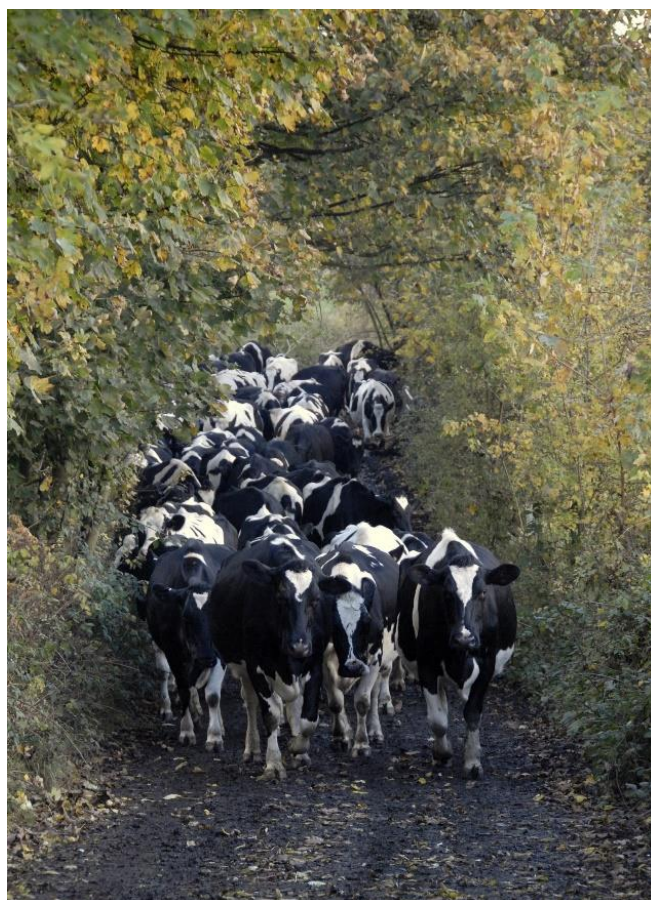


# EuroDairy Technical Report

## Practical on-farm animal welfare assessment tools and approaches



This project has received funding from the European Union's Horizon 2020 research and innovation programme (SIB-2015-1 programme) under grant agreement No 696364

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## Practical on-farm animal welfare assessment tools and approaches

### **Submission date:**

28 January 2019

### **Names of the responsible authors and organisations:**

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### **Dissemination level**

Open

### **Project deliverable**

5.6 Report on practical on-farm welfare assessment tools and approaches

### **About EuroDairy**

EuroDairy spans 14 countries, from Ireland to Poland, and from Sweden to Italy, encompassing 40% of dairy farmers, 45% of cows and 60% of European milk output. EuroDairy is an international network to increase the economic, social and environmental sustainability of dairy farming in Europe. EuroDairy fosters the development and dissemination of practice-based innovation in dairy farming, targeting key sustainability issues: socio economic resilience, resource efficiency, animal care, and the integration of milk production with biodiversity objectives. EuroDairy is funded by the EU Horizon 2020 research and innovation programme under Grant Agreement No 696364.

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# EuroDairy Technical Report

## Welfare assessment: sharing lessons across Europe

### 1. Introduction

Animal care is one of the sustainability themes of EuroDairy, with the aim to address issues of societal concern, in relation to animal health and welfare. One of the Animal Care objectives focuses on improving animal welfare, specifically sharing experiences on the use of practice outcome-based welfare measures. To improve animal welfare assessment, criteria should not only meet consumers'/society demands, but also be feasible at farm level, and the outcome should provide dairy farmers with possibilities to improve animal welfare. The latter will result in improved animal welfare and higher profitability (sustainability), because of the positive correlation between these two.

Today's consumers require more transparency on how milk at farm level is produced, and how the animals are treated. There is a need to continue to address transparency to reassure consumers, and increase their confidence in dairy production practices.

With this in mind, this work stream focuses on improvement and innovation in improving animal welfare. In recent years, a number of industry-led, practical, on-farm, dairy cattle, welfare assessment programmes have been rolled out across individual European countries and others are working towards achieving this.

This report provides a summary of a number of EuroDairy activities, including a survey and two workshops. In addition, innovative practices are captured and suggestions made on developing more practical and effective tools to improve animal welfare, which are feasible at farmer level.

Further information can be accessed via the project website [www.eurodairy.eu](http://www.eurodairy.eu).

### 2. Objectives

The specific objectives of this work stream were to:

1. Identify innovative practices in welfare assessment
2. Exchange knowledge and experiences of welfare assessment tools and approaches

### 3. Identify innovative practices

#### 3.1 Survey

A survey was conducted with EuroDairy partners to establish which welfare assessment tools are in use, or being considered for use in their member states, and to identify innovative activities in practical welfare assessment on commercial farms. Eleven organisations from nine countries responded to the survey, including Netherlands (NL), United Kingdom (UK), Sweden (SE), Denmark (DK), Spain (ES), Italy (IT), Finland (FI), Slovenia (SI) and France (FR).

Many welfare assessment criteria are implemented in national assurance schemes and/or schemes of individual dairy processors. Welfare assessment is mainly conducted by the Vet (NL, SE, ES, UK, IT, FI, SI), assurance auditor (ES, UK, IT) or advisers (FR). The frequency of assessment vary from twice yearly (NL, DK), annually (FI, IT, FR) to every 18 months (UK, SI). In seven countries (DK, UK, IT, FR, SI, NL and FI), a visual assessment of the cow by the vet and/or assurance inspector is conducted.

The most frequently recorded welfare outcome measures for cows included mastitis, body condition, cow mortality, cleanliness, hair loss, lesions, swellings, lameness, space allowance and comfort of lying areas. In contrast, the least frequently measured was broken tails, response to stockperson, cows needing further care, eye & nasal discharges.

The most frequently recorded welfare outcome measures for calf and young stock were mortality, and use of local anaesthetic and pain relief for disbudding. The least frequently recorded measures were calf stillbirths, calf diarrhoea and calf growth rates.

The majority of countries do not have targets for animal welfare measures. In both DK, IT and NL, targets are incorporated into their standards. For example, in DK, the authorities have set targets for mortality rates for cows and calves. In the UK, no targets are given, but farmers are advised to monitor and manage for continual improvement. However, some retailers have recently adopted a zero tolerance to severely lame cows. In IT, for any measure, a hazard level is established. If a hazard is identified, it is discussed with the farmer and corrective or improving interventions are suggested.

The survey respondents were asked to identify what innovations and projects are required to advance cattle welfare. On-farm innovations identified were alternative housing, flooring and bedding, claw health registration programmes and adoption of smart precision technologies. The common welfare priority themes were prevention of production diseases, better on-farm recording of health and welfare data, improving housing conditions both indoor and outdoor, and pain prevention during management procedures such as disbudding.

## 3.2 Innovative welfare initiatives

Several animal welfare monitoring systems have been developed in Europe. More recently, there has been a growing interest not only in measuring how resources truly affect the animal, but also in observing the animals themselves. In 2004, a pan-European Welfare Quality project set out to produce science-based and practical welfare assessment protocols. These protocols have been widely adopted and adapted for use in schemes across Europe. A disadvantage of the Welfare Quality assessment protocol for dairy is reduced feasibility, as it takes between 4 and 7 hours to complete for herds of 25 to 200 cows. Therefore, attempts have been made at incorporating aspects of the Welfare Quality® into existing frameworks as well as developing more practical approaches to welfare assessment. A number of innovative approaches have been developed across Europe and are described below. An inventory of welfare assessment tools and resources are available in Appendix A.

### 3.2.1 Finland: Naseva Health

Naseva is a voluntary national health care register maintained by the dairy industry and slaughterhouses. It enables dairies, slaughterhouses, cattle farms, veterinarians and other authorised partners to document, manage and develop information and measures related to food safety, animal health and welfare. It covers 75% of dairy farms.

A veterinarian performs an annual healthcare review and plan, at least once a year on the farm, storing the information collected in the register. Farm visits entail using adapted Welfare Quality® principles to assess the circumstances, health and behaviour of different age groups. In addition, the visit focuses on the occurrence of contagious diseases, disease protection measures, feed hygiene and the management of residues.

### 3.2.2 France

The National Charter of Good Agricultural Practice includes a 'light' welfare assessment based on observation and best practice. Adhering to the charter is voluntary, and currently 90% of the milk produced in France comes from farms adhering to the Charter.

However, there are a number of private initiatives (at least four) being implemented on farms. The protocols in use are inspired by Welfare Quality®, or by French experts. These are not officially endorsed by national organizations, and the protocols are not publicly available.

There are plans for a new welfare system to be implemented nationally, which is currently under development and being tested on farm. This includes indicators of animal welfare, with the objective of carrying out assessment in the majority of farms over the next five years. It is expected that the National Charter of Good Agricultural Practice will evolve as these developments come to fruition.

One major retailer is trialing a 4-tier welfare labelling system. So far, only broilers are included but if successful, it is expected that it would be extended to dairy.

### 3.2.3 Italy: IZSLER-CReNBA

The Italian National Animal Welfare Reference Centre (CReNBA) has developed a welfare assessment system for dairy cattle, which is conducted by veterinarians. It is based on the Welfare Quality<sup>®</sup> protocol and includes animal based welfare indicators such as lameness, udder health and skin lesions. The evaluation takes a maximum of half a day to be conducted, and considers milking and dry cows, as well as young stock. Additionally, processors and retail chains are starting to reward through financial bonus for achieving a good welfare score in the CReNBA assessment.

### 3.2.4 Netherlands: KoeKompas welfare monitor<sup>®</sup>

KoeKompas<sup>®</sup> is based on a modified version of the Welfare Quality<sup>®</sup> protocol for dairy cattle. The KoeKompas<sup>®</sup> demonstrates strengths and opportunities for improvement through a risk analysis and helps to improve animal welfare and health. Two KoeKompas<sup>®</sup> visits are conducted annually by the vet and it is available to all Dutch dairy farmers via their milk purchaser.

The farmer and vet work together to evaluate food and water, housing, animal welfare, milking, work routines, young stock rearing and animal health. The findings are presented in a web diagram (Figure 1). The farmer and vet agree the priority goals to focus on and these are presented to the farmer as a report. In the second KoeKompas visit, a completely new KoeKompas is conducted. The action points from last time are discussed, and new action points agreed.

KoeKompas<sup>®</sup> is conducted by certified vets, it takes 3 hours to assess a 120 cow farm, including completing the online software program and report. In the NL, welfare measures are implemented as part of the farmer's milk contract, and a good score can be rewarded financially, with a bonus.

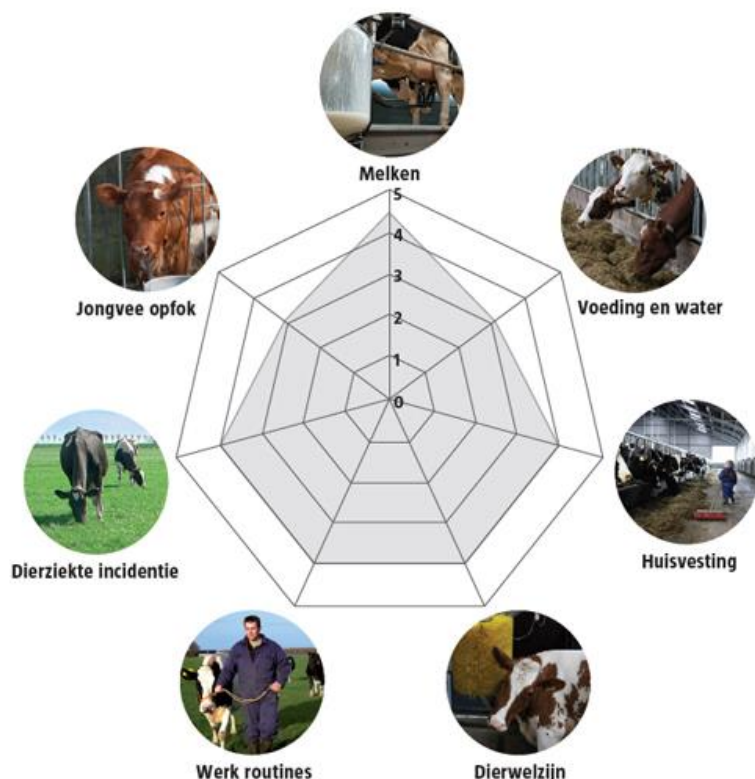


Figure 1. Spider diagram visually representing the results of the KoeKompas<sup>®</sup> welfare assessment

### 3.2.5 Norway: Animal Welfare Indicator

Using health, production and welfare data from the national database, Norwegian researchers have created a prototype of an animal welfare indicator to document status, and provide a tool for measuring improvement.

The main variables included are claw health, calf disease and mortality, mortality in dairy cows, dehorning routines in calves, young stock health (mortality, disease, growth rate and age at first calving), fertility (number of day from first to last insemination and calving interval), udder health (clinical mastitis and cell count), metabolic disease,



culling reasons and longevity, difference in milk production between 1<sup>st</sup>, 2<sup>nd</sup> and 3+ calving. This index can also be broken down into sub-indicators according to the main areas listed above. This enables farmers and advisors to make measured improvements within those areas.

Currently, the prototype is being validated on 50 dairy farms, with the aim of rolling it out to farmers by end of 2019. The indicator is combined with an obligatory herd audit annually, which lasts one hour. The audit includes measurements such as cow health, cleanliness, lameness, comfort, calf accommodation quality and cleanliness of milking equipment.

The animal welfare indicator is a good, objective tool to document and improve the animal welfare of dairy cattle in Norway. The tool has been devised to improve standards in all herds, and can give specific professional advice to help farmers with even the lowest standard to progress, change their attitudes and inspire to be better.

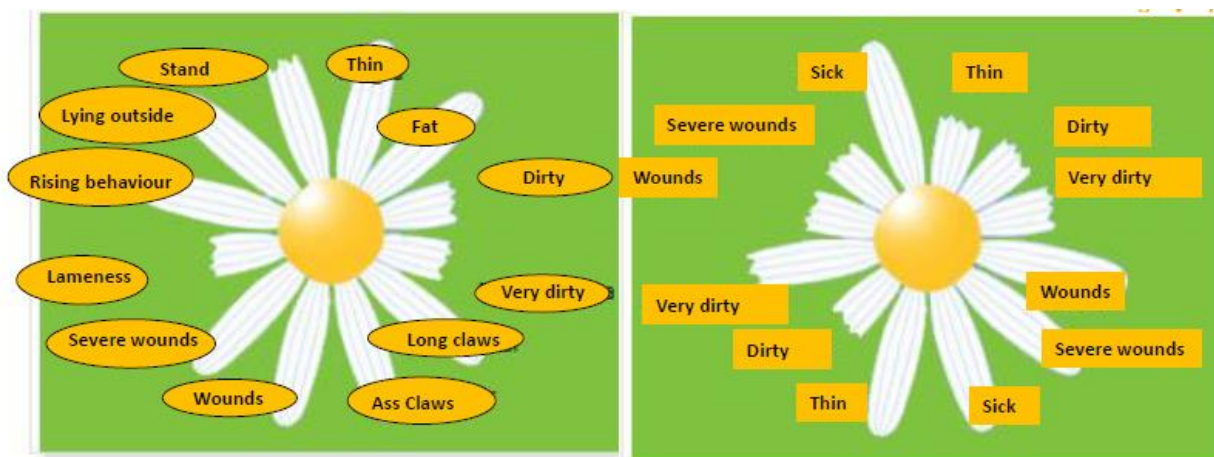
### 3.2.6 Sweden: Ask the cow

In 2004, Swedish Dairy Association (SDA) started the development of a *Scheme for Animal Welfare*. A research project created a model to determine if a herd was at high or low risk of poor welfare by combining seven indicators including two fertility measures, mortality in three age categories and incidence of mastitis and feed-related diseases. Two different animal welfare tools, *Animal welfare signals* and *Ask the cow* were the key outputs of this research.

*Ask the cow* was introduced in January 2010 and is one of Växa Sweden advisory animal welfare service. It is based on practical animal welfare assessment for dairy cows, young stock and calves. It provides dairy farmers a true picture of the management's strengths and weaknesses and provide a good base to improve both animal welfare and profitability.

The assessments are carried out by specially trained and calibrated assessors. A random sample of 35 cows, young stock and calves are observed and assessed systematically, mainly without the farmer present. Some aspects are recorded at group level, for example, the number of cows lying, standing, feeding and drinking. At an individual cow level, rising behaviour, body condition score, cleanliness, appearance of the hooves, lesions and lameness are all observed and recorded. For young stock, body condition score, cleanliness, lesions and health are recorded.

The findings are presented to the farmers as a flower, with each petal representing one parameter. An intact petal indicates a good result but if the petal is not intact this indicates that improvement is required (Figure 2). The farmer can benchmark their results against other herd data. After the assessment, the assessor provides an action plan for the farmer with suggestions on how to improve which is followed up by a second visit. *Ask the Cow* uses mainly animal-based measures and a farm visit takes approximately 3-4 hours.



**Figure 2.** Findings of the Cow Signals welfare assessment is presented to the farm as a flower with each petal representing a welfare measure

### 3.2.7 United Kingdom : AssureWel

In 2012, a tool to provide welfare outcome assessments was launched across the UK. This tool was developed as part of the AssureWel project, led by the RSPCA, the Soil Association and the University of Bristol. The Soil Association and RSPCA Assured were the first to roll out welfare assessment on dairy farms. This pioneering approach for farm assurance schemes, retailers and farmers focuses on the individual animal, looking at welfare outcomes, such as their physical health and behaviour.

AssureWel provides a framework designed specifically for use during a farm assurance scheme audit, which traditionally would have assessed the 'inputs', such as diet and how much space each animal is given, without guidance for assessing how effective those resources and management are at directly providing a good level of welfare for the individual animal.

In 2013, Red Tractor, which assures 95 per cent of the milk produced in Great Britain, included the welfare measures into all their on-farm dairy assessments. During a Red Tractor assessment on a dairy farm, 10 cows are randomly selected by a trained assessor and observed for mobility, body condition score, hair loss, lesions, swellings and cleanliness. A copy of the findings are left with the farmer to discuss with their vet during the annual herd health review.

A pilot study is underway to explore University of Bristol's Positive Welfare/Good Life framework, which explores the presence of positive welfare on commercial farms (see Section 4.2).



## 4. Sharing experiences and lessons

### 4.1 Dairy Cattle Welfare Assessment: Keeping it practical

In November 2017, a session titled “Dairy Cattle Welfare Assessment: keeping it practical” was held at the International Dairy Federation annual congress in Belfast, Northern Ireland. This brought together industry stakeholders and farmers from across Europe and internationally, with an interest in dairy cattle welfare assessment. Presentations were delivered on successful welfare assessment programmes from Sweden (Ask the cow), the Netherlands (Koekompas) and the UK (Red Tractor welfare outcomes). Each welfare programme was represented by an industry expert and a farmer. The industry expert elaborated on the programme and described how they work directly with the farm team to improve welfare of the herd. The farmer spoke about the practicalities and benefits of using the welfare assessment on their farm. A facilitated question and answer session allowed delegates the opportunity to engage and discuss more practical and effective tools to improve dairy cattle welfare, which are feasible at farm level. Discussion mainly focused on how to further improve with innovations and solutions being shared across countries. PDF copies of the formal presentations are available online at <https://eurodairy.eu/case-studies/dairy-cattle-welfare-assessment-keeping-it-practical/>

### 4.2 Welfare plus workshop

In November 2018, a workshop titled ‘Welfare plus’ was held in Birmingham, England. This workshop brought together farmers interested in dairy cattle welfare to foster co-ordination and exchange information and experiences. The agenda, speaker biographies and a PDF copy of the formal presentations are provided in Appendix B. The presentations covered the following topics:

**What is the consumer value of animal welfare in the UK?:** Dr Jenny Gibbons opened the workshop presenting a background on the value that British consumers place on animal welfare. One of the greatest challenges the dairy industry faces is public acceptability of production systems and management practices. It is important that consumers have confidence in dairy production practices, and that the practices of dairy farmers fit well within the values of society. AHDB’s consumer insights team track, and monitor, purchasing behaviour and conducts bespoke pieces of research to identify any changes in attitude or perception. In addition, they work closely with other key stakeholders to access data that gives insight into the impact of lobbying groups.

Vegans make up a very small (1%), but growing (x3 over past ten years) proportion of the UK population. Although still small, the vegan lobby represents a disproportionate share of the online and media conversations relating to the dairy industry. Documentaries and films such as *Cowspiracy* and *Carnage* have entered the media debate and have helped to fuel greater interest in this topic. Ethical issues in dairy production are very emotive, clearly have the potential to be a talking point in future, and are something that the vegan lobby are actively trying to exploit.

However, in terms of impact on mainstream consumers those messages are not yet strongly cutting through. Of 7.2 million online conversations pertaining to dairy only 2.4% are related to dairy-free or veganism. Additionally, interest in veganism does not necessarily equate to a wholesale change in behaviour. Ethical considerations currently play a minimal role in most consumer’s decision-making process when purchasing dairy, much less so than for meat. In the UK context, drivers such as price and quality are much more important at this point.

However, younger consumers, in particular, are more open and receptive to these kinds of messages and 39% of younger consumers say they are cutting back on dairy. By contrast only 14% of older (55 plus) consumers say they are cutting back. To address this, it is important that we can understand the real barriers and concerns that are emerging, particularly amongst younger consumers.

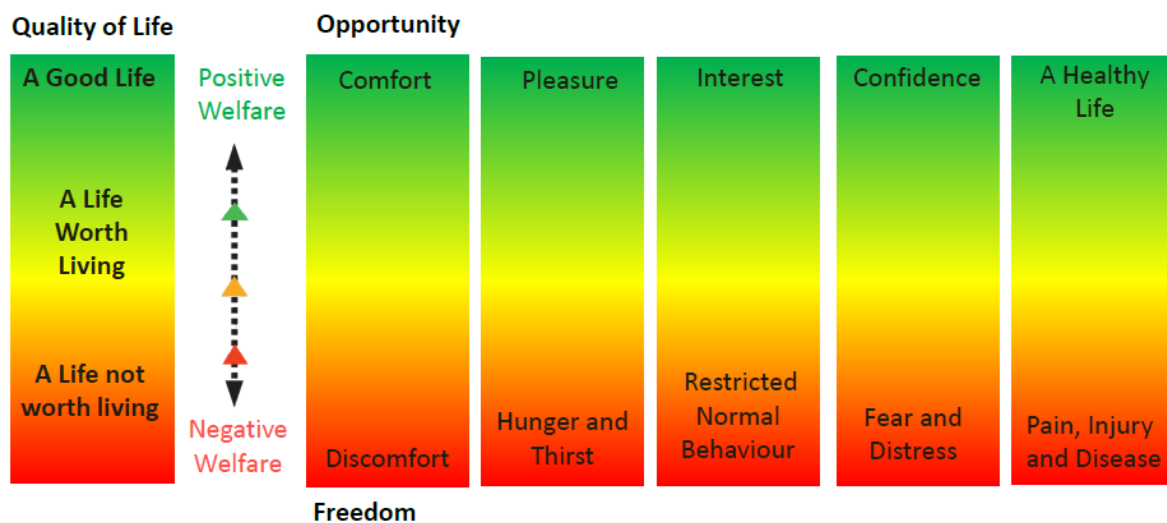
In general, most consumers (60%) feel that UK farmers do a good job in looking after their dairy cattle. When prompted though, some concerns raised include fate of bull calves, cow-calf separation and antibiotics amongst others.

**Good life opportunities:** Dr Jess Stokes introduced the ‘life worth living’ concept developed by the British Farm Animal Welfare Council in 2011. It is a useful concept to describe the quality of life of an animal, and moves beyond the Five Freedoms. Determining whether an animal has a life worth living requires that both positive and negative experiences are counted. An animal’s quality of life can be a ‘life not worth living’, ‘a life worth living’ or a ‘good life’. The ‘good life’ indicates an even higher standard than a ‘life worth living’ and the requirement of a ‘good life’ goes beyond those for the lower categories.

Dr Stokes proposed that there are a number of opportunities required for a 'good life' including comfort, pleasure, interest, confidence and a healthy life. These are represented in Figure 3 below.

Jess tasked the delegates to discuss the following statement "If in 10 years from now, your milk buyer will only purchase your milk if you are able to demonstrate that you are giving your cows a good life because their consumers demand it, what would your farm look like?". The delegates had an hour to discuss this statement in relation to the good life opportunities. An illustrator was present to listen to the discussion and graphically record it, transforming it into a series of illustrations. The illustrations are shown in Appendix C. In brief, some of the concepts discussed included provision of stimulating environments, environmental enrichment tools, providing cows with greater control over their thermal comfort, use of precision technologies to monitor aspects of the cow's environment (e.g. hygiene and cow comfort), providing dedicated calf areas and recognising the stockman's job as a professional career. Over lunch, the delegates were able to discuss the illustrations and share their ideas and concepts.

## Good Life Opportunities



**Figure 3. Good Life Opportunities Diagram**

*Dutch farmer's perspective of animal welfare:* Animal Welfare is a high priority area in the Netherland with a political 'animal welfare' party holding five of the 150 House of Representative's seats. Therefore, transparency on animal welfare is essential for the dairy industry. Marten Knol introduced his farm, where he receives an extra €0.02 per litre for allowing his cows to graze for 6 hours per day for at least 120 days during the summer. KoeKompas welfare monitor is a tool, which enables him to work with his vets to complete a risk analysis of welfare on his farm twice a year. This includes monitoring the behaviour of the cow, and the quality of the resources available to her. The vet advises him how to best manage the risks. Marten sees this as an opportunity to further improve welfare on this farm.

*British farmer's perspective of animal welfare:* Two British dairy farmers, Rachel Horler and David Finlay, introduced their individual dairy farms. The common theme for both of these farmers was that they keep their calves with their cows up to natural weaning. Rachel has been trialling a new approach where 9 cows and 1 heifer are not milked through the parlour, but are nursing 21 calves between them. The calves are responding well with excellent growth rates (tripling birth weight at 8 weeks old) and health. The challenges she faces include a complex weaning process, which is time consuming, less overt oestrus in the cows, and reductions in milk sold per cow.

Tenant farmer, David keeps his calves with their dams for 5 to 6 months, with the cows being milk once a day. He believes this is better aligned to pubic values and since he has 20,000 visitors every year to the farm activity centre, this is an important component of his business model. He admits that making this system profitable has been a struggle, but finally he is in a position where it is paying. David plans to expand by focusing on his cheese enterprise, and is currently crowd funding to buy bigger production equipment to connect his new cheese dairy to the farm anaerobic digester, so that he can use manure power to provide the energy required for cheese making.

*A New Zealand perspective:* DairyNZ's Helen Thoday outlined why focusing on animal care is important and what New Zealand is doing to support dairy farmers striving to be world-leading in this aspect of their business. The Dairy sector's future stated goal is to become a world-leader in animal welfare. There is a clear customer focus behind this ambition, but there is an equally compelling productivity argument, as farmers know that well-cared for animals are healthy and productive, thereby underpinning high performing farming businesses.

Helen and her colleagues are actively engaged with the British researchers behind the positive welfare framework, and are eager to trial it out on dairy farmers in NZ. The starting point is to socialise the concept of positive welfare in NZ. She highlighted the opportunities and challenges ahead, but remains optimistic that the positive welfare framework will assist NZ demonstrating their world-leading stance in animal care.

*Positive welfare framework:* Recent research in the UK has resulted in the development of a positive welfare framework representing a standard of welfare substantially higher than the legal minimum for dairy cattle. The positive welfare framework is based on published evidence and expert opinion creating three tiers of resource provision (Welfare +, Welfare ++, Welfare +++) which are above those stipulated in UK legislation and Government codes of practice (see Appendix C). Jess described the principles underpinning the framework and the process of developing the resource tiers for dairy cattle. The framework has not yet been trialled on dairy cattle farms, but a pilot trial is due to take place early in 2019. Delegates discussed the positive welfare framework in depth. One element of this interactive session focused on the technical detail, as well as the benefits and challenges. Many agreed that the ability to provide a good life opportunity was not a barrier to valuing further aspirational practices, or recognising other farmers who were achieving it.

#### What did the farmers think?

"The welfare plus workshop was Excellent. It provided a great opportunity to learn what is happening in other countries. We had a great discussion and debate. It has been a good motivator for me and very thought provoking" *Karen Halton, Dairy Farmer, England*

"Interesting to hear different views on such important topics. Excellent information and good to meet other farmers. I enjoyed hearing about the New Zealand perspective the most" *Marten Knol, Dairy Farm, The Netherlands*

### 4.3 Further dissemination

#### Webinars

Five webinars relating to animal care were delivered by the EuroDairy project:

- [Achieving excellence in fresh cows](#) with dairy farmer Gordie Jones (USA)
- [Innovations on hoof health](#) with Professor Jon Huxley (UK)
- [Reducing pressure on the foot](#) with Neil Chesterton (New Zealand)
- [Lameness in dairy cows](#) with Lilli Frondelius (Finland)
- [Opportunities and challenges in calf housing and management for the next decade](#) with Professor Nina von Keyserlingk (Canada)

#### Tools to help farmers assess their cows' welfare

Farmers themselves can undertake welfare assessment as part of herd management. [Welfare assessment Tools](#) have been developed and shared with farmers to use as part of their management. These scorecards are available for lameness, body condition, hair loss, lesions, and swellings. There is opportunity for these to be translated into different languages.

#### Videos & podcasts

- A short video introducing a practical method to assess the welfare of dairy cows in the Netherlands can be viewed here: ['Welfare monitor on Dutch dairy farms'](#).
- A podcast on 'The welfare of dairy cows in Eastern Finland' can be listened to [here](#).

### Factsheets and resources

- In the survey, disbudding was highlighted as a key topic that required further dissemination to farmers. IDELE and AHDB collaborated to create two factsheets to help guide farmers on how to disbud (dehorn) efficiently, easily and painlessly. These factsheets are shown in Appendix E.
- Early detection of lame cows was the key message from a number of experts presenting webinars. Therefore, a factsheet was developed about the most effective strategy for treating lame cows. This is available online here: [Lame cows? No antibiotics without diagnosis](#) and is available in French and English.

### European conferences

A poster on 'Sharing experiences and best practice of dairy cattle welfare assessment across Europe' was presented at the [Welfare at the Farm Level](#) (WAFL) conference in the Netherlands in 2017. You can view the poster here: <https://eurodairy.eu/resources/dairy-cattle-welfare-assesment/>

## 5. Key messages

- People's expectations around the management of cattle has changed, as our understanding of the science behind good welfare outcomes has grown
- There are several innovative welfare initiatives being implemented across farms in a variety of European countries. Welfare Quality® protocols are the most widely adopted, and adapted, protocols in use across Europe. Several countries have created their own bespoke welfare assessments protocols. Some of which are readily accessible, and in the public domain
- There is a move towards measuring aspects of behavior and welfare that focus on the positive welfare of cattle, but on-farm trials have yet to be conducted on the practicalities of this approach
- There is some controversy around setting targets for the different welfare outcome measures, with some countries already leading the way on this
- The common welfare priority themes were prevention of production diseases, better on-farm recording of health and welfare data, improving housing conditions, both indoor and outdoor, and pain prevention during management procedures such as disbudding
- In general, welfare assessment of calves and young stock is lacking
- To enhance and spread the use of welfare assessment, especially animal-based measures, among dairy farmers, several actions should be put in place. This includes increasing and simplifying communication, including training and translation of scientific findings, making welfare assessment more friendly and fit for purpose
- Several common areas of risk to the dairy industry's reputation were frequently identified, including the fate of dairy bull calves, grazing access, large/mega dairy farms and cow-calf separation
- National strategies using animal-based welfare indicators which are properly monitored, offer the most promising solution to demonstrating the real level of welfare in dairy cows

## 6. Further research and development needs

Gaps in knowledge, which might be addressed by further research, include:-

- Improved survival, growth rate and reduced risk of illness and poor welfare in young stock, should be considered a top priority. There is an urgent need to develop and test practical on-farm welfare assessment protocols for dairy heifer and bulls calves/young stock
- Centralised databases where information on welfare assessment, information sources and relevant documents can be stored and shared with farmers. This process should allow farmers to benchmark themselves against others
- Historically, much of welfare science has focused on negative experiences of animals affecting their welfare. Positive farm animal welfare is a relatively new idea, which brings attention to animals having a good life. Positive welfare is in sympathy with public opinion, but further research is needed to ensure it is supported by scientific evidence
- Further research is required on developing objective precision technology, to measure aspects of welfare (e.g. infrared and 3d sensors to detect early warning of lameness)
- Improve and future proof housing to optimise animal care, welfare, health, behaviour and productivity

Areas for further development include:

- Making animal-based measures more user-friendly, and fit for purpose
- Harmonisation of practical protocols, and hazard levels, within and between countries
- Developing quantitative risk assessment methodologies in animal welfare, by using animal based measures
- Overcoming the gap between science and practice; the benefits to the whole supply chain of using welfare assessment should be evident
- More work is needed to help dairy producers understand current welfare legislation, be compliant and implement changes that improve welfare.
- Develop and deploy a benchmarking tool to allow farmers to evaluate their performance on welfare measures against their peers
- Training to enhance livestock worker skills within different production systems, and in areas such as on-farm euthanasia and transport
- Improve the uptake of anaesthetic and pain relief during disbudding of calves
- Developing market opportunities for unwanted dairy bull calves

## 7. Implications for policy

Campaigning activity from animal activist groups creates consumer discomfort, and drives people to feel they need permission to enjoy the dairy products they have historically known and loved. The challenge for the dairy industry is to consider carefully reputational risks with consumers. Welfare groups are also pushing for a system of production labelling across agricultural sectors in more than one European country. Following Brexit, the direction of UK government policy is towards agricultural support based on delivery public goods, such as the environment and animal welfare. Underpinning industry responses must be trust and transparency in food safety, and animal welfare. The status quo may not be an option.

The approach taken needs to be evidence-based, and considered. It is likely that greater emphasis will be placed on assessing and reporting the positive experiences of dairy cattle.

Regardless of the individual approach of European countries, it is necessary to prove farmers take all reasonable steps to ensure the welfare of dairy cows.

To continue to protect the dairy industry's reputation and the welfare of animals managed, consideration needs to be given to:

- Developing national strategies, with clear objectives for ensuring dairy cow welfare. This should be underpinned by demonstrable aspirations, actions and targets.
- Identifying ways to better promote and report dairy cow welfare, so that better assurances can be provided and appropriate action taken, as necessary.
- A strategic vision focusing on 'tackling transparency' to help reassure consumers, and those in the food chain delivering products to consumers, should be developed.
- Consideration for which animal-based indicators can be used to assess the requirements of Directive 98/58/EC concerning the protection of animals kept for farming purposes.

## 8. Acknowledgements

The involvement of EuroDairy farmers presenting, and hosting farm visits, is gratefully acknowledged. EuroDairy is funded by the EU Horizon 2020 research and innovation programme under Grant agreement No 696364.

## Appendices

**Appendix A. Inventory of welfare assessment tools.**

**Appendix B. Welfare plus workshop agenda, biographies and presentations**

**Appendix C. Welfare plus workshop illustrations**

**Appendix D. Disbudding factsheets**



## Appendix A

Resource	Country	Internet link
Animal Needs Index	AU	<a href="http://www.bartussek.at/pdf/anicattle.pdf">http://www.bartussek.at/pdf/anicattle.pdf</a>
Danish Animal Welfare Index	DK	<a href="https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/Pages/Developing-Danish-animal-welfare-indices-for-cattle-and-pigs.aspx">https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/Pages/Developing-Danish-animal-welfare-indices-for-cattle-and-pigs.aspx</a>
Welfare Quality	EU	<a href="http://www.welfarequality.net/en-us/home/">http://www.welfarequality.net/en-us/home/</a>
NASEVA	FI	<a href="https://www.naseva.fi/">https://www.naseva.fi/</a>
Charter for Good Agricultural Practices	FR	<a href="http://www.charte-elevage.fr">http://www.charte-elevage.fr</a>
Irish Bord Bia Quality Assurance Programs : Sustainable Dairy Assurance Scheme	Ire	<a href="http://www.bordbia.ie/industry/farmers/quality/SDQASDocuments/SustainableDairyAssuranceScheme-ProducerStandard.pdf">http://www.bordbia.ie/industry/farmers/quality/SDQASDocuments/SustainableDairyAssuranceScheme-ProducerStandard.pdf</a>
Italian National Animal Welfare Reference Centre	IT/EN	<a href="https://www.izsler.it/pls/izs_bs/v3_S2EW_CONSULTAZIONE.mostra_pagina?id_pagina=3311">https://www.izsler.it/pls/izs_bs/v3_S2EW_CONSULTAZIONE.mostra_pagina?id_pagina=3311</a>
KoeKompas	NL	<a href="https://www.zuivelplatform.nl/">https://www.zuivelplatform.nl/</a>
Ask the cow	SE	<a href="http://www.fragakon.se/gem/">http://www.fragakon.se/gem/</a>
Index of the suitability of animal rearing for cattle	SL	<a href="https://www.uradni-list.si/files/RS_-2010-071-03848-OB~P001-0000.PDF">https://www.uradni-list.si/files/RS_-2010-071-03848-OB~P001-0000.PDF</a>
Red Tractor Farm Assurance	UK	<a href="https://assurance.redtractor.org.uk/contentfiles/Farmers-6802.pdf?_af=636790162726941131">https://assurance.redtractor.org.uk/contentfiles/Farmers-6802.pdf?_af=636790162726941131</a>
AssureWel for Dairy Cattle	UK	<a href="http://www.assurewel.org/dairy cows">http://www.assurewel.org/dairy cows</a>
The AssureWel Manual	UK	<a href="https://view.pagetiger.com/AssureWelManual/AssureWelManual">https://view.pagetiger.com/AssureWelManual/AssureWelManual</a>
AHDB Dairy Welfare Assessment tools	UK	<a href="https://dairy.ahdb.org.uk/technical-information/animal-health-welfare/welfare-assessment/#.XD4ZTeS7LIU">https://dairy.ahdb.org.uk/technical-information/animal-health-welfare/welfare-assessment/#.XD4ZTeS7LIU</a>
OIE standard on welfare for dairy cattle	International	<a href="http://www.oie.int/index.php?id=169&amp;L=0&amp;htmfile=chapitre_aw_dairy_cattle.htm">http://www.oie.int/index.php?id=169&amp;L=0&amp;htmfile=chapitre_aw_dairy_cattle.htm</a>
Global GAP	International	<a href="https://www.globalgap.org/uk_en/for-producers/globalg.a.p./integrated-farm-assurance-ifa/livestock/DY/">https://www.globalgap.org/uk_en/for-producers/globalg.a.p./integrated-farm-assurance-ifa/livestock/DY/</a>
Animal Welfare Approved	International	<a href="https://agreenerworld.org/certifications/animal-welfare-approved/standards/dairy-cattle-and-calves-standards/">https://agreenerworld.org/certifications/animal-welfare-approved/standards/dairy-cattle-and-calves-standards/</a>
National Dairy Farm Programme	USA	<a href="https://nationaldairyfarm.com/">https://nationaldairyfarm.com/</a>
ProAction Animal Care Assessments	Canada	<a href="https://www.dairyfarmers.ca/proaction/targets-achievements/animal-care">https://www.dairyfarmers.ca/proaction/targets-achievements/animal-care</a> <a href="https://www.holstein.ca/Public/en/Services/proAction_Animal_Care/Cattle_Assessments">https://www.holstein.ca/Public/en/Services/proAction_Animal_Care/Cattle_Assessments</a>

## AGENDA WELFARE PLUS+ WORKSHOP

**Date:** Monday 5<sup>th</sup> & Tuesday 6<sup>th</sup> November 2018  
**Time:** 7pm Monday 5<sup>th</sup> – 4pm Tuesday 6<sup>th</sup>  
**Venue:** [Arden Hotel](#), NEC, Birmingham, B92 0EH, England, UK  
**Facilitator:** *Dr Jess Stokes, University of Bristol*

### Monday 5<sup>th</sup>

7:30pm Dinner  
After dinner speaker Dr Jenny Gibbons (AHDB) “What is the consumer value of animal welfare in the UK?”

### Tuesday 6<sup>th</sup>

#### *Breakfast*

08:30 Good life opportunities - *Dr Jess Stokes*  
08:50 Good life vision discussion  
10:05 Refreshment break  
10:30 Marten Knoll – Dairy farmer  
11:00 Rachel Horler – Dairy farmer  
11:30 David Finlay – Dairy farmer  
12:00 Panel discussion  
12:30 Lunch & networking  
13:30 A New Zealand perspective - *Helen Thoday, DairyNZ*  
14:00 Introducing the Positive Welfare Framework – *Dr Jess Stokes*  
14:10 Positive welfare framework discussion  
15:30 Summary & roundup  
16:00 Close

# Speaker Biographies

## Senior Dairy Scientist, AHDB



Dr Jenny Gibbons is based at AHDB HQ in Warwickshire, Jenny leads a ten year Research Partnership on dairy cattle health, welfare and nutrition. She is an Animal Science Graduate (University of Aberdeen) with an MSc and PhD from the University of Edinburgh. Before taking up her current role at AHDB, she worked in livestock research at SRUC in Edinburgh and Agriculture and Agri-Food Canada. In 2012, she returned from Canada to take up her current role as AHDB's Senior Dairy Scientist. Jenny is passionate about providing the scientific evidence needed to underpin progress and raise the profile of GB dairy farming.

## Lecturer in Farm Animal Welfare Science and Policy, Royal Agricultural University



Since completing a PhD and post doc in dairy cattle lameness (2007-2011) as part of the Healthy Feet Project, Jessica Stokes has been Animal Welfare Advisor on AssureWel ([www.assurewel.org](http://www.assurewel.org)). AssureWel is a partnership between the University of Bristol and UK farm assurance schemes to embed a good scheme framework, welfare outcome assessment and continuous farm animal welfare improvement at farm, scheme and sector level. Based at the Soil Association (an organic certification bodies in the UK), Jessica supported welfare improvement, innovation, standards and policy development for the major livestock species (2011-2016). After AssureWel, Jessica moved back to University of Bristol as Senior Research Associate as a facilitator and research coordinator on the Hennovation project which fostered practice led farm innovation across the laying hen sector ([www.hennovation.eu](http://www.hennovation.eu)), and working collaboratively with farmers to develop a positive welfare framework for dairy cattle and sheep (2016-2017). Jessica is now facilitating an International Federation of Higher Welfare Schemes and conducts the producer focused research activities of the laying hen welfare forum ([www.lhwhf.org](http://www.lhwhf.org)). In November, Jessica will be moving to the Royal Agricultural University to take up a lectureship in Farm Animal Welfare Science and Policy.

## Dairy farmer, Melkveehouderij 't Eyland vof



I was born 52 years ago on a dairy farm which I later took over. After my bachelor study, I worked 5 years as a breeding staff member for an AI company. In 1993, I started as a dairy farmer. Our farm is located near the city of Kampen, which is in the center of the Netherlands. At this moment, we have a farm where we use 102 hectares land. 20 hectares is used for the production of corn silages. The rest is grassland. Our herd counts 195 milking cows and 90 head of young stock. We are more on the low cost management system. That means that we graze our cows more than 200 days per year. In addition, we feed our cows 1700 kilograms of concentrates per year. Our production is 8000 kilograms of milk with a 4.30 % fat and 3.45 % protein. We deliver our milk to a private company Bel Leerdammer. This French owned company produces cheese for the German, French and Italian market. Besides as being a dairy farmer I always have been board member on different subjects. I was active for the Young Farmers, for the farmers union, for the breeding committee of CRV, for the cooperative bank and this moment as a member of an advisory group for an animal welfare project (KoeKompas) from the dairy industry. I am married with Jeannette for 28 years. We have three children from 19, 18 and 17 years old.

**Team Leader Animal Care,  
DairyNZ**



Helen Thoday is DairyNZ's Animal Care Team Leader and manages their new sector commitment to be world leading in animal care. Helen, a Harper Adams Agricultural University graduate, originates from Wiltshire and has worked in the pig, beef, sheep and dairy sectors in the UK, Falkland Islands, Canada and New Zealand. Although the roles have varied the principle aim was still the same; motivate farmers to provide better care to their stock by seeking to understand the barriers to change and create farmer led solutions to overcome them.

**Farmer, Maundrils Farm  
Partnership**



After graduating from Harper Adams University in 1992, with a First Class Honours degree in Agriculture, Rachel spent the next 5 years working in the feed milling sector for BOCM Pauls Ltd. and Sun Valley Foods Ltd. In 1997, she moved back to Somerset where a decision was made to convert Maundrils Farm to organic. The farm has been managed to organic standards for 20 years, during which an attention to detail and continuous improvement approach was taken by her and husband, Joe. This has resulted high milk production from forage and herd health benefits. Although Rachel still has a very practical and full time role on the farm she tries to get involved in off farm meetings or focus groups where there will be the opportunity to discover and sometimes implement new ideas. In 2012, Joe and Rachel commenced a 5 year Innovate UK project -Sustainable Forage Protein - as a commercial development farm. Their enthusiastic participation in this contributed to being Highly Commended in the Inspiration and Leadership category of the 2017 Waitrose Farming awards. Rachel has been NFU branch chairman, Somerset Grassland Society Chairman and is currently the British Grassland Society council representative for Somerset, Dorset and Gloucestershire.

**Farmer, J Finlay & Son**



BSc Agic., Ten years agricultural consultancy, then 30 years practical farming – dairy beef sheep. Diversified into tourism (visitor attraction) 25yrs ago, and ice cream. Converted to organic 20yrs ago. Trialled extended suckling of dairy 6 years ago, 37 cows for 6 months. Converted full herd (100 cows) 2 years ago. Aim to turn all milk into artisan cheese.

# What is the consumer value of animal welfare in the UK?

Jenny Gibbons Senior Dairy Scientist



Almost everyone in the UK loves Dairy...



£10.5Bn



27m HHs



116 trips

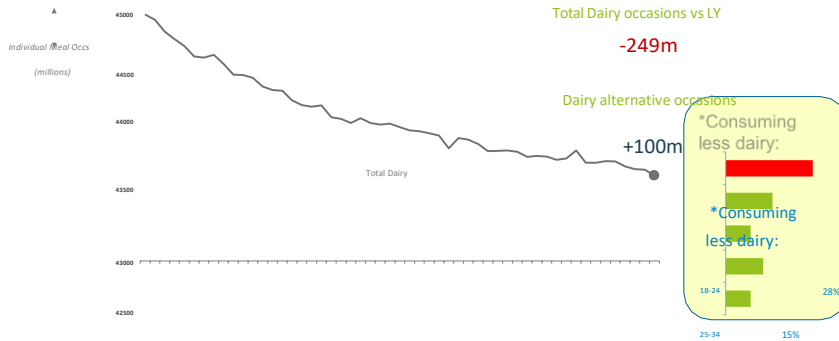
64% of ALL our food occasions feature dairy

2x per day

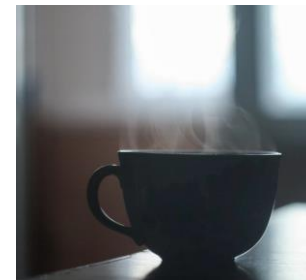
Source: Dairy & Food Survey 2018

day

## But dairy is losing occasions over past 5 years



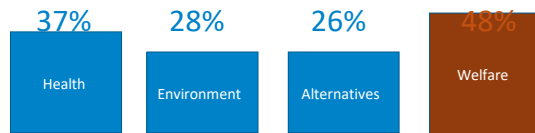
If it continues at the current rate, Milk in the UK could lose - £250 million in the next 5 years



## What factors do people SAY are driving decline?

AHDB

In UK **16%** say they plan to cut back



Of course we know what people *say* they do doesn't always match what they *do*

AHDB



We need to disentangle rhetoric from reality

## So how can we know what actually IS important? Are welfare concerns drivers of reduction, or not?

AHDB

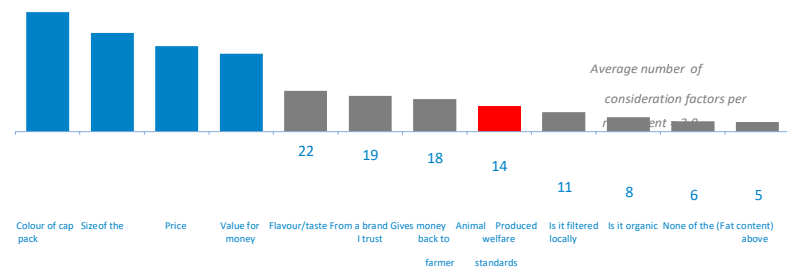
KANTAR WLT<sup>®</sup>RLDPANEL

- 30,000 panellists in UK
- Isolated households who had reduced milk consumption by at least 20% year on year, compared to a control group of non-reducers
- Compared attitudinal differences

## But what about when they buy milk?

AHDB

Consideration Factors When Buying Milk - % of Respondents





## Question: Are people even aware they are cutting back on dairy?



• % of decliners of the respective market (milk, cheese, butter, yogurt) that are doing it consciously ("actively trying to eat less or cut out")



**MOST DECLINE IS UNCONSCIOUS**

## Commoditisation drives lack of value to consumers



What do milk reducers look for in buying milk?



Value for money  
(113)



Flavour taste (83)



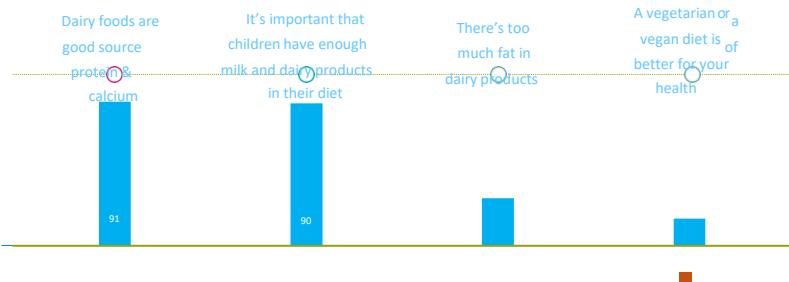
From a brand I trust  
(84)



## Dairy is generally seen as healthy



% of total respondents who agree or strongly agree with statement



## ...Only a small proportion of dairy buyers believe dairy farming is bad for the environment...



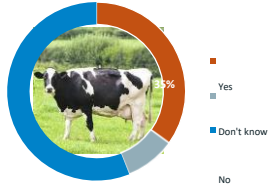
Only 12% Agree or strongly agree Dairy farming is bad for the environment

... 54% disagree or strongly disagree that dairy farming is bad for the environment!

All respondents that

## So what about welfare?

Concerns about the dairy farming industry and how milk is produced (Aug-18)

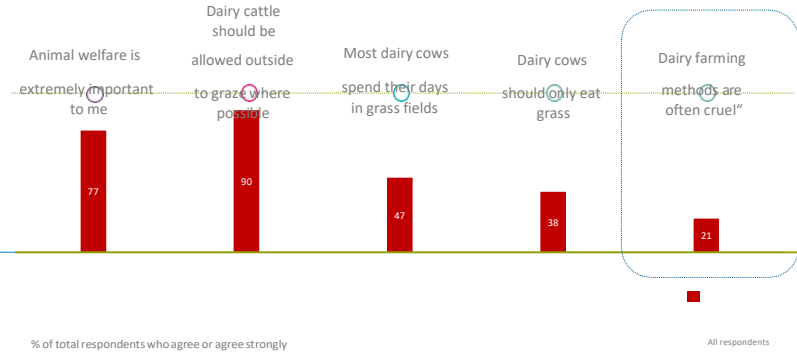


18-24

42%



## Animal welfare is definitely important to consumers (but a “concerned minority”)



## There are some misgivings



## Welfare can be a factor for a concerned minority

21% Agree that “Dairy farming methods are often cruel” Likelihood to



have reduced purchasing in past year



2x

1.3x

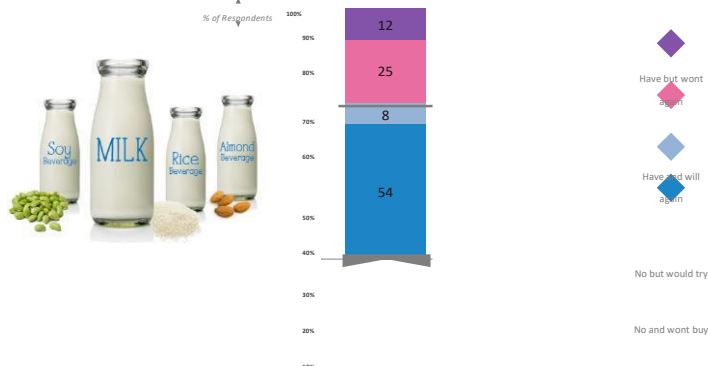
3x

3x

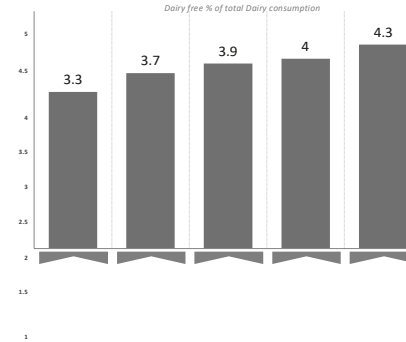
## When consumers are wavering, availability of alternatives becomes a factor



Consideration of Dairy Free Alternatives - % of Respondents



## Dairy alternatives: Still small...but growing



Occurrences +8%

vs last year



Share of free from consumption

Milk 74%

## Substitutions are being made...in some categories



If you reduce your dairy consumption are you any more likely to buy an alternative?



30%



No more likely



20%



No more likely

If some consumers want better welfare, can we monetise that?



## Various higher welfare products, claims and certification schemes available in the UK

AHDB



As well as retailer assurance schemes

## Retailer assurance schemes in the UK examples

AHDB



Waitrose dairy farmers really are a special breed

Behind every pint of the supermarket's milk is a dedicated band of British men and women committed to quality, sustainability and welfare

M&S  
EST. 1884

- Prohibit all year round access to grazing at least 100 days per year
- Select Farm Assurance standards developed with Royal Veterinary College

TESCO

- Adherence to Five freedoms proposed by the Farm Animal Welfare Council.
- 100% of farms are assured to a recognised farm assurance standard including Red Tractor certification and in addition satisfy our Tesco specific requirements which cover further improvements in animal welfare.

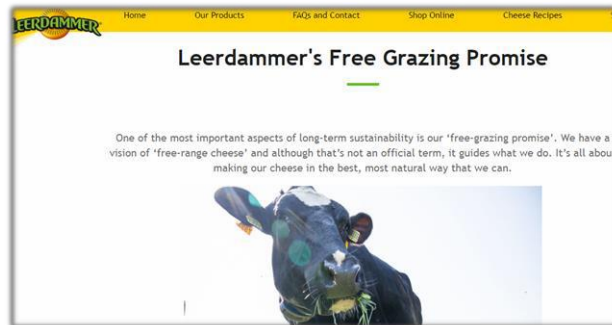
\*Price per litre. £0.59

£0.71

£0.53

## Some brands may use elements of welfare as a point of difference

AHDB



Arla rebranded Organic Farmers Milk to Arla Organic Free range milk July 2017

AHDB

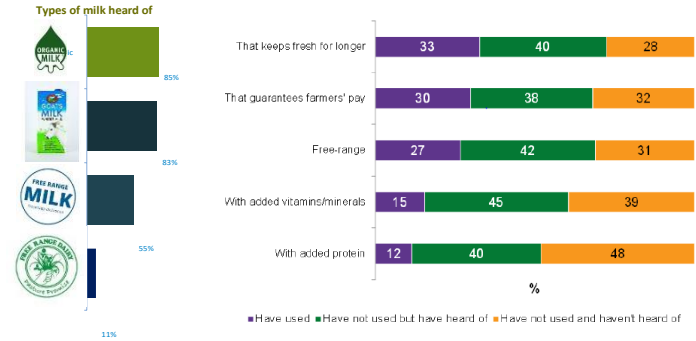
## Asda launched Free range "Pasture Promise" milk in 2017



## Awareness of higher welfare products



"Which of these best describes your usage and awareness of the following types of cow's milk in the last 3 months?"



## Will consumers pay more for higher welfare dairy products?



Willing to pay more for Free range milk: Yes



27% claim

they have bought a free range milk

Willing to pay more for Pasture Promise milk:



(50% 18-24's)

## What can we learn from organic?



■ Price premium they're willing to pay I in %  
■ Actual paid price premium I in %

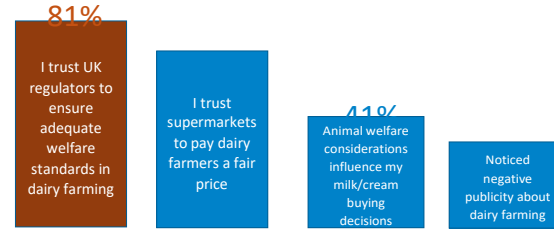


\* Price per kg

# So what next?



Trust is key:  
in the UK, the majority trust regulators and their retailer



Base: 1,000 internet users aged 16+ who use and buy milk/cream/milk drinks  
Source: Lightspeed/Intel

But NGOs are working hard to erode that trust

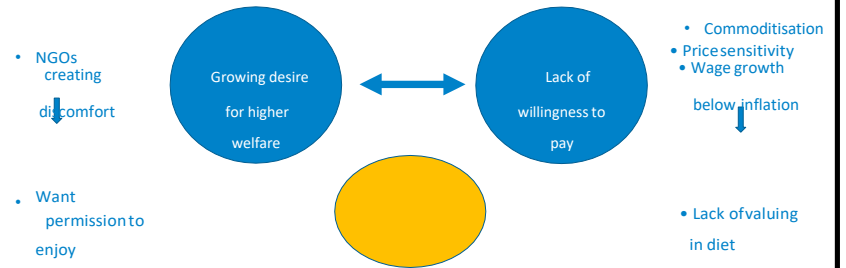
**HUMANE MILK IS A MYTH DON'T BUY IT**

**Consumers paying more for organic milk being duped' as secret footage reveals cruelty on Soil Association farm**

**Chas Newkey-Burden**

...photo of calves in cramped pens will shock many, and with many non-dairy alternatives now consumers have a choice

# Consumer contradiction





## What do we do next? First, add value



- The biggest threat to dairy consumption is for consumers to not value it in their diet
- Promote enjoyment, taste and health benefits
- Creative marketing and more added value products with functional benefits



- Where consumers do not value, they will question and may be vulnerable

ANNOUNCING:  
A CONTINUED ERA  
OF COOPERATION  
BETWEEN MAC & CHEESE.

A message brought to you by  
The Department  
of Dairy Related  
Scrumptious Affairs

**CHEESE DREAMS  
ARE MADE OF  
THESE.**

## What to do next?

### Welfare is an underpinning: Challenges ahead



- Trust and transparency is key
- Review practises with a consumers eye
- Willingness to pay is overstated
- Public Goods to be incentivised
- Production labelling
- Monitor and respond
- Provide toolkits to engage with

Goal = Protection

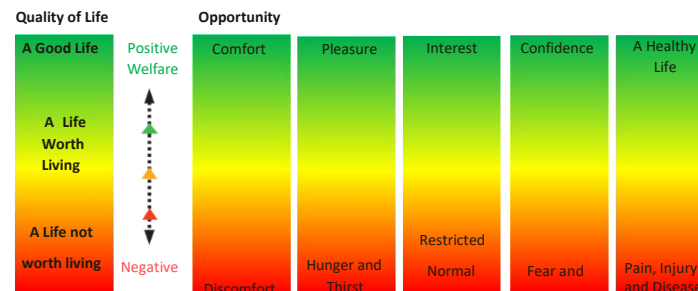


**'Inspiring our farmers, growers and  
industry to succeed in a rapidly  
changing world'**

# Good Life Opportunities and Welfare Plus Framework

Dr Jessica E Stokes

## Good Life Opportunities



Reference: Edgar JL, Mullan SM, Pritchard JC, McFarlane UJC and Main DCJ 2013. Towards a 'good life' for farm animals: development of a resource tier framework to achieve positive welfare for laying hens. *Animal* 3, 1-10 <http://www.mdpi.com/2076-2615/3/3/584>

What might *Comfort* look like?



What might *Pleasure* look like?



What might *Confidence* look like?



What might *Interest* look like?



What might *A Healthy Life* look like?



Good life vision: discussion and illustration

*If in 10 years from now your milk buyer will only purchase your milk if you are able to demonstrate that you are giving your cows a good life, because their consumers demand it, what would your farm look like?*



## Collaborative development of a positive welfare framework with dairy farmers

Jessica E Stokes, David CJ Main, Siobhan Mullan, Marie J Haskell and Cathy M Dwyer

Dr.jessica.e.stokes@gmail.com



Teach me and I forget. Teach me and I remember. Involve me and I learn - Benjamin Franklin



## Highlights of a discussion group approach

- Self-selected dairy farmers defined positive welfare in very similar ways to the good life concept
- Ability to provide a good life opportunity was not a barrier to valuing aspirational practices or recognising other farmers who were achieving it
- Consulting farmers gathered existing positive welfare practices, added examples and new content to the framework
- Farmers shared expertise and stories with each other, and welcomed a focus on positive welfare for motivation and pride of the industry
- Farmers supported the idea of a voluntary approach that was “accessible for all but flexible enough to allow for differentiation”
- Good life opportunities valued by the market but that require substantial investment or management change, require significant incentives

### Comfort



### Confidence

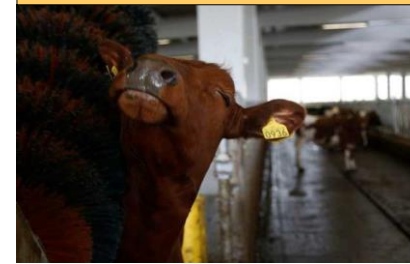




Pleasure



Interest



Healthy Life



### Positive welfare framework group discussion

- How might your farm measure up ?
- From this mornings exercise, and your own positive welfare ideas, is there anything missing ?
- Which three tiers do you value most, and why ?
- If you could change any, what would you change ?
- Are there any less valuable tiers ?
- Are there any tiers that are too unattainable ?

## Animal welfare on our dairy

Marten Knol, dairy farmer from the Netherlands

## Dairy farm near Kampen



## Melkveehouderij 't Eyland

- 102 hectares of land
- 20 hectares corn silage, the rest grasland
- Produce milk from grass and own corn silage
- 195 milk cows
- 90 head of young stock
- Production 8000 kg with 4,3 % fat 3,45 % protein
- Milk cows daily grazing over 200 days a year

## Production

- Milk delivered at Bel Leerdammer. They produce high quality cheese mainly for the German, Italian and French market
- Production of weide milk (means milk from cows who graze in the summer at least 120 days 6 hours per day)
- Next year GMO-free production
- Grazing milk: 2 eurocent extra per litre
- GMO-free milk: 1 eurocent extra per litre



## Breeding program

- Holstein herd with some crossbreds
- 60% of the cows inseminated by Belgian Bleu or Aberdeen Angus
- Breeding goal: Efficient cow with less trouble
- Important traits: percentage protein and fat, somatic cell count, feet and legs and longevity.

## Animal welfare



## Animal welfare on our farm

- How you treat or work with animals
- Grazing
- Calving cows
- Housing
- Feeding



## Grazing

- Low cost for feeding cows
- Each day new parcel
- Healthy
- Young stock has to learn this early



## Calving cows

- Cows calve in a pen with straw
- 90% without help
- Calf stays 12 hours with the cow



## Housing

- New barn build in 2015
- Cubicles with chalk/straw/water mix
- Build for low ammonia emissions



## Feeding

- Good roughage is an important base of cow feeding
- Storage is very important



## Some 'results' of animal welfare

- Cull rate milk cows 15%
- Somatic cellcount 118
- Use of antibiotics: 1.39
- 6 year culling age for cows
- Pregnancy rate 28%



## Animal welfare in a bigger perspective

- In modern society the role of animals changes
- Citizens do not understand how we work with animals
- Farmers do not understand citizens
- Vega becomes popular
- Social media play an important role in animal welfare

## Animal welfare discussion in the Netherlands

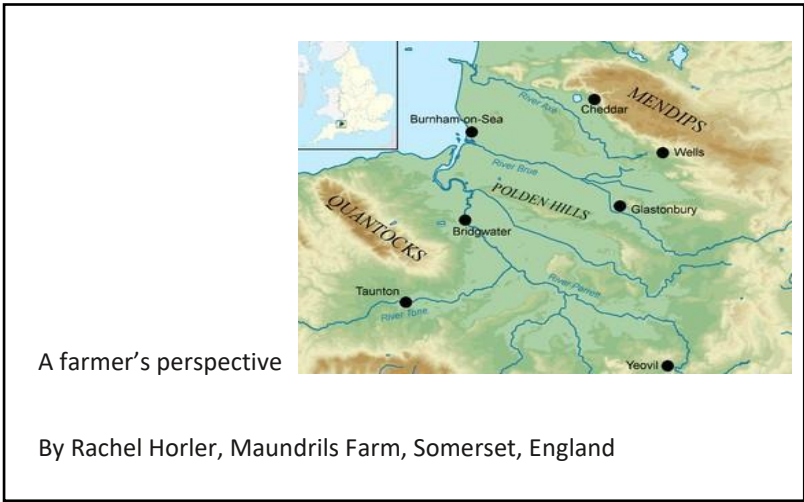
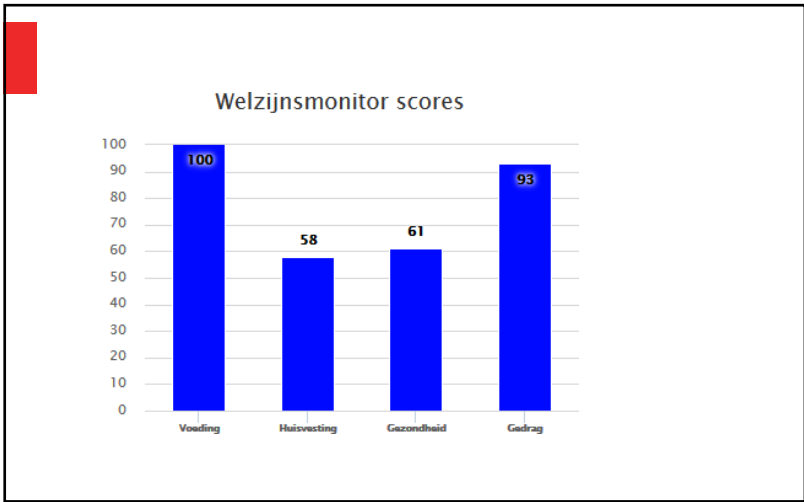
- Party for the Animals
- 5 members in parliament
- Calf with cow discussion
- Grazing in the law
- Fur production is forbidden



## Transparency on animal welfare for the dairy industry is essential

- Koe-kompas: Risk analysis for a dairy farm
- Veterinarian checks twice a year the risks on a farm
- Checking control points (Water, feed, housing ect)
- Advise how to manage the risks
- Outcome is interesting for the farmer
- Important information for the dairy industry





- Rainfall average 30mm (in a 'good' year)
- Soil types : grey clays, silt and sands
- Farm below sea level - Internal drainage board
- Organic conversion completed in 2000
- Farmed area 78 ha

- Dairy – 85 cows: pedigree Jerseys, Jersey x Holstein Friesians and some older Holstein Friesians. Rear all heifer replacements, to calve at 24 months of age.
- Cropping – 60% grass/clover leys inc 17 ha of multi species ley and 11 ha red clover cutting leys. Remainder is permanent pasture inc 5 ha of SSSI.

## Grazing season- Early/Mid March to Late October



## Kingshay - rolling to September end

	2012	2013	2014	2015	2016	2017	2018
Yield	8020	7325	8050	7540	7674	6852	6791
milk from all forage	3270	3530	4030	4090	4825	3890	4158
Milk from grazed forage	1190	1000	1700	1810	2168	2064	1476
% yield from forage	41	48	50	53	63	57	61
Conc use kg / litre	0.30	0.27	0.27	0.25	0.21	0.24	0.21

## Kingshay - rolling to September end

	2013	2017	2018
Days to 1 <sup>st</sup> service	60	73	79
Services per conception	2.1	1.8	2.0
Calving interval	387	370	379
Notes:	Calving all year round, unsexed semen.	Sexed semen and beef semen used from Spring 2017 onwards.	Calving now - 30% Feb/March and 70% June to October.

## Positive herd health.

Disclaimer...

This is what we do currently.

We can always improve and want to.

Neither our interpretation of positive welfare or what we do is necessarily correct.



## Loose Housing

Cow comfort: (rolling September 2018)

Lameness : 7 cases /100 cows

Mastitis : 8 cases /100 cows

Somatic Cell Count : 124

Oestrus activity/ observation

Stackable manure/importing nutrients onto farm

BUT

Cost of straw at 2 tonnes per cow =2.6 p per litre

High labour cost, physical and long job to maintain hygiene.

Future cost of storing manures?

Size of shed required/ stocking rate





'Best' type of cow for positive welfare?



Switching breeds



### Multi-species/diverse/herbal leys

2.4 ha sown May 2013 (still in situ) and then established between 1.6 ha and 3 ha every year since then. Now total 17 ha.

Diversity – interest for cows and us, form and taste? foraging, browsing needs?

Trace elements.

Soil structure, deep rooting, drought resilient.

Pollinators/birds

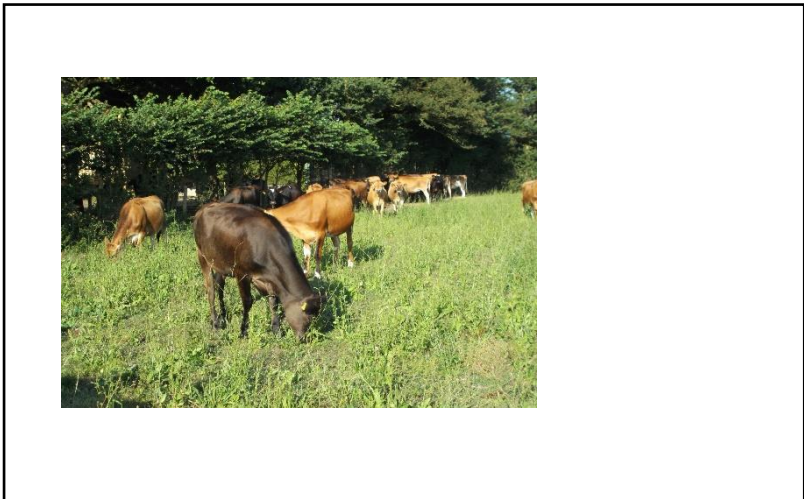
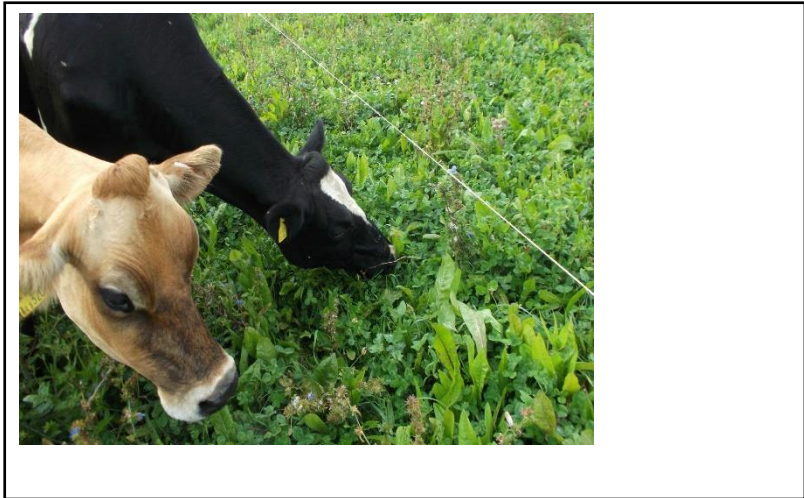
Newman Turner – Fertility Pastures 1956

Herbal strips in field

Hedges – hawthorn, elder, willow, ivy, bindweed.







Play? Other substrates.



Dry/ Calving paddocks –  
visibility, group stability, choice of areas, willow,  
buckets of water, colostrum, dirt ‘scrapes’, choice  
of forage, competition.



1997 ‘My concern is that you will get bored.’

Standing still is not an option.

Last 6 years :

Calf coats, calf igloos, cluster spraying, new track  
to grazing, weigh scales for heifers, calving  
pattern, trace element boluses, own forage  
wagon, LED lighting = ? on factor?



## Rearing calves on cows

### Why try?

Positive welfare focus group meetings and physical reason – catalysts.

### When?

Summer calving groups only, not Spring.

### Which cow?

Temperament, udder conformation, yield, most had own heifer calf.

### Which calves?

Dairy heifer calves

### How?

Fostered on calf, loosebox until happy has foster calf has been accepted and suckling without supervision – average 4 days.  
2017 grazed by night, housed by day.

2018 housed, opportunity for more dry forage and creep area.  
Weaned at 12 weeks – staged, line weaning.

## 2017 -10 cows suckled 20 calves



## 2018 – 9 cows + 1 heifer suckled 21 calves



## POSITIVES +

Growth rate - calves were 3 x birth weight at 8 weeks old. Optimising feed conversion efficiency.

Nil scouring treatment in calves Nil mastitis in cows

Calm calves during disbudding procedure.

Calm calves post weaning – unexpected outcome. Labour/ time saving – estimated 2 hours per day Cell counts 'normal' post weaning

Interest for farmer

Positive feedback from public walking through farm

Observation of play, racing, skipping as a group.

### NEGATIVES – RISKS/ CHALLENGES

Weaning process is complex, difficult to control, time consuming. Post weaning check, less for 2018 housed group.

Eye problems in 2017 calves 2017 when grazed with dams. Safety of calves – risk of straying, water filled ditches – risk. Need for separate buildings. Space requirement. Straw use.

'Foster' calves lower weight gain than 'own' calf – competition, feeding opportunities.

Oestrus signs less obvious, small group, no bull with group, later conception to service.

No teat emollients as not in parlour.

Loss of suckling dam as bovine TB reactor, calves switched to hand rearing, growth initially compromised.

Reduction in milk sold per cow, estimate 3.5 litres per day per cow, total 1050 litres per lactation.

### Simple financial overview

#### Teat feeding

Estimate 410 litres at milk selling price £156 (up to 6l/head/day)

Concentrates to 12 week weaning 80 kg £30

#### Suckling cow

Estimate 785 litres at milk selling price

£298 Concentrates to 12 week weaning 10

kg £4 'cost' of lost milk per lactation 1050

litres £400

Extra 'cost' per calf weaned = £516 v Benefits?

Herd life, lifetime yield, health and fertility long term?

### Public footpath



#### Positive welfare - do not forget the people.

Pressures and emotions.

Urgent need to attract younger generation.

Maintain interest and enjoyment.

Time to look and time to see.

Positive herd health requires same or more input time per cow – that time is spent differently.

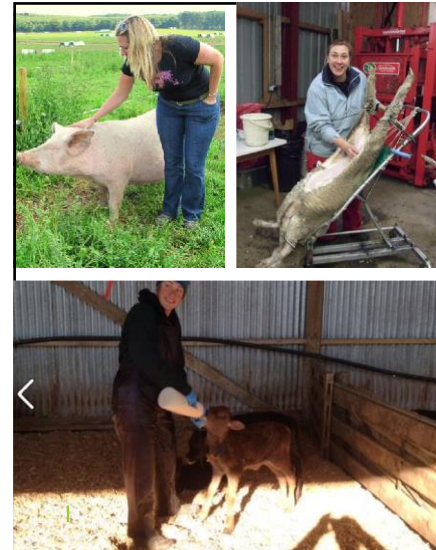






## + WELFARE THE NZ PERSPECTIVE

Helen Thoday – Animal Care  
Team Leader

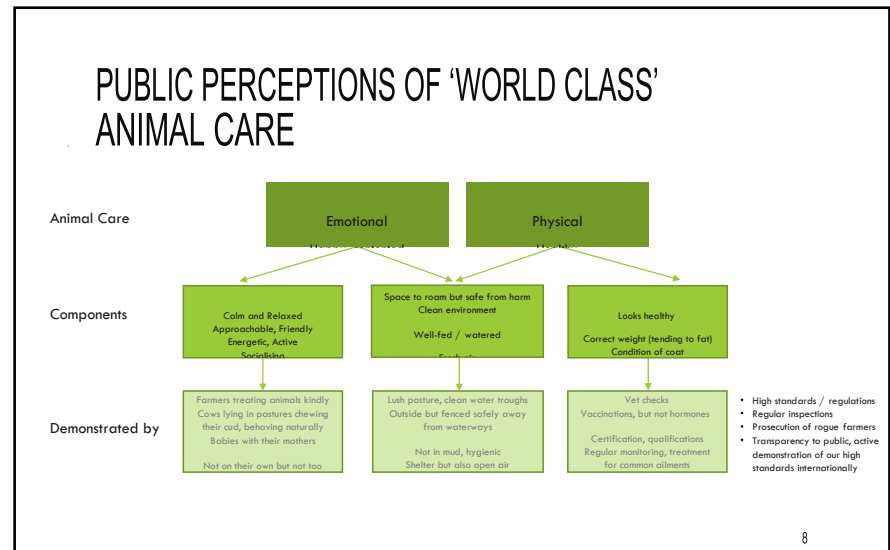
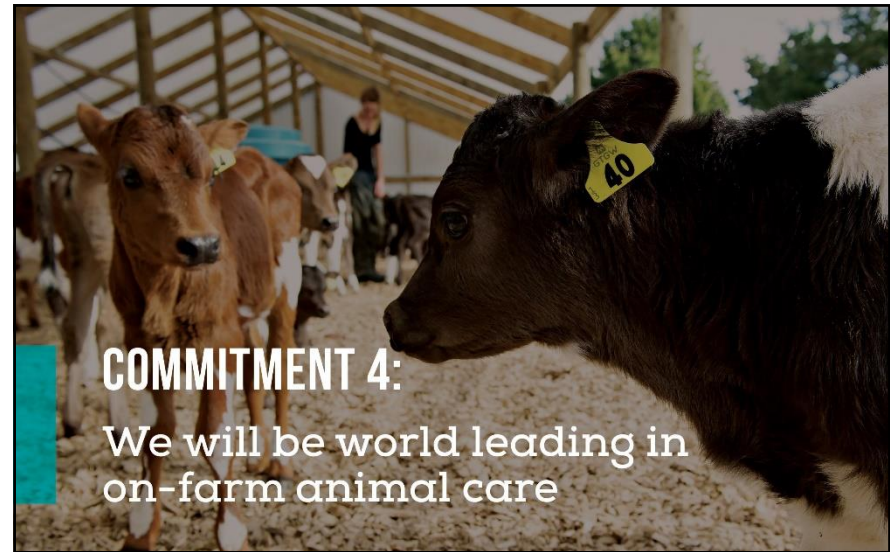
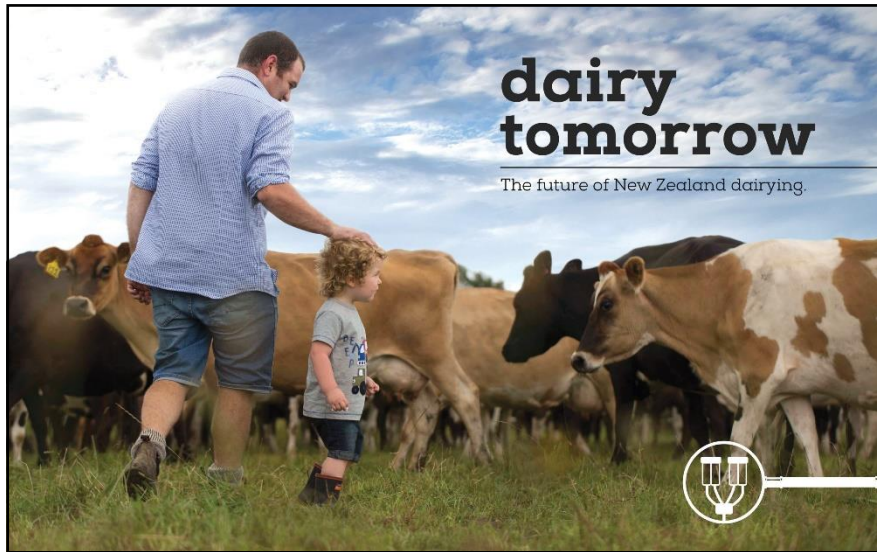


## HELEN THODAY



## UNIQUE NEW ZEALAND

- PASTURE
- EXPORTS
- EXPANSION
- FEW ASSURANCE SCHEMES
- RECENT "STEP UP" IN WELFARE STANDARDS



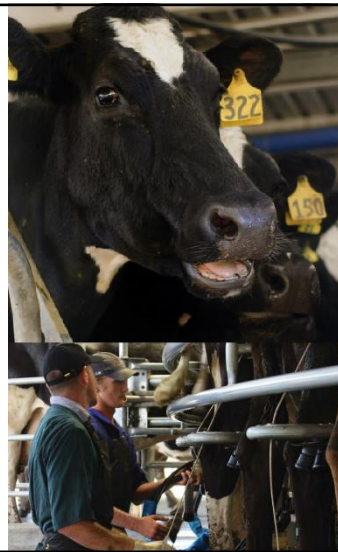


## HOW WILL OUR SYSTEMS DELIVER?



## WHERE NEXT?

## SOCIALISING POSITIVE WELFARE



## CHALLENGES

- Time budgets
- Diversity in paddocks
- Social hierarchy change
- Practical options for calf cow contact
- Attitude



## OPPORTUNITIES

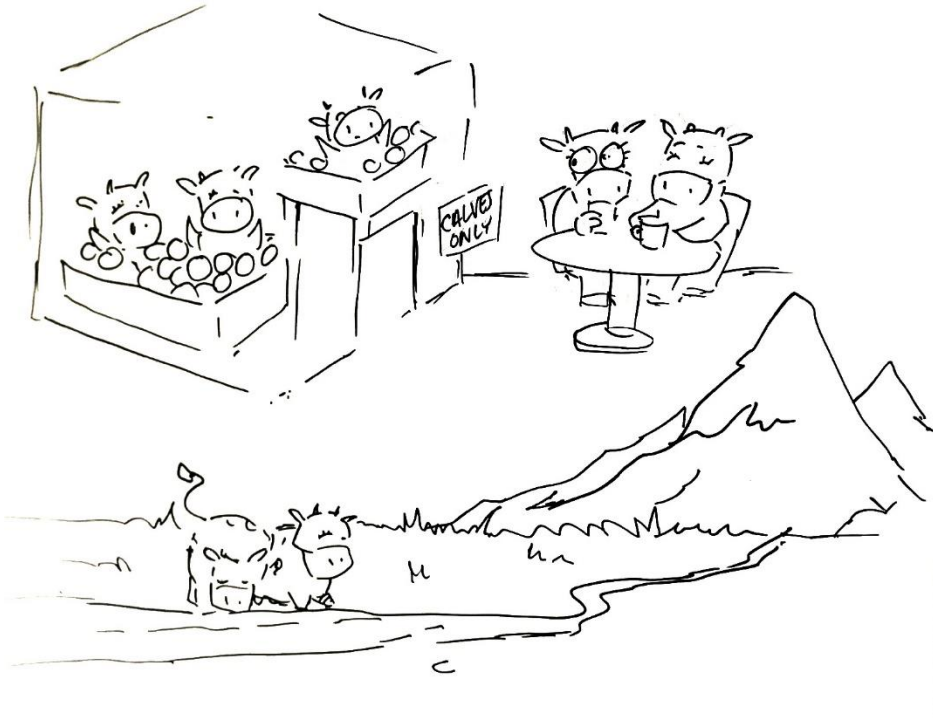
Topography  
Group housed  
calves  
Social networking  
Personality  
research  
Choice of cooling  
Choice of shelter

THANKS



[www.dairynz.com](http://www.dairynz.com)

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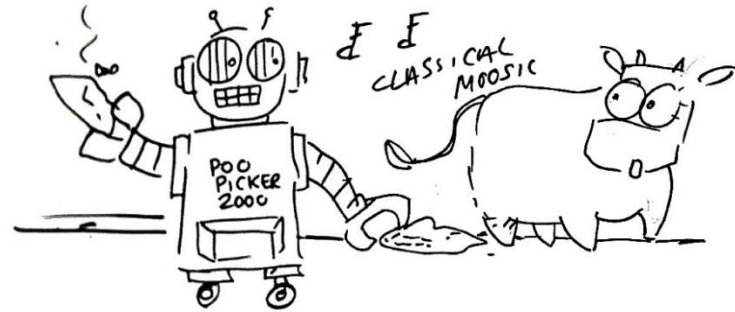
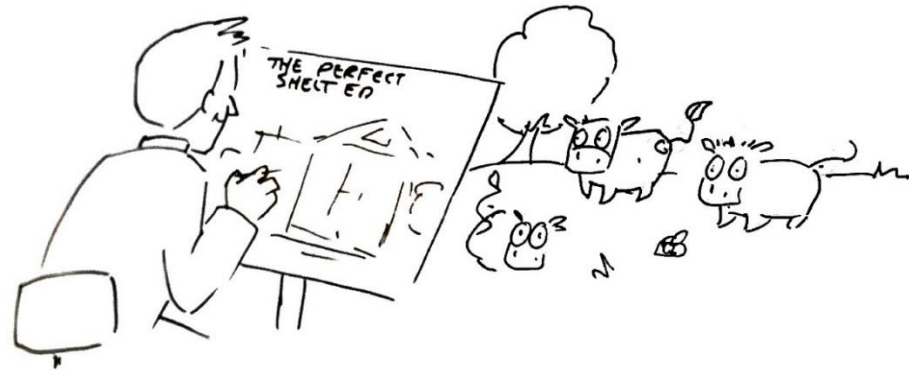




# ENRICHMENT



# ENVIRONMENT



## DISBUDDING In practice

### FACTSHEET 1

#### How to disbud (dehorn) efficiently, easily and painlessly

##### Why should you favour disbudding instead of dehorning?

Horned cattle are at risk of hurting other stock or humans. Dehorning is the removal of formed horn, it should never be a routine procedure and should be avoided if possible. Dehorning involves cutting or sawing horn and other sensitive tissues under local anaesthetic. It should only be undertaken by a vet, never by a stockperson and only if it is necessary for the herd's welfare. Dehorning of older animals should be avoided by disbudding them as calves. Disbudding is preferable to dehorning as it is less stressful to the animal. Disbudding is a common procedure used to make cattle management easier and safer.

##### Horn bud

Calves have horn forming tissue at birth, which if left will produce a horn. When the calf is born, this bud of tissue is free-floating in the skin and is not yet attached to the skull (figure 1). Over time, this bud will weld itself to the skull creating a connection between the horn and the frontal sinus (figure 2). This connection enables the horn to develop. The speed of this development can vary depending on animals and breed, but generally takes place during the first two months of life.

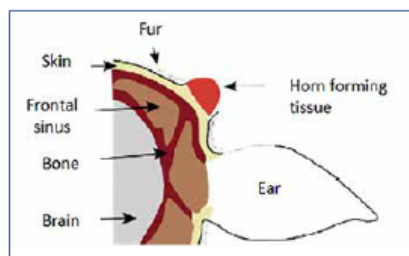


Figure 1: During the first weeks of life, the horn bud is free-floating under the skin layer.

##### Optimal age

Calves should be disbudded as soon as the horn bud can be easily felt. The smaller the horn buds, the easier and quicker the procedure will be. Therefore, it is recommended to dehorn between 2 to 4 weeks of age, or certainly, when calves are younger than 2 months.

##### Disbudding options

- Heated iron under local anaesthetic is the most effective and preferred option to disbud calves
- Caustic paste is not recommended and in some countries it is illegal. It can spread into the eyes or onto other calves causing painful burns. It should only ever be used in calves younger than 1 week.

##### Heated iron

Thermal disbudding blocks the blood vessels that irrigate the horn bud preventing its development. Cauterization is done using a metallic or ceramic iron, heated to a very high temperature (500 to 700°C). It normally causes little bleeding and therefore limits infectious risks. Some irons have interchangeable tips of varying dimensions to adapt the size of the horn bud. For young calves, tips with a 15 to 20 mm diameter are enough. A ceramic head dehorner must be reserved for animals younger than 3 weeks.

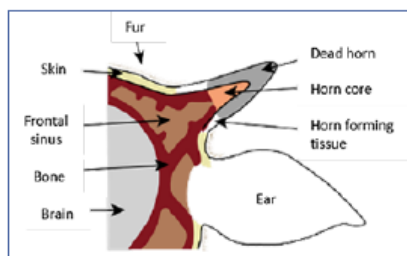


Figure 2: After 2 months of life, the developing horn communicates with the frontal sinuses

## DISBUDDING In practice

##### How to manage the pain?

One option for restraint to alleviate stress due to handling is to ask your vet to administer a **sedative**. As a minimum, local **anaesthetic** should be used for disbudding, which numbs the horn bud for several hours. Using an **anti-inflammatory** as well will reduce inflammation which can persist for at least 9 hours

after disbudding. All cattle medication is available on prescription from the farm veterinarian. They must be written in the medicine record. Their conditions of use and effectiveness are available in the table below, but can vary between countries (done by a vet only in some countries).

	Sedative (15-20 min before disbudding) <sup>1</sup>	Local anaesthetic (10-15 min before disbudding)	Anti-inflammatory (15-20 min before disbudding)
Why?	Calms the calves and relaxes the muscles. Sedated calves are easier to disbud as there is no head shaking	Stops the painful nerve impulse by anaesthesia of the corneal nerve	Reduces inflammatory response and acts against post-disbudding pain
How to administer	Intramuscular injection in the neck	Subcutaneous injection in the corneal nerve area <sup>2</sup>	Subcutaneous injection
Active ingredient	Xylazine	Procaine	Meloxicam

<sup>1</sup> This time is needed for the treatment to become effective and have the desired effect. If you are uncertain about the exact time, check with your vet for the expected time required for the treatment to start working and be effective in alleviating stress and pain.

<sup>2</sup> Local anaesthesia of the corneal process is done along a bone situated between the eye socket and the horn bud. This skill can be learned from the farm veterinarian or during specialized training.

##### Polled bulls

Using polled bulls, where available, will reduce the number of animals that need to be disbudded. Talk to your genetics supplier about using polled genetics across some or all of your herd.

##### Dehorning older animals

Dehorning of older animals should be avoided by disbudding them as young calves. However, if animals are purchased with horns or if a horn re-grows and dehorning is required, pain relief must be used. Ideally, a veterinary surgeon should do it and in some countries this is a legal requirement. If dehorning is deemed necessary, it should be done in spring or autumn to avoid flies or frosts. Following the procedure, the animal should be given appropriate pain relief. The wound should be protected from contamination by such things as grass seeds, hay or silage until the hole has scabbed over.

##### Acknowledgements

The technical content of this factsheet was produced in association EuroDairy, IDELE and AHDB. This leaflet is based on a French leaflet 'Ecomer les jeunes bovins efficacement, facilement et sans douleur' developed by the RMT Bien être Animal ([www.rmt-bien-etre-animal.fr](http://www.rmt-bien-etre-animal.fr)). This document has been created as part of the AccEC project (CASDAR no. 1273).

Diagrams / Photos: JC. Coutausse, C. Helsly / CNIEL, G. Paillard / Inra Institut de l'Élevage

## CONTACT

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Animal Care

##### Is the area numb?

Test the area around the outside of the horn bud with a needle, if the anaesthetic is working the calf will not flinch. A drooping eyelid is a good indication as the nerve also supplies the muscle of the eyelid but be aware it is not a foolproof test.





## DISBUDDING In practice

### FACTSHEET 2

#### 8 step guide to disbudding a calf

Disbudding calves is ideally done at 2-6 weeks of age using local anaesthesia to eliminate pain during the procedure and anti-inflammatories to reduce pain after. Making disbudding as painless as possible for all involved requires good training and an efficient protocol.

#### Step 1: Get organized

A dedicated disbudding toolbox will help to ensure the equipment is located together. This should include:

- A supply of new 10 ml syringes and 18 gauge needles
- Local anaesthetic and analgesic/anti-inflammatory drugs
- Disbudding iron and spares
- Fuel for the iron
- A wire brush

#### Step 2: Correct calf selection

Disbudding must be done before 2 months of age, but with a healthy calf, hot-iron disbudding is best performed at 2-6 weeks of age, before overgrowth of the horn bud.

#### Step 3: Appropriate restraint of the calf

The calf should not struggle through any part of the procedure. A stressed calf means a stressed worker. Restraint does not need to be complicated, calves can be disbudded while standing and restrained by a competent handler, however, this is a two person job. When larger numbers of calves are involved, handling equipment (e.g. headbail or crush) should be used to block the calf's head to operate more easily, more precisely, more efficiently and in a secure way.

#### Step 4: Effective anaesthesia

Using a local anaesthetic is a legal requirement of hot-iron disbudding. Effective anaesthesia can be done by blocking the corneal which prevents the calf feeling the cautery process of disbudding. The best place to anaesthetize this nerve is half way between the base of the ear and the corner of the eye. Locate the bony ridge situation in this area and inject 2-5ml of local anaesthetic under the ridge. A small amount of blood after injection is a good indicator of accuracy,

as the nerve runs alongside the blood vessels. The local anaesthetic is effective within seven minutes of administration. It has a variable length of action, but is reliable for up to one hour. If you are uncertain whether it has worked you can repeat the nerve block after seven minutes. Always check that both horn buds are desensitized before applying the hot iron.



Anaesthetic of the horn bud: find the bony ridge halfway between the eye and the ear.

#### Step 5: Using the hot iron

Adapt the size of the cauterizing iron to the area that needs to be cauterized, so that the burn is not too large. Pulling the ear back displaces the corneal artery, preventing the risk of bleeding. When the iron is hot, apply it to the corneal process, perpendicular to the skull and rotate 45° in both directions to create an even cauterization ring.

Make sure to:

- Never apply strong pressure, except with a Buddex-type system
- Never tilt the iron, because this increases the risk of bleeding
- Never pull out the corneal process after disbudding. This will fall out on its own a few days after disbudding.

The entire process to remove both buds should take no longer than 45 seconds. Slow disbudding is most commonly due to an iron that is not reaching a high enough temperature.



Disbudding using a hot iron

#### Step 6: Pain relief

Behavioural monitoring of calves has shown the process to be markedly uncomfortable over the following hours and days. The economic impact of the associated reduced feed intake and hence growth rate is well documented. Use of non-steroidal anti-inflammatory drugs helps to reduce the pain associated with disbudding. This helps maintain feed intake making it cost-beneficial tool that also counters some of the stress.



Administering pain relief

#### Acknowledgements

The technical content of this factsheet was produced in association with EuroDairy, Idele, AHDB and Farmers Weekly / Reed Business. Diagrams/photos: Farmers Weekly / Reed Business

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Animal Care

## DISBUDDING In practice

#### Step 7: Preventing infection

Use an antiseptic spray to limit infections and help cool down the cauterized tissues. To improve its cooling effect, the spray can be kept in the refrigerator a few hours before intervention.



Applying disinfectant spray

#### Step 8: Monitor disbudded animals

In the days after the intervention, monitor the wound healing process and the general state of the animal, looking for indications of pain. For calves older than 2 months, check for symptoms of sinus infection, indicated by the presence of pus, the calf scratching its head or keeping it low, apathy, anorexia or fever.



Animal Care



Animal Care

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