their first lactation. However the effects did not extend into subsequent lactations.
- **The additional milk produced by rearing heavier heifers (620 compared with 540 kg) resulted from increased body tissue mobilisation in early lactation, resulting in poorer reproductive performance.** In addition, foot claw condition was poorer with heavier heifers (20% more heifers with heel erosion during rearing period) and was associated with increased lameness (50% higher (poorer) locomotion scores).
- **Increasing growth during the first year of life (above 0.7-0.8 kg/day) increased skeletal size.** However, very high planes of nutrition can have detrimental effects on udder development, particularly with strains/breeds of lower mature weight.
- **Increasing growth during the second year of life (above 0.8 kg/day) has been found to increase body condition score at calving, reducing dry matter intake in early lactation.**

As highlighted research on-farm and at AFBI Hillsborough clearly shows the benefits of calving Holstein-Friesian heifers at moderate weights at 24 months of age. To achieve these targets animals must achieve weights at certain ages. Only through monitoring actual performance against targets can producers make informed decisions. An on-farm study based on this principle of monitoring performance, gave producers the confidence to make important breeding decisions which reduced the calving age of the 1st lactation heifers by up to 3 months. This reduction in calving age was associated with a reduced calving interval and no negative effect on 1st lactation yield.

**Conclusions**

Dairy youngstock are the future dairy herd therefore it is critical to minimise mortality, minimise calf ill health and supply adequate nutrition in suitable accommodation. Monitoring performance enables informed decision making to help ensure cost effective rearing to maximise lifetime performance.
Practical approach to... 1

Presenter: Dr Brian Aldridge, BVSc, MS, PhD, Dip ACVIM, MRCVS Online Veterinary Academy

Introduction:
Calf rearing objectives are actually very straightforward, falling into two broad categories: optimizing growth minimizing health problems.
Since these are the central outcomes of calf production, it follows that we need to understand how our management decisions affect one or both of them. The practical impact of our decisions on calf growth and health can, however, only be fully appreciated by understanding the biological principles underlying these processes.
In this seminar we will be provide an uncomplicated overview of the factors impacting growth and the hazards that can lead to sub-optimal health in the individual calf. We will do this by:
- considering the entry points (‘doorways’) by which potentially beneficial and harmful elements reach and impact the young and growing calf;
- suggesting points of practical evaluation (‘windows’) which can be used to identify the risk and existence of suboptimal health and production.

Doorways to Health and Production

There are four main portals by which beneficial or harmful elements reach the individual calf. The relative importance of each depends on calf age and the ecosystem created by the care-giver. In the first section of this presentation we will discuss these four portals, namely (i) the mouth, (ii) the nose (iii) the umbilicus and iv) the caregiver. Each of these can act as an entry point or themselves impact elements that either enhance or impair calf health and production (Table 1).

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<thead>
<tr>
<th>Doorway</th>
<th>Beneficial Factors</th>
<th>Harmful factors</th>
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<td>Microbes (manure meals)</td>
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<td>Sub-optimal nutrition</td>
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<td>Nose</td>
<td>Quality air, Hygiene, Moisture, Microbes</td>
<td>Noxious gases, Ammonia</td>
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<td>Dam/umbilicus</td>
<td>Growth factors (before birth)</td>
<td>Microbes</td>
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<td>Caregiver</td>
<td>Immunity, Groceries</td>
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Windows of Health and Production

The concept of the canary in the mine shaft is useful when considering how we might realistically detect changes in calf performance or health that will enable us to establish appropriate management practices. In the second section of the presentation we will describe three useful windows that we can look through to help us measure calf productivity and current and future health risks. These windows are:
- the calf itself (e.g. weight, behaviour, appearance);
- the environment (e.g. hygiene, moisture) and
- the caregiver themselves (resources and behaviour).

Managing the Doors by Watching the Windows

The overall goal in optimizing calf health and production is to provide calves with an ecosystem in which they can thrive by equipping and enabling care givers to perform the necessary tasks effectively, consistently and completely. In the final section of this presentation we will explore how an understanding of the doors and windows of calf health and production can be used to inform our decision making so that these goals can be achieved.
A PRACTICAL APPROACH TO CALF REARING - WEANING TO BREEDING

In simple terms the whole purpose of rearing heifer calves for breeding is to produce a long-lived, healthy adult cow with a sustained high milk yield and impeccable fertility – Easy really!

If this is the ideal then how are we measuring up?

**Current survival rates**
- 15% heifers never reach 1st lactation.
- 20+% heifers reaching 1st lactation only calve once.
- Average lifespan of 3 lactations per cow.

Obviously profitability and welfare would increase if more animals survived for longer. Genetic selection of dam and sire will provide us with the potential for this ‘perfect cow’ but the influence of management during the rearing period can fulfil this potential or ruin it.

The rearing period in question covers a timescale of over 13 months. Arguably there is no other period within the animal’s life with such a complexity of change.

**Growth - Change** 65kg -400kg.
Diet – Change concentrate to TMR to grass.
Housing – Change housed to grazing.

We will consider this in 2 time periods -

- Weaning (8wks) - 6 months
- 6 months - Breeding (15 months)

The single most important factor influencing this success is Growth Rate and during each of these periods we can consider the various constraints that prevent optimal growth rates.

Housing /Environment
Management/Nutrition
Infectious Disease

The death of an individual calf is an obvious loss but poor growth rates are often hidden and the consequences spread over a larger number of animals.
If we measure growth rates we are then in a position to take corrective steps now or implement changes for the next group.

Improved housing or Nutrition
Vaccination
Worming programs
Practical approach to optimizing reproductive management strategies of dairy heifers

The overall goals of a successful, cost effective, heifer health management are:
- Achieve first calving by 24 months
- Provide sufficient growth to initiate puberty, establish pregnancy and prevent calving difficulty at first calving.
- Maximize proactive, preventative health
- Maintain or facilitate expansion of the herd
- Genetic progress

Age at first breeding and the degree of reproductive efficiency to first and subsequent inseminations has significant impact on age at first calving. Onset of puberty is related to body weight, heifers show the first signs of heat when they have reached approximately 40% of their mature body weight. Nutritional management of pre-pubertal heifers influences age at puberty, age at first insemination and hence age at first calving.

The decision when to breed varies significantly between farms in the UK. Heifers should be monitored for weight +/- height to determine if they are ready to breed. For Holstein heifers targets should be 397kg or 127cm – guessing is not acceptable in efficient heifer rearing systems. The rate at which heifers become pregnant after reaching puberty is determined by service rate and conception rate. The goal for a heifer rearing program is to attain an average age at calving of 24 months. To achieve this, insemination needs to start from 13.5 months of age, based on a submission rate of 70% and a conception rate of 50%.

Measuring age to first calving as an average does not however account for the distribution or variation among individual heifers around that average. In many systems a high proportion of heifers conceive too late and have a much higher age at first calving, despite the fact that the average age at first calving for all heifers within the rearing system is between 23 and 25 months. In some herds up to 11% of heifers might calve at over 30 months of age due to either not achieving adequate body weight by planned start of mating, poor reproductive efficiency such as missed heats, or poor synchronization / insemination technique. This spread in age to first calving makes grouping, diet formulation and control of body condition and weight at calving very challenging.

The main reason for synchronizing oestrus in dairy heifers is to facilitate the use of AI. Heifers represent the most advanced genetic population of females on the farm. Therefore the genetic merit of AI-sired calves from heifers is superior to that of AI-sired calves from older cows. Semen costs per pregnancy and per replacement heifer produced are lower for heifers because heifers exhibit higher conception rates than lactating cows and therefore require fewer AI services per pregnancy. Effective hormonal breeding protocols for conducting timed artificial insemination can yield acceptable fertility in dairy heifers reducing the necessity for oestrus detection.

This presentation will attempt to assist producers in identifying key steps to optimize reproductive performance of their heifer rearing programs, highlighting breeding tools available to attaining key rearing and breeding goals.

Jon Mouncey BVetMed DBR MRCVS
Clinical Director & Veterinary Surgeon, Westpoint Veterinary Group
Westpoint Sevenoaks, Park Farm, Brasted, Kent, TN16 1LL
Calf nutrition for early growth

The ideal heifer rearing system is one with minimal mortality and optimal growth rates to help ensure the required number of replacements reach first calving at 2 years with adequate body size. To calve at 2 years, a heifer must be ready for first breeding by 13 months of age – thus feeding and management during the rearing period is crucial.

Growth rate targets need to be set for individual farms, and growth must be monitored to ensure all animals within a group are reaching the desired target. Unless growth rate is measured, how do you know if all animals are on target for first breeding at 13 months? If growth is too slow (or too fast) review the quality as well as the quantity of milk fed, since growth rates vary according to energy and protein content of the milk and volume supplied during the first months of life.

Weaning is a critical period when the calf must transfer from a liquid to solid diet. Nutritional intake must be maintained during the weaning period to avoid any setbacks in growth. The calf must therefore be consuming measurable amounts of solid feed to reduce the lag between demand and supply of nutrients after weaning.

This presentation will review how much to feed calves for target growth rates, and examine the relationship between milk intake, solid feed intake and weaning method.
Care of the Pre-weaned Calf

Calving is always an anticipated and exciting event ensuring the future of our herds and livelihoods and yet deficiencies in management and disease mean that a significant proportion of the calves born in the national herd fail to become productive animals.

Although born with a fully functional immune system calves have no immunity at birth because antibodies cannot cross the placenta. Hygiene and passive colostral antibody transfer are therefore vital to the health and well being of newborn calves.

Colostral antibody content declines rapidly after birth as does the calf’s ability to absorb immunoglobulins. An early intake of a sufficient volume of quality colostrum is therefore necessary. Assessing colostral quality and how it might be improved will be discussed along with strategies for ensuring intake and actions to take if an inadequate intake can be predicted.

The major disease issue encountered in the pre-weaned calf is scour which can have a profound effect on performance and result in significant mortality. The causes of calf scour and influencing factors will be discussed along with treatment protocols and, more importantly, prevention strategies.

The underlying theme of this presentation will be the importance of caring for your calves and planning for health rather than treating disease.
Nutrition 2

Presenter: Will Sinclair

Wills notes will be made available on the NYA website following the event.
Elwyn Rees will emphasise that grazed grass is the most natural, and potentially one of the most dietary balanced feeds available for cattle and the fact that the herbage is generally harvested in situ by the animal itself can also make it one of the cheapest. However, a disappointing performance in cattle spending their first season at grass is commonplace and reasons for this will be discussed along with the importance of achieving target live weights for age.

The management of grazed grass to achieve optimum quality for as long as possible will be discussed and also the importance of offering high quality supplementary feed when grass is in short supply. The control of bloat on clover rich swards will be covered. Young cattle spending their first season at grass can be very susceptible to infection from gut worms and lung worms and there will be reference to how these parasites can be controlled.
Nutrition 3.2

Presenter: Paul Westaway

Summary of paper given to National Youngstock Association Conference June 30th 2011

Background

- 140 acre County Council Farm in Dymock Glos
- Run Melview Farming, Sterling Sires and dairybullsfromktr.com from the farm
- Elite Herd of 50 pedigree Aberdeen Angus Cattle, just had breed Champion at Royal Bath & West and Three Counties Show.
- Rear 40 Holstein bulls a year for breeding
- Rear 30 Aberdeen Angus x Holstein heifers for Blade Farming

Forage & Nutrition

- Completely committed to reducing bought in feed as much as possible
- Grow Lucerne, Red Clover, Maize and five year high clover grass leys.
- Analyse feed twice a year, grass test every month.
- We know our costs per tonne to the penny!
- Use Dave White at Countrywide for all rations and agronomy

Health & Welfare

- Use simple herd health plans for all cattle
- Member of CheCS High Health Herd Scheme (Biobest)
- Farm Assured
- Pedigree cows live outside 365 days a year and calve in March.
- Work with Holly Thompset of Leadon Vale Vet Group in Ledbury on all health planning
- Farm is currently in a NVZ and is in ELS.

The Future

- New barn for another 80 cattle going up this winter
- Investigating Solar Panels for area around Silage pit
- Starting a trial for McDonalds/Eblex/Blade in Aug to produce Holstein Bulls at 15 months of age on a high forage low concentrate system.

Paul & Kirsty Westaway, Gamage Hall Farm, Dymock, Glos, GL18 2AE
Age of First Calving – How low should we go?

The ultimate goal of a replacement heifer program is to rear heifers of optimum genetic merit, to reach a desired age and body weight early; thereby initiating puberty, establishing pregnancy and calving easily at minimum cost.

The optimum age to calve down dairy heifers is a common discussion point amongst dairy producers and advisors. Age of first calving and herd culling rate have significant impacts on the number of heifers and their associated rearing costs within dairy enterprises. With replacement rates of up to 40% (2.5 lactations average herd life) in some herds the time it has taken to rear a heifer is equivalent to the length of time she has spent in the milking herd.

The time from birth to first calving represents a period in which replacement heifers are not generating income, instead during this time, considerable capital expenditure is required such as feed, housing, health and disease costs. There is significant variation in the age of first calving and associated costs of heifer rearing enterprises within the UK.

In recent years there has been great focus placed on reducing age to first calving (AFC) and the subsequent impact on the total cost of rearing dairy replacements. Research has indicated that lifetime milk yield and lifetime profit of replacement heifers are maximized when heifers calve between 23 and 25 months of age.

Reducing AFC by increasing average daily live-weight gain, shortens the heifer rearing period and correspondingly reduces feed costs. In addition, reducing the age at first calving results in fewer replacement heifers required at any given time to maintain herd size. Decreasing the number of heifers needed to maintain herd size reduces costs associated with feed and housing within the rearing cycle. Although this strategy has the potential to lead to an earlier return on investment, decreasing AFC has been reported to decrease first lactation performance.

Loss in first lactation milk yield with early calving ages has been well documented. However first lactation milk yield gained by increasing AFC beyond 25 months of age, has been shown to be outweighed by additional rearing costs and poorer reproductive performance, impacting on overall lifetime production.

Key factors influencing AFC include:

- Average daily live-weight gain (ADLG)
- Variance of pre-breeding ADLG
- Voluntary age waiting period
- Pregnancy rate
- Re-breeding cut-off criteria

This presentation will attempt to assist producers to optimize the age to first calving of heifers within their milking herds, by considering their current heifer breeding goals, addressing concerns of shortening the age to first calving within their herd and focusing on how they might intensively manage factors such as those listed above to achieve reproductive efficiency to get heifers into the milking herd on time.

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The Synchronisation of Heifers and the use of Sex-Sorted Semen

John Cook BVSc DCHP MRCVS RCVS Specialist Cattle Health and Production
European Technical Services Director, Genus ABS
Genus Breeding plc, Alpha Building, London Road, Stapeley, Nantwich, Cheshire CW5 7JW

Disappointing results often arise both from attempts to synchronise the breeding of heifers and from the use of sex sorted semen. This paper will seek to highlight some of the main areas which contribute to the successful synchronisation of heifers and the maximisation of pregnancy rates using sex sorted semen.

Synchronisation of heifers may be used for many management and genetic reasons. For example to ensure that only pregnant heifers are moved to a distant pasture or housing or the concentrated use of a particular bull or mating plan designed to accelerate genetic gain prior to the use of a sweeper bull.

Much of the confusion and disappointment that surrounds the use of synchronisation protocols arises because it is assumed that the same programs used on cows can be used on heifers and vice versa. However there are key differences in the oestrus cycle of heifers and cows, which need to be understood if synchronisation is to be successfully applied. In terms of reproductive management it may be best to think of cows and heifers as 2 completely separate and distinct species particularly when considering the pharmacological manipulation of the oestrus cycle.

Secondly confusion arises because the event to be synchronised is not clearly defined at the beginning of the program. Available protocols can be designed to synchronise either heat or ovulation and it is often assumed incorrectly that these two events are either one or the same or that they are so closely linked that one inexorably follows the other. In reality this is not the case and poor results often arise when a program designed to synchronise heat contains a timed or targeted artificial insemination better suited to a program which synchronises ovulation and vice versa.

This presentation will attempt to clarify and illustrate these points by describing 2 protocols, one designed to synchronise heat the other ovulation and outline the results that can be expected in well managed heifers.

Sex is the single most sought after genetic trait and considerable interest surrounds the use of sexed semen both for the production of extra heifers as either herd replacements or for sale. This paper will however argue that the true value of the use of sex sorted semen lies in the opportunity for genetic gain and not in the production of a female calf per se.

There is however little doubt that sex sorted semen is a biologically damaged product and as such cannot be expected to produce similar results to those obtained with conventionally produced frozen semen. Excellent results can be obtained providing high management and husbandry standards can be achieved in the heifers selected to receive sex sorted semen.

Expected pregnancy rates and birth ratios with sexed semen used on heifers bred to natural heats and with synchronisation protocols will also be discussed.
Fertility 3

Presenter: Marco Winters

PROFITABLE LIFETIME INDEX (£PLI)

- Represents the financial improvement an animal is predicted to pass on to its daughters in its lifetime.
- Use as the primary screening tool when selecting bulls for breeding dairy replacements.
- Based on a combination of milk production traits (accounting for 45 percent of the index), and health, welfare and type traits (accounting for 55 percent).
- Traits included are kg milk, fat and protein, lifespan, fertility, somatic cell counts, udder conformation and locomotion (see boxes).
- These are the traits which have been proven to be most strongly linked to lifetime profitability.
- The benefits of using high PLI bulls are cumulative and build up over the generations.

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<thead>
<tr>
<th>Relative importance of traits in the Profitable Lifetime Index</th>
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<tr>
<td>Lifespan 21.1%</td>
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<tr>
<td>Udder 5.6%</td>
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<tr>
<td>LOC 4.1%</td>
</tr>
<tr>
<td>SOC 5.5%</td>
</tr>
<tr>
<td>Fertility 18.5%</td>
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<tr>
<td>£PN 45.2%</td>
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<tr>
<td>a) Milk 24.1%</td>
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<tr>
<td>b) Fat 27.5%</td>
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<td>c) Proteins 43.5%</td>
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PRODUCTION (PIN)

- The production element of PLI is designed to recognise the valuable components of milk; its weight of fat and protein.
- 45 percent of PLI is represented by production.
- The emphasis on fat and protein within PLI is designed to maintain milk quality.
- Producers on a liquid or specialist contract may wish to consider changing the emphasis when selecting bulls, eg. by placing a heavier emphasis on kg milk.
- Genetic indexes for production were the first to be introduced and have played a key role in increasing milk production nationally.

LIFESPAN INDEX (LS)

- Predicts the number of lactations a bull’s daughters are expected to live.
- Expressed on a scale of around 0.5 to +0.5. Daughters of a +0.5 bull are predicted to survive, on average, 0.5 lactations longer than daughters of a bull with a lifespan PTA of zero, so they will milk for around 150 more days.
- Calculated from actual daughter survival where that information is available.
- When it is not, (eg. for young bulls), information on type (feet, legs and udder), cell count and family is used to make the best possible predictions of lifespan.

FERTILITY INDEX (FI)

- Describes the effect a bull will have on the fertility of his daughters.
Fertility 3 cont.

- Positive figures are desirable and improve daughter fertility.
- Expressed on a scale of around -15 to +15 with each point (worth £1) representing, on average, a half day reduction in calving interval.
- A +10 bull’s daughters are expected to have about a five day shorter calving interval than daughters of an average bull whose FI is zero. They will also have an improved non-return rate at 56 days of around four percent.
- An average herd can reduce calving interval by around seven days in one generation by using the best FI bulls. These benefits accumulate over generations.

SOMATIC CELL COUNT INDEX (SCC)

- Describes the effect a bull will have on the SCC of his daughters.
- Negative figures are desirable and reduce daughter cell counts.
- Daughters of a bull with a -10 SCC are expected to have cell counts 10% lower than daughters of a bull with a SCC Index of zero.

TYPE TRAITS

- Genetic indexes for a variety of type traits predict the sort of conformation a bull will transmit to his daughters.
- Some type traits influence a cow’s ability to produce profitable milk over a long lifetime. Others have little or no bearing on her profitability at all.
- The two ‘functional’ type traits most strongly associated with profitability are udder composite and locomotion (or feet and legs where locomotion is unavailable). Both are included in PLI.
- Dairy farmers may wish to place a heavier emphasis on type than that included in PLI, but should be aware that selection for these traits will not necessarily improve profitability.

SIX STEPS TO USING EPLI

1. PLI should be used as the initial screening tool in bull selection.
   - Focus on the top 50 percent of bulls, ideally with a PLI of over 85.
   - Try to avoid bulls with a PLI of less than 65.
2. Look within this group for the traits which most need improving in your herd. This will vary with individual herds but should include Lifespan, SCC and Fertility index.
3. Type traits should be considered after the health and fitness traits.
4. Choose a group of four of five bulls with different strengths and weaknesses and pick at least one of these with a positive direct calving ease score to use on maiden heifers.
5. Buy more semen from each of your high reliability bulls and less from each of the lower reliability bulls.
6. Avoid inbreeding which can be checked in breeding programs offered by most AI companies and breed societies.

For more information contact DairyCo - 02476 692051
Or download the ‘Breeding Briefs’ documents from our website www.dairyco.org.uk

Marco Winters – June 2011
Health and welfare 1.1

Presenter: Dr Dai Grove-White

Calf diarrhoea: Prevention and Treatment: Calf diarrhoea is a multi-factorial condition with the key factors being

- Pathogen load
- Calf defences
  - Colostrum derived antibodies
  - Nutrition, living conditions, lack of stress etc

Irrespective of the identity of the causal agent, the route of infection is the same – ingestion or inhalation of the organism from the environment which is heavily contaminated by faeces. Thus hygiene and cleanliness are paramount in control. This not only includes the calf living area but also the area where the calf is born. Many infections are picked up in the calving area including scour agents and Johne’s disease. This is a particular risk with group housing.

Colostrum intake is a key factor in determining the health of the calf. It is well recognised that allowing natural suckling by the dairy calf will result in a considerable proportion of calves receiving insufficient colostrum therefore all calves should be fed colostrum via a stomach tube or via a teat and bucket. The target is for all calves to receive 4 litres of colostrum within 6 hours of birth, ideally within 3 hours. A further 3-4 litres may be administered 8-12 hours later. Continued feeding of the dam’s colostrum is advantageous but pooled colostrum feeding should be avoided due to risks associated with Johne’s disease. Colostrum quality is a contentious issue and undoubtedly some colostrum is of poorer quality than other samples. However the problem of quality is easily overcome by feeding more colostrum if quality is considered sub-optimal.

The other key to control is early removal of the calf from the dam’s environment – ideally this should be within 2 hours of birth (“Snatch calving”). This is also a key element of Johne’s disease control.

Treatment of calf diarrhoea

Irrespective of cause the treatment is always the same namely administration of oral fluid mixtures to repair the dehydration and acidosis that occurs in diarrhoeic animals. Choice of mixtures will be discussed. It is essential that treatment is started as soon as the diarrhoea is observed – delay will massively increase the probability of treatment failure. Milk feeding must be continued throughout treatment even though it may appear to worsen the diarrhoea.

There is no role for administration of antibiotics to diarrhoeic calves – it is best considered as “bad medical practice”.

Dr Dai Grove-White, University of Liverpool
"Best practice" Sustainable Worm Control Strategies for Cattle ("COWS")

Infections with gastrointestinal roundworms are an important cause of production losses in sheep and cattle. Worm control is a vital part of health and production management in cattle herds in the UK, and good control is highly dependent on effective anthelmintics. Unfortunately, a direct and unavoidable consequence of using anthelmintics to control worm populations is selection for individuals that are resistant to the chemicals used.

If left unchecked, anthelmintic resistance (AR) could prove to be one of the biggest challenges to ruminant production and animal welfare within the UK. As a consequence of increasing reports of AR in sheep, a working group "SCOPS" (sustainable control of parasites in sheep) was to promote practical guidelines for sheep farmers and their advisors. This led to the production of guidelines for 'sustainable worm control strategies for sheep' aimed at vets and advisors.

Whilst there is some evidence of emerging resistance in roundworms of cattle, it appears to still be at a very low level in the UK. However the potential presence of such AR in cattle worms has been seen as a timely warning, which if ignored, could lead to a not dissimilar AR situation to that seen in sheep, and in other cattle areas around the world.

Reports of AR in UK cattle nematodes have been limited to a small number of anecdotal reports of treatment failure with some macrocyclic lactone (ML) products, especially those formulated as pour-on preparations. Where these have occurred they have invariably involved the 'dose-limiting species', Cooperia oncophora. As a consequence of these observations, guidelines have been produced similar to those for sheep, for sustainable worm control strategies for cattle "COWS" (Control of Worms Sustainably), which were launched in 2010. The presentation will provide a background to worms and fluke in cattle, and highlight 'best practice' control principles.
Calf Pneumonia

Pneumonia is a cause of major economic loss for the cattle industry, associated with decreased production, higher levels of mortality and increased veterinary and labour costs. The immediate impact of the disease is often very apparent with the loss of animals and the increased labour requirements being easily appreciable for the producer, however, the long term impact should not be underestimated. For those rearing dairy replacements reduced growth rates means an increase in the age at first calving and the subsequent negative effects this has on milk production and reproductive performance. In the beef industry the reduced daily live weight gains means a longer finishing time resulting in increased production costs thus further squeezing already tight profit margins.

When faced with an outbreak of calf pneumonia the first priority is treatment of the affected animals and to minimise the spread of disease within the group. Following on from these disease investigations can be carried out to identify specific causes and risk factors that contributed to the outbreak. Once identified appropriate recommendations and management changes can be implemented to reduce the likelihood of future outbreaks.

Treatment

Given the large number of different bugs that can cause pneumonia, treatment tends to be symptomatic with a broad spectrum of effect with antimicrobials and anti-inflammatories being frequently used. Antimicrobials are the main component of most treatment regimes and there is a wide selection of products. The exact choice of antimicrobial is dependent upon a number of factors, including the vet’s previous experience on the farm and elsewhere and also reported susceptibility patterns. There are also a number of practical considerations such as cost, ease and frequency of administration, potential carcass damage and for some products the issue of human safety that can impact on antimicrobial choice.

Prevention

The prevention of pneumonia in calves is more desirable than having to treat in the face of an outbreak. Prevention consists of both vaccination programmes and establishing and maintaining management practices which reduce the risk of disease.

Mixing animals of different ages or from different sources within the same airspace will increase the risk of respiratory disease. Housing animals in poorly ventilated, overcrowded and poorly drained conditions can also potentiate respiratory disease.

In combination with improvements in management practices, vaccination programmes make up a key component of pneumonia control programmes on farm. Vaccines are now available which will provide effective control of the most common bacterial and viral causes of calf pneumonia and should be used prior to high risk periods to minimise the risk of disease. Vaccination programmes need to be tailored to the circumstances on individual farms and care must be taken to ensure vaccines are handled and administered in accordance with the manufacturers recommendations.
Health and welfare 3

**Presenters:** Rob Drysdale and Richard Phelps

**Is data management really that useful in youngstock health?**
**Can rearing calves be made more profitable for your business?**

Are you doing the best job you can for your youngstock?
What is your current performance in pre-weaning and post weaning animals?
Do you evaluate your system regularly in terms of production versus losses?
Do you feel your youngstock system is profitable for your farm?

If you answered “yes” to all the above then well done – but if you answered “no” to any then this could be the workshop for you!

The speakers will show that working together as a team with a clear business goal in place that youngstock production can be used to generate profit for a farming system. From baby calves through to calving heifers or working bulls wastage can exist in any system. Are your calves performing to the best of their abilities? The speakers believe that without measuring performance, managing change and monitoring the results how would any farmer know if their system is improving?

Having a clear commercial and economic model from the start Richard Phelps has driven Blade farming to ever improve performance in terms of costs of production through managing calf health and nutrition. Being “unemotional” about the methods used historically to rear calves, Richard will discuss the targets he feels any farmer rearing calves should look to when monitoring their system.

By monitoring data collected from Blade farms key performance indicators have been used to manage areas from daily live-weight gain to cases of pneumonia per batch. With 12 dedicated rearing units aiming to rear 15,000 calves sourced from dairy units at an average of 14 days old to over 110kg at 14 weeks old oversight and benchmarking is critical to the system. Rob Drysdale oversees calf health on these units where often small changes can be seen quickly to make major differences to performance.

Within farm practice youngstock performance on dairy and beef farms could often be improved with minimal investment yet with great results. Specifically looking at replacement heifers on dairy and beef units a case will be made for potential profit improvements through data management leading to better health.

This will be both discussion and theory based workshop where audience participation will be expected.
**Presenters**

**Dr Brian Aldridge, BVSc, MS, PhD, Dip ACVIM, MRCVS**
Dr Aldridge has over 25 years of experience working as a farm animal clinician, researcher and clinical educator at the Royal Veterinary College (London), Western College of Health Sciences (Pomona, CA), University of California-Davis, the University of Wisconsin-Madison, the Royal (Dick) School of Veterinary Studies (Edinburgh), Colorado State University and Louisiana State University.

One of his primary clinical interests is neonatal health and immunity and the impact of these on livestock productivity. Until recently Dr Aldridge held the position of Professor in Farm Animal Health and Production at the Royal Veterinary College and currently works as an independent academician, exploring the utility of online learning resources for veterinary surgeons and farmers.

**Andrew Brown**
31 years of age and brought up on the family dairy farm in Co.Down, N.Ireland
Graduated in 2001, Bachelor of Agriculture degree from Queens University Belfast.
Started career as Dairy heifer rearing manager at the Agri Food and Biosciences Institute, Hillsborough and have been in this post for nearly 10 years.

Responsible for the day to day rearing management of 375 dairy youngstock for the AFBI dairy/beef herds and within this, manage experimental trials collating data for efficient and sustainable livestock rearing systems.

**Dr Jessica Cooke (nee Brickell)**
Young Animal Technical Specialist, Volac International Ltd
Jessica grew up on a dairy farm in East Sussex. She gained a first class degree in Zoology from the University of Leeds in 2003, followed by a PhD at the Royal Veterinary College, London in 2008. During her PhD, Jessica conducted a large on-farm study to determine the importance of factors during the calf development period on the subsequent fertility, productivity and longevity of dairy cows. Jessica monitored 500 heifers across 19 commercial dairy farms from birth through to third lactation, and recorded valuable data including mortality and growth rates. This was followed by 3 years in a research post at the Royal Veterinary College in the area of dairy cow fertility. Jessica has published a number of research papers on different aspects of heifer rearing, and has presented her findings at several national and international meetings to highlight the importance of the calf rearing period. In October 2010, Jessica started in her current role as the Young Animal Technical Specialist at Volac, Royston. Her role at Volac involves providing technical support for the young animal products with a key focus on calf and heifer rearing.

**John Cook**
John graduated from Liverpool in 1988, and worked in mixed practice in Yorkshire, Lancashire and Cumbria, with an increasing amount of his caseload being in expanding dairy herds. He joined Genus ABS in September 2007 and is currently responsible for the European technical support team. He holds the RCVS diploma in cattle health and production, and is also an RCVS specialist in this subject.

**Paul Cunliffe**
Wood Veterinary Group

**Keith Cutler BSc BVSc Dip.ECBHM MRCVS**
Keith Cutler has been in cattle practice with the Endell Veterinary Group in the central south of England since he qualified as a veterinary surgeon in 1990. He is passionate about all aspects of cattle health and welfare, having particular interests in infectious disease management and control, bovine lameness, suckler herd productivity and, of course, youngstock health.

In addition to his role in practice he is a Diplomat of the European College of Bovine Health Management, a past president of the British Cattle Veterinary Association and a previous recipient of the Farmers Weekly Farm Advisor of the Year award.

**Robert Drysdale BVM&S MRCVS**
Managing Director of Westpoint Veterinary Group
After graduating in 1995, Rob worked in mixed practices in Yorkshire, Ayrshire and Derbyshire before moving to the sunny south east for a purely farm animal position. Since founding Westpoint in 2000 Rob now divides his time between the farms of Surrey and Sussex and consultancy for several dairy herds across the UK. As the vet for Blade Farming Ltd, Rob manages the health of the rearing units producing over 15,000 calves this year. Calf health and heifer management take up much of his time where he specialises in "youngstock for profitable production."
Rob is well known for his wide range of publications and public speaking engagements. He regularly publishes in Farmers Weekly, Veterinary Times and UK Vet among other publications. Rob is a regular speaker at BCVA conferences, MDC meetings and a multitude of other events aimed at both farming groups and pharmaceutical companies. His specialist interests include heifer management in dairy farming, and livestock business reviews for all types of livestock farming.
**Presenters**

**Dr Dai Grove-White**
Dr Dai Grove-White is a Lecturer and Head of the Division of Livestock Health and Welfare at the School of Veterinary Science at the University of Liverpool. He qualified in 1975 and has worked as an agricultural veterinarian in Europe, Africa and the Middle East. He first developed a research interest in calf diarrhoea whilst in practice in Wales and was awarded FRCVS in 1997 for studies on fluid therapy in calves. He joined Liverpool University in 2000. In 2008 he gained a PhD for molecular studies on Campylobacter in cattle and sheep. His current research interests include dairy calf nutrition. He is an RCVS Specialist in Cattle Health and Production and holds the European Diploma in Bovine Health Management.

**Jon Mouncey BVetMed DBR MRCVS**
Jon graduated as a veterinarian from the Royal Veterinary College, London in 2003. As a livestock practitioner he has focused principally on dairy production with an interest in bovine reproduction. In 2007 he joined Westpoint Veterinary Group and became a Director in 2009. Westpoint Veterinary Group employs 40 livestock veterinarians providing a regular service to over 200 dairy farms across the UK plus a number of consultancy clients at home and abroad. Jon sits as Clinical Director on the Board of Directors and promotes evidence based, proactive, preventative animal healthcare to the livestock industry through closely working with all aspects of the food chain – producers, processors and retailers alike. Since starting at Westpoint, he has been integral in setting up and chairing the Westpoint Board of Clinical Excellence and founding the Westpoint Sevenoaks branch having developed links with the Royal Veterinary College to become a student teaching centre.
In addition to veterinary students Jon is a mentor for the Westpoint Internship program. Jon completed his Diploma in Bovine Reproduction, University of Liverpool in 2010. The success of his business is founded on professional communication, effective knowledge transfer and trust with clients. His practice aspiration is to nurture "Science, Commitment and Results".

**Richard Phelps**
Richard started the Blade business in 2001 and is responsible for our name and the branding of Blade Farming. He is connected to our key customers through Southern Counties Fresh Foods and the Hilton Food Group as a Director for both companies. Richard is responsible for securing business for Blade by working closely with key customers and delivering volume to our farmers.

**Dr Tim Potter BVetMed PhD MRCVS**
Tim graduated from the Royal Veterinary College in 2003. Following graduation Tim completed a three year residency in dairy herd medicine and surgery based at the Royal Veterinary College and a dairy practice in Somerset. He then completed a DEFRA funded PhD programme examining the use of antimicrobials in the treatment of calf pneumonia. Tim currently works as a veterinary surgeon and consultant for Westpoint Veterinary Group Ltd with a specific interest in youngstock health and management.

**Elwyn Rees**
Senior Consultant
Sustainable Livestock Group
ADAS

**Will Sinclair**
Will's childhood was spent around Pedigree Aberdeen Angus Herds, and in 1970 (aged 18) worked with a Pedigree North Devon herd in Buckinghamshire. In 1974 he moved to the NAC Calf and Beef unit, managed by BOCM Silcock. In 1976 the management of the unit was taken over by MLC, and he assumed responsibility for calf rearing management. Approximately 1,000 calves per year were reared on various systems including, bucket, machine, and cold acidified milk. His other responsibilities included running training courses for the Agricultural Training Board and Warwickshire College of Agriculture.
Will joined British Denkavit, part of Dalgety Agriculture, in 1988, and was driving force behind the introduction of the Föerster Technik Computer feeders into the UK market in 1991.
He became a Director of British Denkavit Ltd in 1999, serving on the UKASTA milk replacer committee, and a judge on the Farmers Weekly calf rearer competition.
Will joined Volac International in 1995, and has continued to champion good calf rearing practise, and the use of computerised calf feeders.
Prof Mike Taylor BVMS PhD MRCVS DipEVPC, Dip ECRSHM CBiol MSB
Prof Mike Taylor graduated from the Glasgow Veterinary School in 1976. After 6 years in general practice, he joined first the State Veterinary Service and then the Central Veterinary Laboratory Weybridge (later to become VLA) where he worked for 18 years specialising in parasitology. During that period he undertook a PhD in Veterinary Parasitology from the Royal Veterinary College, London for work on anthelmintics resistance in sheep.
In 2002, he moved to the Central Science Laboratory (CSL) York as head of Veterinary Surveillance. He is currently a veterinary consultant at the Food and Environment Research Agency (formerly the CSL).
Mike is also a visiting professor in Veterinary Parasitology at the Royal Veterinary College London and Bangor University, Wales; a Diplomate of the European Colleges of Veterinary Parasitology and Small Ruminant Health and Management, and editor-in-chief for the Journal Veterinary Parasitology.
He has written over 250 scientific publications including 18 book chapters and is first author of the textbook Veterinary Parasitology 3rd edition. He is author of the COWS technical manual and one of the authors of the SCOPS technical manual.

Paul Westaway
Paul Westaway is a beef farmer from Dymock in Gloucestershire. Paul and his wife Kirsty run Melview Farming and Sterling Sires from their 140 acre County Council Farm. Paul has a pedigree herd of Aberdeen Angus and has been a finisher for Blade Farming for 5 years. Paul is completely committed to High Health status and Herd health planning as a way of ensuring long term sustainable profit.

Marco Winters
Marco Winters was born on a Dutch dairy farm, but since studying Animal Breeding at Edinburgh University he has been working in the UK. Over the years he has worked for the ADC, Holstein UK and Cogent. In his current role as Head of Genetics at DairyCo he is now responsible for the co-ordination and dissemination of genetic evaluations for bulls and cows in the UK through DairyCo Breeding+, and participates in R&D which will further help to promote the profitable use of dairy genetics for the benefit of UK milk producers.
For further information on the National Youngstock Association visit our website www.nationalyoungstock.co.uk or email us on info@nationalyoungstock.co.uk

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