

Innovations Leading to Ethical Milk Production in Developed Economies

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Abstract: This article investigates the economic implications of ethical issues and considerations thereof with regard to dairy production. The methods combine the review of recent scholarly literature on the topic with analysis of the current media presentation of the studied ethical issues. For the latter, we have conducted a case study of Scottish dairy farming and its coverage in the British newspaper *The Guardian*. Three broad ethical problems are dealt with separately, in particular the living conditions of cattle in tie-stalls, the early separation of calves from their mothers and reduced diversity due to intensive pasture management. There is not much consensus regarding ethics even among farmers, who aim at ethical and environmental processes of production. The degree of ethical approaches is a highly subjective matter, notwithstanding the difficulty of measuring the monetary value of ethical approaches and outweighing it against cost-efficiency.

Keywords: biodiversity; dairy production; ethics

JEL Classification: K32, M14, Q13

1. Introduction

This paper addresses the possibilities of innovation of milk production in developed economies. Such innovation could lead to the adoption of more ethical ways of milk production. While meat production is often viewed as unethical by some members of the general public, due to the necessity of inducing premature death on animals, the same is not true about the public apprehension of dairy products. However, it has been proven that milk production is linked to more deaths and suffering per calorie than meat production (Kolbe 2018). At the same time, animals can be killed in the process of meat production with minimal suffering, while acquiring milk from cattle has long-term effects on the well-being of animals and their offspring, such as for example mastitis on the side of cows and psychical deprivation on the side of their calves. Therefore, the decision of some consumers to substitute meat with dairy products due to ethical consideration is not rational.

The possible innovations aiming at the adoption of more ethical ways of making dairy products should thus include, apart from dairy-free milk products (such as soy milk or yogurt), the methods of delayed separation of cows and calves.

2. Methodology

This article combines literature review with original research based on discourse analysis. The literature review involves literature assessment of recent articles dealing with the economic and ethical factors influencing the choice of ways for dairy farming and milk production. The section on analysis assesses the public discourse on ethical dairy farming, with a particular reference to the media discourse in the United Kingdom, as a specimen of a developed economy, and on the background of the relevant EU legislation pertaining to the ethics of dairy farming.

3. Results

3.1. Review of recent research

Recent research on the ethics of dairy farming has been concerned with several factors influencing the ethical acceptability of the methods of production. These factors are weighed out by corresponding economic challenges.

The main ethical considerations include the reduced possibility of movement of bred animals and the early separation of calves from their mothers (Kikou 2015). More generally, ethical milk production should also take biodiversity into account. Grassland management is closely connected to biodiversity (Klimek *et al.* 2007). Extensive breeding with the use of large grasslands supports biodiversity (Wätzold *et al.* 2016), while intensively managed pasture contributes to the loss of biodiversity (Plieninger *et al.* 2012).

Apart from the ethical issues of early separation of calves from cows, other problems include the keeping of animals in tie stalls (Algers *et al.* 2009). This leads into the reduced possibility of movement and further resulting health problems often leading to premature deaths (Kikou 2015). According to Markova-Nenova and Wätzold (2018), milk farming has been under pressure due to the high demands on ethical standards including animal welfare and biodiversity.

3.2. Analysis - dairy farming in developed economies

Our analysis below is based on black-letter (doctrinal) analysis of current legislation and a socio-legal assessment of the working of such laws in practice, especially the effect of European legislation on domestic laws regulating the systems of milk production upon implementation.

The European Union regulates dairy farming through a dense legislative frame aiming at combining ethical considerations with cost-effectiveness and competitiveness to other world producers. The key legislative instruments pertaining to dairy farming in the EU include:

- EU regulation 1308/2013 on the common organization of the agricultural markets
- EU implementing regulation 511/2012 on the milk and milk products sector
- EU regulation 880/2012 on transitional cooperation and contractual negotiations of producer organizations in the milk and milk products sector
- EU delegated regulation 2016/1612 of 8 September 2016 providing aid for milk production reduction
- EU delegated regulation 2016/1613 of 8 September 2016 providing for exceptional adjustment aid to milk producers and farmers in other livestock sectors

The aim of such legislative framework is to provide a feasible system of milk production, which would combine the considerations for ethics and environment with market competitiveness. This is enacted through a number of bodies which monitor the market of milk production, including the European milk market observatory and various committees, such as the Committee for the common organization of the agricultural markets (European Commission, n.d.). This is further specified in Table 1 below.

Table 1. The basic legislative framework of the European Union regarding milk production.

Area of regulation	EU legislating body	Regulation citation
Agricultural markets	European Parliament and Council	Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organization of the markets in agricultural products

		and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007
Milk sector	Commission	Commission Implementing Regulation (EU) No 511/2012 of 15 June 2012 on notifications concerning producer and interbranch organizations and contractual negotiations and relations provided for in Council Regulation (EC) No 1234/2007 in the milk and milk products sector

Apart from the basic legislative framework, there are legislative instruments ensuring that milk is produced, distributed and consumed in a way as ethical as possible. These include measures aiming at reducing milk production and consumption and legislation regulating the distribution of aid in order to compensate for the possible loss of income due to the adoption of more ethical procedures for milk production. These are further specified in Table 2 below.

Table 2. EU legislative framework aiming at reducing unnecessary production and subsidies promoting ethical milk production.

Area of regulation	EU legislating body	Regulation citation
Aid for milk production reduction	Commission delegated regulation	Commission Delegated Regulation (EU) 2016/1612 of 8 September 2016 providing aid for milk production reduction
Exceptional adjustment aid	Commission delegated regulation	Commission Delegated Regulation (EU) 2016/1613 of 8 September 2016 providing for exceptional adjustment aid to milk producers and farmers in other livestock sectors

The concern for ethical considerations connected with milk production has been discussed in many developed economies recently. We have selected Scotland as an example of a developed economy, where farming plays an important role and where the trend for and interest in more ethical milk production has recently been in the front of media attention. According to the British newspaper *The Guardian*, the vegan market has significantly aided other ways of ethical milk production, because consumers got used to the idea of paying significantly more for ethically produced milk (Levitt 2019). The alternative ways to the vegan version of milk products, include belated separation of calves from their mothers. Scottish farms on the Dumfries and Galloway coast practice a procedure where the calves are only separated from their mothers after 5 months from birth (instead of days). Until the separation a “calf at foot” system is practiced, which means that a part of the milk is collected from the cows for sale, while their offspring are still fed (*ibid.*). This helps preventing mastitis on the part of the cows and many other health issues on the part of the offspring, including increased mortality. On the other hand, according to the farmer David Finlay of Cream o’ Galloway at Rainton Farm, such procedure leads to about 500 GBP loss in revenue for each cow every year, which has logically to be

partly compensated by higher prices of milk products (*ibid.*). Even non-mainstream milk production aiming at ethical correctness can lead to controversiality and the creation of other ethical problems – e.g. early impregnation of cows or later separation of calves and their mothers, which can be more distressing than separation days after birth (Kikou 2015). Later-age first calving, on the other hand, leads to technical inefficiency (Allendorf and Wettemann 2015).

Numerous studies have been conducted regarding the interconnectedness between ethics and cost effectiveness of milk production. According to Allendorf and Wettemann (2015), animal welfare leads to losses in farm efficiency. Similarly, Markova-Nenova and Wätzold (2018) have concluded that higher ethical standards might negatively influence consumer choices, based on their survey as specified in Figure 1 below:

Please choose one of the three products below. In all eight decision situations you also have the option not to buy milk. Please be honest in your choices and always take into account your financial situation.

	Milk A	Milk B	Milk C
Animal welfare/ Housing system of dairy cows	free-stall	free-stall + summer pasture	tie-stall
Biodiversity conservation	good for biodiversity conservation	no special biodiversity conservation	no special biodiversity conservation
Support for milk farms	small milk farms with below- average income	no support	no support
Origin of the milk	from your region	from your region	from Germany
Price per litre	1.32 €	0.78 €	0.60 €

I buy milk A I buy milk B I buy milk C I buy no milk

Figure 1. Survey carried out by Markova-Nenova and Wätzold (2018), example of a choice card used in the survey.

Similar surveys have been devoted to the willingness of consumers to pay higher prices for ethically produced milk. It has mostly been concluded that while part consumers are willing to pay higher prices for ethically and environmentally friendly milk, this does not significantly contribute to the general consumer population and farmers still have to make choices between being ethical and being cost-efficient.

4. Discussion

The dairy farming market has been recently challenged by a raised awareness of ethical and environmental issues on the side of the general public. This has been further reinvigorated by the milk production crisis in 2014-2016.

As for the literature review, we have gathered sources assessing the ethics of milk production from researchers dealing with the issue mostly in developed economies. The sources and their main findings are listed in Table 3 below.

Table 3. Literature review – sources and their main findings in several countries with developed economies.

Source	Area	Main ethical issues
Markova-Nenova and Wätzold 2018	Germany	Business led by consumer choices
Algers et al. 2009	European Union	Keeping animals in tie stalls
Kikou 2015	European Union	Lack of access to pasture
Klimek et al 2015	Europe	Plant species diversity
Wätzold et al. 2016	Saxony, Germany	Intensive pasture management
Plieninger et al. 2012	European Union	Decrease in biodiversity
Allendorf and Wettemann 2015	Westphalia, Germany	Correlations of lower-age first calving with technical efficiency

The ethical problems connected to milk production can be split up into several broader categories: The problem of cows living in tie-stalls and their resulting reduced possibility of movement, the issue of early separation of calves from their mothers and their subsequent feeding with formula milk and the problem of the impact of cow breeding and pasture on biodiversity.

The problem of reduction of movement resulting from tie-stalls is closely connected to cost-effectiveness due to the spatial demands of any alternative arrangement for animal breeding. The same economic challenge applies to the farmers' choice between extensive and intensive management of pastures and thus possible reduction of biodiversity due to cost-efficiency.

The issue of separation of calves from their mothers is immensely complex and is not unequivocal from the ethical point of view. While some farmers in Scotland practice the "calf on foot" system, where the offspring are separated from their mothers as late as 5 months after birth, some believe that this does not contribute to the wellbeing of neither the calves nor the adult cows. Further research would have to be conducted and its results would still be highly subjective if we were to find out whether such system is more sensitive than the mainstream system where the offspring are separated days after birth, before any bond is created between them and their mothers. However, this issue is even more complex as the particular models for the "calf at foot" system vary highly and there are also some alternative procedures adopted at some farms, such as the use of surrogate mothers for feeding the calves separated from their biological mothers.

5. Conclusions

Recent research has been devoted to the ethics of dairy production, in contrast to the already traditionally contested ethics of the production of meat. While the general public is increasingly aware of the problematic nature of producing milk, it is not so generally well-known that milk production can lead to more deaths per calorie than meat production. Consumers are generally inclined into spending more on ethically produced dairy foods, but this is still not significant in terms of compensation for the farmers who are less cost-efficient due to their adherence to more ethically considerate processes. Further research should concern the economic side and equality of possible EU subsidies in terms of compensating farmers for their ethically aware choices.

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