

## Q & A on cloning of animals for food

### **What is cloning?**

The aim of cloning is to produce genetically identical copies of an animal.

Cloning involves collecting a cell from the animal that is to be cloned (called the 'donor cell') and transferring it into an egg cell that has been removed from another animal. The donor cell and the egg cell are fused by an electrical pulse and from this a cloned embryo is developed.

Once a cloned embryo has been produced, it is implanted into a surrogate (substitute) mother who carries out the pregnancy. This is an invasive process. In pigs the transfer of the embryo into the surrogate mother is performed by a surgical procedure. In cattle embryo transfer is sufficiently stressful for UK law to require a general or epidural anaesthetic.

### **Why is cloning an animal welfare issue?**

Scientific research shows cloning often involves severe suffering both for the surrogate mothers and for the clones themselves.

### ***Painful births***

Cloned calves tend to be heavier than normal which leads to painful births for the surrogate mothers and as a result Caesarean sections are often needed.

### ***High mortality rates for clones***

Most clones die during pregnancy. Of those that survive, many (up to 35%) die during or shortly after birth or in the early weeks of life from a range of problems including heart failure, respiratory difficulties, muscle and joint problems and defective immune systems.

The European Food Safety Authority (EFSA) has said that "The health and welfare of a significant proportion of clones have been found to be adversely affected, often severely and with a fatal outcome."

### **Is cloning animals for food ethically justifiable?**

The Opinion of the European Group on Ethics (EGE) in Science and New Technologies concluded that "considering the current level of suffering and health problems of surrogate dams and animal clones, the EGE has doubts as to whether cloning animals for food supply is ethically justified". The EGE added that it "does not see convincing arguments to justify the production of food from clones and their offspring".

### **In what ways is cloning likely to be used within the livestock sector?**

Cloning aims to produce multiple copies of the highest yielding cows and fastest growing pigs. Traditional selective breeding has already led to major health problems for such animals. EFSA has concluded that "genetic selection for high milk yield is the major factor causing poor welfare in dairy cows" and that genetic selection of pigs for rapid growth has led to leg and heart disorders. These animals are 'bred to suffer' – they are being pushed to their physical limits and often break

down as a result. Cloning will exacerbate these problems. Cloning of the most fast growing and high yielding animals will lead to an even higher proportion of animals suffering from serious health and welfare problems.

#### **How many clones are alive worldwide?**

EFSA estimates that in 2007 there were about 100 cattle clones and fewer pig clones in the EU. The estimated number in the USA is about 570 cattle and 10 pig clones. There are also clones produced elsewhere e.g. Argentina, Australia, China, Japan and New Zealand.

#### **What is the situation in the UK?**

Eight calves with a cloned mother have been born in the UK. The cloned cow was produced in the US and frozen embryos from her were imported by the UK.

The Food Standards Agency (FSA) is investigating whether milk from one of the calves has entered the food chain. The FSA has reported that two of the male offspring of the cloned cow have been slaughtered. The first was slaughtered in 2009. Meat from this animal entered the food chain and will have been eaten. The second was slaughtered on 27 July 2010. Meat from this animal has been stopped from entering the food chain.

#### **What is the position in the US?**

Initially there was a voluntary moratorium in the US that prevented the sale of food from clones and their offspring. However, the moratorium has been lifted for meat and milk from the offspring of clones and we suspect that before long it will be lifted for food from the clones themselves.

#### **What is the legal position?**

Cloning is arguably unlawful under paragraph 20 of the Annex to EU Directive 98/58 which provides that: "Natural or artificial breeding or breeding procedures which cause or are likely to cause suffering or injury to any of the animals concerned must not be practised." However, the position should be clarified by passing a law that clearly bans the cloning of animals for food production.

The Lisbon Treaty requires the EU and the Member States, when formulating and implementing their policies on agriculture to "pay full regard to the welfare requirements of animals". If the EU does not ban cloning it will be in breach of its Treaty obligation to pay full regard to animals' welfare needs.

The sale of meat and milk from clones is governed by the EU Novel Foods Regulation. We agree with the FSA that under the Regulation an authorisation must be granted before food from clones or their offspring can be put on sale. No such authorisation has been applied for in the UK.

#### **Do we need cloning to feed the world?**

No, we do not. Cloning is an inefficient way of feeding the growing world population. Clones and other high yielding animals are fed on cereals. These crops could feed more people if they were used for direct human consumption rather than being fed to animals. The most efficient way of rearing cattle is to let them graze at pasture eating grass (with perhaps just a little supplementary feed). This way they are converting something we cannot consume, grass, into meat and milk that we can eat.

### **How will consumers react to milk and meat from cloned animals and their offspring?**

UK and other EU consumers and supermarkets have rejected GM crops. They are likely to be even more uncomfortable with cloning as this interferes with the genetic make-up of animals. Indeed, opposition to cloning may be even greater as consumers may well feel that such a high-tech approach to sentient beings is even more disturbing than the genetic manipulation of crops. It would be unwise for farmers to use cloned animals and their offspring as this could tarnish the image of agriculture.

A recent Eurobarometer study found that:

- 69% of interviewees agreed that animal cloning would risk treating animals as commodities rather than creatures with feelings.
- 61% of EU citizens think animal cloning is morally wrong
- A majority (58%) of EU citizens are not willing to accept animal cloning for food production.
- A majority said they were unlikely to buy meat or milk from cloned animals even if a trusted source stated that such products were safe to eat.

### **Is there a link between cloning and genetic engineering?**

Animals are being genetically engineered in research facilities to increase the animals' rate of growth. Pigs, sheep and salmon engineered with growth hormone genes have been born with gross skeletal deformities and enlarged organs. Many die shortly before or after birth.

Cloning is not genetic engineering. However, cloning is attractive to the biotechnology industry as, once a genetically engineered animal has been produced, the simplest way of making multiple copies of that animal is by cloning. Cloning will facilitate the genetic engineering of animals, a process that leads to great suffering.

### **What will be the implications of having herds of genetically very similar animals?**

A herd of cloned animals or their offspring will have less genetic diversity than conventional animals and so will be much more vulnerable to any disease that enters the herd.

### **What are the wider implications of cloning?**

An increasing number of people want society to move away from the cruelties of factory farming towards a more sustainable, humane agriculture. Cloning is taking us in the wrong direction - towards perpetuating industrial farming when all other societal trends point towards sustainable farming and respect for animals as sentient beings.

### **What is Compassion in World Farming's objective?**

We want the EU to ban the cloning of animals for food and the sale of meat and dairy products from clones and their offspring.

### **What is the political position?**

The EU is in the process of discussing a proposed new Novel Foods Regulation. In July 2010 the European Parliament voted for a ban on the sale of meat or dairy products derived from cloned animals or their offspring.

We agree with the EU Agriculture Council (the Agriculture Ministers from the 27 EU countries) that the proposed Novel Foods Regulation cannot address all the issues of cloning and that therefore the European Commission should produce a report on all aspects of food from cloned animals and their offspring. However, we disagree with

the Council that in the meantime the Novel Foods Regulation should allow such food to be placed on the market.

Autumn 2010 is going to be a very active time politically in Europe. In September the Parliament and the Council will be holding talks to try and resolve their differences. The Commission is due to publish their report before the end of the year and this will generate a huge debate on whether the EU should permit the cloning of animals for food.

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