



# ATTITUDES TO MALE DAIRY CALVES ARE BECOMING MORE BLACK & WHITE

The Beyond Calf Exports Stakeholders Forum: A Progress Report

November 2009

[www.calfforum.org](http://www.calfforum.org)

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# BEYOND CALF EXPORTS STAKEHOLDERS FORUM

## Success measures

In January 2008, the Beyond Calf Exports Stakeholders Forum published a report on conclusions and recommendations in which it advised that its success would be measured by:

- An increased uptake of male dairy calves into the UK beef chain;
- A reduction in calves killed on farm;
- A reduction in live exports of calves for further fattening.

And it agreed in order to achieve this, the Calf Forum would need to to:

- Work to support and encourage the development of economically viable outlets for the domestic rearing and finishing of male dairy calves;
- Work to raise awareness, to identify and develop potential domestic and export market opportunities for home produced beef from male dairy calves;
- Support and encourage technical and breeding developments to assist dairy farmers wishing either to reduce the number of male dairy calves born on their farms or to improve the quality of calves that are presented to market;
- Support and encourage high welfare standards within calf rearing systems both domestically and in other EU member states;
- Support and encourage consumers to purchase welfare-friendly British beef.

The full report is available at [www.calfforum.org.uk/ForumReport.pdf](http://www.calfforum.org.uk/ForumReport.pdf)



## FOREWORD

We are pleased to introduce the annual report of the Beyond Calf Exports Stakeholders Forum. This Forum, which launched in June 2006, underlines what can be done if the expertise of industry, retailers, farmers and non governmental organisations is joined up to agree goals and then work together to meet these goals.

The main goals of the Calf Forum, to reduce calf exports and the number of male dairy calves killed on farm by increasing uptake of such calves into the British beef chain, is an issue that has challenged governments, industry and NGOs for decades. It is an emotive issue, but one that can only be solved by joint working rather than by legislation.

In the three years since the Calf Forum has existed, the members have worked by consensus to agree goals and in the past 18 months to meet these goals. This report clearly shows that whilst there is some work still to do, progress has been made in the past year.

The case studies in this annual report clearly show the progress that has happened from all sectors represented at the Calf Forum. The direct impact can be measured in the increase in uptake of black and white calves into the food chain, despite the end of calf exports in July 2008 which increased the numbers of calves in the UK.

This report provides a large amount of information for producers, farmers and industry on how to improve the welfare of black and white male dairy calves and make a profit from them.

We wish to congratulate all stakeholders for the progress that has been made and look forward to more progress during 2010.

### *The co-chairmen of the Beyond Calf Exports Stakeholders Forum*

*David Bowles,  
Head of External Affairs,  
RSPCA*



*Philip Lymbery,  
Chief Executive,  
Compassion in World Farming*



# EXECUTIVE SUMMARY

This is the second annual progress report issued by the Forum. In 2008, the Calf Forum agreed to measure its success on three indicators:

- **The increased uptake of male dairy calves in the UK beef chain**

*There was a net gain between June 2008 and May 2009 of 61,000 dairy bull calves being retained for rearing and finishing in the UK.*

**Positive.**

- **Reduction in number of calves killed on farm**

*Between June 2008 and May 2009, an (estimated) total of 118,000 calves were killed at birth compared with 100,000 over the same period a year earlier. However as almost no calves were exported to Europe, it is not surprising that this figure has increased.*

**Negative.**

- **Reduction in live exports of calves for further fattening**

*The prohibition enacted by the Netherlands in July 2008 due to fears on TB controls saw only 9,000 calves exported compared to 53,000 in the previous year. This is positive but is predicated on the prohibition being continued.*

**Positive.**

It is encouraging that the Calf Forum has made progress in two of the three indicators.<sup>1</sup> It is also positive that not only are more of the UK's male dairy calves going into beef production systems but also that Forum Stakeholder actions should prevent a greater fall in overall prime beef production occurring from autumn 2009 onwards. The fall will occur because of the current deficit in registrations of around 175,000 calves as fewer cross heifers and beef cross male calves are being born.

This report is divided into three parts.

Sections 1 and 2 look at the present status of the UK dairy herd and the economics of rearing and finishing dairy cattle, arguing that robust cows give better returns and revealing that it makes economic sense to rear black and white male dairy calves. Section 3 presents nine case studies from Stakeholders showing what they have done to progress the Calf Forum's goals.

It is particularly pleasing to see so many case studies and so much activity by stakeholders to meet the objectives set in 2008.<sup>2</sup> These case studies provide a large amount of data and information for producers, farmers and industry on how to improve the welfare of black and white male dairy calves and make a profit from them.

One of the areas that the Calf Forum has been particularly concerned about is the provision of colostrum to black and white male dairy calves. There are a number of case studies that show what progress can be made in this important area and, as with all the case studies, information is provided for other retailers, farmers, producers and NGOs to share best practice.

Aside from the major case studies, progress has been made in other areas. For instance, the two farm assurance standards of Assured British Meats (ABM) and Assured Dairy Farms (ADF) are being aligned to include a specific standard for calves 'not intended for rearing' to ensure all welfare requirements are fully met prior to humane dispatch and a section on artificial rearing of calves to ensure good welfare.

In addition, Defra is considering advice recently received from the EU Commission regarding the

<sup>1</sup> Appendix 1: Calf Deficit 2008

<sup>2</sup> Beyond Calf Exports Stakeholders Forum: Report On Conclusions & Recommendations, Jan 2008.

labelling of rosé veal in the UK. It will shortly be issuing revised guidance to the industry but in broad terms, it will mean that any claim made in relation to rosé veal and the system of production must be approved by the Rural Payments Agency (RPA) under the voluntary approval scheme (Beef Labelling Scheme).

Defra wants to be as flexible as possible but under general food labelling legislation. The information provided must not be misleading to consumers and operators must also abide by the rules of the EC Regulation in terms of use of the correct sales descriptions (i.e. for animals aged 0-8 months on slaughter, the term 'Veal' and for those aged 8-12 months, the term 'Beef' must appear in the description).

Defra advises: "In this way, we intend to enable the consumer to clearly distinguish between beef of young bulls marketed at 12 months of age or less and rosé veal under a clearly-defined production system approved under the voluntary Beef Labelling Scheme".

So what of the future? There are three factors that suggest the trend of increased uptake of black and white male dairy calves will continue:

- As the Forum's members' calf capture programmes are being extended after completing the establishment of their production models, more calves will be taken on;
- The value of calves at 12 days is expected to grow, responding to the overall decline in cattle numbers, and so encouraging previously undervalued animals to be retained and encouraging more dairy farmers previously unattached to any scheme to be interested in rearing their calves;
- Improvements in the conformation (strength) of the Holstein cow, are occurring, resulting in a smaller proportion of Holstein bull calves being placed in the "just not strong enough to be worth rearing" category.

In future, it will also be important to provide viable trading routes for male dairy calves from TB2 herds as it is clear that large numbers of male calves are produced by such herds. Defra calculates that the number of male dairy calves born in TB2 herds could be 92,700, that is 18% of the around 515,000 male dairy calves born in GB in 2008<sup>3</sup> of which it is feared that a considerable number are killed at or shortly after birth as farmers have difficulty marketing their cattle.

It is hoped that this annual report shows the steady progress that can be made and that will continue in the future.

<sup>3</sup> It is not possible to reliably estimate what proportion of these would have been slaughtered at, or shortly after, birth. The figure of 92,700 is likely to be an over-estimate as a number of farm businesses will have TB2 status for only part of the year (so are likely to have produced calves when unrestricted also).

# SECTION 1: MEASURES OF PROGRESS

## Update on the current situation of calf registrations and market trends

### Calf registrations and the live export trade

The latest 12 months to May 2009 and comparable period in previous years were analysed to see whether the lack of a UK live calf export trade had affected birth registrations. A prohibition on imports of British calves was imposed in July 2008 due to fears about TB in British dairy herds. The table below shows that during this time period, more male dairy calves were registered in the UK compared to 2007/08 when there were live calf exports. There has been an estimated increase in the number of dairy male calves killed on farm from 100,000 to 118,000 calves. However, because live calf exports had been reduced from 53,000 to 9,000, the figures suggest that more of these male dairy calves have been retained for production in the UK, rather than being killed on farm. An additional 60,000 male dairy calves were potentially made available for beef production in the 12 months to May 2009.

### Effect on calf price

When the Dutch industry imposed an import ban on British calves in July 2008 due to concerns about TB, prices for Holstein calves fell by £20-£30 per head. But with the falling price of feed together with a tightening supply of cattle, the demand for male dairy calves improved. Holstein bull calf prices recovered to a peak of over £60 per head in June 2009 and have constantly been around £15-£20 per head higher than when the live calf export trade was operating. At the beginning of August prices were on average £45 per calf.

### Future calf registrations

Unrecorded calf slaughterings in 2008/2009 increased by 18% compared with over the same period in 2008. But total registration of male dairy calves was 18,000 head more.

So despite unrecorded calf deaths increasing, mainly due to the limits on calves being exported, there will be potentially more available for beef production. This follows the trend of increased use of dairy breeds in artificial insemination on dairy units in 2007/08. Based on the first half of 2009, dairy calf registrations could be up by 8-10% for 2009 as a whole compared to 2008.

Reports so far in 2009 are that fewer dairy breeds have been used in dairy cow artificial inseminations. This is likely to lead to fewer male dairy calves being born next year and so the number of recorded births. The number of unrecorded deaths will depend on the price of calves in the market place. Economic forecasting suggests that prices will hold up well.

### The short-term beef market

The continuing decline in both the dairy and suckler herds is affecting total calf registrations. As a result, prime cattle slaughterings are forecast to drop further over the next 2-3 years. Meat imports will still continue to be affected by EU limitations on Brazilian fresh/frozen product in 2009 and 2010, and supplies will be sourced from a range of other countries. UK meat exports will continue to do well this year on the back of a shortage of manufacturing beef on the continent, but more significantly due to a favourable exchange rate.

Although consumption has fallen recently in part due to the recession and limitations in supply,

UK DAIRY CALF REGISTRATIONS, DEATHS AND LIVE EXPORTS (JUNE – MAY YEAR)	2006/07	2007/08	2008/09
Dairy male calf registrations	438,228	404,468	422,399
Estimated number born (from heifer registrations)	500,000	505,000	540,000
Estimated number killed on farm or not registered	62,000	100,000	118,000
Number of male dairy calves exported live	96,000	53,000	9,000
Estimated number of male dairy calves retained in UK	343,000	352,000	413,000

\*Based on latest detailed breed data available to May 2009

demand will increase once the economy improves. It is uncertain whether there will be enough supply to fully meet any upturn in demand but male dairy calves potentially could help with any shortfall in future supply.

**Mark Topliff, AHDB Market Intelligence**

**TABLE 1: UK MALE DAIRY CALF BIRTHS, DEATHS AND LIVE EXPORTS**

**2007**

Male dairy calf registrations	395,405
Estimated number born (from dairy heifer registrations)	480,000
Recorded male dairy calf deaths under 1 month old	14,995
Recorded female dairy calf deaths under 1 month old	8,899
Unrecorded number estimated killed on farm or not registered*	85,000
Number of male dairy calves exported live	88,000

**2008**

Male dairy calf registrations	401,884
Estimated number born (from dairy heifer registrations)	515,000
Recorded male dairy calf deaths under 1 month old	12,500
Recorded female dairy calf deaths under 1 month old	9,500
Unrecorded number estimated killed on farm or not registered*	113,000
Number of male dairy calves exported live	67,000

**2008 Jan to May**

Male dairy calf registrations	146,539
Estimated number born (from dairy heifer registrations)	185,000
Recorded male dairy calf deaths under 1 month old	5,100
Recorded female dairy calf deaths under 1 month old	4,000
Unrecorded number estimated killed on farm or not registered*	38,000
Number of male dairy calves exported live	29,000

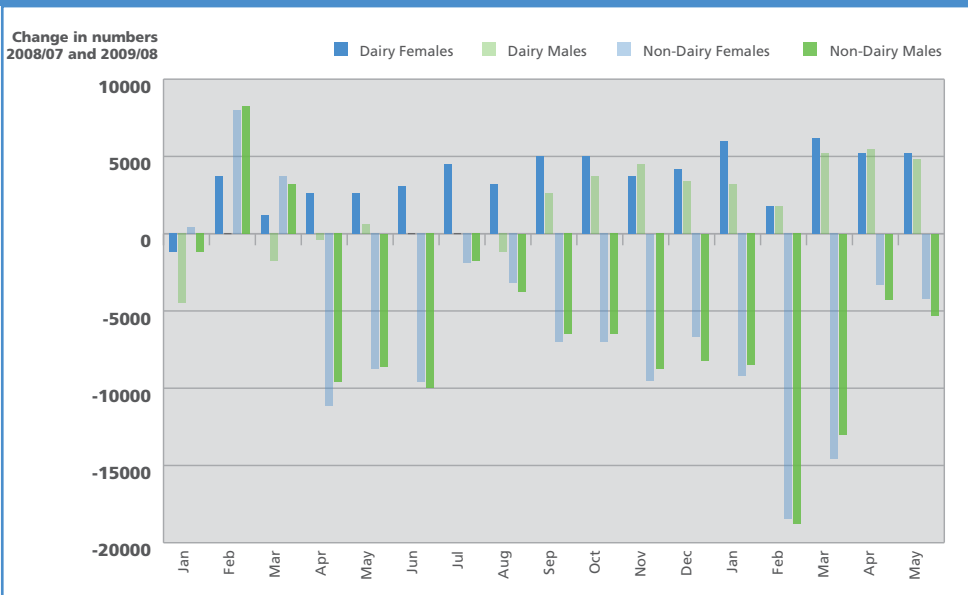
**2009 Jan to May**

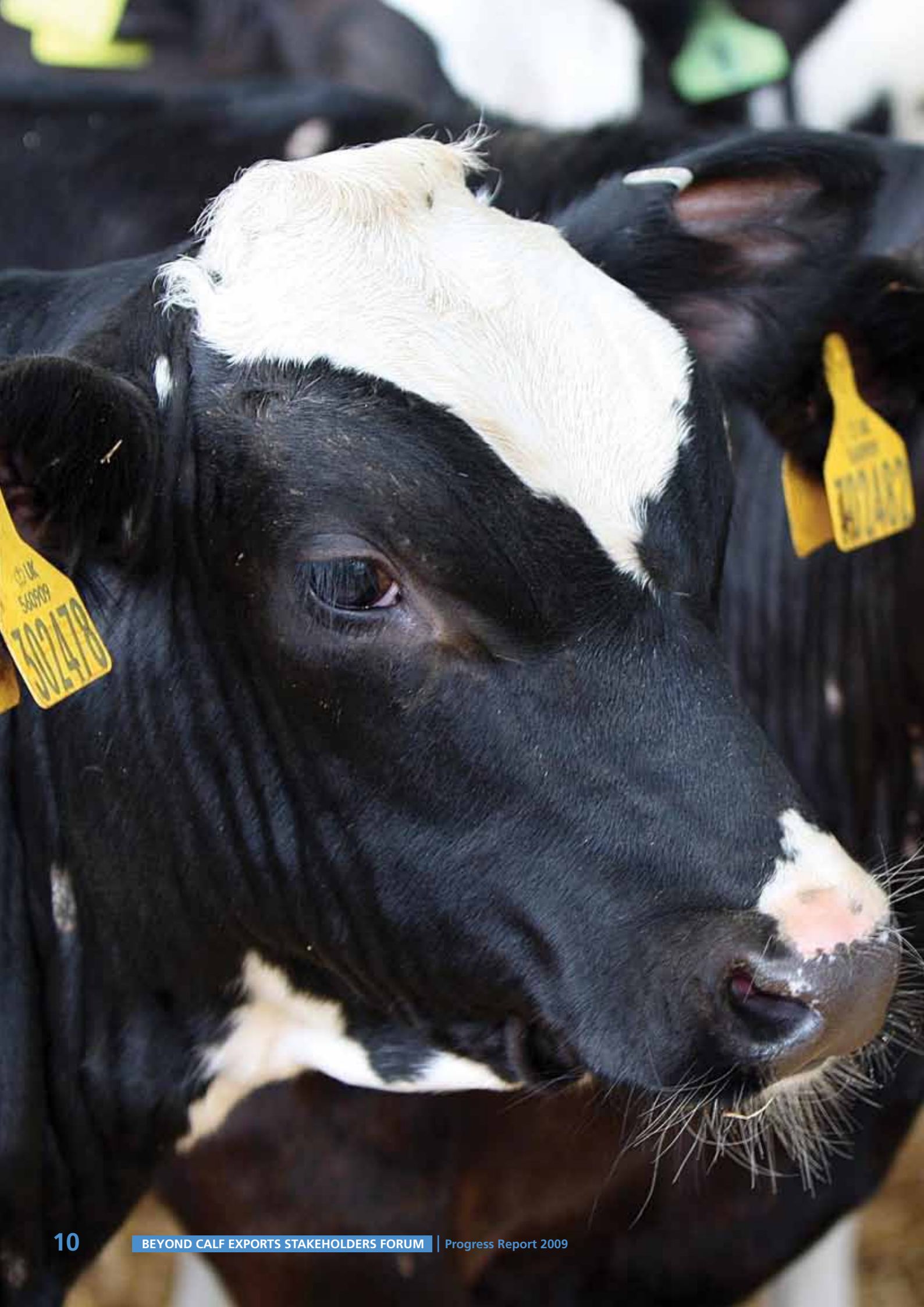
Male dairy calf registrations	167,054
Estimated number born (from dairy heifer registrations)	208,000
Recorded male dairy calf deaths under 1 month old	5,200
Recorded female dairy calf deaths under 1 month old	4,300
Unrecorded number estimated killed on farm or not registered*	41,000
Number of male dairy calves exported live	10

**Notes:**

- 1) Data provided by BCMS (Great Britain) and APHIS (Northern Ireland); 2) Latest data available as at July 09;
- 3) Historical data also updated; 4) 2007 to 2009 live exports estimated - awaiting NI data;
- 5) \*net of recorded deaths under 1 month of age.

**TABLE 2: CHANGE IN CALF BIRTH REGISTRATIONS 2008 - 2009**





## SECTION 2: ECONOMICS



### Holstein bulls – because they're worth it!

Holstein bull calves make a valuable contribution to the beef supply in the UK and there are plenty of bull calves available for beef production. What is often overlooked is that Holstein bull finishing frequently produces the best gross margin of the beef systems operating in the country, making it economically viable. As the eating quality of Holstein bull beef is excellent when it is reared, slaughtered and matured in the right way, market potential exists for producers.

EBLEX has funded a number of projects in recent years which have added to our knowledge about Holstein bull beef systems. This case study looks at some of the results on the economics of rearing and finishing Holstein bulls.

#### Calf rearing

The benchmarking figures EBLEX collect show that the average cost of rearing a Holstein bull to 12 weeks is £129 excluding purchase price. So for the finisher, a Holstein bull will cost around £180 when calves cost £50.

The current trial that EBLEX is funding in partnership with Blade Farming Ltd is designed to examine if selection of calves at a week old can affect subsequent performance. Expert calf traders were asked to sort calves into two groups: those that were worth rearing and those not. It was assumed that this decision would be based on carcass potential. This may yet be the case because the trial is still running but it became clear that the traders looked at the calf's healthiness and, that status was a significant factor in deciding which group a calf should go in rather than conformation alone.

Table 3 shows the average costings for a number calf rearing enterprises. Key areas for attention in calf rearing are mortality, concentrate feed costs, labour and the veterinary programme. The skills shown by good calf rearers are centred on calf selection and disease control.

EBLEX and Dairy Co have put together a guide to calf rearing and a benchmarking tool for rearers to examine their costings and look at different system opportunities. It was launched in 2008 and can be found at [www.holsteinbullcalves.co.uk](http://www.holsteinbullcalves.co.uk)

#### The finishing phase

Assuming that the calf is healthy when received, the finishing phase is mainly about nutrition and growth. Optimising the rations offered to Holstein bulls should be fairly straightforward. The most likely options are barley beef, maize silage or grass silage-based rations, with many producers exploiting the potential to reduce feed costs by including by-products in their rations such as bakery wastes or distillery co-products. But making sure the ration is optimised, particularly for home-produced forage, means undertaking analysis of the ration and changing if necessary. This is why EBLEX produced its ration report, written by nutritionist David Hendy, available on request from EBLEX and summarised in Beef briefing 08/11 (September 08).<sup>1</sup>

<b>TABLE 3: COSTS FOR CALF REARING</b>	
<b>CALF REARERS</b>	
<b>Variable Costs (£)</b>	
Total feed and forage	65.00
Veterinary	7.47
Bedding	8.07
Other costs	0.41
<b>Total Variable and Stock Costs</b>	<b>80.95</b>
<b>Fixed Costs (£)</b>	
Paid labour	2.52
Power and machinery repairs	2.21
Contractor charges	1.14
Administration	1.90
Property charges	2.93
Land resource costs (e.g. land rent)	1.72
Machinery depreciation and fixtures	3.37
<b>Total Fixed Costs excluding non-cash costs</b>	<b>15.79</b>
<b>Non-cash costs (£)</b>	
Unpaid family labour	30.29
Rental value of owned land	0.00
Interest on working capital	2.30
<b>Total non-cash costs</b>	<b>32.59</b>
<b>Total costs</b>	<b>129.33</b>
<b>Physical Performance</b>	
Feeding period (days)	86
Weight at start (kg lwt)	57
Weight at finish (kg lwt)	133
Daily liveweight gain (kg)	0.89
Mortality (%)	2.1
<b>Prices</b>	
Concentrate price (£ per tonne)	249
<b>Feed</b>	
Concentrate usage (kg per head)	246

<b>TABLE 4: COSTS OF PRODUCTION FOR THE AVERAGE UK HOLSTEIN BULL FINISHING ENTERPRISE</b>	
<b>Variable Costs (£)</b>	
Total concentrates	272.93
Forage	3.84
Total feed and forage	276.76
Veterinary	11.69
Bedding	49.77
Other costs	34.77
<b>Total Variable Costs</b>	<b>372.99</b>
<b>Fixed Costs (£)</b>	
Paid labour	19.90
Power and machinery repairs	24.61
Contractor charges	13.80
Administration	8.17
Property charges	8.98
Land resource costs (e.g. land rent)	20.93
Machinery depreciation and fixtures	24.78
<b>Total Fixed Costs excluding non-cash costs</b>	<b>121.17</b>
<b>Non-cash costs (£)</b>	
Unpaid family labour	38.10
Rental value of owned land	11.20
Interest on working capital	19.99
<b>Total non-cash costs</b>	<b>69.29</b>
<b>Total costs</b>	<b>563.45</b>
<b>Physical Performance</b>	
Feeding period (days)	310
Av carcass Wt (kg)	275.0
Weight at start (kg lwt)	152.0
Weight at finish (kg lwt)	498.0
Daily liveweight gain (kg)	1.06
Mortality (%)	6.2
Feed (t) (£108/t)	2.634

Key issues for the barley beef system will be ensuring 24-hour access to feed and the provision of sufficient long fibre to ensure rumen function is maintained. For the maize and grass silage diets ensuring forage quality is high and that the concentrate compliments the forage is vital.

Holstein bulls fed high-quality rations will grow very quickly with 1.5-1.6kg live weight per day as a target. Work at the Scottish Agricultural College by Basil Lowman<sup>2</sup> and funded by EBLEX and Defra showed a feed conversion rate (FCE) of 5.5:1 for the barley system but the feed conversion declined rapidly as bulls approached slaughter weight. Between 450 and 500kg live weight the FCE declined to nearly 9:1. This clearly makes the business of selecting animals promptly when they are ready for slaughter a crucial decision in the economics of the system. As bulls get to 450kg, they should be weighed and assessed for fat cover at least once a fortnight and preferably every week.

**TABLE 5: BREAK-EVEN CARCASE PRICE ASSUMING TABLE 3 AND 4 COSTS AND A VARIABLE CALF PRICE**

Rearing calf purchase cost (£)	Reared calf purchase price (£/calf)	Break-even price £/kg liveweight	Breakeven price £/kg carcase wt (55% KO)
0	130	1.13	2.52
20	150	1.17	2.59
40	170	1.20	2.67
60	190	1.23	2.74
80	210	1.27	2.81
100	230	1.30	2.89
120	250	1.33	2.96
140	270	1.36	3.03
160	290	1.40	3.10
180	310	1.43	3.18
200	330	1.46	3.25
220	350	1.49	3.32

**TABLE 6: EFFECT OF CHANGE IN CONCENTRATE FEED PRICE WITH CALF VALUED AT £60**

Concentrate cost (£/t)	Break-even price £/Kg liveweight	Breakeven price £/kg carcase wt (55% KO)
78	1.10	2.45
88	1.15	2.55
98	1.19	2.64
108*	1.23	2.74
118	1.28	2.84
128	1.32	2.93
138	1.36	3.03
148	1.41	3.12

\* Current average from Table 3

Table 4 shows likely costs of finishing. Assuming these costs are met and that the carcase has a weight of 275kg and conformation O- and fat class 3, the variable of calf value relative to the carcase value will determine if the enterprise can break even. Table 5 shows the break-even carcase dead weight prices for different calf values; Table 6 shows the break-even price for a £60 calf with feed cost during finishing as the variable.

## Carcases and beef

The conformation of Holstein beef bulls average around the O- and P+ area. The genetics of Holsteins determines their carcase shape and an EBLEX and Dairy Co study<sup>3</sup> conducted by SAC has shown that selection for improved carcase conformation could be made without limiting the progress on milk yield. It is clear that some Holstein sires have better carcase traits than others, but to date this has not been a priority for dairy breeders.

A number of EBLEX funded trials (and other work) support the position that the eating quality of Holstein bull beef compares well with bulls of beef breeds when the same age and feed systems are used. Feeding with cereals reduces the beef flavour compared with grass or grass silage feeding.

## Conclusion

We know a good deal about how to produce beef from Holstein bulls. The product is valued in the market and when the right economic conditions prevail the profit opportunity is as good or better than many beef enterprises.

*Duncan Pullar, Head of R & D, EBLEX*

## References

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- 3 Muscling on Holsteins – Economic Consequences. EBLEX and Dairy Co. Eileen Wall, Habtu Weldegebriel, Mike Coffey, Alistair Stott and Kev Bevan, SAC Edinburgh.

### Background

This paper shows that the robust dairy cow is sustainable in terms of animal welfare and its ability to meet market requirements, whilst delivering an economically satisfactory return for the farmer.

Milk producers have sought to improve profitability through maximising sales revenue and controlling costs of production. Rapid progress in the development of breeding programmes and technological advances in ruminant nutrition have enabled herd managers to rapidly increase milk yields and the promotion of milk yield as the key driver of profitability has been an effective marketing tool for selling dairy genetics. Cows of extreme stature and angularity have been a major presence over the last twenty years, encouraging many farmers to breed this type of cow for commercial milk production.

New technology and innovative management techniques have facilitated the intensification of milk production. Greater understanding of cow nutrition has produced diets capable of increasing the potential of high yielding cows and veterinary science has provided new medicines and practices to help these animals.

Historically, dairy cattle would partition dietary energy, from simple feeds such as grass and cereals, between the production of milk to feed offspring and the maintenance of body condition to ensure survival and enhance the ability to conceive at mating. Having now been genetically programmed to divert a vast proportion of the energy from feed it consumes towards the synthesis of more milk, the metabolism of the high yielding cows has been significantly altered. An inability to meet the demand for energy in these cows, particularly in early lactation, means that body reserves are depleted to produce milk at the expense of health and fertility.

Furthermore, cows with tall, angular frames

produce calves with little ability to lay down flesh, which produces a beef carcass of limited value in the food chain. All this has had impacts on both animal welfare and farm profitability.

### What is a robust dairy cow?

Before assessing the economic value of robust dairy cows, it is important to understand the characteristics that define such an animal. Within the dairy industry, a small number of milk producers run what are often referred to as 'dual purpose' cows, so called because of their ability to produce both milk and beef. These robust animals are distinctly different from the modern, specialist high-yielding cow and are often regarded as old fashioned. However, it is becoming increasingly apparent that there are a number of attributes associated with the characteristics of these breeds which have an increasing economic value in the industry today.

The conversion of feed into milk has long been regarded as the key indicator of dairy cow performance. Since purchased feeds are the single biggest cost in many herds, it is important to maximise return from consumption. But this narrow focus fails to take account other key components of profitable cow management which have been neglected in particular fertility, longevity as a milk producer, residual value and calf income.

### Fertility

Dairy cows are not seasonal breeders and healthy cows will display a heat cycle every twenty one days. However, cows intent on channelling all their energy towards producing high levels of milk stand less

chance of conceiving. When cows are unable to replace body reserves they suffer from fertility problems and some never become pregnant again, leading to premature culling. High-yielding cows will continue to produce milk over an extended lactation but failure to conceive means they will not stay in the herd for long.

### Longevity

Longevity refers to the number of years a cow spends producing milk in the herd. Most dairy animals produce their first calf at between 24 and 30 months of age, after a lengthy and costly rearing regime. A number of inherent characteristics in the cow will ultimately determine her herd life; cows that have been genetically constructed to produce high volumes of milk often display frailties and weaknesses in their physical conformation. This may be in the form of poor legs and feet, which compromise mobility and lead to lameness. The pressure of producing high-milk yields increases the chance of metabolic disorders induced by diets overloaded with specific nutrients to exacerbate inherent weaknesses and allow disease to take hold.

Reduced longevity, whatever its causes, means that there is a higher turnover of cows in the herd. It is now common for cows in high-yielding herds to average little more than two complete lactations before leaving the herd, delivering little payback for the time and investment in their upbringing.

### Residual value

There will come a time when any dairy cow will have no further commercial use in the herd and will need to be disposed of. The loss of these cows from the herd will always incur costs for the farmer, primarily through the need to buy or rear replacement animals. However, farmers can offset the cost of replacing cows not only by reducing culling rates (herd turnover), but also through achieving a good price for the cull

cow when she exits the herd. Well-fleshed, robust cows can achieve considerably higher returns and so offset the cost of their replacement.

### Calf income

The birth of a calf should be a welcome event as it provides future replacements or a male calf to sell into the beef industry. But now, despite the promotion of integration within the food supply chain, dairy farmers have effectively divorced themselves from their beef producing kin, becoming only specialised in delivering high volumes of commodity milk. As milk yields have risen, so calf quality has fallen and many dairy farmers have reached a point where calves do not add to farm income from sales and have become something of a nuisance.

### Evaluating the profitability of robust dairy cows

Farmers need to strike a balance between milk output and health and welfare. Continuing dependency on new technology to support hitherto unprecedented milk yields merely provides flimsy support for the welfare of a cow. Robust characteristics may be identified in any breed of dairy cattle, but they will only be generated from bloodlines which have been bred with a balanced approach, allowing the animal to display all of the elements of efficient and sustainable production outlined above. However, in order to bring about a wholesale change in the approach to breeding dairy cows, farmers must be convinced of the financial rewards such an approach will bring.

As Table 7 shows, although the high-output cow generates a significantly higher return in milk income, the annual net margin per cow is actually lower than that of the robust cow. So, neglecting important economic attributes such as fertility (calving interval) and beef calf value in pursuit of high-milk yields can undermine the profitability of the dairy enterprise.



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## CREATING NEW INDUSTRY STANDARDS IN CALF PRODUCTION AND WELFARE

### Introduction

At ASDA, we take our commitment to calf welfare very seriously. We are continuously working hard to improve our welfare standards and forge closer working relationships with all of our farmers. That's why we've committed to creating new industry standards in calf production to encourage calf rearers operating within ASDA's supply chain to adopt high welfare practices and help them improve their economic performance. In conjunction with 'The Calf Company', a specialist in calf rearing, we believe that CalfLink leads the way in finding innovative ways to improve calf welfare and promoting the benefits of rearing dairy bull calves, such as discounted colostrum to ensure all ASDA calves receive adequate amounts of antibodies at birth.

As well as building stronger working relationships with our calf rearers, our aim is to promote and demonstrate to our producers that the correct management of young calves leads to healthy and sustainable returns. By sharing and educating farmers via training days and ASDA's calf rearing centre of excellence, we are highlighting the importance of adopting high welfare calf practices that will ultimately benefit their businesses.

### Background

Following the successful launch of ASDA's DairyLink scheme in 2004 and ASDA's BeefLink scheme in 2007, we felt we were missing a direct link between the two initiatives. With thousands of dairy bull calves being slaughtered unnecessarily across the UK each week, we believe we have a moral duty to ensure that none of the calves born on ASDA DairyLink farms are either disposed of at birth or exported with the long term aim of ASDA becoming 'calf neutral' i.e. none of the dairy bull calves born on ASDA DairyLink farms are either disposed of at birth or exported.

By setting up CalfLink, we've been able to link DairyLink farmers directly with BeefLink farmers

without a third party taking a cut, ensuring all profits go back to family farms which make up the backbone of British agriculture.

As part of our continual commitment to improve calf welfare, ASDA has implemented the following initiatives over the past 12 months, all of which are dealt with in detail below:

- ASDA Calf Rearing Centre of Excellence
- 180 Dairy Bull Scheme
- ASDA Dairy Bull Rearing Units
- First supermarket to accept cattle up to the age of 36 months
- Launched the Fantasy Farming Dairy Bull League
- Calf Rearing Training Days
- Discounted Sexed Semen
- Discounted 'High Welfare' Holstein Semen
- Discounted Identity Tags
- Discounted Colostrum
- Discounted milk powder
- Free Calf Rearing Production Reviews and Management Plans.

The key objectives of CalfLink are:

- Eradicate the need to dispose of or export any dairy bull calves born on ASDA DairyLink farms achieving 'calf neutral' status;
- Work with farmers to offer a carcass specification that allows for profitable production of dairy bull calves;
- Make single sexed female dairy semen affordable to ASDA DairyLink farmers;
- Promote the use of Holstein bulls with high welfare attributes and capable of producing strong, viable bull calves;
- Emphasise to farmers the importance of sufficient intakes of quality colostrum to the new born calf;
- Improve the economic performance of calf rearers operating within the ASDA DairyLink and ASDA BeefLink supply chains;
- Maximise the genetic potential of dairy replacement heifers, improving the performance and longevity of the ASDA DairyLink herd;
- Link ASDA DairyLink farmers directly with ASDA Beeflink farmers without a third party taking a cut, ensuring all profits go back to family farms who are the backbone of British agriculture.

### Achieving 'calf neutral' status

It is estimated that currently 3,000 black and white bull calves per week are shot in UK, a staggering 150,000 a year. We believe that as a retailer of milk we have a moral obligation to overcome this problem, particularly on our dedicated supplying milk farms.

On the face of it, accommodating all of the 20,000 or so dairy bulls born on ASDA DairyLink farms annually into the ASDA beef range seems unachievable. However, we believe that it is both a realistic and achievable goal as, in reality, this is only seven per cent of ASDA's overall annual beef kill.

Our long-term aim is to achieve 'calf neutral' status i.e. none of the dairy bull calves born on ASDA DairyLink farms are either disposed of at birth or exported. In order to achieve our goal, in the autumn of 2008, we launched ASDA CalfLink in conjunction with a specialist calf rearing company based in Cheshire, The Calf Company.

### INITIATIVES

- **The ASDA CalfLink Centre of Excellence**

Pool Head Farm near Winsford, Cheshire is the new ASDA CalfLink Centre of Excellence, producing in excess of 1200 calves per year. These calves are reared to the highest standards of animal welfare, creating new standards of calf rearing excellence and animal welfare. All procedures on the unit comply and in many cases exceed the FABBL farm assurance guidelines.

All the products supplied by The Calf Company are evaluated at Pool Head Farm before being offered to clients. Trials are conducted to ensure they will perform well under UK conditions.

Calves are fed using all common UK feeding systems such as group housed, trough feeding, feeding in individual pens and computerised feeding, allowing ASDA DairyLink and BeefLink farmers to view and assess each method and to analyse first-hand which system best suit their individual requirements.

#### **Ted Jackson, Shropshire**

Ted Jackson is a calf rearer based on the borders of Wales and now collects all of the available Welsh ASDA dairy bull calves. Ted was introduced to the dairy farmers at the regional ASDA 'best practice' meetings allowing him to meet face to face with the farmers. On becoming an ASDA CalfLink rearer, Ted was eligible for a free production review and management plan from the Calf Company and he visited the ASDA CalfLink Centre of Excellence to see first hand the various feeding systems and regimes.

**Ted says:** *"I would thoroughly recommend anyone involved with calf rearing to visit the ASDA CalfLink Centre of Excellence, I learnt more about calf rearing in one afternoon there than I thought possible and I've been rearing calves for most of my life.*

*"Having visited the centre and on the back of my production review and management plan I have completely transformed my calf rearing unit; I have installed a new ventilation system in my sheds, purchased new milk feeders and adopted the feeding regimes advised to me by the calf company. Since making the changes the calves have not looked back, are far healthier and the pneumonia, which was once an issue, has all but disappeared. The first ASDA dairy bull calves I purchased last autumn are just about ready to send for slaughter and at current prices should provide me with a healthy return on my investment."*

One ASDA DairyLink farmer, Martin Evans from Welshpool, was disposing of all of his Holstein bull calves before the CalfLink scheme was launched. He now supplies all his dairy bull calves direct to Ted.

***"This time last year I was paying a chap £9 per calf to have them shot and taken away, this year I've got Ted collecting my calves direct from my farm at regular intervals and at an agreed price – what a turn around."***

**Martin Evans**



- **180 Dairy Bull Scheme**

Throughout the spring and summer of 2008, ASDA ran trials with several key ASDA DairyLink and BeefLink farmers, slaughtering in the region of 100 Holstein bulls at various ages and under several different feeding regimes. From these trials, it immediately became apparent that the most profitable age for our farmers to slaughter dairy bulls was around 10-11 months of age at a carcass weight in the region of 200kg. The trial showed that the bulls thrived up until 10-11 months of age with impressive feed conversion and surprisingly good conformation for the breed. Once over 10-11 months of age however, feed conversions dropped dramatically and conformation also deteriorated making the production of dairy bulls over this age unviable.

The trial showed that:

- Slaughtering at 10-11 months allows dairy bulls to be reared to their peak feed conversion efficiency;
- By allowing nearly two bulls in the space of one 16 month old steer/bull it generates improved cash flow and more beef being produced in a shorter timescale;
- Farmers were in favour as bulls were slaughtered before they become dangerous to manage;
- Dairy replacement heifers did better on trial dairy farms through increased shed space as a result of bulls being sold earlier;
- Best trial bull in 2008 came to £655 at 11.5 months of age.

Having identified the optimum age and weight to slaughter dairy bulls, the major stumbling block to be overcome was the ASDA beef weight specification; a minimum 270Kg carcass with severe penalties (up to -80ppKg) for bulls falling below this minimum weight requirement. It became apparent that the ASDA weight specification had to be amended in order to accommodate ASDA dairy bulls and remove the severe penalties that were in place to encourage dairy and beef farmers to rear ASDA dairy bull calves profitably.

After several months of trials carried out on carcass yields and primal sizes, we decided to re-write the ASDA beef carcass specification, as follows:

- Allowing ASDA dairy bull carcasses between 180-260kg to enter the ASDA standard beef range, removing all previous deductions for these lower weights;
- Removing any penalties for bulls between 180-260kg grading Fat Class 1;
- Significantly reducing the grade deductions to ensure poorer (P+ & P-) grade carcasses were not penalised too hard, ensuring a viable outlet for all ASDA dairy bull calves and not just the better ones.

Adam Quinny, ASDA BeefLink Supplier, says: *"The ASDA 180 Dairy Bull Scheme is a real breakthrough for the industry which with the current export ban couldn't have come at a better time. ASDA's new scheme is a very attractive option to farmers such as myself, as the capital outlay is low, the turn around is short and with feed and beef prices where they currently are, it should also return a healthy margin."*

#### • 180 Dairy Bull Rearing Units

Having created a specification that allowed for the profitable production of dairy bulls, we firstly encouraged ASDA DairyLink producers to rear their own dairy bull calves on their home farms, thus eradicating the need to move young calves from their farm of birth and offering our DairyLink farmers a new stream of income. Whilst a handful of DairyLink farmers decided to rear their bulls for the new scheme, the vast majority wanted to sell their calves on to specialist rearers.

We have specifically resisted the involvement of a third party to manage the transport and rearing of ASDA dairy bull calves. Instead, are we are linking ASDA DairyLink farmers directly with our ASDA Beeflink farmers, ensuring all profits remain with the family farms operating within the two supply chains.

In response to the vast majority of our dairy farmers wanting to sell their calves on to rearers, we identified suitable rearer/finishers who could not only rear the calves to weaning age (12 weeks) but take them right the way through from 10 days of age to slaughter on the same farm, again minimising the number of moves and ultimately the stress levels on the calves. There are four major dairy bull rearing units: one in Yorkshire, two in the Midlands and one in Shropshire as well as several smaller units.

The farmers running the rearing units provide a free calf collection service. Calves are generally collected on a weekly basis and the price paid is agreed between the dairy farmer and the rearer at the day of collection. The system is fair for all parties and from the feedback we have received appears to be working very well.

Justin McCarthy, Livestock Editor, Irish Farmers Journal, says: *“The focus is to ensure that all profits go back to the family farms operating within the two supply chains, without the unnecessary involvement of any third parties – in stark contrast to other retailers who have gone down the route of involving third party management companies that take a huge cut of the profits.”*

- **Eating Quality**

Having identified the optimum age to slaughter dairy bulls to enable maximum returns at farm level, it was important that we remained customer focused and ensured that the eating quality of the meat was up to scratch. A number of taste panels were set up at ASDA and ABP to analyse the meat eating qualities of the young bulls. The results from the panels were very encouraging, the meat was visually appealing with very little external fat and yet the meat was tender, succulent and flavoursome. The final test was carried out by ASDA’s executive chef at the time, Neil Nugent, who described the meat as being “outstanding”.

- **Rosé veal or beef?**

Having amended the specification to accommodate young dairy bulls less than 12 months of age into the ASDA beef range, a decision then had to be made on how to market the product. Whilst marketing as rosé veal was one option, having carried out customer research, it soon became apparent that there was very little demand for British reared rosé veal, a high level of customer education would be required and most importantly, we would fall far short of selling sufficient quantities to achieve ‘calf neutral’ status.

Instead, it made far more sense to market the product as standard beef. With the credit crunch looming and customers showing resistance to retail beef price inflation on the back of the 38% increase in raw material cost between 2007 and 2008, offering our customers smaller steaks

and joints allowed us to achieve much lower price points preventing our loyal beef shoppers from switching into cheaper proteins such as pork and chicken. But most importantly, it allows us to accommodate all of the 20,000 dairy bulls born on ASDA DairyLink farms annually, enabling us to achieve our long term goal of becoming ‘calf neutral’.

- **First supermarket to accept cattle up to the age of 36 months**

In January 2009, ASDA became the first supermarket to accept cattle up to 36 months old for use in our standard beef range. The move, which increased the limit from 30 months is enabling farmers to get a better return on their capital investment, giving them another six months to grow their cattle on and achieve the optimum conformation grades. This should make the rearing of dairy bull calves into large steers a viable and attractive option once again, reducing the number of dairy calves being disposed of at birth.

- **Fantasy Farming League**

In November 2008, ASDA, in conjunction with our long-term partner, Anglo Beef Processors (ABP) and new partners Askham Bryan College, launched a new Fantasy Farming League for Yorkshire beef and dairy farmers as part of our wider sustainability programme (CalfLink) to tackle the issues surrounding dairy bull calves.

The ASDA Fantasy Farming Beef League has similar rules to that of fantasy football, but instead of managing players, the ten teams of farmers are looking after a pen of dairy bull calves, competing to produce the best product and make the most profit.

The teams of three, each comprising two Yorkshire BeefLink farmers and one Yorkshire DairyLink farmer selected by Arla, Asda’s sole supplier of milk, were given eight calves to manage from twelve weeks old to finishing. The 80 calves are being reared at Askham Bryan College’s National Beef Training Unit in York.

Commenting on the initiative, Research Officer at Askham Bryan College, Oliver White, says: *"This initiative with ASDA and ABP is the first Fantasy Farming competition to focus on beef. It is great that a retailer like ASDA is taking the issue of sustainability so seriously, and we hope that the results will have far reaching benefits to the industry."*

Update meetings are held monthly, during which various guest speakers advise on topics such as nutrition, health and supply chain. The teams can use the information gathered from the guest speakers to alter any aspect of the cattle's management.

The groups have up until November 18th 2009 to market their bulls into one of ASDA's dedicated beef abattoirs, ABP York. The final results will be announced in December. The group that makes the most profit will be crowned the winners and all key learnings taken from the most profitable systems will be shared with producers operating within both the ASDA DairyLink and BeefLink supply chains.

David Benson, ASDA BeefLink farmer, York, says: *"It's been a real eye opener to see the growth potential of young dairy bulls on various different diets. Our main goal for the rest of the project is to reduce feed costs whilst maintaining target growth rates. We intend to sell the bulls sooner rather than later while their feed conversion is still favourable, which thanks to the ASDA 180 Dairy Bull Scheme is now possible."*

- **Calf rearing training days**

In June 2009, the first ASDA CalfLink Open Day was held at the CalfLink Centre of Excellence to learn from the management practices employed at the Centre. Areas covered included: Housing/ventilation, vaccination, nutrition/feeding systems, calf health status, colostrum check/disease check and managing large batches of calves.

Farmers were encouraged to regularly test colostrum quality and to take advantage of the ASDA colostrum deal if there is any doubt about the quality of the colostrum they are giving their calves.

The day was a great success, with several dairy farmers showing interest in retaining their dairy bulls and rearing them for the 180 Scheme as opposed to selling them in their local livestock auctions. One BeefLink farmer decided to purchase a large batch of discounted ASDA colostrum and is now going to provide the colostrum free of charge to the ASDA DairyLink farmers supplying his dairy bull calves, stipulating that every calf supplied to him must receive a sachet of colostrum at birth.

- **DairyLink Discounted Sexed Semen Scheme**

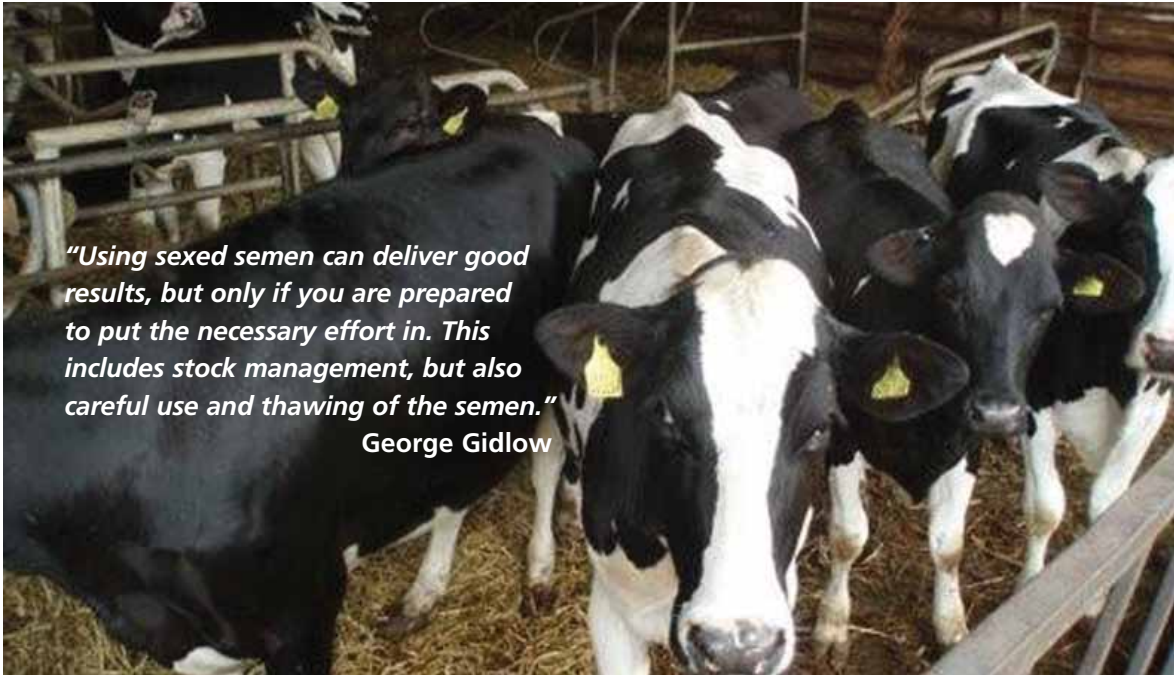


In an attempt to reduce the number of dairy bull calves being shot at birth or exported, ASDA has set up a discounted sexed semen scheme in conjunction with the

sexed semen company Cogent. ASDA DairyLink members are eligible for a 20% discount on all orders of sexed semen allowing farmers to choose the bull or bulls that best suit their breeding programme. As well as the discount, presentations have been conducted at the regional 'best practice' meetings instructing farmers on how to get the best out of using sexed semen.

The main benefits of sexed semen to ASDA DairyLink members are:

- Eradicate the need to dispose of and export unwanted bull calves;
- Reduced calving problems associated with large bull calves;
- Reduce disease risk by breeding own replacements;
- Minimise herd replacement and veterinary costs;
- Speed up genetic progress.



*“Using sexed semen can deliver good results, but only if you are prepared to put the necessary effort in. This includes stock management, but also careful use and thawing of the semen.”*

**George Gidlow**

### **R & W Gidlow’s Springwood Farm, Leicestershire**

R & W Gidlow’s Springwood Farm, Leicestershire, run by Asda DairyLink farmer Robert Gidlow with his son Paul and nephew George, along with Paul’s son Alex and Simon Holt, has a herd of 250 black and white cattle. It rears all stock and has a bull beef unit. The farm decided to use sexed semen following the discount price and as the farm was short of heifers. In 2008, the Gidlow’s achieved an 82% conception rate to sexed semen in their heifers (32 out of 39), yielding 28 heifer calves. They plan to move from using it on heifers to on selected cows.

- **Discounted ‘High Welfare Holstein’ semen**

A 20% discount on semen from Cogent’s ‘High Welfare Holstein’ bull, Huddlestone Spooky, will hopefully provide an additional incentive for ASDA DairyLink and BeefLink farmers to rear dairy bull calves.

Spooky comes with all the right credentials: he produces very easy calving cows with medium frames, low cell counts, positive protein percentages, super udders and great locomotion, plus the ability to carry extra condition without losing milk yield. But his other great asset is that he produces strong, viable bull calves that are well worth rearing.

Pearce Hughes, Agricultural Development Manager, ASDA, says: *“Spooky is producing long lasting, medium framed cows with low cell counts, great legs and feet and all this without*

*having to sacrifice on milk yield. His bull calves are well-built and predominantly black in colour - just the type of calves our rearers are looking to take on.”*

- **Discounted Identity Tags**

A 50% saving on cattle identity tags from tag manufacturer, QuickTag, is now available to ASDA DairyLink and BeefLink suppliers. ASDA’s decision to forge a deal on tags followed discussions with one of the supermarket’s DairyLink suppliers who claimed he was having to dispose of his dairy bull calves at birth because of the cost incurred through tagging.

The new deal, which allows farmers to double tag their calves from as little as 98p per calf, ensures that farmers no longer need to dispose of their bull calves on the grounds that the price of tags are too expensive.

- **50% discount on colostrum supplement**

As part of the CalfLink initiative, we are offering all of our cattle farmers the chance to buy half price powdered calf colostrum at just £4.50 per sachet against the usual price of £9.00. The deal means ASDA farmers can get their calves, regardless of sex, off to the best possible start improving the health and performance of the animal throughout its lifetime.

ASDA's decision to forge a deal on colostrum followed discussions with Geoff Spence, one of the supermarket's DairyLink suppliers and last year's British Dairy Farmer of the Year.

Geoff says: *"With high yielding dairy cows it is often hard to get enough colostrum into new born calves. Using a powder to supplement the first milk makes real sense."*

*"One sachet per calf is enough to get them started. This, combined with the first milk of the mother, gives the calves an immediate boost after birth and means their immune system is fully charged against disease. There also appears to be a positive effect on body condition and growth rates."*

- **10% Discount on Milk Powder and Supplements**

- **FREE Production Review and Management Plan**

All DairyLink and BeefLink suppliers now have the opportunity to take advantage of a free production review and management plan. An experienced calf-rearing specialist will visit the unit and give a full appraisal of current feeding and housing systems. This appraisal will identify which products and services are necessary to achieve the required production targets. The production review also establishes which particular feeding system is suitable for the unit, taking into account calving pattern and labour availability.

The Calf Company will do a full review of the housing with particular attention paid to ventilation, drainage and access. The

construction team are able to make any changes that are necessary.

The type of feed and the method with which it is being fed is reviewed to establish if any improvements can be made. Growth rates, herd health and labour availability are taken into account so that the best solution can be offered on problem units.

Any particular disease issues are taken into account when the production review is conducted. Where necessary, the Calf Company will liaise with the farms vet and discuss various options that are available to the producer.

- **Training Courses**

Bespoke training programmes are available for ASDA calf producers and their staff. Training days are conducted at ASDA's Calf Rearing Centre of Excellence. The objective of these days is to offer training in all aspects of calf production leading to the creation of new industry standards of excellence in calf production and welfare

### **TYPICAL PROGRAMME**

#### **Day One**

- Why modern production needs to be different than 10 years ago
- Caring for the newborn calf
- Why the correct preventive medication is important
- Managing large numbers of young calves
- Creating the correct environment

#### **Day Two**

- Disease check training
- Colostrum check training
- Dehorning
- Injecting
- Feeding
- General calf unit management

- **Colostrum Check**

Most of the disease problems in young calves can be attributed to a low immunity level. Many calves don't receive enough colostrum that contains an adequate level of immunoglobulins. As average yields have risen over the last 10 years, the problem of low immunoglobulin levels have had a major influence on calf health. Colostrum check allows colostrum with inadequate immunoglobulin levels to be identified and corrective action to be taken. Through colostrum check, good quality colostrum can be saved to feed to animals in the future.

- **Disease Check**

Diagnosing disease early is vital to a young animal's health and well being. Disease check can give an indication of the type of disease and its prevalence in five minutes. The disease check can identify the following diseases


- Coronavirus
- Rota virus
- E.coli F5
- Cryptosporidium

This allows the correct administration of medicine quickly. Production techniques can be changed when necessary increasing the animal's resistance to disease.

- **Study Tours**

ASDA CalfLink study tours offer an informative way for farmers to experience first hand the calf rearing methods used abroad. They come with fully assisted guidance and, without a doubt, give a fairly unique insight into the calf rearing industry, as witnessed first hand by the ASDA study group who visited Holland in June this year.

A mixture of 30 ASDA DairyLink and BeefLink farmers visited several leading Dutch rosé veal rearing units to gain an insight into production methods and to identify areas in which they could improve the efficiency of their own dairy bull production systems.



ALAN BARROW FROM THE CALF COMPANY AND PEARCE HUGHES FROM ASDA AT THE LAUNCH OF ASDA'S CALFLINK CENTRE OF EXCELLENCE



## CASE STUDY



# HOLSTEIN CATTLE PRODUCTION

## Introduction

Blade Farming Ltd began in 2000 with the aim of developing a sustainable production system for suppliers but it needed a more reliable source of cattle and more consistent, good quality beef. The Blade supply chain is different from any other beef farming system in the UK as it has developed measurable systems to improve farmer returns and give the animals in the production system the best start in life until they are in the finishing systems.

Genetics is important and Blade have been at the forefront of the meat industry in promoting Holstein beef using unwanted calves from the dairy herd. Trials showed that beef from younger cattle was tender and Holsteins if reared properly could achieve good carcass weights at 14 months. Finishers desperately needed weaned calves to be reared through a network of calf rearers, making sure that weaned calves were always available in batches. This would help the contract finisher to sell the finished cattle in batches that would improve the welfare of the animals as they would remain in the same social group throughout their lives and reduce production costs.

*"We are based in the South West of England which has the second largest density of dairy cows in the UK. It was obvious to Blade that these calves needed a home rather than being disposed of, so we set about trying to understand why there is a stigma attached to beef from Holstein cattle".*

Richard Phelps, Blade Farming's  
Managing Director

So Blade began a calf rearing system whereby Blade maintained ownership of the calves, feed, milk powder and veterinary costs and the farmers were responsible for



*"My job, is to work with our procurement team to feed back valuable information on the quality and health of the calves arriving in the units. The most important thing is to get a consistent and healthy growth rate and the dairy farmers have a key role in ensuring the calf has had colostrum before we receive it."*

**Alexandra Robinson**

the labour, water and straw which would release the capital spend for farmers and allow them to earn a profit. Calf rearers are paid a management fee for each calf reared with a bonus if key performance indicators such as milk powder use, daily live weight gain and medicine use are met.

There are now 12 calf rearing units rearing in excess of 16,000 head of calves each year. A manager visits each of the calf units on a fortnightly basis to make sure the rearers are working to the high welfare standards adopted by Blade, as well as keeping a close eye on the stock of feed, milk powder and medicines required.

Blade has since developed an online management tool using electronic ear tags and the web to upload data to a central point, allowing Alexandra to access the data from the calf units from almost anywhere. The information from the system, such as on health and feed intake, can be given to the finishers as a health card when the calves arrive on their unit reducing the amount of preventative medicine given to the animal.

Selection is vital and this is done either on farm or in the dedicated collection centre based in Honiton, Devon. Each week, dairy farmers deliver calves older than two weeks old from assured dairy units. On arrival at the collection centre the calves are weighed and selected on sex, breed and quality and the farmers are paid based on these attributes. The aim is for an O grade and not all calves have the genetic potential to do this, so advice is also given to dairy farmers on sires that should produce the right calves. The system is working as the numbers of Holstein calves disposed of has been reduced.

Blade has developed the 'Star Sires Scheme' to encourage dairy farmers to select better shaped dairy bulls to sire the herd, hoping that more farmers produce calves with better beef potential. The scheme is still in very early stages but if successful will allow more Holstein calves to enter the Blade system in future.



**ONE OF THE FIRST CALVES BORN THROUGH THE STAR SIRE SCHEME**

### Profit improvement

The abattoir needs a carcass that can achieve the maximum cuts for retail and food service. The appearance and price point of the cuts are vital when selling beef. Calves with poor genetics will not achieve carcass grades to produce good size and fat cover steaks.

The grading system in the abattoir takes into consideration the conformation (shape) and fat cover. This is done using a grid system known as the EUROP grid (see Table 8 below). Farmers are paid incentives with carcasses with higher yields and optimum fat cover and penalties for those that don't meet the specification.

**TABLE 8: THE EUROP GRID**

	1	2	3	4L	4H	5L	5H
E	-40	9	20	20	12	-25	-40
U+	-40	6	12	12	6	-25	-40
U-	-40	3	6	6	0	-25	-40
R	-40	-5	0	0	-5	-25	-40
O+	-40	-10	-5	-5	-10	-25	-40
O-	-40	-20	-15	-15	-20	-25	-40
P+	-40	-40	-40	-40	-40	-40	-40
P-	-40	-40	-40	-40	-40	-40	-40

The difference in revenue to the beef finisher between a good quality Holstein bull and a bad quality one is calculated as follows:

R4L base price	£2.80p/kg
O+4L =	£2.75 (less 5p from base)
-O4L =	£2.65
P2 =	£2.40

The average difference between a good calf and a poor confirmation calf is 25p per kg and with an average carcass weight of 275kg this equates to £68.75p. The grade 1 calves that are equivalent to star sires calves achieve consistently the top price paid for Holstein calves. Poor quality Holstein calves are disposed of at an average price of £4 per head. So by improving the genetics of the sire and by ensuring the calves are healthy there is a cash benefit to the producer of £64 (at current market values).



**THIS HOLSTEIN CALF WOULD NOT BE CONSIDERED FOR BLADE BEEF SCHEME DUE TO ITS POOR BEEF CONFORMATION, TYPIFIED BY ITS NARROW SHOULDERS AND OVERALL ANGULARITY**



**THIS HOLSTEIN CALF HAS GOOD CONFORMATION, BUT IS SHOWING SIGNS OF UNDER NOURISHMENT CONSISTENT WITH A SHORTAGE OF COLOSTRUM (STAREY COAT)**



**UNDER NOURISHED AND NOT IDEAL BEEF CONFORMATION, THIS HOLSTEIN CALF WOULD NOT BE ACCEPTED FOR THE BLADE BEEF SCHEME**



**GOOD CONFORMATION AND WELL NOURISHED; THIS HOLSTEIN CALF WOULD BE ACCEPTED FOR THE BLADE BEEF SCHEME**

## Calf Rearing, Rob and Claire Martin

In 2000, Rob Martin was looking for calf-rearing opportunities and had heard that a local abattoir was finalising a scheme to rear and finish cattle under contract. Blade visited the farm and agreed that there was great potential to operate a calf rearing business and agreed to fund all of commodities such as a milk mixer and software programme to rear the calves.

The farm now boasts being the largest Blade rearing unit, with four sheds capable of rearing groups of 120 each on a quarterly basis, meaning that the unit can rear a total of 1,900 each year.

*"We have learned a great deal over the last 9 years. We have improved ventilation in all of the sheds to improve the flow of fresh air and we realise that during the winter, we need to provide more shelter if the calves need it. The key to a healthy environment is to offer the calves' freedom to chose where they lie and that the environment is right for them. By doing this the calves are growing quicker and leaving the unit earlier. When we started, the calves were here for an average of 115 days and now we average 92 days, sometimes even 84 days."*

**Rob Martin**

All of this is down to welfare of the calves, attention to detail and monitoring performance. Blade feedback this performance data and meet formally on a six-monthly basis to discuss benchmark figures with each rearer. Blade ensures that each shed is emptied and refilled in a timely fashion as batches of calves are not mixed and the shed has adequate time to rest before refilled. During this period the rearer has time to cleanse the shed reducing the chance of any bugs to re-appear in the next batch.



**ONE OF THE FOUR SHEDS NOW AT THE MARTIN'S FARM**

## Beef Finishing, John Hoskin & Sons

John Hoskin, with his two sons Mark and Richard, operates farms in Cornwall and Dorchester that are both rented from the Duchy. The unit finishes 350 Holstein bulls under contract each year for Blade.

During the last five years in working together, John has been keen and focused on getting the right quality calves into the system and is currently working on a trial with Blade and EBLEX to see how poorer confirmation Holstein calves at birth compare at slaughter with others.

*"I wanted to go into beef but was really worried on the returns I was being offered especially after leaving the dairy industry after there was inadequate profit to reinvest in the farm. Blade offered me security and a good business structure. I had never finished Holstein bulls before but after looking at the numbers involved and comparing this to some other beef production systems it made sense."*

John Hoskin



**RICHARD & HAZEL HOSKIN WITH  
RETAIL PACKS USING HOLSTEIN BEEF  
PRODUCED ON THE FARM**

In the beef finishing system, the finishers purchase the Blade-weaned calf, operate to the Blade health and welfare manual and deliver good quality cattle to the abattoir whilst Blade supply healthy calves, arrange a forward price contract with the abattoir and supply the IT program to help with the cattle production on farm.

Blade now finishes in excess of 3,000 head of Holstein bulls and 1,000 head of high welfare UK rosé veal in 2009, with more set to be finished in 2010.

**TABLE 9: FINISHING**

Costs	£	Detail
Weaned calf	200	£45 per calf plus £155 rearing costs
Feed	299	£130 per ton @ 2.3 t
Straw	60	£60 per ton
Vet & med	5	
<b>TOTAL</b>	<b>564</b>	
Revenue	742	£2.65 per kg x 280 kgs
Gross Margin	178	excluding labour and machinery costs

## Veal production

The same quality Holstein bull calves can be used to produce UK welfare friendly rosé veal. Blade has been working with Linden Foods in Northern Ireland to develop a supply chain for 10-month old calves at slaughter.

**TABLE 10: FINISHING**

Costs	£	Detail
Weaned calf	200	£45 per calf plus £155 rearing costs
Feed	210	£140 per ton @ 1.5 t
Straw	35	£60 per ton
Vet & med	5	
<b>TOTAL</b>	<b>450</b>	
Revenue	510	£2.55 per kg x 200 kgs
Gross Margin	60	excluding labour and machinery costs

The system uses a blended feed product to ensure the meat colour meets the market requirements. Blade has a network of dedicated finishers in the SW that finish cattle to the Blade veal program. This is similar to the Holstein bull production system demonstrated above. The costing is as follows:

The calves are on the farm for seven months rather than 10 months as per the Holstein bull system, therefore more cattle can be finished over a 12-month period.



**ONE OF LINDEN FOODS'  
FIVE CALF REARING UNITS**

## CASE STUDY



# ROSÉ VEAL PROJECT

## Introduction

In 2006 Linden Foods investigated the rosé veal market in Europe regarding the possibility of developing the European market for UK products. Branded rosé veal product of very high quality that met the highest welfare standards could be sold in niche markets in certain countries such as Sweden, France and the Channel Islands. These markets were entered with very small volumes but this has increased steadily.

To meet demand, dairy farmers were encouraged to rear batches of black and white bull calves in the autumn of 2006 instead of sending them for export. These calves were reared to eight weeks, at which stage they were transferred to cattle finishing farms. They were slaughtered from July 2007. As the demand for the product grew, the number of farmers rearing and finishing was expanded. Work was undertaken to formulate rations and production models in order to produce rosé veal carcasses of suitable weights (180kg – 220kg) with the required meat colour within the 12-month time span. As an integrated supply chain became established, the feedback of information from the marketing team meant that changes could be made at farm level in order to produce carcasses that fully met the customers' requirements, for instance, producing a lighter carcass with the same fat cover.

The number of calves reared and slaughtered for rosé veal has increased in the past two and a half years. There are currently over 30 rosé veal producers in Northern Ireland and there is a reasonable margin to be obtained in a well managed unit.

Linden Foods has now developed its own calf-rearing units and, by the end of 2009, it will have the capacity to rear over 2,500 calves annually on five specialised rearing farms. The majority of which will be Holstein/Friesian bulls for rosé production. The calves move to finishing units at 14 weeks of age.

A growing interest in rosé veal in the domestic market, particularly from the catering trade, has led Linden Foods to establish its own brand of rosé veal called Banquet Royale for the UK. This was launched in the spring of 2009 and has had great success in the some catering establishments.

In a period of less than 30 months, a sustainable product has been developed and marketed from a resource that had been considered a waste by-product from the dairy industry and was only worthy of export or slaughter shortly after birth.



**BY THE END OF 2009, LINDEN FOODS WILL HAVE THE CAPACITY TO REAR OVER 2,500 CALVES A YEAR**

## CASE STUDY

# ROSÉ VEAL

MARKS &  
SPENCER

### Introduction

In October 2007, Marks & Spencer made the decision to remove imported white veal from its shelves. Although Marks and Spencer never used 'crate systems' and only sourced veal reared in 'group housing systems', the company believed that welfare standards could be greatly improved and to achieve and control this, its veal production had to be brought back to Britain.

However, as well as improving welfare standards, one of the other fundamental points to bring veal production back onto British soil was to find a long-term solution to the problem of the unwanted bull dairy calf. By working with its suppliers within

its dairy pool, Marks & Spencer has been able to utilise the bull calves and develop high welfare reared rosé veal endorsed by RSPCA Freedom Foods to market within its Speciality Range.



## EXAMPLE OF M&S VEAL PRODUCTION MODEL

**Marks & Spencer "Select Dairy Farm"**  
**Located in Lanark, Scotland.**

- At birth, calves receives colostrums from dam for at least 3 days.
- Calves moved to a well ventilated, light, open straw bedded court where calves are grouped by age.
- Calves are introduced to a milk substitute formulated diet controlled via a programmed transponder collar attached to calf.
- Calves have access to roughage.
- Calves are reared in their age groups and fed on a wholesome diet which includes iron and is appropriate to their age, weight, behaviour and physiological needs.
- Calves are finished under 8 months
- Target weight >120kg
- Target Confirmation R,O,P

- Scotbeef – Abattoir/ Processor**
- Slaughter calves at under 8 months
  - Carcase Chill Protocol
  - Maturation protocol of Primals
  - Carcase Utilisation
  - Product Innovation & Development
    - Filled Veal Burger with Ham & Emmental Cheese
    - Liver with Sage Butter
    - Veal escalope filled with mushroom duxelle & wrapped in Parma ham
    - Fillet Medallions
    - Sirloin Steak
    - Rump Steak
    - Single Fore Rib Joint
    - Two-Rib Joint

- M&S sources its rosé veal from family-run farms who are members of its M&S dairy pool.

- The farm meets the high welfare standards required by
  - ✓ Marks & Spencer On Farm Specification
  - ✓ Marks & Spencer Milk Production Specification
  - ✓ Marks & Spencer Rosé Veal Production Specification
  - ✓ RSPCA Veal Specification
  - ✓ National Farm Assurance

- Scotbeef Ltd
- Supplying beef and lamb to Marks & Spencer for 47 years.
- Operated both slaughtering facilities and processing / value added facilities to retail pack.
- Sites operate to
  - ✓ Marks & Spencer Production Specification
  - ✓ Efsis
  - ✓ RSPCA Freedom Foods
  - ✓ BRC

## CASE STUDY

# IMPROVING CALF HEALTH

### Project aim

This project is a collaboration between McDonald's Restaurants Ltd, Arla Foods UK and NMR and the aim is to develop an on-farm colostrum measurement protocol and monitoring system, which has national application, and will improve the welfare of calves and improve the efficacy and quality of home-produced beef supplies into the UK market. Di Snell DEVA Vets, FAI Farms Ltd assisted in provision and collation of data and the Farm Animal Welfare Trust (FAWT) funded the validity of the refractometer test. This is directly in line with the objectives of the Calf Forum.

### Background information

A significant number of calves are slaughtered or die on-farm unnecessarily because they are weak at birth; or do not thrive. This has a negative impact on both calf welfare and farm profitability because female calves reared as dairy heifer replacements are a valuable asset and male calves could be reared as beef. In many cases, failure to thrive may be caused by a lack of colostrum provision soon after birth: calves receive passive antibodies via colostrum, which provides general, as well as specific, protection. A single cow can provide colostrum for many calves.

There are two major disease types, which affect calves throughout their lives:

- Enteric (gut) diseases e.g. rotavirus, coronavirus, Ecoli resulting in diarrhoea
- Respiratory diseases e.g. IBR, BVD, RSV, PI3, pasteurilla, adenovirus 3 and mycoplasma

Enteric diseases tend to affect calves at an early age and thus some dairy farmers use vaccines in cows in order to reliably protect calves. Colostrum has a local protecting effect on the gut and when given in sufficient quantity and quality it will protect against enteric disease, even if specific disease antibodies are not present. Respiratory disease generally occurs later in life, after the calf has moved on to another farm for further rearing. Because

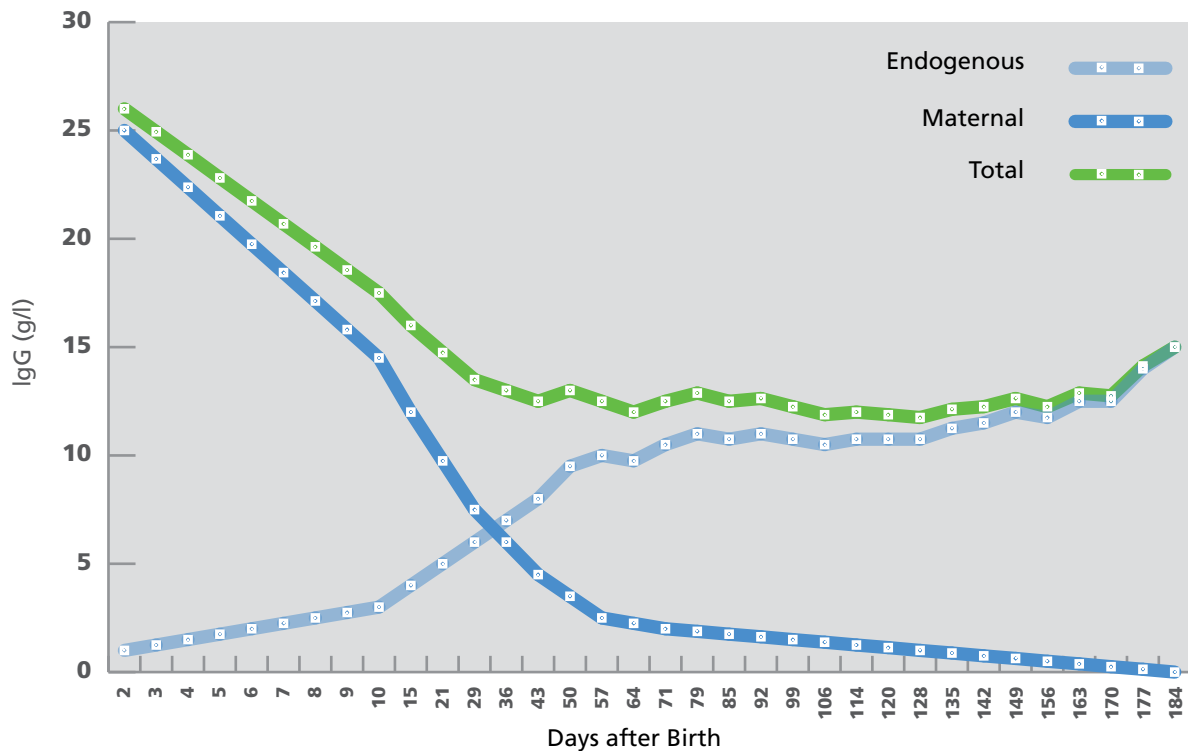
the dairy farmer does not see these problems (calves have often moved off the farm by this time), vaccination against these diseases is less common on the farm of origin. Home reared calves are at less risk of suffering from respiratory disease.

A calf is best able to absorb antibodies or immunoglobulin (IgG) from the colostrum during the first few hours of life and by 12 hours the lining of the gut changes such that absorption reduces dramatically. Despite farmers generally having good understanding of the importance of colostrum provision and the timing of this provision, random blood sampling of 3-7 day-old UK dairy calves by veterinary surgeons demonstrated that 50% of calves had inadequate plasma IgG concentrations (<10g/L). Similar results have been found in the USA (USDA and Quigley unpublished data).

Furthermore a study by Hassig *et al* (2007) demonstrated that maternal (passive) antibodies drop rapidly in newborn calves and are below adequate levels at 2-3 weeks. Although endogenous (active) antibody production starts from day one, levels are not adequate until 10-12 weeks of age. Calves are most often traded at between 2 and 4 weeks of age when maternal antibody levels are dropping and endogenous levels have not yet reached full protective levels are also low (Fig. 1, Hassig *et al*. 2007).



**FIG 1 TIME COURSE OF ENDOGENOUS, MATERNAL AND TOTAL IMMUNOGLOBULIN G (LGG) CONCENTRATIONS (MEAN ± SD) IN 20 CALVES DURING A SIX-MONTH PERIOD**



There are currently no requirements or routine methods for farmers to measure and monitor their on farm calf colostrum levels. If farmers have an easily accessible immunological profile of their calves throughout the year, it will enable them to:

1. Monitor their calf colostrum provision and respond quickly if levels are inadequate; calf rearing is often a delegated task which can get 'side-lined' in the overall daily list of tasks. Farm owners need quantitative tools to monitor and motivate staff to do the job properly;
2. Provide a colostrum provision profile to assurance schemes/retail customers/calf buyers; and
3. Improve on-farm profitability:
  - Calves retained on farm will have better health;
  - Calves sold have good IgG levels and potentially will command a better price;

- Labour requirements are reduced as there are less sick calves;
- Veterinarian and medicine costs are reduced.

## METHODOLOGY

### Phase 1

IgG samples were collected from four pilot farms to establish a baseline and highlight collection and measurement. The samples were collected on routine veterinary visits in order to keep costs as low as possible. There are two tests which can reliably measure IgG levels: ZST (Zinc Sulphate Turbidity), the most commonly used test by veterinary surgeons, and refractometer, which is also often used for other purposes within a veterinary practice. The data was used to create a user-friendly web based database with NMR that allows farmers and their vets to view the information regularly, look at trends and make management changes

if necessary. Appendix 1 gives a brief case study of how this information was used to make immediate and positive changes on one of the farms.

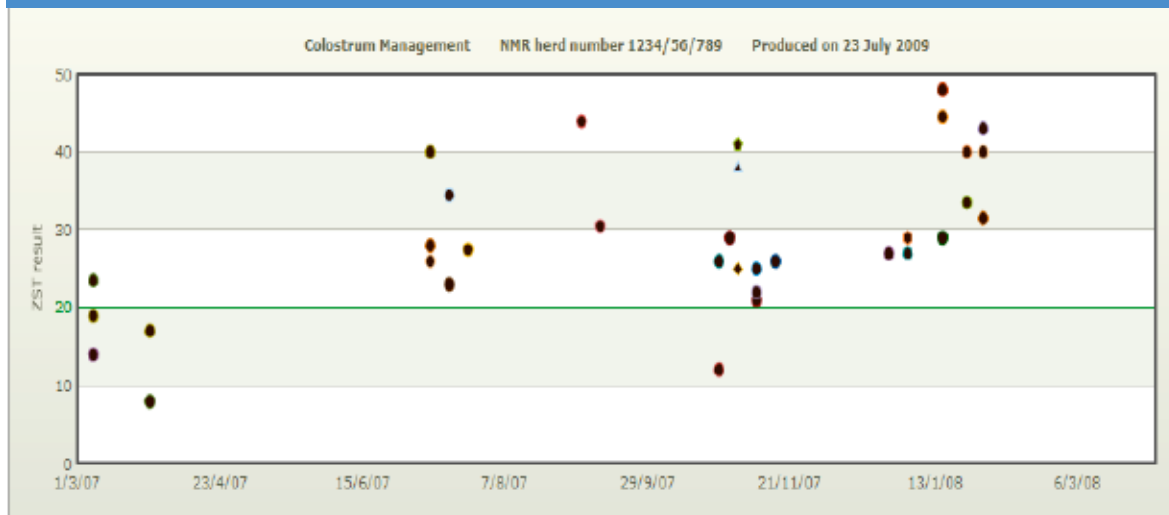
Fig. 2 below is an example of colostrum results from a farm, which has carried out long term monitoring. This data has been entered on the web database as a test farm. It can be seen that the farm had a relapse after several months and then continued with an upward trend, which has been maintained to date.

of Johne's transmission used for colostrums provision at any time. Johne's reduction has significant financial benefits for the farmer (cost of screening is ~£7 cow, resulting in ~£20 per cow more per annum -due to higher value breeding stock, higher yield, reduced lameness and mastitis treatment) and health benefit for cows in addition to providing safe and plentiful colostrum for calves.

### Phase 2

During Phase 1, it became obvious that although the colostrum information was

**FIG. 2 2007/2008 ZST IGG RESULTS FROM TEST FARM ON NMR DATABASE. SOLID LINE INDICATES ACCEPTABLE TEST RESULT**



Individual cows on all four farms were also tested for Johne's Disease courtesy of NMR. This is simply done on a routine basis for those herds, which milk record (at a cost of ~£13/cow resulting in a 0.5% yield improvement). Milk record data for the herd can be produced along with a list of suitable cows for colostrum provision. Tools such as [www.myhealthyherd.com](http://www.myhealthyherd.com) can help write procedures that require calves to be given Johne's-free colostrum. The number of UK dairy herds with Johne's present in the UK is circa 80% (unpublished data) and Johne's is most commonly transmitted around the time of birth. Therefore it is a vital component of this project that the Johne's status of the herd is known. A policy put in place to reduce the levels of disease and only cows with low risk

regarded as extremely valuable, the process of collecting the samples and getting timely results posted on the web site was problematic because:

1. Collecting blood is an additional job for vets during busy routine visits;
2. The timing (3-7 days) for IgG sampling of calves did not always coincide with routine visits and specific visits, which would have made the procedure expensive;
3. Results from samples were not always communicated in a timely manner, as there were hold ups with posting and passing on result information.

NMR has considerable expertise regarding the collection, analysis and posting of data and this is done for many purposes currently using a system which does not involve veterinary surgeons and which requires minimal input from farmers. Two routes are currently being explored in order that colostrum monitoring can become a service routinely provided at a national scale:

1. A tagging system is currently available which collects the small amount of tissue displaced by the tag, as it is placed into the ear of the calf, into a vial which can then be posted by the farmer for testing and automated placing of results on the web as occurs through other milk recording services. Testing has been validated for BVD (Bovine Viral Diarrhoea) to identify any persistently infected animals. There is potential for this tissue also to be used for measuring IgG levels in calves. This would have many advantages in that all calves would then be tested and costs

would be reduced as the sample would automatically be taken as the calf is tagged, posted to NML labs and the data posted onto the web site as with other milk recording services.

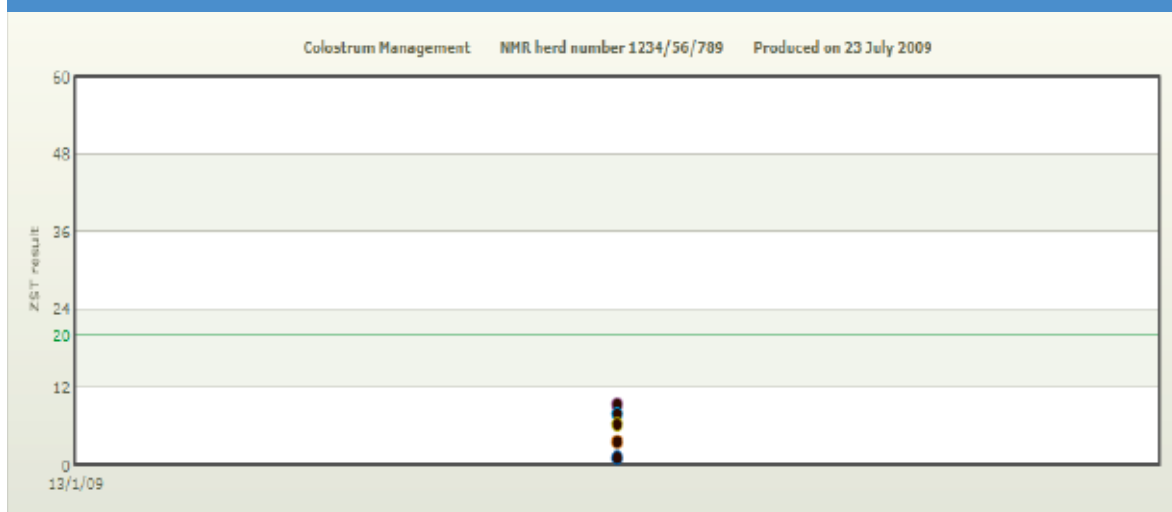
2. Collection of samples by NMR milk recorders, routine testing through NML labs and automated placing of the information in the same way as occurs through other milk recording service. This will require derogation from the Royal College of Veterinary Surgeons under the Veterinary Surgeons Act for lay persons to undertake routine blood testing on farm through the paraprofessional route. This has been used for other on farm services such as cattle scanning. Initial investigations indicate that this is feasible.

We are currently exploring the possibilities of using the ear tagging technology outlined in Option 1; this would be the most cost effective way and efficient way forward.

### Peter and Val Kenny

Peter and Val Kenny milk 200 cows and run a 280-acre grass and 220-acre cereals farm. The average yield of the herd is 8,200Kgs. Peter, along with two full-time staff, runs the farm. Peter believes in rearing all his dairy calves, both male and female.

**FIG. 3 INITIAL ZST TEST RESULTS FROM KENNY FARM JANUARY 2009**



In January 2009, calf rearing was carried out by someone who, it was discovered after some questioning, was not providing the calves with adequate colostrum. Low ZST results demonstrated this (Fig. 3) because IgG levels were well below 20 (Fig.3).

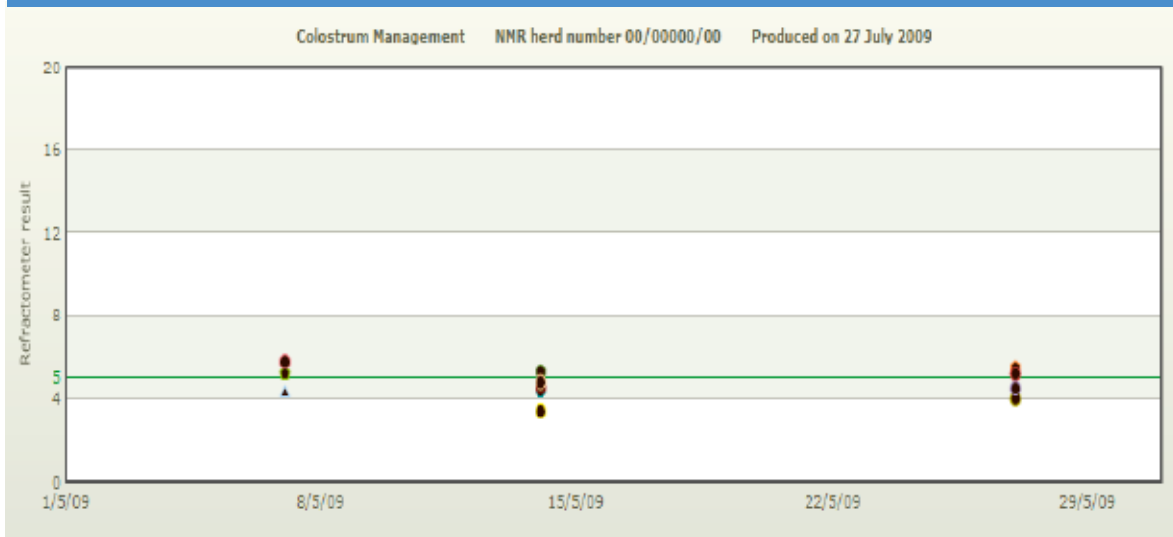
This case study highlights the fact that it is not possible to tell by looking at a calf whether it has had adequate colostrum and when it becomes ill it is often too late, as the time for antibody transfer has passed (Fig. 1), leaving the farmer with hefty medical bills and an animal which will always be a 'poor doer'.

The calf rearer was replaced, as calf rearing is regarded as an important part of the farm income stream. Calves are now thriving and the mortality rate has fallen. During March, April and May 2009 50 calves were born and reared to weaning with only one death in the period, a mortality rate of 2%.

Recent IgG levels have been much better (Fig. 4). Note the refractometer test was used in later tests, as it is quicker and cheaper. The dark line shows the target levels required. Some results (each symbol represents an individual calf) are still lower than would be desirable and further management changes are being reviewed.

The management changes on Peter's farm included the employment of a calf rearer who, after training, carried out the required protocols more consistently and accurately, providing calves with adequate colostrum and a clean environment. The monitoring of colostrum on an ongoing basis is deemed important as other factors could come into play which would not be obvious on first observation e.g. cow nutrition affecting colostrum quality and colostrum dilution during collection.

**FIG. 4 REFRACTOMETER TEST RESULTS FROM KENNY FARM MAY 2009**



## CASE STUDY

# FARMING RESEARCH



Trial assessing the yield and quality of lean beef from male dairy calves addressing Beyond Calf Exports Forum Objective 1 – to increase uptake of bull calves in the supply chain

### Background

Morrisons is committed to investing in applied farm research that can help build a sustainable British farming industry. Our Farm Programme includes a number of applied research projects and trials focused on different production sectors.

As a result of our unique position as an integrated supplier of beef we have been able to undertake a trial assessing the yield and quality of beef from dairy bull calves.

### Programme

As part of the trial, 240 male dairy calves were purchased as calves and reared and finished to ages of between 12 and 14 months. The cattle were then processed at one of Morrisons' plants.

The objective is to fully understand the cost of production, processing costs and yields and eating quality.

### Next steps

Further work is required to determine if beef from male dairy calves can be developed as a viable beef offering for Morrisons' customers.



## CASE STUDY



# GUARANTEEING A MARKET FOR DAIRY BULL CALVES

An agreement between members of Sainsbury's Dairy Development Group (SDDG), Anglo Beef Processors (ABP) and Farmright will encourage a move to place dairy calves as an integral part of the food supply chain, so giving an additional income to dairy farmers and a consistent supply of bull calves to ABP, helping reduce the seasonality of the beef supply chain.

The welfare of the calves is overseen by Sainsbury's contracted vets and because they remain in their milk fields, travelling times and animal movements are significantly reduced. On-farm collection is available or calves can be moved through Defra- approved collection centres under license and veterinary supervision.

Sainsbury's dairy farmers receive a guaranteed price, to be reviewed once a quarter, providing long term sustainability on dairy bull calves in a historically volatile market. Farmers have the option to sell calves up to 100 days old; and the scheme will include options for TB restricted herds.

### Sainsbury's Dairy Bull Calf Scheme

Under the management of farmright every event in the animals' life from birth to slaughter is objectively measured and recorded. All the inputs of veterinary medicines and animal feed on each of the units are also captured to provide complete traceability. All parties within supply chain have visibility of this information and are therefore jointly responsible for the welfare of the animals.

We've created a virtuous circle that feeds information back to SDDG producers helping them to make decisions on animal health, nutrition and genetics. Rearers and finishers work to a simple protocol with milk powder, feed and nutritional advice organised by farmright. They then get paid a management fee for achieving set targets relating to growth and animal welfare.

Annie Graham, Sainsbury's Head of Brand Sustainability, Agriculture and Health, says:

*"This initiative highlights Sainsbury's continued commitment to working closely with the dairy industry through the SDDG. We aim to provide an alternative and viable option for our members to market dairy bull calves that would normally not be reared for beef. It also ties in with our decision to stop selling Dutch veal and to meet demand through producing British veal from dairy bull calves sourced through the SDDG."*

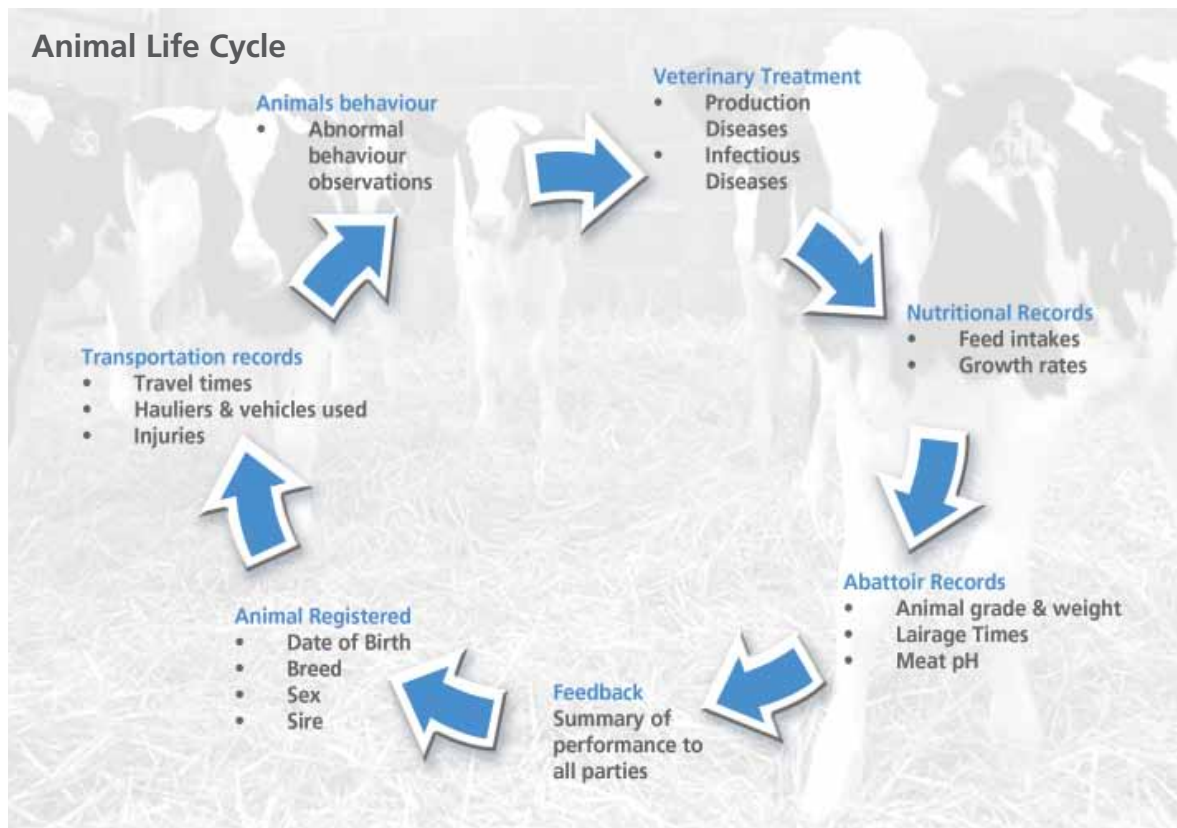
Eric Waldron is the manager of the first Farmright calf rearing unit for Sainsbury's. With over 40 years experience managing pedigree dairy cows he is now using his skills as a stockman to rear up to 2000 calves per year as part of the Sainsbury Dairy Bull Calf Scheme. Eric says: *"It's like a lot of things if you keep it simple and focus on doing one job really well it's surprising what you can achieve. I am pleased with the way calves have settled into the rearing unit and working to a protocol for each batch helps us to keep track on how calves from different farms perform."*

Colin Telfer and his family farm around 720 acres near Lochgelly, Fife, with a dairy herd of 120 cows producing 1.2 million litres/annum. Colin was a founding member of the Sainsbury's Dairy Development Group when it was launched in autumn 2006 and supplies his milk to Sainsbury's via Robert Wiseman Dairies.

Colin decided to rear bull calves to ensure the animals are well cared for and to add balance to his enterprise. The bull calves that Colin rears are all sold onto the Anglo Beef Processors (ABP) which completes the chain back to Sainsbury's as the major beef suppliers to the supermarket chain.



Colin says: *"Rearing bull calves is part of being a dairy farmer as far as I'm concerned, and something I enjoy and take great pride in doing and doing well. Any encouragement to rear bull calves is a positive and can deliver real benefit on the dairy and beef side. As a member of the Sainsbury's Dairy Development Group I am delighted that not only my milk but also my black and white bull beef ultimately ends up on Sainsbury's stores shelves, thereby contributing to a truly integrated supply chain between producers, retailers and consumers."*



## Veal

### **Sainsbury's new Freedom Food-endorsed veal is giving male dairy calves a good life on British farms.**

Veal has attracted close scrutiny from those concerned about animal welfare as it conveys images of veal crates and travel over long distances. Sainsbury's is the first major retailer to introduce a range of veal that is sourced from its dairy supply chain and to link it with a dedicated veal rearer and beef processor. The move ensures that calves are reared to the highest standards of welfare

One of the ranges that will use calves sourced in this way is the Taste the Difference West Country veal, currently available in over 20 stores across the country. Pure bred dairy bull calves are sourced from Sainsbury's Dairy Development Group (SDDG) farms and reared on a Freedom Food-approved, high-welfare specialist unit in northwest Dorset.

This is a boost to British farmers as it ensures that these calves will now give extra value by providing a sustainable source of top-quality, high-welfare meat for Sainsbury's stores.

As well as delivering a better return for our farmers, the collaboration between SDDG and Anglo Beef Processors (ABP) will also ensure that all Sainsbury's veal is fully-traceable and of the highest quality.

Calves are reared to 6 months of age, to an ideal deadweight of 100 – 120 kg. All the calves benefit from full herd health history and move directly from the SDDG farm to the rearing farm minimising movements and transportation during their lifetime, as well as specialist expertise on rearing.

Every stage of the process has been carefully assessed, ensuring the calves will make a short journey to a Freedom Food-approved farm in Dorset designed especially for rearing calves. Once on-site, the calves live in small social groups, with plenty of room to move in deep, straw-bedded barns. The calves are reared on a milk based diet supplying all their nutritional requirements with access to forage and are reared by farmers who have more than 20 years' experience in dealing with veal calves and who work to the RSPCA's strict welfare standards.

The products available are veal mince and escalopes and as a veal burger during the summer months. On the counter, customers are able to buy a wider selection, which includes a rib chop, T-bone steak, Osso bucco, escalope, shoulder and calves' liver. All of these will be sold under the *Taste the Difference* West Country veal banner.



# 1. TESCO SUSTAINABLE DAIRY GROUP

When Tesco launched its dedicated supply chain for dairy farmers back in April 2007, a key aspiration was a domestic solution for black and white bull calves. It was felt that this important welfare requirement was very positive for British farming, as it should lead to healthier calves in the supply chain and a better return for farmers.

Now in 2009, Tesco has a well-established calf scheme which takes around 20,000 calves annually. Initially, the project was seriously challenged by the rising feed prices making Holstein bull beef systems uncompetitive in many cases. However, finishing systems are looking more effective as feed prices are more attractive.

Black and white calves from the Tesco dairy supply chain can either be used for standard beef (black and white and continental cross calves) or for the new *Finest* range of Aberdeen Angus cross beef. One major processor is still rearing and finishing 2,000 head higher welfare rosé veal per year.

### Healthy calves continue to be the key in the success of this project

Tesco has also run a number of producer workshops, which included calf health, as a result of a project looking into colostrum levels on its dedicated dairy farms. This project was the result of national and international data showing that a large proportion of calves were receiving insufficient colostrum, up to 50% in some studies. Research clearly shows a link between adequate colostrum levels, calf survivability and improved performance (DLWG).

The project concluded that the extent and severity of the problem is not recognised by many farmers and their vets. Current focus from many farmers and their vets is on vaccination and treatment, and husbandry is often a secondary consideration.

The project clearly demonstrated that measuring colostrum levels does lead to improvement – all farms researched went from inadequate to adequate levels of antibodies. However, it is noted that some farmers respond faster and more consistently than others, and some ‘improvements’ might be due to other factors, such as the weather (all farms improved in the autumn).

The research also showed that farmers with a disease problem do not measure antibody levels and do not know if they have low levels. Even farmers who give ‘adequate’ colostrum provision can have low levels due to colostrum quality issues (cow or collection issues).

Through the Sustainable Dairy Group, Tesco has continued to raise awareness of this important issue, providing data and further case studies to demonstrate improvement. Through Alta Genetics, producers are provided with a special offer on colostrum substitute. Calf’s Choice Total (CCT) colostrum substitute is the only product available that delivers the minimum required immunity for newborn calves, along with 1,655Kcal of energy and can be used in disease control programmes such as Johne’s and TB.

### Sexed semen

Tesco has also facilitated a number of sexed semen promotions for the TSDG to reduce the number of unwanted bull calves. Sexed semen is more financially viable for dairy producers, as having a heifer calf compared to a bull calf far outweighs the added cost.

A Tesco producer that has used sexed semen is Mark Lovatt of Leicestershire. *"This is a small part of the solution to a big problem, the sexed semen promotions are a good idea from Tesco, adding choice.*

*"Before buying sexed semen it has to fit my breeding criteria for bulls, including type, legs, feet and conformation. I won't buy any semen that may jeopardise my herd. The idea of sexed semen sounds good, although it's better used on maiden heifers."*

Tesco has also endorsed and promoted the Blade Star Sire Scheme to the TSDG farmers, as it fits well with our focus on our healthy calves, including colostrum intake. All of these issues must be worked on alongside this project to ensure the health, welfare and profitability of the Holstein bull calf is not compromised.

### Tesco Dairy Centre of Excellence

In September 2008, the Tesco Dairy Centre of Excellence was launched, in collaboration with the University of Liverpool. The Centre

will offer expertise in cattle health and welfare and will become a beacon for those farmers belonging to the Tesco Sustainable Dairy Group (TSDG). The collaboration will also help further veterinary teaching by providing the latest information on dairy technologies and farm management, as well as test new ideas and systems of operation, in particular looking at pre-weaning nutritional strategies that could markedly improve the health, welfare and productivity of Holstein calves. While adequate and appropriately timed colostrum provision is undoubtedly essential to the calves' ability to 'fight' the inevitable pathogen challenge, it is also recognised that early development of the calves' immune system (from 7 days of age) also has a vital role in maintaining health. Development of a functional immune system is 'energy intensive'. Small-scale studies have demonstrated improved health and growth in group-housed, dairy heifer calves allowed prolonged, free-access to milk (Anderson, 2008)

## 2. RUBBERISED SLATS - AN IMPROVEMENT FOR HOUSED CATTLE

### Introduction

There is potential now for more dairy cross animals to be reared for beef in the UK and this is a major objective for the Calf Forum. The welfare of these animals through the rearing process is thus of key importance. This project aims to demonstrate improved welfare of housed cattle together with associated commercial benefits in order to encourage more producers to adopt the system.

### Background information

For many years animal welfare scientists and NGOs have been aware of the animal welfare problems associated with housing cattle on concrete slats. This system is common in areas where straw is in short supply and is therefore expensive such as Wales, Scotland and Ireland which have limited grain growing areas within easy access. The slats allow faeces and urine to be collected in tanks below the floor as it passes through gaps in the floor (hence the term slat). The resulting slurry is then spread on the fields.

The environmental aspects of transporting a bulky product such as straw over long distances makes this practice increasingly unviable as it is now common knowledge that greenhouse gas emissions (carbon dioxide in this case) must be reduced in order to reduce the effects of global warming. Half the carbon emissions associated with food products are from activities which take place at farm level and thus this is an area which is being closely monitored by governments.

Alternative systems for providing bedding for housed cattle have been on the

animal welfare agenda for many years and the development of rubberised slats provides a real potential for animal welfare improvement. Through animal welfare science we now have knowledge of the needs of animals and we can relate this to commercial benefits both for farmers and consumers.

Results from trials of rubberising slats for beef cattle are variable and often hotly-debated. However, research carried out by scientists all over the world in a myriad of cattle systems shows conclusively that:

1. Cattle want to lie down for about 10 in 24 hours and this activity is so important to them that hungry cattle will lie down in preference to eating if they have been deprived of both in the previous period.
2. Cattle do not like lying down if the flooring is cold, wet or hard (particularly if it is uneven). Current evidence, although limited, is that cattle mind much less about being dirty than being comfortable (humans do make the same decision in extremis). Dirty hides are a food safety issue and it is important to keep them clean for this reason. Cattle are often clipped to remove the faeces before slaughter but it is more effective in terms of food safety and efficient in terms of time, effort and cost to keep them clean throughout life.
3. Cattle move in an abnormal way if the flooring is slippery which restricts their natural behaviour (stride up to 20% shorter) and can lead to lameness.

It can be seen from the above points that rubberised slats are likely to be beneficial as they have the *potential* (depending upon the type of rubber used) to provide a non-slip, relatively soft and thermally-comfortable lying area. To put this latter point into context, rubber has a thermal conductivity of 0.16W/(m.K), concrete 1.7W/(m.K) and ice 2.0W/(m.K) i.e. concrete is almost as cold as lying on ice when temperatures are low.

Trials have shown an increase in daily liveweight gain i.e. the number of kilogrammes an animal puts on per day, particularly as the cattle increase in size when they are provided with rubberised slats. The reason behind this is that a large area of the animal will be in contact with the floor as it gets bigger and thus the animal will use increasing amounts of energy to produce heat to keep warm when ambient temperatures are below the body temperature of the animal. Also, the animal will be supporting more weight as it gets bigger and thus getting up and down and staying comfortable on unsuitable flooring will become increasingly difficult owing to the pressure on the weight bearing areas in contact with the floor. Similarly, the benefit is greater in thin-skinned, less hairy, more angular animals such as dairy and dairy crosses as they have potential for being more uncomfortable as they have less protection over the weight bearing areas in contact with the floor.

## The trial

In winter of 2008/9, Foyle Meats, in conjunction with Easyfix, provided rubberised slats to carry out a trial with finishing cattle at Tesco supplier Ivan Loughery's farm. Ivan runs a beef and lamb farm in Limavady with his son and has previously used slats to great benefit when settling in newly weaned suckler calves. These animals which would be around 7-8 months were in Ivan's opinion more comfortable on the rubber slats than on the concrete slats.

Two of Ivan's slatted concrete pens were coated with rubber immediately prior to cattle being housed in autumn 2008. The rubber slatting fits over the existing concrete slats (see below) and it is thus relatively easy to change this system. One pen was completely rubberised and

the other left as concrete for about a metre depth next to the feed face. Ivan felt that this was advantageous as the cattle tended not to lie in this area leaving the feed face clearer for the other cattle in the pen to feed. This tells us that the cattle prefer to lie on rubber over concrete when given a choice. This is the type of test animal welfare scientists use to 'ask' animals which type of flooring they prefer and is known as a preference test.

Other observations from Ivan and his family were that when walking through the cattle on the rubber slats, they are more likely to jump and kick out! This could be seen as a negative but it does tell us that the cattle feel confident enough in the flooring and so full of life that they wish to move about on three legs. This obviously gave Ivan and his family great pleasure.

With current pricing, about 7kg of additional liveweight over the life of the animal would be required to offset the cost of placing slats assuming that the slats have a seven-year lifespan. Ivan's view is that this is very achievable with animals which weigh in the order of 650kg liveweight at the time of slaughter, as this represents a small percentage of the total weight and could easily be achieved with the additional physical and thermal comfort of the animal.

Ivan is adamant that the cattle thrived better on the rubberised slats than on the painful concrete slats and plans are in place to quantify this accurately during winter 2009/10 as it would obviously facilitate uptake if we could demonstrate farmer to farmer that the system is beneficial to farmer margins. Communication of such a message from one farmer to another is very powerful when facilitating positive change, as farmers have great trust in other well-respected farmers.



**RUBBERISED SLATS OVERLAY CONCRETE SLATS ARE EASY WITH QUICK BENEFITS FOR WELFARE**

In practice, the slats do not look very different from concrete but evidence is that they make a great and positive benefit to the lives of cattle which are housed often for up to six months of the year in wet areas. The quality of Ivan's cattle is evident in that they are healthy, quiet and of good conformation.

### Additional planned research

Work underway at the Food Animal Initiative (FAI) shows that cattle carry out their preferred behaviours in a synchronised manner. This is substantiated with regard to lying behaviour by watching cattle lie together in a field as they choose to lie quite closely together.



**IVAN LAUGHERY WITH SOME OF HIS CATTLE ON THE RUBBERISED SLATS**

Scientific research shows that although rubberised slats are more comfortable than concrete, cattle prefer to lie on straw over rubberised flooring. Innovative farmers in Scotland are now using a combination of rubberised slats and a relatively small amount of straw or other similar substrate bedded area at the back of the pen. This gives additional comfort to the cattle and also keeps their coats clean. The bedded area is easy to maintain and keep clean and uses very little bedding. The system will be documented winter 2009/10 and compared to rubberised slats only.

### Additional information

[www.sciencedirect.com/science](http://www.sciencedirect.com/science)

[www1.foragebeef.ca/\\$foragebeef/frgebeef.nsf](http://www1.foragebeef.ca/$foragebeef/frgebeef.nsf)

[www.farmersjournal.ie/2005/0507/farmmanagement/beef/feature](http://www.farmersjournal.ie/2005/0507/farmmanagement/beef/feature)

## WAITROSE VEAL

When the Waitrose calf scheme started in August 2007, great thought was given as to what system would best suit the pure-bred dairy bull calves. The utilisation of this type of calf was new to the Waitrose beef supply chain as, until that point, the beef protocol stipulated that pure-bred dairy cattle were not permitted to enter the supply chain.

Initially, as numbers were relatively low, all pure-bred dairy bull calves were castrated and sold to Waitrose beef finishing farmers, with the resultant carcasses that met the specification being utilised in the British beef range. The initial results though have varied with, as expected, the production of a number of lean carcasses with poorer conformation than ideally required.

Currently the calf scheme collects calves from one third of the Waitrose dairy farms, and it is intended to expand this to include all Waitrose dairy farms (both conventional and organic) over the coming months. To do

this, and cope with the increased numbers of pure-bred dairy calves, another more appropriate solution is needed.

In 2008, a trial was run using a group of dairy bull calves to examine the potential of using this type of calf for veal production grown to UK standards. Traditionally, continental heifer calves have been the main type of calves used in UK veal production. Based on the success of the trial, it has been agreed to channel the majority of these calves into the Waitrose veal supply chain in future and utilise the pure bred dairy calf in a way we feel is more suited to this type of calf.



Waitrose's veal is all produced by one hand-picked producer, who has been supplying veal exclusively to Waitrose for over 10 years now. The farm was selected for its higher standards of welfare and stockmanship, and the calves are reared according to a bespoke veal production protocol.

Calves live in small groups, and are housed in well-lit and ventilated straw yards with plenty of room to move around and socialise. They are fed on a milk-based diet which supplies all their nutritional requirements and have access to forage at all times.

The aim is to grow the calves to reach a carcass weight of between 100 to 150 kilogrammes at approximately six months of age. The first calves from the Waitrose dairy farms will be slaughtered in August this year.

All Waitrose veal is British, and as the Waitrose business grows, this will provide the opportunity for both the calf scheme and the veal supply chain to expand in the future. Utilising the pure bred dairy calf in this way will benefit all parties involved by providing a consistent supply of calves direct from Waitrose dairy farms, which have been fed with a sufficient quantity and quality of colostrum to ensure that they are fit and healthy, ready to move forward and grow at the veal unit.

Trial work carried out by Dovecote Park in 2008 concluded that, in taste panel tests, no significant difference was found between veal from beef cross calves and that from pure-bred dairy calves. The main difference as would be expected was the poorer conformation of the dairy calf compared to the beef cross calf. However, any difference in the value of the carcass at slaughter was negated by the much higher input price paid for the beef cross calves at the outset.

With greater emphasis now being placed on breeding a more robust dairy cow, it is hoped that with time the quality of the pure bred dairy calves will improve, to provide a calf more suited to veal production.

## CASE STUDY



# CALF LIFE – WANTED NOT WASTED

Compassion in World Farming's public campaign to ensure male dairy calves have a life worth living.

Compassion in World Farming's vision is a world where male dairy calves are acknowledged as sentient beings, born with a moral and economic value. There are three main welfare issues with respect to calves:

- The long-distance transport of calves across the EU;
- The conditions in which calves are reared for veal in the EU; and
- The shooting at birth of pure-bred male dairy calves in the UK

In 2009, Compassion decided to focus on the rearing of calves for veal to make sure that the UK demand for veal is met by calves reared to higher standards in the UK. Two key audiences were identified: veal consumers and Compassion in World Farming's supporters.

As little knowledge existed about the UK veal consumers before starting the campaign, YouGov was commissioned to undertake research. The poll identified UK veal eaters in terms of geography, National Readership Survey (NRS), social grade, gender and age and their knowledge around veal rearing here in the UK and the continent, and their eating and buying habits.

28% of the UK public eats veal. The key target audience is 25 years and above, belonging to NRS ABC1 (lower, middle and upper middle class) and living in London and South England. They know little or nothing about age of slaughter and rearing

conditions in the UK and the EU (please see Table 12) or what type of veal they eat (please see Table 13). Almost 60% eat veal in restaurants and hotels, 33% whilst on holiday, and 29% prepare it at home (please see Table 14).

The profile of the target audience was used to analyse how to communicate with them. With the help of the British Market Research Bureau and using target group index (TGI), messages and channels of communication were tuned to reach the target audience. The communication will commence in October 2009 and carry on until April 2010.

'Calf life – wanted not wasted' was launched to Compassion's supporters 3 June 2009, to coincide with the first episode of the latest series of River Cottage. In this episode, Hugh Fearnley-Whittingstall raised the issue of male dairy calves by comparing UK- to EU-produced veal. Compassion's footage of continental veal rearing was used to visualise the latter.

The aim is to end the export of calves to the continent, reduce the numbers of calves shot at birth, ensure the UK market is supplied by high welfare or organic veal and to increase public awareness. A toolkit was given out to supporters, to improve their understanding of the issue containing suggestions on campaigning and how to lobby local restaurants, delis or butchers to only serve British veal or other higher welfare alternatives.

[ciwf.org/calflife](http://ciwf.org/calflife)

**TABLE 11: IDENTIFICATION OF KEY TARGET AUDIENCE**

	gender		Age					Social Grade		Region							
	Base	Male	Female	18 to 24	25 to 34	35 to 44	45 to 54	55 +	ABC1	C2DE	North Midlands	East London	South Wales	Scotland			
On average how often if at all do you eat veal?																	
Unweighted Base	1995	950	1045	188	370	325	383	729	942	1053	512	309	164	244	472	108	186
Base: All GB Adults	1995	958	1037	239	347	335	375	698	1097	898	491	327	192	255	457	100	174
More often than once per week	0%	0%	0%	-	1%	-	-	0%	0%	0%	0%	-	-	1%	-	-	1%
Once a week	0%	1%	0%	2%	0%	1%	0%	-	1%	0%	0%	0%	-	1%	1%	-	-
2 to 3 times per month	1%	1%	1%	1%	1%	1%	1%	0%	1%	1%	1%	-	1%	1%	1%	-	1%
Once per month	2%	3%	0%	4%	2%	1%	1%	2%	2%	1%	1%	1%	2%	3%	2%	-	2%
Once every 2 to 3 months	2%	2%	2%	2%	1%	2%	2%	2%	3%	1%	2%	2%	2%	2%	2%	1%	2%
Once every 4 to 6 months	3%	4%	3%	1%	5%	3%	2%	4%	4%	2%	3%	2%	4%	3%	4%	4%	5%
Less often than once every 6 months	19%	22%	16%	10%	19%	17%	24%	21%	22%	16%	18%	19%	19%	22%	20%	12%	20%
Never	72%	66%	78%	80%	70%	76%	69%	71%	67%	79%	75%	75%	72%	68%	70%	83%	69%

**TABLE 12: Mapping of peoples' knowledge of rearing conditions in the UK and the EU**

To what extent do you agree or disagree with each of the following statements regarding veal production in the UK?	Base
<b>Veal calves are fed a diet that keeps them in good health</b>	
Unweighted Base	2436
<b>Base: All UK adults</b>	<b>2436</b>
Strongly agree	3%
Agree	14%
Neither agree nor disagree	16%
Disagree	7%
Strongly disagree	7%
Don't know	54%
<b>Veal calves are reared in the dark in individual crates</b>	
Unweighted Base	2436
<b>Base: All UK adults</b>	<b>2436</b>
Strongly agree	6%
Agree	10%
Neither agree nor disagree	13%
Disagree	8%
Strongly disagree	8%
Don't know	56%
<b>To what extent do you agree or disagree with each of the following statements regarding veal production in the rest of Europe (ie, excluding the UK)?</b>	
<b>Veal calves are raised in good conditions with straw bedding</b>	
Unweighted Base	2436
<b>Base: All UK adults</b>	<b>2436</b>
Strongly agree	2%
Agree	5%
Neither agree nor disagree	13%
Disagree	10%
Strongly disagree	10%
Don't know	61%
<b>Veal calves are raised indoors in group housing without bedding</b>	
Unweighted Base	2436
<b>Base: All UK adults</b>	<b>2436</b>
Strongly agree	4%
Agree	10%
Neither agree nor disagree	14%
Disagree	4%
Strongly disagree	4%
Don't know	63%
<b>Approximately how old do you think veal calves are when they are slaughtered?</b>	
Unweighted Base	2436
<b>Base: All UK adults</b>	<b>2436</b>
Newborn (i.e. up to 1 week of age)	*
More than 1 week up to 4 months old	19%
More than 4 months up to 8 months old	23%
More than 8 months up to 12 months old	10%
More than 12 months	1%
Don't know	46%

**TABLE 13: MAPPING OF TYPE OF VEAL PEOPLE EAT**

<b>Which if any of the following types of veal do you eat? [Please tick all that apply]</b>	Base
<b>Unweighted Base</b>	<b>578</b>
<b>Base: All GB Adults that eat veal</b>	<b>551</b>
Organic veal	9%
RSPCA Freedom Food veal	6%
British veal	30%
Imported veal (from another EU country)	9%
Other	4%
Don't know	60%

**TABLE 14: MAPPING OF WHERE CONSUMERS EAT VEAL**

<b>Which if any of the following places do you usually eat veal? [Please tick all that apply]</b>	Base
<b>Unweighted Base</b>	<b>578</b>
<b>Base: All GB Adults that eat veal</b>	<b>551</b>
At home	29%
On holiday	33%
In restaurants/ hotels	59%
At someone else's home	7%
Other	4%

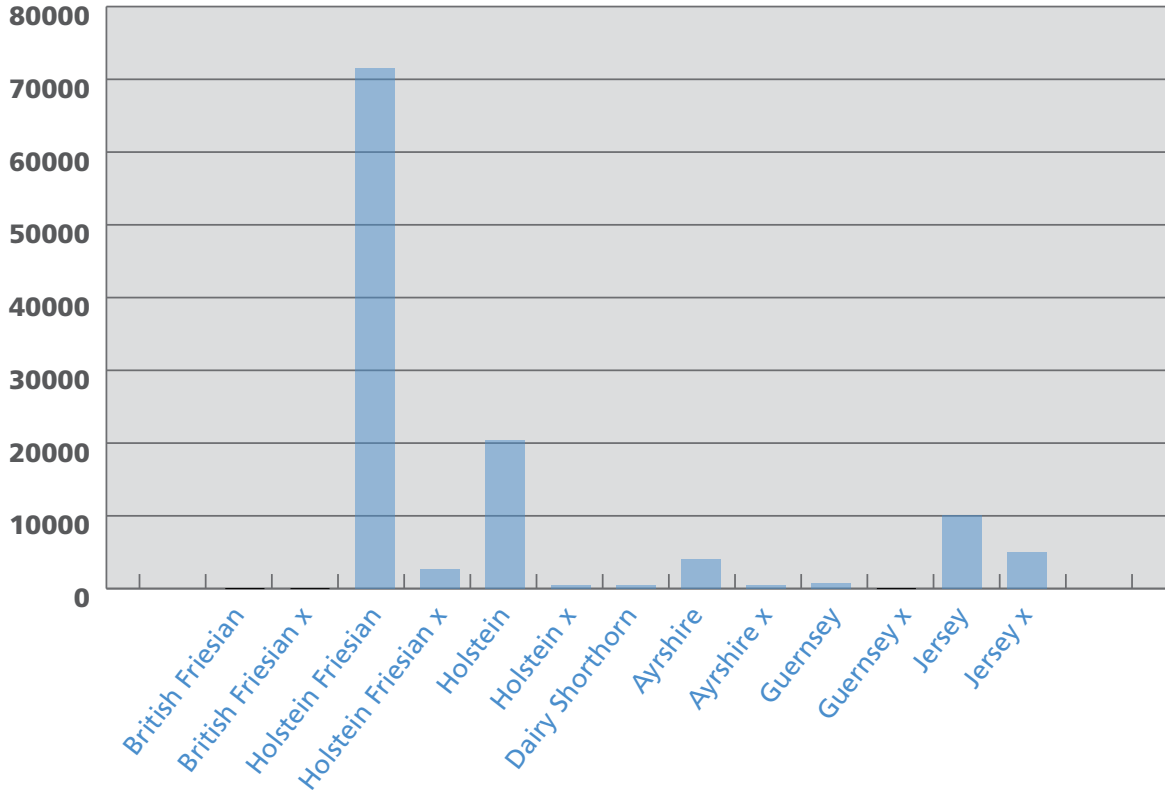
# APPENDIX 1

## CALF DEFICIT 2008

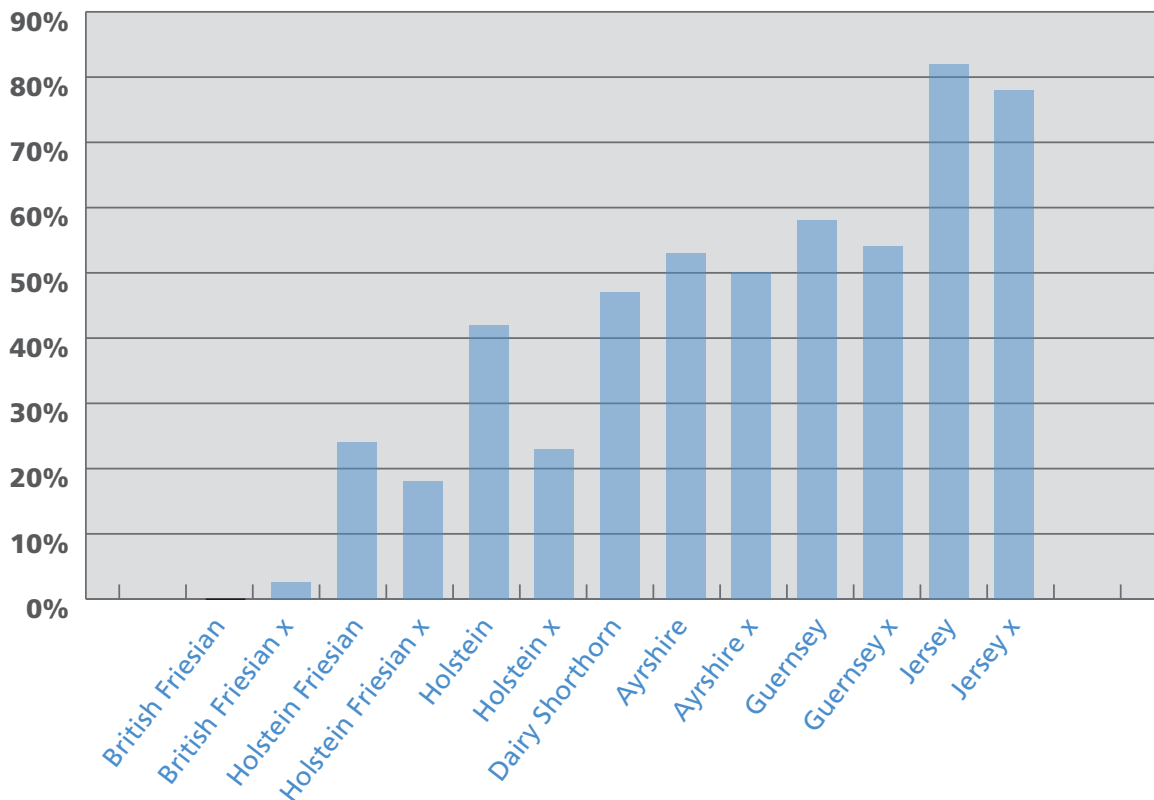
breed	births females	nb males expected	male deaths registered	males birth registered	deficit number	% deficit
BRITISH FRIESIAN	49,874	54030	1232	52686	112	0%
BRITISH FRIESIAN X	10,164	11011	336	10257	418	4%
HOLSTEIN FRIESIAN	268,004	290338	7616	210586	72136	25%
HOLSTEIN FRIESIAN X	17,723	19200	505	15046	3649	19%
HOLSTEIN	44,917	48660	1170	26690	20800	43%
HOLSTEIN X	3,113	3372	77	2477	818	24%
DAIRY SHORTHORN	1,382	1497	13	762	722	48%
AYRSHIRE	7,496	8121	117	3700	4304	53%
AYRSHIRE X	1,581	1713	28	816	869	51%
GUERNSEY	2,032	2201	28	886	1287	58%
GUERNSEY X	113	122	2	53	67	55%
JERSEY	11,833	12819	257	1989	10573	82%
JERSEY X	6,591	7140	99	1457	5584	78%

## APPENDIX 2

### CALF DEFICIT (NUMBER OF ANIMALS)



### CALF DEFICIT (% OF ANIMALS)



# MEMBERS OF THE FORUM

Anglo Beef Processors (ABP)

Arla Foods UK

ASDA

Assured British Meat (ABM)

Assured Dairy Farms (ADF)

Beef Production Systems Ltd

Blade Farming Ltd

Bristol University

British Friesian Breeders Club

British Cattle Veterinary Association (BCVA)

Centre for Dairy Information (CDI)

Cattle Information Service (CIS)

Compassion in World Farming

Co-operative Group

Cranfield University

DairyCo., a sector division of the Agriculture and Horticulture Development Board (AHDB)

Defra

Dovecote Park Ltd

Dunbia

English Beef and Lamb Executive (EBLEX),

a sector division of AHDB

European Farmers Network (EFN)

Food Animal Initiative (FAI)

Freedom Food

Helen Browning Organics

Hilton Food Group

Holstein UK

Linden Foods

Marks & Spencer

Meadow Quality

McDonald's

Morrisons

National Beef Association (NBA)

National Farmers Union (NFU)

National Farmers Union Scotland (NFUS)

National Milk Records (NMR)

Organic Milk Suppliers Cooperative (OMSCo)

Royal Association of British Dairy Farmers (RABDF)

RSPCA

Sainsbury's

Scottish Agricultural College

Soil Association

Southern Counties Fresh Foods

Tesco

Trading Standards Institute (TSI)

Waitrose

Westpoint Veterinary Group