DG Health and Food Safety

OVERVIEW REPORT

Welfare of Cattle on Dairy Farms
OVERVIEW REPORT
OF THE DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY
ON A SERIES OF AUDITS CARRIED OUT IN 2016 IN ORDER TO EVALUATE MEMBER STATE CONTROLS AND USE OF INDICATORS TO ENSURE THE WELFARE OF CATTLE ON DAIRY FARMS
Executive Summary

The objective of this report is to provide an overview of the general animal welfare conditions in dairy farms in the European Union and to signal good practices and weaknesses present in Member States that impact on the welfare of dairy cows.

Despite the multiple ongoing activities and projects in Member States covering animal welfare in dairy cows, and despite claims from animal welfare organisations, it is almost impossible to get an overall picture of the level of welfare in the EU dairy sector with the publicly-available data.

The current legal framework is flexible enough to cater for the highly variable farming conditions, but directs official controls towards checking parameters which might not be key for animal welfare. In addition, the risk profiling of farms for official controls is mainly geared to check cross-compliance in the context of farm subsidies.

The interest in improving the welfare of dairy cows is demonstrated by a wide range of activities in all Member States with potential benefits to dairy cow welfare. Farmers particularly value discussion groups which provide a means for knowledge transfer.

Several Member States aim to improve productivity traits and welfare concurrently by looking at longevity, occurrence of mastitis, incidence of reproductive diseases and lameness. However, with the exception of somatic cell counts for mastitis, they have not established clear indicators for the other parameters nor a monitoring system for existing ones. Additionally the current systems do not direct how data from farm level would be collected and analysed and they do not allow a robust assessment of welfare of dairy cows at a national level. Therefore farmers lack clear benchmarks which they can use to manage their herds. Equally, lack of data, together with a lack of assessment systems, make it difficult to know to what extent the farming community implements the various initiatives.

National strategies, adopted in consultation and partnership with the dairy industry and all relevant stakeholders, and which use animal-based welfare indicators which are properly monitored, offer the most promising solution in overcoming current difficulties to demonstrate the real level of welfare in dairy cows.

Member States could deliver on their obligation to take all reasonable measures to ensure the welfare of animals using the existing tools, such as public and private regulatory instruments, the possibility of penalties and financial incentives and codes of practice.
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1 INTRODUCTION

The European Union (EU) was the first region in the world to recognise the importance of animal welfare. The EU has been responsible for the majority of initiatives to try and translate ideas and concepts into reality and concrete rules.

The EU's animal welfare rules for dairy cows stem from Council Directive 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes which provides general requirements for animal welfare in all farmed species, based on the European Convention for the Protection of Animals kept for farming purposes drawn up within the Council of Europe\(^1\). In 1988 the Council of Europe adopted a Recommendation Concerning Cattle which has provisions relating to, e.g. inspecting animals for good health, limiting the risk of disease or traumatic injuries, and provision of suitable accommodation which allows animals to lie down, to rest and to rise.

The European Union's animal welfare rules require that owners or keepers of dairy cows take all reasonable steps to ensure the welfare of animals under their care. Council Directive 98/58/EC focuses on the resources needed to ensure animal welfare (e.g. staff; inspections; records; freedom of movement; buildings and accommodation; mutilations and rearing methods).

The European Union law for farm animals requires Member States to take all reasonable measures to ensure the welfare of animals. The requirements applicable to dairy cows are general and non-specific (e.g. 'animals not kept in buildings shall where necessary and possible be given protection from adverse weather conditions'). Several Member States have specific legislation for the husbandry of dairy cows (e.g. Sweden) or they have regulated some aspects in national animal welfare legislation (e.g. Germany and the UK).

Over the last twenty years, dairy farming has become more intensive to increase the amount of milk produced by each cow. To the point that in the past forty years, milk production per cow has more than doubled. High yielding dairy cows have a metabolic rate equivalent to that of a *Tour de France* cyclist according to eminent dairy cattle scientist Professor John Webster\(^2\) and are highly tuned for milk production. Constant attention to detail is therefore required to ensure they can have good performance while maintaining adequate health and welfare.

2 OBJECTIVE

This report intends to provide an overview of the general animal welfare conditions in EU's dairy farms and to signal good practices and weaknesses present in Member States so that practicable measures are taken to ensure the welfare of dairy cows.

3 BACKGROUND

There are 23.5 million dairy cows in the EU, producing 168 million tonnes of milk a year\(^3\) and milk is the EU's number one single agricultural product sector in terms of value at approximately 15% of agricultural output.

\(^1\) The EU approved this Convention by Decision 78/923/EEC (OJ L 323, 17.11.1978, p. 12)
\(^2\) Webster J, 2013, 'Animal Husbandry Regained: The Place of Farm Animals in Sustainable Agriculture'
The EU has promoted milk as a source of important vitamins and minerals and encourages children to drink milk by operating an EU School Milk Scheme since 1977. Milk is produced in every single Member State. More than 90% of the milk is produced by 14 Member States with the top seven accounting for nearly 75% of total EU milk production.

EU farmers on 1.7 million farms keep around 23.5 million dairy cows with an average milk yield per dairy cow of 6,900 kg per year. Although the number of dairy cows has decreased steadily during the last 30 years, the yearly milk production per cow has steadily increased. Milk production per cow still increases annually (e.g. in 2016, +14% in Ireland and +5.3% in The Netherlands). There is variation between the Member States on whether they increase or decrease cow numbers in recent years. The European Union had a milk quota system for 30 years (1984 - 2015). The growth in milk production after the quotas disappeared resulted from several combined factors: growth of the most productive dairy herds, contraction of the less productive ones, and contrasting national dynamics.

2015-2016 change in "deliveries" (milk processed by dairies) and dairy cow numbers (%)
European Union average results conceal a wide range of situations at national and regional levels. There are big differences regarding the average farm size and the farming systems. On average, farms are larger in the ten 'old' Member States. In these, milk-specialised farms keep an average of 54 dairy cows. In contrast, farms in Bulgaria and Romania keep five dairy cows on average.

There is no 'typical' European dairy cow breed, though the Holstein-Friesian is the most prevalent. The farming and housing systems for dairy cows vary widely, from cattle reared on pasture to cows that are indoors all year round and may be in loose housing, in cubicles or in tie stalls. There are no global statistics for housing systems in the EU. In Austria, approximately 18% of dairy farms provide loose-housing and 82% use a tethered husbandry system.

Data on grazing are also scarce. The estimates available indicate wide variability; from 98% of cows in Ireland - which has grass-based seasonal systems - with access to grass, to 10% in Greece and almost zero in Bulgarian dairy farms. Data for 2015 in the UK indicated that 83% of farms graze their milking cows between 21 and 52 weeks of the year with 5% of farms providing no grazing. Austria has a requirement for access to pasture for at least 90 days/year when cows are kept on tethered farms, but a review of the farm inspections (2013-2014) revealed that the most frequent non-compliance was related to this (freedom of movement).

The use or not of grazing is influenced by factors such as type of soil and climate, farm infrastructure, and topography, but factors such as social pressure, farm economics, farmer skills and motivation have an important impact. In the EU, there are various laws, regulations and subsidies regarding grazing - which may apply in a Member State, in the whole EU or in special cases for specific regions. The majority of them promote grazing (e.g. Common Agricultural Policy (CAP) 2014-2020, animal welfare laws in Scandinavian countries, organic agriculture).

In 2009, the European Food Safety Authority conducted a major review of the scientific literature considering four main risks: (1) udder problems, (2) leg and locomotion problems, (3) metabolic and reproductive problems, (4) behavioural problems, including fear and pain.

In 2012, the European Commission registered a European citizens' initiative inviting the Commission to propose specific legislation regarding the welfare of dairy cows. The initiative was withdrawn the same year as the organisers were unhappy with the progress of their efforts and concluded that the system was not ready to collect one million signatures safely or at reasonable costs for the organisers.


In 2015, Eurogroup for animals and Compassion in World Farming produced a report on "Welfare of EU dairy cows". The report indicated that dairy cows suffered a range of serious health and welfare problems and many Member States were not making a serious attempt to enforce Directive 98/58/EC and the Council of Europe Recommendation.

In 2016, the Commission's DG Health and Food Safety audited animal welfare on dairy farms in five Member States (Ireland, Estonia, The UK, The Netherlands and Austria). References for the

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6 'EU dairy farms report 2013 based on FADN data', European Commission, DG AGRI, 2014
7 'The future of grazing', European Grassland Federation, Wageningen UR Livestock Research Report 906, September 2014
10 http://www.oie.int/animal-welfare/oie-standards-and-international-trade
individual audit reports are in the Annex to this report.

4 MAIN WELFARE CONCERNS FOR THE EU'S DAIRY COWS

From the audits to five Member States and literature review it is clear that concerns regarding cow welfare are not the same for the various groups of stakeholders. Although all agree that good health and productivity is central to good welfare (biological functioning), they are not equally worried about issues related to their affective states (e.g. absence of pain and fear) and to concerns about natural living, such as access to pasture.

Three overlapping areas of welfare concern. Redrawn from Fraser et al. (1997).

Source: ‘Invited review: the welfare of dairy cattle - Key concepts and the role of science’

Thus, different people can, for instance, differ in what is "good housing" and reach opposite conclusions about the relative welfare advantages of different housing systems by favouring different welfare indicators.

Intensive dairy farming brings risks for the welfare of dairy cows, and many factors require careful control. A panel of the European Food Safety Authority concluded that long term genetic selection for higher milk yield and the nature of the farming systems used – i.e. housing and equipment, as well as management and handling practices – are major factors impacting the health of dairy cows and other aspects of their welfare. And from the audits and literature review, there is a consensus on the most frequent welfare problems for the EU's dairy cows, which are indicated in bold in the following paragraphs.

Dairy cows are kept in a cycle of pregnancy and birth so they will continue to yield milk - that's the basis of dairy production.

Nowadays, many herds emphasise rapid growth rates and improved cow efficiency (e.g. a common herd goal is decreasing the calving interval), as this can have a dramatic (positive) impact on costs. Increasing heifer growth rates will increase the possibility of decreasing age at calving. But unless carefully managed, reproductive problems, such as calving difficulty (dystocia) could become an issue. In the weeks after calving, cows are at a higher risk for infectious disease. There are many factors (genetics, environmental and nutritional) affecting all these and other possible reproductive problems such as infertility and retained placenta.

Traditionally cows are selectively bred for higher milk production; through selective breeding, dairy cows now produce six to ten times what they naturally would for a calf. Selection for production increases milk secretion and, therefore, the demand for energy. Many studies indicate that as the genetic ability to produce milk increases, more cows have subfertility or metabolic diseases. Selection for higher milk yield can also bring certain problems such as oversized and swollen udders. There are concerns that the decline in longevity of modern dairy cows may be indicative of the

increased demands of higher milk production or cows may be culled earlier due to a related drop in reproductive efficiency.

**Mastitis** is an inflammation of the udder, generally caused by infection. The infection is generally produced by bacteria present on the farm, and can also occur as a result of chemical, mechanical, or thermal injury to the cow's udder. Mastitis is a very common disease of dairy cows and it can present clinical symptoms or stay subclinical, i.e. there are no visible changes in the appearance of the udder or the milk, but milk production decreases, bacteria are present in the secretion, and milk composition is altered.

**Lameness** is a clinical sign with a multifactorial origin. It is widely regarded as one of the major welfare problems for dairy cows. The materials and state of walking and laying surfaces, the degree of dryness and of presence of slurry on surfaces, the time that animals spend inside/grazing, the diet and hoof management, are some of the factors that influence the development of foot problems in cows and these can be adjusted.

## 5 Official Controls on Dairy Cow Welfare

EU law focuses on resource-based indicators rather than on the animals' response to the resources provided.

Additionally, direct payments under the Common Agricultural Policy require 'cross-compliance' inspections, and most official controls of dairy cow welfare are carried out to fulfil this requirement. The risk-basis used in farm selection is therefore not only focused on animal welfare, but also on the risk of non-compliance with many other different areas which are regulated at farm level, including: environment, public health, animal health, plant health, and land maintenance, as well as animal welfare. The risk used for selecting farms in the context of 'cross-compliance inspections' is therefore often not related to animal welfare.

The coverage of farms for cross-compliance is around 1% of agricultural holdings, not only dairy farms, receiving the subsidy. To put this in context, if authorities would focus exclusively on the dairy sector, visiting 1% of the farms annually, it would take them 100 years to visit all dairy farms in the EU. In Member States with specific programmes on animal welfare, the percentage of farms checked for welfare purposes is bigger, e.g. veterinary services in Poland inspect 5% of cattle farms (beef and dairy) annually. An exceptional number of official controls are carried out in Estonia, where animal welfare controls cover around 25% of cattle farms in a year. Officials visit dairy farms for other reasons (e.g. tuberculosis campaigns, complaints, different notifications) and during these visits, animal welfare might also be checked but this is done on an ad hoc basis. Even where there is a higher coverage of farms and animal welfare requirements it is still difficult to get a picture of the situation of dairy cow welfare as the focus is on resources rather than animal-based indicators and the considerable differences in Member States’ reporting make the interpretation and comparison of the data generally more difficult.

## 6 Use of Animal-based Welfare Indicators for Dairy Cows

Animal-based indicators are measurements which give an accurate representation of the animal's wellbeing. Their use is relatively new. The European Commission called for measurable animal-based welfare indicators to be developed to reinforce the scientific basis of EU regulation and different activities are ongoing in this respect.

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12 Cross-compliance is a mechanism that links direct payments to farmers under the Common Agricultural Policy to compliance by farmers with basic standards, including animal welfare rules.

For dairy cows, many measures of biological health can be used as indicators of animal welfare - e.g. those focused on disease, injury, and reproductive problems. In the EU, there is an increase in the use of welfare indicators for the dairy sector by all stakeholders, including the official services.

**Somatic cell count**, an indicator of sub-clinical mastitis, is widely used in the EU to monitor milk quality. It is widely used by industry and farmers, and for official controls as an indicator of milk hygiene. In four of the five Member States audited, results of tests of somatic cell count were readily available to the authorities, who could use this data to illustrate a constant reduction in the average somatic cell count over a period of many years, which they also took to demonstrate a decrease in udder problems. This indicator is therefore useful not only for milk hygiene but also as a general indicator of animal welfare. In addition data derived from tests of somatic cell counts on farms is readily available to use as part of national control systems.

**Scoring for lameness** is widely used at farm level in the EU but the results are often only available to the farmer and the person who carried out the scoring. The indicator is used as a measure of the degree of affection of the cow and is assessed by observing how the cow walks/moves or observing the state of the hooves and giving a score. The frequency of monitoring in farms and the collection of data are not harmonised and not always clear, even within a Member State. There is also an absence of systematic analysis. Thus, it is not possible to compare data which are available. Some Member States have set intervention levels for official investigation (e.g. The UK: 20% lameness), but do not have systems for monitoring and targeting controls on this basis.

**Body condition score** again is widely used in the EU and again the results using this indicator mostly remain at farm level. It is a method of evaluating fatness or thinness of cows according to an X-point scale and using the score to assess whether feeding is appropriate on an individual farm. But again, data are generally not compiled, so results from farms cannot be compared and data cannot be used currently to produce an overview of the dairy sector.

**Ease of calving** is the main indicator used by breeders' associations to improve cow survivability, aiming to reduce injury at the time of calving and ensure better reproductive performance. In addition, Ireland and Austria promoted the need to match cow type with the conditions in which the cow lives. Again data are not available on the uptake by farmers of the strategy advised. For most indicators, the data available at national level are scarce. There is not a clear picture on the number of farms (or animals) that follow different projects and schemes using them and the results obtained.

**Longevity** is an indicator of the length of the productive life of the cow. This may indicate an animal welfare problem but declining reproductive efficiency also leads to cows being culled from the herd.

The importance of using animal-based indicators was highlighted in Poland where a project which collected data from over 7,000 cows on 69 farms over an eight year period showed a high culling rate (33%/year) and that only 10% of the cows had been provided with correctly formulated feed, and/or placed under proper environmental conditions and management to allow such a high milk yield without causing some level of malnourishment. A production model based on the result of this project, which is valid for approximately 90% of Polish dairy farms, is to be made available for all other dairy farmers.

**Good practice: using a range of parameters for breeding**

Member States are moving away from using exclusively milk volume as a parameter for breeding and they are incorporating a wide range of other parameters.

- In Estonia, the Animal Breeders Association includes approximately 90% of cattle breeders and works in cooperation with the Livestock Performance Recording Company to provide
genetic information to farmers. The Association uses 17 parameters, including average milk volume production, fertility, somatic cell counts, life expectancy and ease of calving. Each farmer uses that information to choose which replacement animals to keep and the genetic material they wish to purchase depending on the parameters more interesting to them.

- In Ireland, the Economic Bovine Index, which farmers use to identify the most profitable bulls and cows for breeding herd replacements, has been modified over the years with the addition of (a) an index for ease of calving in 2005, (b) health (mastitis, lameness and somatic cell count) from 2006 and (c) management from 2013.
- In Austria, the parameters include ease of calving and longevity.

The impact of the use of such breeding indexes is not known in many Member States. Although indicators have been established and used by farmers in making decisions about the genetics of their herd, there is no monitoring at a national or regional level on how this has translated into the overall situation for dairy cow welfare. Even though there has been limited analysis or overview using animal-based indicators, some Member States have systems to collect data, which are mainly used by individual farmers to benchmark their performance and identify the areas they need to focus on, but in certain cases can be used by official services to identify risks for animal welfare.

**Good practice: sharing of data in Austria**

The official veterinarians have several tools to obtain data for targeting and carrying out controls:

- The database from the Agriculture Organisation (AgrarMarkt Austria) containing data on milk production, lameness and body condition score;
- The official database, with information on results of past inspections, herd health status and number of animals;
- The dairy industry data, which is available in real-time to farmers and competent authorities.

Information available includes indicators such as somatic cell count, calving interval and longevity. By accessing this information, each farmer and official can compare the performance of an individual farm with nation-wide standards of performance.

7 MAIN INITIATIVES AIMED AT IMPROVING COW WELFARE

The European Union picture shows a myriad of stakeholders whose activities may have a positive impact on the welfare of dairy cows. In the five Member States audited, assessment of the actors shows that farmers and farmer associations - including cattle breeders' and dairy farmers', official departments in charge of Rural Development Funds, veterinary services responsible for animal health and welfare, services responsible for checking cross-compliance and dairy industry associations have activities impacting directly or indirectly the welfare of dairy animals. In all of them, there were also research projects conducted in this field, funded either by public services or by dairy industry (farmers or processors), positively impacting dairy cow welfare.

In all Member States there are many quality assurance schemes - private and public - where dairy farmers participate. The types of quality assurance schemes differ from each other in the level of focus on animal welfare.

The degree of integration and synergies of all actions varied greatly in the Member States visited (e.g. it was good in Ireland and Estonia as they had national strategies for the dairy sector). The main focus of such national strategies was on animal health and production, but improved animal
welfare was seen as an added value and by being integrated with the basic economic drivers of health and production, improvements to animal welfare were also sought.

Most of the activities and tools having a positive impact on the welfare of dairy cows are taken in partnership by different stakeholders (e.g. stockmanship guidance is agreed between official services and farmers, disease eradication schemes need farmers associations and veterinary practitioners, and frequently have official funding).

### Good practice: specific national strategy for the dairy sector in Ireland

The Irish national strategy shows good examples of coordination and integration of actions. The effects on welfare can be considered as significant, as the aim was to achieve a sustainable and profitable system modelled to the Irish environment i.e. at maximising the use of pasture with a cow suited to it.

- Objectives, strategies and performance indicators were decided for different areas, including animal health and welfare.
- The Department of Agriculture highlighted the need for extensive cross-departmental action and a 'whole of Government' approach to achieving effective implementation. It also emphasised the importance of effective two-way engagement, information sharing and feedback between stakeholders, citizens, the European Union and international institutions.

Member States receive money from the European Agricultural Fund for Rural Development and they draw up their rural development programmes based on the needs of their territories. These funds are in some cases used for promoting animal welfare.

### Good practice: use of rural development funds for restructuring dairy farms in Austria

The authorities indicated rural development funding as one of the main tools helping to improve animal welfare on farms.

- The funding was available for restructuring farms on condition that they converted from tethering stalls to loose-housing.
- In one province, 13% of dairy farms (480 out of 3772) had obtained this funding in the last five years.
- One farmer indicated he had a 40% increase in milk production and a significant improvement in milk quality (genetics remained the same) after converting from tethering to loose-housing.

Farmer’s value discussion groups which are funded as part of Rural Development programmes and represent an opportunity to better share data and improve the management of animal welfare hazards through benchmarking exercises.

**Milk processors** main concern relates to milk quality. They have a major impact on what happens on a dairy farm, as they pay premiums depending on the quality of the milk. Farmers are financially rewarded for low herd somatic cell counts (number of cells per ml of milk) and penalised for high ones, because cell counts reflect the quality of milk. Dairy processors commonly have advisory services for farmers (including on animal nutrition, animal health, milking equipment), but there are no overviews on these or their impact.

**Advisory and research bodies**: These bodies are generally funded from official services or farmers/processors associations. They provide a range of important services such as research, training and advice for farmers, official services and private practitioners. A Polish project 'Healthy
cow' (Warsaw University in cooperation with The National Veterinary Institute), which is separate from their project on animal-based indicators, produced a model valid for 90% of Polish farms and aims to improve economic efficiency through counselling and training on genetic improvement, health, welfare and nutrition of dairy cows.

**Private veterinary practitioners and animal health services**: Veterinary practitioners play an important role in the welfare of dairy cattle. Their professional activity in disease and pain management, in providing expertise and advice to animal keepers and through ethical decision-making has a big effect on the welfare of animals. Their professional bodies and associations (which sometimes are public-private partnerships) have also an important role in animal welfare. There are many animal health programmes and schemes – either promoted privately (e.g. eradication of bovine viral diarrhoea in Ireland) or from public spheres (e.g. eradication of bovine tuberculosis in the UK), which in general contribute to maintain high level of animal health and therefore the welfare of dairy cattle.

In the Member States audited there was no data regarding the uptake by farmers of activities such as those above and no assessment of impact.

**8 OVERALL CONCLUSIONS**

Despite the multiple ongoing activities and projects in Member States covering animal welfare in dairy cows, and despite the claims from animal welfare organisations, it is almost impossible to get an overall picture of the level of welfare in the EU dairy sector with the data publicly available.

The current legal framework is flexible enough to cater for the high variable farming conditions, but drives official controls towards checking parameters which might not be key for animal welfare. In addition, the risk profiling of farms for official controls is mainly geared to check cross-compliance in the context of farm subsidies.

The interest in improving the welfare of dairy cows is demonstrated by a wide range of activities in all Member States with potential benefits to dairy cow welfare. Farmers particularly value discussion groups, which provide means for knowledge transfer.

Several Member States aim to improve productivity traits and welfare concurrently by looking at longevity, occurrence of mastitis, incidence of reproductive diseases and lameness. However, with the exception of somatic cell counts for mastitis, they have not established clear indicators for the other parameters nor a monitoring system for existing ones. Additionally the current systems do not direct how data from farm level would be collected and analysed and they do not allow a robust assessment of welfare of dairy cows at a national level. Therefore farmers lack clear benchmarks which they can use to manage their herds. Equally, lack of data, together with a lack of assessment systems, make it difficult to know to what extent the farming community implements the various initiatives.

National strategies, adopted in consultation and partnership with the dairy industry and all relevant stakeholders, and which use animal-based welfare indicators which are properly monitored, offer the most promising solution in overcoming current difficulties to demonstrate the real level of welfare in dairy cows.

Member States could deliver in their obligation to take all reasonable measures to ensure the welfare of animals using the existing tools, such as public and private regulatory instruments, the possibility of penalties and financial incentives and codes of practice.
9 Matters for Consideration by Member States

Member States should consider:

1. A National strategy involving all stakeholders, with clear objectives for ensuring dairy cow welfare. Such a strategy should ensure the coordination of Ministries, authorities and different governmental Departments. The strategy should be underpinned by targets and ways of monitoring these. Objectives should be set for official controls and their role within the national strategy clearly defined.

2. Animal-based welfare indicators to use at farm level when checking the requirements of Directive 98/58/EC.

10 Actions Taken or Planned by the Commission Services

A workshop was carried out under the Better Training for Safer Food (BTSF) framework with representatives of the 28 Member States in October 2017 (Grange, Ireland). It discussed ways to prove farmers take all reasonable steps to ensure the welfare of dairy cows.

The workshop also:

- explored synergies with arrangements under Rural Development to ensure good knowledge transfer;
- discussed to which extent animal-based indicators can be used to assess the requirements of Directive 98/58/EC;
- discussed measures to promote better monitoring of dairy cow welfare so that better assurances can be provided and appropriate actions taken as necessary.
## ANNEX 1 – LEGAL REFERENCES

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<thead>
<tr>
<th>Legal Reference</th>
<th>Official Journal</th>
<th>Title</th>
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</table>
ANNEX 2 – DAIRY SECTOR PROFILES

The countries audited had very different profiles for the dairy sector. These are the main facts:

IRELAND

- 17,500 dairy farms with an average herd size of 64 cows – approximately 1.1 million dairy cows.
- 52% of dairy farmers were over 50 years of age.
- Average milk production per cow increased from 3,500 litres to 5,200 litres since 1984 to 2015.

AUSTRIA

- Around half a million dairy cows, the number of animals has been very stable for the last ten years.
- The number of dairy farmers has decreased by around 25%, from 54,580 to 39,100 approximately. In the same period, the average herd size, milk production per cow and lactations per cow progressively increased;
- In 2014 there were 16.9 cows per farm, 6,579 litres of milk per cow per year and the number of lactations per cow was 3.77.
- Approximately 76% of cattle in the dairy herd are Fleckvieh and 12% are Holstein.

ESTONIA

- For the past 15 years Estonian dairy farms have undergone major intensification with a move to loose housing systems and fewer very large farms (i.e. over 1000 animals), resulting in almost a trebling of milk production. Estonia is now second only to Denmark in average volume of milk produced per milking cow.
- The number of dairy cows in Estonia has declined by about 14% since 2014 due to the trade embargo with Russia.

POLAND

- Approximately 373,000 dairy farms and both the number of cows and farms have decreased in recent years but average herd size has increased. With approximately 2,250,000 dairy cows, it is the 5th biggest EU milk producer by volume.
- The large majority of dairy farms are relatively small and fall into the categories that have between 10 to 19 and 20 to 49 cows. The large majority of dairy cows are in farms grouped in the two categories that have between 20 to 49 and 50 to 149 cows.
- Approximately 35% of the dairy cows in Poland are registered in a national programme: these animals have an average annual milk yield of around 7,770 kg and the average annual milk yield for dairy cows outside of this programme is at around 5,840 kg.
**THE UNITED KINGDOM**

- The third biggest EU milk producer by volume and had 1,918,000 dairy cows in December 2015.
- The number of dairy farms has decreased in recent years but average herd size has increased. The average annual milk yield for dairy cows is approximately 7,897 litres.
- Around 30% of dairy farms maintain a traditional grazing system of winter housing and grazing from spring through to autumn. A further 55% of farms, in addition to grazing during the summer months provide some feeding indoors during part of the day during the grazing season.
ANNEX 3 – DETAILS OF INDIVIDUAL DG HEALTH AND FOOD SAFETY AUDITS CONSIDERED FOR THIS OVERVIEW REPORT

<table>
<thead>
<tr>
<th>Member State</th>
<th>Dates of audit</th>
<th>SANTE ref. no.</th>
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<tr>
<td>Ireland</td>
<td>15-22 February 2016</td>
<td>2016-8760</td>
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<tr>
<td>Poland</td>
<td>11-15 April 2016</td>
<td>2016-8762</td>
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<td>Estonia</td>
<td>30 May - 3 June 2016</td>
<td>2016-8763</td>
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<td>19-23 September 2016</td>
<td>2016-8767</td>
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<tr>
<td>Austria</td>
<td>7-11 November 2016</td>
<td>2016-8765</td>
</tr>
</tbody>
</table>

For each individual audit, a report was sent to the competent authorities of the Member States visited with a request for a proposal of actions aimed at addressing the report’s recommendations.

These reports, competent authority comments, and, where requested, action plans, are published at: [http://ec.europa.eu/food/audits-analysis/audit_reports/index.cfm](http://ec.europa.eu/food/audits-analysis/audit_reports/index.cfm)
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