



The Consumer Voice in Europe

EU consumers have little appetite for cloning

BEUC Position Paper

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Summary

Cloning is generating a growing interest in the medical and pharmaceutical areas, where the technique could potentially be used to produce donor organs and medicines. Such kinds of applications are reasonably well accepted by EU consumers, who can see a benefit for human health.

In contrast, for a variety of reasons ranging from ethical and animal welfare concerns to the wish to support a less intensive and industrialised farming system, the vast majority of Europeans have little appetite for cloning to produce food.

Cloning is indeed used in several third countries to replicate elite farm animals (e.g. high-yielding dairy cows). It is a relatively new technique, for which success rates are still very low, and it has been associated with frequent miscarriage and pregnancy problems for the surrogate mothers (who carry the clones).

As for the clones, most of them simply do not survive birth or die shortly after. The cost of producing a clone remains fairly high; therefore cloned animals are not meant for food supply, but instead for breeding purposes. Food from their offspring and descendants, on the other hand, is meant to end up on supermarket shelves and might find its way onto Europeans' plates.

In December 2013, the European Commission published a package of two legislative proposals on the use of the cloning technique and the sale of food from cloned animals respectively.

These proposals fall short of EU consumers' expectations. Whereas the vast majority of Europeans have little appetite for food produced with the use of cloning and would overwhelmingly want food from the offspring of clones to be labelled (83%), the Commission proposals merely suggest a (temporary) ban on the cloning of animals for food supply and on the sale of food from clones in the EU. They do not say a word about food from cloned animals' offspring and descendants.

In view of the upcoming discussions in the Council and European Parliament, The European Consumer Organisation (BEUC), wishes to stress the following:

- Many EU consumers **strongly disapprove of the use of cloning for food production**. This should be **recognised and respected**.
- EU consumers should be able to **make an informed choice** when it comes to **purchasing and consuming food from cloned animals' offspring and descendants**.
- As the minimum, we wish to see the **reintroduction of the package of measures** on which the Council and European Parliament could have agreed back in 2011.
- As the EU negotiates free trade agreements with countries using cloning e.g. Canada and the US, we look to the Council and European Parliament to **stand by EU consumers and put their interests before trade**.

I. Introduction

Cloning is a relatively new technology which allows for the production of almost exact replications of an animal. The method commonly adopted for mammals is known as “somatic cell nuclear transfer” (SCNT), whereby a genetic copy of an animal is produced by replacing the nucleus of an unfertilised egg cell (from another animal) with the nucleus of a body cell from the animal to be cloned to form an embryo. The embryo is then transferred to a surrogate dam (mother), where it develops until birth.

Cloning technology has been applied to animals since the early 1980s but the major breakthrough came with the birth of Dolly the sheep in 1996. Cloning has a range of applications including research, production of pharmaceuticals or the conservation of endangered species and breeds. However, this position paper focuses on application to the agri-food sector where it has been used for several farm animal species, notably cattle and pigs. The use of the cloning technique in the agricultural sector aims to **replicate “elite” breeding animals**, e.g. highest yielding dairy cows or fastest growing pigs.

Given the cost of producing a clone (approximately €15,000)¹, cloned animals are normally not meant to end up as a steak on consumers’ plates, but **for reproductive material** (semen, ova and embryo). This reproductive material produces, via traditional² breeding techniques, progeny (i.e. offspring – also known as “first generation” – and descendants) mostly destined for direct use in the food chain.

Although clones are not meant to produce meat or milk, they can end up in the food chain when too old to breed.

Although clones are not produced to obtain meat or milk for the food chain, this may happen for meat at the end of the clone’s breeding life after being sent to the abattoir.

While the limited data available seems not to indicate any food safety risk stemming from the consumption of meat and milk from cloned animals and their offspring³, the **animal welfare issues associated with cloning**

are undisputable both for the clone itself and its surrogate mother.

Moreover, ethical considerations are also at stake. In the EU, an overwhelming majority⁴ of consumers **do not want cloning to be used for food production**.

Under current EU rules, food from clones is considered a “novel food” and so is subject to **pre-market approval**. Regulation (EC) No 258/97 on **novel foods**

¹ European Commission [Staff Working Document](#) (2013) 519 final. Impact Assessment accompanying the cloning legislative proposals from December 2013.

² Artificial insemination in most cases.

³ EFSA [Scientific Opinion](#) on *Food Safety, Animal Health and Welfare and Environmental Impact of Animals derived from Cloning by Somatic Cell Nucleus Transfer (SCNT) and their Offspring and Products Obtained from those Animals*, 15 July 2008.

⁴ 84% of respondents. ‘Europeans’ attitudes towards animal cloning’, Flash Barometer 238, Oct. 2008. http://ec.europa.eu/food/food/resources/docs/eurobarometer_cloning_en.pdf

makes authorisation compulsory in order to sell e.g. meat and milk from clones.

Food from the *progeny* of clones, on the other hand, is not subject to any particular regulation. While **commercial cloning** for food supply currently **takes place in several countries** (e.g. US, Canada, Argentina, Brazil), to date cloning is not used in the EU and no company has ever applied to sell food from cloned animals on the European market.

However, clones' reproductive material, the live offspring from clones, their semen and embryos as well as food from clones' offspring can be imported to the EU from such countries as the US, Brazil and Argentina **without consumers having the slightest indication**.

Selling food from clones requires approval in the EU. To date, no authorisation has ever been sought. But food from clones' offspring can freely reach EU supermarket shelves, with consumers unaware.

When the Novel Foods Regulation was reviewed in 2011, the cloning issue was such a stumbling block it made negotiations between the EU institutions collapse. The question of the clone offspring and food thereof and whether these deserved specific measures particularly divided the Council and European Parliament⁵. As a result, the European Commission committed itself to presenting a standalone proposal on animal cloning for food.

In December 2013, following an extensive consultation process, the European Commission finally published a **package of two proposals** dealing respectively with the use of cloning technology and the placing of food from cloned animals on the EU market⁶. It suggests temporarily prohibiting both the use of cloning for food production and the sale of food from clones in the EU. By way of contrast and most disappointingly, the **crucial issue of cloned animal's offspring remains unaddressed**.

As the cloning proposals are being debated in the Council and European Parliament, this paper aims to present the consumer perspective on animal cloning for food.

Consumers' right to make informed food choices is denied by the lack of EU rules on labelling food from clones' progeny.

We believe that not only should food derived from cloning be unequivocally proven safe, but it is also important to hear consumer concerns over a technique which causes unnecessary animal suffering.

The European Consumer Organisation (BEUC) calls on EU legislators to adopt **cloning regulations which respect European consumers' lack of appetite for food derived from cloning and recognise their right to decide themselves** on the food they put on their plate.

⁵ European Parliament [press release](#) on the novel food talks failure.

⁶ Proposals for a [Council Directive](#) on the placing on the market of food from clones and for a [Directive of the European Parliament and of the Council](#) on the cloning of animals of the bovine, porcine, ovine, caprine and equine species kept and reproduced for farming purposes. 18 December 2013.

II. Food derived from animal cloning: safe to eat?

The European Food Safety Authority (EFSA) was tasked with evaluating the safety of food derived from cloned animals³. Due to the limited data available on other species, EFSA's assessment was limited to meat and milk from cloned cattle and meat from cloned pig.

In a 2008 Opinion, looking at the composition, nutritional value, microbiological quality and potential allergenicity of food from clones, EFSA found **no indication that differences may exist in terms of food safety** between food products from healthy cattle and pig clones and their progeny, compared with those from healthy conventionally-bred animals. It must be noted, however, that cloning being a relatively new technique, the extent of the **current knowledge on this technology and whether it may affect food safety and quality is still limited**. EFSA itself recommended that the "*database on compositional and nutritional characteristics of edible animal products derived from clones and their progeny should be extended*"³.

Moreover, research tends to suggest that **clones' immune system may be weaker** than that of their conventionally-produced counterparts⁷.

Due to the scarcity of information with regard to clones' immune functions, EFSA recognised it is unclear whether or not cloned animals might be more susceptible to zoonotic pathogens than conventionally-bred animals. This might mean an increase in risk of infections, which in turn could present risks to human health if clones are more prone to carry bacteria, some of which may be of concern to human health.

Clones may be more prone to infections due to a weaker immune system. The potential consequences for human health are yet to be fully studied.

As pointed out by EFSA, should clones' reduced immune functions be confirmed, "*it should be investigated whether, and if so, to what extent, consumption of meat and milk derived from clones or their offspring may lead to an increased human exposure to transmissible agents*".

Another potential consequence of clones' weaker immune systems and increased susceptibility to infections might be a more frequent need to recourse to and administer veterinary medicines, including antibiotics. This in turn might impact on the global, life-endangering problem of antibiotic resistance.

EFSA statements published subsequently in 2009⁸, 2010⁹ and 2012¹⁰ have

⁷ Vajta G, Gjerris M. Science and technology of farm animal cloning: state of the art. In *Anim Reprod Sci.* 2006 May; 92(3-4):211-30.

⁸ EFSA [Statement](#) (2009). Further Advice on the Implications of Animal Cloning (SCNT).

⁹ EFSA [Statement](#) (2010). Update on the state of play of animal cloning.

¹⁰ EFSA [Statement](#) (2012). Update on the state of play of Animal Health and Welfare and Environmental Impact of Animals derived from SCNT Cloning and their Offspring, and Food Safety of Products Obtained from those Animals.

consistently confirmed the 2008 Opinion, concluding on the “*still limited information available on species other than cattle and pigs*” to conduct a risk assessment and underscoring animal welfare issues.

III. Animal health and welfare concerns linked to cloning

It is widely recognised that cloning is associated with animal health and welfare issues for both the surrogate mother (who carries the clone) and the cloned animal itself.

Surrogate mothers experience higher miscarriage and C-section rates. Most clones do not survive birth or die shortly after.

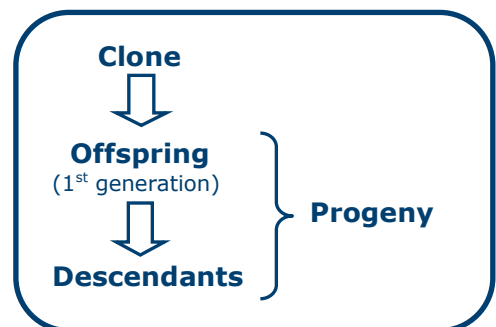
With regard to the **surrogate mother**, **high rates of miscarriage** as well as **problems during pregnancy** (e.g. placental abnormalities and enlarged umbilical cords with dilated vessels) have been observed (particularly in cattle). As the risk of abnormally large offspring is also higher than for “conventional” pregnancies, Caesarean sections tend to be more frequent in cattle carrying a clone³.

As far as the **clones** are concerned, **most of them simply do not survive birth or die shortly thereafter**. The “efficiency” of the technique is very low (6-15% for cattle and about 6% for pigs¹) and increased mortality rates have been reported in the perinatal period for pigs and bovine clones as well as during the juvenile period (before weaning) for bovine clones. For those few animals who do survive, they appear to be normal and healthy although uncertainties remain as to the possible effects of cloning on their longevity³.

The aforementioned adverse health outcomes mean **reduced welfare for both animal clones and the surrogate mothers**. An indirect side-effect of cloning – as with similarly selective breeding techniques – may also be the loss of genetic diversity within livestock populations if only a limited number of animals are multiplied in breeding programmes³. This may in turn increase susceptibility to infections and diseases, threatening animal health and welfare, which are interconnected. All the more so as “elite” farm animals are often those with the highest welfare problems, e.g. incidences of mastitis and lameness in dairy cows has been linked to their milking performance¹¹.

Data pertaining to the health and welfare of the **progeny of clones** (i.e. their offspring and descendants) is very scarce. From the limited evidence available, there seems no indication that these animals’ health might be affected³. No specific studies on the welfare of clones’ progeny have been reported in livestock species.

Nevertheless, previous considerations related to the loss in genetic diversity and the selective reproduction of highly productive animals and their effect on animal welfare are **equally relevant for clones’ progeny**.



¹¹ EFSA (2009). [Scientific opinion](#) on welfare of dairy cows in relation to udder problems based on a risk assessment with special reference to the impact of housing, feeding, management and genetic selection.

IV. EU consumers' attitudes towards cloning

EU consumers **overwhelmingly disapprove of the use of cloning for food production**, as reflected by two Eurobarometer surveys which investigated Europeans' perceptions of animal cloning for food supply.

According to the 2008 Eurobarometer report¹², **84%** of EU citizens had **concerns over the long-term effects of animal cloning on nature**. While the use of the cloning technique for certain purposes such as preserving endangered species was acceptable to some extent among EU citizens (approximately two-thirds), they were significantly less willing to accept cloning for food production. **58% considered it totally unjustifiable**.

While 2/3 of EU citizens may accept cloning as a means to preserve endangered species, they see its use for food production unjustifiable.

A majority of EU citizens said it was unlikely that they would buy meat or milk from cloned animals (regardless of whether or not it is safe to eat) and **83% said that they would want food from the offspring of cloned animals to be labelled** if it were to become available in EU supermarkets.

The **ethical dimension** of consumers' lack of appetite for food from clones and their progeny must be stressed with **three-quarters** of Europeans agreeing there could be **ethical grounds for rejecting animal cloning** and **69%** agreeing that animal cloning would risk **treating animals as commodities** rather than creatures with feelings.

83% of EU consumers want food from clone offspring to be labelled.

This echoes the European Group on Ethics (EGE)'s stance on animal cloning for food supply: in a 2008 report¹³, the EGE stated that "*considering the current level of suffering and health problems of surrogate dams and animal clones, [it had] doubts as to whether cloning animals for food supply [was] ethically justified*", while recognising that further research was needed before any such conclusion could be drawn in relation to clones' progeny.

The EGE made it equally clear it "*[did not see] convincing arguments to justify the production of food from clones and their offspring*". The Treaty on the Functioning of the European Union itself acknowledges that animals are "*sentient beings*" and states "*full regard [shall be paid] to the welfare requirements of animals*"¹⁴.

The 2010 Eurobarometer¹⁵ findings confirmed that EU consumers "*have strong reservations about animal cloning in food production (67%), do not see the benefits (57%), and feel that it should not be encouraged (70%)*".

¹² [Flash Eurobarometer](#) 238 published in October 2008. Europeans' attitudes towards animal cloning.

¹³ The European Group on Ethics in Science and New Technologies to the European Commission. Ethical aspects of animal cloning for food supply. [Opinion N°23](#) published in January 2008.

¹⁴ TFEU. Title II, Article 13.

¹⁵ [Special Eurobarometer](#) 341 published in October 2010. Biotechnology.

V. Traceability of clones, their offspring and descendants

Commercial cloning of farm animals is not taking place in the EU for now. However, this technique is developing (especially for cattle) in a number of countries from which the EU imports reproductive material (essentially bovine material from the US and Canada), beef, sheep meat and dairy (notably from Argentina, Brazil and the US) as well as a small number of live animals (mostly pigs and, to a lesser extent, cattle, sheep and goats)¹⁶.

In terms of numbers, imports of live animals represent **less than 0.01%** of the EU's livestock. Imports of (mostly bovine) reproductive material account **for 2.5% on average** of the EU's use of reproductive material, but may represent up to 20% in some Member States. The share of EU imports of meat and dairy products is also low (<5%), except for sheep and goat meat (20%, essentially from New Zealand)¹.

Individual animal traceability is already in place in the EU for bovine animals (including when imported into the EU). For pigs, sheep and goats, traceability is generally in place on a batch basis, while individual systems are limited to high-value animals.

While the EU has traceability systems in place for food-producing animals and their reproductive material, this is not the case for all of its trading partners.

Pedigree information is generally recorded in databases managed by the national herd books for bovine breeding animals¹⁶. Private initiatives are also developing in some countries (e.g. The Netherlands, France) to collect parentage information for elite breeding pigs. As far as **reproductive materials** are concerned (including imported to the EU), **EU law requires individual identification and traceability** i.e. the donor and parents must be known for semen and embryo respectively¹⁶. **Germany is an exception for this**, as it exports clone semen to third countries and has set up a registration system for clones and their reproductive material. There is currently no EU requirement to specifically register *clones* in herd books. There are however a few voluntary initiatives, such as that registering clones from the dairy cattle breed Holstein¹⁷.

Looking now to the EU's trading partners, **most of them – except for the US – do have individual beef traceability systems in place**. However this is not the case for other species¹⁶. **New Zealand** is the only country **requiring identification of cloned animals and registration** in an official database (with the declared purpose of facilitating access to foreign markets, should an importing country introduce restrictions on food derived from clones)¹.

In **Canada, food from clones and their progeny is considered novel** and requires pre-market safety assessment (although the system rests on notification by industry)¹. In all other countries, clones, their progeny and reproductive materials are subject to the exact same regulations as conventional animals¹.

¹⁶ ICF/GHK [study](#) (Dec. 2012). Impact in the EU and third countries of EU measures on animal Cloning for food production.

¹⁷ World Holstein Friesian Federation. [Guidelines for registering clones](#). October 2006.

Clones are registered by private companies in the US, Canada and Brazil. There are some private systems in place in the US and Canada that can help exclude reproductive materials from clones from EU imports¹⁶. In contrast, Argentina and Australia reported to the European Commission that clones are not registered.

VI. BEUC position

As of today, although no official figures are available given the absence of clone traceability, considering the novelty of the cloning technique and its low “success rate” it can be reasonably assumed that third countries’ livestock populations include very few clones. This is therefore the right moment for the EU to set its conditions towards potential exporters and **urgently adopt a robust regulatory framework on cloning for food production** that fully recognises the right of EU consumers to decide whether or not to eat food produced with the use of the cloning technique.

As the European Commission’s two legislative proposals on cloning are in the Council and European Parliament for debate, BEUC wishes to stress the following elements:

Consumers’ lack of appetite for cloning must be heeded and reflected in the law.

- The view of the overwhelming majority of EU consumers who **disapprove of the use of cloning for food production must be heard and respected**. As they stand, the cloning proposals largely fail to address Europeans’ concerns. Indeed although they do (on a temporary basis) ban cloning in the EU as well as the sale of food from cloned animals, they do not touch upon the crucial issue of **the progeny of clones**. However, it is widely admitted that clones, unlike their progeny, are not meant to produce meat or milk, but rather to be used as elite breeding animals.
- The assumption that “*the cloning technique itself may improve over time and thus become more acceptable to consumers*”¹⁸ disregards the **fundamental ethical concerns** many consumers have with the cloning technique, regardless of its technical “efficiency” (see section IV. above).
- EU consumers should be able to **make informed choices** when it comes to **purchasing and consuming food derived from cloned animals’ offspring and descendants** (for as many generations as is scientifically feasible).
- In March 2011, just before the Novel Foods conciliation failed, the Council had proposed the following package of measures¹⁹ including:
 1. a temporary ban on animal cloning in the EU for food production;
 2. a temporary ban on food from cloned animals, whatever their origin;
 3. a temporary ban on any supply of clones in the EU for food production;

¹⁸ EC Proposal for a Council Directive on the placing on the market of food from animal clones. Recital(8).

¹⁹ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/lsa/120351.pdf

as well as

4. **a traceability system for semen and embryos from cloned animals;**
5. **a traceability system for the live offspring of cloned animals;**
6. introducing **labelling requirements for fresh meat of cloned cattle offspring** within six months of the new regulation's entry into force;
7. labelling requirements would have been extended to all other foods from the offspring of cloned animals, subject to a Commission feasibility report.

Traceability is a must, be it for clone reproductive material, live offspring and food derived therefrom.

As a minimum, we seek the reintroduction of these measures deemed feasible back in 2011 to the cloning proposals on the table.

As the EU already has a strong traceability system in place for beef, new EU requirements for the traceability of cloned cattle and its progeny and for the labelling of meat from cloned cattle offspring should be adopted as a matter of urgency. In parallel, a feasibility study²⁰ should look at other food products (e.g. milk), more extensive labelling requirements (on several generations as far as is scientifically feasible), and other species (pig, sheep, goat and horse).

Pressure from its trading partners should not prevent the EU from adopting rules on cloning in line with its citizens' demands.

- The remarkable developments since 2011 are the free trade agreement negotiations the EU has meanwhile engaged into (with Canada and the US notably). It is hard not to believe this new situation might have influenced the European Commission's decision to not even propose the "lowest common denominator" on which the Council and Parliament could have agreed three years ago. As a leaked legal opinion²¹ from the Council legal Services

revealed, **requiring food from cloned animals' offspring to be labelled would not put the EU in breach of international trade rules.** Therefore, we look to the Council and European Parliament to **stand by EU consumers and put their interests before trade.**

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²⁰ Whereas the [terms of reference](#) of the study commissioned by the EC on the labelling of products from cloned animals and their offspring also cover meat from cloned cattle's offspring.

²¹ Full opinion available on the website of Food & Water Watch: http://documents.foodandwaterwatch.org/doc/CouncilPositionCloningMarch2011.pdf#_ga=1.201496465.1251649350.1396536769

See also joint BEUC/Eurogroup for Animals [press release](#) of 11 May 2011.

