

Viva!

The kids are **NOT** alright

The welfare of dairy
goats and human health
consequences of
consuming goats' milk

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Goat's cheese and milk is becoming increasingly popular amongst consumers; with many mistakenly presuming that the welfare problems inherent in the milking of dairy cows do not apply to goats.

The truth is that British goats suffer as much as dairy cows: with their babies taken away from them almost immediately (the females to replenish the herd and the males either killed at birth or kept for meat). Also, animals uniquely suited to thriving on tough, mountainous terrains are increasingly kept indoors their whole lives in massive zero-grazing units.

Background

The domestic goat (*Capra aegagrus hircus*) is a subspecies domesticated from the wild goat of southwest Asia and Eastern Europe. They are a member of the Bovidae family and are closely related to sheep as both are in the goat-antelope subfamily Caprinae. There are over 300 distinct breeds of goat.

Female goats are referred to as 'does' or 'nannies', intact males as 'bucks' or 'billies'; their offspring are known as kids.

There are approximately 500 million goats worldwide. Globally, more goats are kept for their meat than their milk or hair.

Goat nature

Goats are active and inquisitive. It has been said that sheep are conformists whereas goats are capricious, unpredictable, flighty, impulsive and whimsical. The word capricious comes from the Latin for goat (capra). Put into a new field, goats will examine the perimeter and finding a gap they will escape! Whereas some species will run scared from a low flying plane, goats are more likely to look up and watch. They are endlessly curious. It is shameful that these highly intelligent, playful, friendly animals are increasingly being factory farmed across the industrialised world.

It is distressing and sad to see animals of such an independent spirit intensively farmed in zero-grazing sheds.

The UK industry

Although the goat dairy herd is smaller in the UK than some other countries it is increasing quickly. It is estimated that the national herd is currently around 90,000. Of those, 10,000 are kept for their fibres (such as Angora and Cashmere breeds) and another 10,000 are so-called meat goats (usually Boer breed or Boer cross) (9). This puts the UK dairy goat herd at approximately 70,000.

In UK commercial dairy farms the Saanen (from Switzerland) or Saanen type is mostly used as this breed has a high milk yield and a relatively placid nature.

Smaller extensive (free-range) and larger intensive (indoor) systems exist in the UK, with a rapid move towards the latter as it is easier for farmers to manage and provides a higher return. Indeed, herds in excess of 2,000 goats are not unheard of in the UK and are becoming increasingly common (2) (5) (8).

Some reports have said that the market for goat dairy products is increasing by 20-30 per cent a year in the UK (1) (11). It is believed that the market is worth in excess of £50 million a year in the UK alone (9) (11). According to the goat industry, 2012 is the first year Britain's will drink more than two million litres of goats' milk (19).



Milking machines

Female goats typically give birth (kidding) for the first time at 18 months. They are impregnated either artificially or, more usually, by 'stud' billies from high milking stocks (21). They have a five month pregnancy and high yielding dairy breeds often have twins or triplets (21). (In the natural state, indigenous goats usually have one kid with each pregnancy.) Lactation (producing milk) can continue for up to two

years following giving birth in a non-pregnant goat but as this longer lactation results in a lower milk yield than if the doe is bred again (22), most commercial farms breed the nanny goats every year. With a view of improving milk yields even further some are impregnated with semen that has been selected with 'improver' genetics (5).

Kidding the reproductive system

According to the Universities Federation for Animal Welfare (UFAW), "Many European farmers will be interested in controlling the breeding season in order to stimulate the goats into breeding all the year round to eliminate the problems of seasonal milk production. The two methods used ... are intravaginal hormonal sponges or artificial lighting regimes." (21.)

The sponge involves implanting a sponge impregnated with the hormone progesterone into the vagina for 11 days. Two days before it's removed the goat is injected with pregnant' mare's serum gonadotrophin (PMSG) and prostaglandin. The hormones stimulate the goats to come into oestrus one to two days after sponge removal. If AI is used, the goats are inseminated 42 to 44 hours after sponge removal.

In the UK, the decreasing daylight and increasing dark stimulate breeding in goats. The longer nights stimulate the release of melatonin which in turn stimulates the release of hormones which make the ovaries release an egg (oestrus).

Intensive farmers may mimic this affect by subjecting the goats to increased light in the winter and then reverting to periods of darkness. The *Dairy Goat Journal* recommends exposing goats to 20 hours of light for 60 days during January to March; oestrus occurs 10 weeks after a return to ambient lighting (21).

Melatonin implants are also used with indoor dairy goats, sometimes with extended lighting.

Mothering stopped

Goats are well known for their mothering abilities, as well as their ability to nurse other animals' young (they are sometimes used to foster orphaned or rejected lambs, calves and even foals) (9). Of course, on most dairy farms the maternal needs of both nannies and kids are almost immediately curtailed after birth. The female kids will typically be removed from their mothers after one feed and subsequently fed milk replacer, replacement goat's milk or even cow's milk, so that the mother's milk can be harvested for human consumption (for the fate of the males see below). Sometimes the kid and mother will not even have that interaction, as many young are fed immediately by bottle to manage colostrum intake (14). On intensive units, kids are machine fed in large batches of around 300 or more, despite Defra acknowledging that artificial rearing "... can give rise to problems "(4) (16).

Nannies are then typically milked for 18 months. Unlike dairy cows, goats do not have a dry season when they are not milked. On one farm (where Viva! filmed in 2011) they kid for a second time and then their milk yield is assessed at 200 days. If the yield is exceptional they will be used to breed again – whilst the remaining nanny goats will continue to be milked only. This selective breeding is designed to increase milk yields.

Currently, 880-900 litres of milk a year per goat is not uncommon – but farmers are pushing for ever greater yields of up to 1,100 litres (2) or more (in some cases up to 1,800 litres per 305 day lactation) (3). On British farms, three litres per day is the average, although some nannies will produce as much as ten litres (5). Some goats are milked up to three times daily to further maximise yield (3).

The natural life expectancy for goats is 15-18 years of age (although some have been known to live as long as 24 years). On one of the farms Viva! filmed at (4), the female goats are robotically milked for up to six years; which means that they are sent for slaughter at less than half their natural life expectancy. As with dairy cows, life expectancy is rigidly dependent on milk yield and fertility. In modern production, technology means that the milk yields of individual



goats can be recorded, and on a farm that we filmed on (Bromes Farm, near Taunton, Somerset), each goat must produce at least 1.1 litres to be retained.

When milk production drops, the nanny goats are killed, often for meat. As goat milk farmer, Loraine Makowsky-Heaton states in *Farmers Weekly*, Asian customers prefer meat from an older goat, so nanny goats are killed up to the age of six years for this market. The male offspring, who cannot produce milk, are killed on her Welsh farm up to the age of 11 months for meat (20).

As with cows, the pastoral extensive image that consumers have of the dairy farming of goats is one that is fast becoming unrealistic. Whilst there are some smaller dairy goat operations (and maybe even a few that still milk by hand), the reality is that there has been a major push to intensification within the goat dairy industry with most now milked by machine in large sheds.

Zero-grazing

The debate about zero-grazing of cattle and mega-dairies has been useful in focusing the attention of

the public to the new excesses of factory farming. However, what has not been reported is the increasing tendency to permanently house goat dairy flocks all-year round for reasons of convenience and profitability (grazing goats use up energy that would otherwise go into extra milk production). Unbelievably, some farmers try to justify this by saying that they are protecting goats from the elements (8).

In the UK, the dairy industry reports that only one large scale goat milk producer allows grazing on grass (12). (Viva! filmed here at Upper Enson Farm – see later.) This means that all other large scale operations in the UK (including most in Northern Ireland) are now indoor, intensive zero-grazing units (15).

Bromes Farm that we also filmed at currently houses 1,200 Saanen breed goats (with a view of expanding to 1,500). The goats are permanently housed inside in a massive open-sided shed (with some access to a small outside concreted area). The shed is split into sections which houses a revolving section of either milked goats or those due to be milked. They are never allowed out to pasture. The reason given is to avoid the need to worm them, as there are no licenced wormers for goats. To do so would mean a seven-day withdrawal period when milking could not take place – which would impact on profits.

Defra recommends that because of the gregarious nature of goats, large scale units should only be set up if it is “reasonably certain” that the welfare of individual animals can be met. It is difficult to see how this can be achieved on intensive units where the number of animals can run into the thousands. It is also recommended that timid and aggressive animals are separated to prevent bullying and stress. Again, it is difficult to see how this can be achieved – let alone identified – on large scale intensive farms.

Bar the straw on the ground there is usually no environmental enrichment for goats that are permanently housed. Goats are extremely curious and intelligent – and are exemplary climbers. However, in today's modern intensive unit these natural behaviours are routinely thwarted.

Disease and illness

Although goats are relatively hardy animals, Defra says that: “When goats are ill they soon lose the will to live” (16).

As with all farmed animals, disease and other ailments can affect goats – and some are exacerbated by intensive conditions (15). For instance, the parasitic disease *Coccidiosis* is most common in intensive systems because of the concentration of faeces in a confined space (as opposed to open free-grazing) and especially affects kids. It is acknowledged that post-weaning is a particularly stressful time for very young animals and this is undoubtedly compounded by forced separation from their mothers after just a day or two on intensive units. *Coccidiosis* can lead to diarrhoea (scours), with streaks of blood, followed by severe dehydration and even death (13).

In 2012, Viva! investigated Upper Enson Farm in Stafford, which supplies Delamere Dairy. (Delamere Dairy sells goat milk products to almost every supermarket in the UK, including Sainsbury, Tesco, Waitrose, Co-op, Budgens, Asda, M&S and Whole Foods.) It has some 1,800 animals. Our investigator found it strewn with dead kids and a skip overflowing with corpses.

We were told by a worker that the problem was probably ‘worms’ and then later by the manager that: “We've got more losses than I'd like, mainly from cryptosporidia”. Many of the kids had diarrhoea and he explained that the disease is spread via the excreta of the ill animals. For footage see www.milkmyths.org.uk/goats

In general, goats are susceptible to many of the same diseases as sheep, such as clostridial diseases, foot-rot, worms, liver fluke and external parasites. Milk fever, listeria and pink eye are all more common in housed goats (18).



Johne's disease (aka paratuberculosis)

It has been proposed that an environmental factor leading to Crohn's disease in humans is a disease-causing bacterium. The most popular candidate is the infectious bacterium *Mycobacterium avium* subspecies *paratuberculosis* (MAP).

Johne's disease in goats is caused by MAP and it can be a problem in all ruminants. In goats, "*clinical disease seems to be seen more in large commercial herds and is thought to be initiated by low levels of stress*"(21). Typical signs are a short period of diarrhoea, followed by a rapid loss of condition and loss of milk. There is no cure or treatment and, if left the goats usually die two to three months after showing clinical signs.

To control the disease, UFAW states "it is necessary to eliminate all those animals showing signs and to vaccinate all kids within one month of birth." (21.)

Caprine arthritis and encephalitis (CAE)

This disease is economically important to the goat industry. It is caused by a lentivirus. Adults usually show arthritis with inflamed swollen knee joints which make walking painful. The poor goats lose condition and are sometimes emaciated and weak. There is no cure. In the USA and Australia, a staggering 80 per cent of goats have CAE. In the UK it is currently considerably lower at about 2 per cent (21).

Mastitis

Mastitis (inflammation of the udder) is a major issue with dairy cow farmers. Its high incidence has led to the development of many drugs. UFAW state that there is a problem with goats in that so few drugs are licensed for goat use and if unlicensed products are used there is a 21 day

milk withdrawal period (21). However, there is a lower incidence of mastitis in goats than in dairy cows but a higher incidence of pus in milk (see later).

Mutilations

On commercial goat farms, male kids are either killed shortly after birth or kept for meat. If they are fattened for the meat trade, they will be castrated. Both males and females are disbudded.

Castration

Castration is meant to happen within a week of birth (21). At the supplier of Delamere Dairy (which sells products to most supermarkets), Upper Enson Farm in Stafford, Viva! filmed two women casually lifting baby billy goats and placing a rubber ring around the



base of each goats' testicles so the blood supply is cut off and the testes slowly shrivel and die. The UK government's Farm Animal Welfare Council (22) describes the procedure as causing "pain and distress" and urges it be used as little as possible. At the very least, it pleads for pain relief to be given. It wasn't.

No horn

Viva! also filmed kids at Upper Enson Farm being 'disbudded' by having their horn buds burnt out. A worker holds a baby animal over her lap, pushing the kid's neck into her leg as she forces the heated device down into the skull. The little creature struggles and cries. Kid after kid bleats and screams throughout the process.

According to the government's Farm Animal Welfare Council disbudding is "painful and stressful" and The Veterinary Surgeons Act 1966 requires that it be undertaken by a veterinary surgeon, recommending it be done under general anaesthesia. (23). This wasn't the case at the suppliers of Delamere Farm – a dairy which has many of its products approved by the Vegetarian Society.

"With goats (disbudding) is a veterinary procedure. It is virtually impossible to anaesthetise the horn buds using a local anaesthetic and general anaesthesia is therefore necessary." Universities Federation for Animal Welfare, 2011 (21).

According to UFAW, kids born for intensive dairy 'should be disbudded within a few weeks of birth'. The longer they are left the harder it is to disbud. They are disbudded because of the difficulty of horns going through the milking parlour and because of the potential for injuries of each other and handlers (21).

De-horning mature goats is 'a difficult and unpleasant procedure that is very traumatic for the goat and should only be carried out as a last resort' (21).



'Surplus to requirements', the fate of Billy goats

Around 100,000 male dairy calves are either shot shortly after birth or die on British farms (UK Dairy Council figures). This is for two reasons: simply put they are the wrong sex to produce milk and would (as pure dairy breeds) not be profitable enough to 'grow on' for the beef trade.

It is a common misconception that this issue does not apply to the dairy farming of goats. In fact, it is often even more pronounced as most Billy goats are killed at birth or shortly after. Many farmers are unwilling to provide space and staff to raise males for meat when those resources could be used for expanding dairy production, which is more profitable (9).

On a large scale goat farm, births of 300 or more female kids over a short space of time are not uncommon. A similar number of males will also be born.

Unwanted Billy goats are killed in a number of ways on British farms. The only stipulation by Defra is that it is done "humanely" and by someone who is familiar with killing goats. Some may be killed with an overdose of barbiturates by a vet (although this costs money). Others are killed with firearms, such as rifles or even shotguns. Some are hit on the back of

the head with a heavy object. Or, swung by their legs, their heads are smashed into door posts (sometimes repeatedly if unconsciousness is not achieved on the first blow). The baby animal then has his throat cut. It is not uncommon for these dead Billy goats to be collected and fed to the hounds at the local hunt (17).

When Viva! filmed at Bromes Farm, near Taunton in 2011 we were informed that the male kids were, until recently, 'disposed of' by swinging them by their legs to smash their heads against a metal post. Later, a market had been found and they were being sold for meat to a Bristol-based company.

Some goat farmers are trying to find a market for the meat – which is known as 'Capretto' (the Italian for kid meat); with Billy goats being killed at around five weeks (6), though some kill at up to 11 months. Some producers have even tried to promote goat meat as 'healthy' and 'local'. However, it is unlikely to take off as, outside ethnic and Halal markets, there is little demand for goat meat in the UK – and that market is presumably already saturated by females who are killed when their milk yields drop below a certain level and the small Boer meat herd. The Meat Hygiene Service reports that 9,547 goats went through UK red meat slaughterhouses in 2009 (9).

Good for health? Stop Kidding

"For those people who experience cows' milk intolerance, goats' milk is an ideal substitute..." Delamere boast on their web site. Others claim that it is also perfect for people with cows' milk allergies. But what does the science say?

Lactose Intolerance and Protein Allergies

Goats' milk has virtually the same lactose (sugar) content as cows' milk! Goats' milk contains 4.4g lactose per 100g of milk; whole cows' milk contains 4.5g and semi-skimmed cows' milk, 4.7g. (24.) Patrizia Restani, Department of Pharmacological Sciences, State University Milan, reviewed the science on allergies and goat milk and concluded that goats' milk is wholly unsuitable for the lactose intolerant (25).

Even more serious is milk allergy, caused by proteins in milk, not sugars. Restani states that claims that goats' milk is less allergenic than cows' milk are "controversial" and have "not been proved". She adds that there are more papers showing the opposite! (25.)

For example, 26 infants aged five months to seven years who were allergic to cows' milk protein were tested for goats' milk allergy. Twenty four out of 26 were allergic to both. In another study, 22 out of 28 children were allergic to both milks and just six to cows' milk alone (25).

Several independent studies have shown that milks from different animals all evoke the same immune reaction in people with cows' milk allergy.

Restani forcefully concludes that given the severity of the reaction in some people to goats' milk – including hives, eczema, difficulty in breathing and vomiting – goats' milk "must not be considered an appropriate replacement for infants/children with cows' milk allergy" and that "labels suggesting use of goat's milk for intolerant/hypersensitive people should be banned." (25.)

Hormone cocktail

It is a fact (though not widely acknowledged by the dairy industry!) that cows' milk contains 35 hormones and 11 growth factors (26), the most devastating being insulin-like growth factor 1 (IGF-1). Levels of IGF-1 in the blood can be a strong indicator of whether a person will develop cancer (27). It controls growth and development in both cows and people but each species has very different rates of growth. IGF-1 in cow's milk, survives pasteurisation and can cross the intestinal wall and enter human blood. Even small increases in levels of IGF-1 increase the risk of several common cancers, including breast, prostate, lung and colon (28, 29).

The big question is: does goats' milk contain IGF-1? Scientists conclude that: "IGF-1 is present in goat milk" and can survive in commercial milk products (30).

Another hormone present in both cows' and goats' milk is oestrogen, though at a lesser concentration in goat milk. Again, it has been particularly linked to hormone-dependent cancers such as breast, ovary and prostate. Most oestrogens in our diet come from animals' milk and those in goats' milk are precursors to 'catechol oestrogens', strong promoters of cancer (31).

Mind the bugs don't...

Unpasteurised goat's milk is sometimes hailed as a safer alternative to raw cows' milk. A UK study examined 131 frozen and fresh samples of unpasteurised goat and sheep milk from 79 retail outlets and around half failed the legal standards. They were rife with pathogenic (disease-causing) bacteria, many of which indicated faecal contamination. Scientists conducting the study suggested that unpasteurised goats milk should be banned (32).

Fat kid

Fat, however, may be an even bigger disincentive to sales, according to the *Journal of Dairy Science* (31). "The largest health concern for consumers of goats' milk is likely to be its elevated fat content compared to cows' milk. More troubling is how much of the fat in goats' milk is saturated fat... if one is looking for a heart-healthy diet that includes dairy... goats' milk may not be the best alternative to cows' milk." (31.)

Whole goats' milk contains 3.7g fat per 100g of milk, most of it 'bad' saturated fat. Whole cows' milk is similar at 3.9g but semi-skimmed cows' milk is by far the most popular sold in the UK and has 1.7g.

Although semi skimmed goats' milk is available (which also contains 1.7g of fat) – according to the *Journal of Dairy Science* in 2012 more whole goats' milk is consumed than semi-skimmed. Whichever milk is chosen there is still the problem with hard cheeses and butters made from both cows' and goats' milk which are staggeringly high in saturated fats. Typically, 50-65 per cent of the fats in dairy products are saturated fats. And it is dairy products which contribute to most of the UK's saturated fat intake, followed closely by meats (33).

Vegetarians eat about two-thirds of the saturated fat, and one-half of the cholesterol of omnivores, and vegans

consume one-half of the saturated fat and no cholesterol (33). Vegans have very low levels of harmful LDL blood cholesterol (33). Staple foods of their diets, such as nuts, soluble fibre (from oats and barley), soya proteins, and plant sterols improve blood lipid levels (33). In addition, substituting soya or other vegetable proteins for animal proteins in dairy products reduces the risk of developing nephropathy (a disease affecting the kidneys) in type 2 diabetes. Vegans in Western countries enjoy remarkably good health, exemplified by low rates of obesity, diabetes, heart disease and cancer (33).

Are you taking the pus?

Most revolting though is the 'somatic cell' content of goats' milk! Somatic cells, more commonly known as pus cells, are counted in milk sold for human consumption as there are legal limits as to how much it can contain. Somatic cells are the white blood cells that are the defence against bacteria that invade the udder and can cause mastitis. Cows' milk can legally contain up to 400 million pus cells/litre. So one teaspoonful of milk can have two million pus cells! According to UFAW, 65 per cent of goat milk samples will have a cell count greater than 1,000 million cells per litre! (21.)



Conclusion

Some consumers are turning away from cow's milk because they believe that goat's milk and dairy products comes from less intensive systems and that it is healthier. However, the reality is that similar problems exist in all dairy production – and with the increasing intensification of those systems these problems are only going to get worse.

Intensive or extensive, the issue of what to do with Billy goats is a universal problem for the industry. They are either killed at birth or sent to slaughter at a fraction of their natural lifespan. As with dairy cows, 'does' or 'nannies' are regarded as milk and baby machines to be discarded as soon as their productivity drops. The only time many of them will leave the factory farms where they were born is the trip to the abattoir.

And all for a product that may promote disease. Thank goodness for plants – soya, almonds, oat, hazelnuts, rice – and their milk of human kindness.

For more on goat farming visit
www.milkmyths.org.uk/goats or phone
0117 944 1000 (Mon-Fri, 9am-6pm).

For more information on the health consequences of consuming cows' milk, see White Lies at
www.vegetarian.org.uk/campaigns/whitelies/index.html

On the health impact of consuming animal fats, see Globesity at
www.vegetarian.org.uk/campaigns/globesity/index.html

On the welfare of dairy cows, see Dark Side of Dairy at
www.milkmyths.org.uk/sites/default/files/dairy_report.pdf



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