

Milk Hygiene on the Dairy Farm

A practical guide for milk producers to
The Food Hygiene (Scotland) Regulations 2006



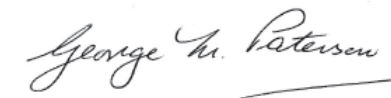
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New EU food hygiene legislation, which came into effect on 1 January 2006, sets out more clearly the duty of food businesses to produce food safely and to achieve consistency. It covers the whole food chain, from farm to fork. Key elements of the previous dairy hygiene legislation are retained, such as those relating to the health and cleanliness of the animals, hygiene during milking and the prohibition on sales of raw drinking milk.

This simple and practical booklet aims to assist you, as food business operators, to achieve the standards of hygiene required to conform with the new legislation as it applies to milk production holdings. Each section clearly identifies the specific requirements of the Regulations and also provides advice on good practice.

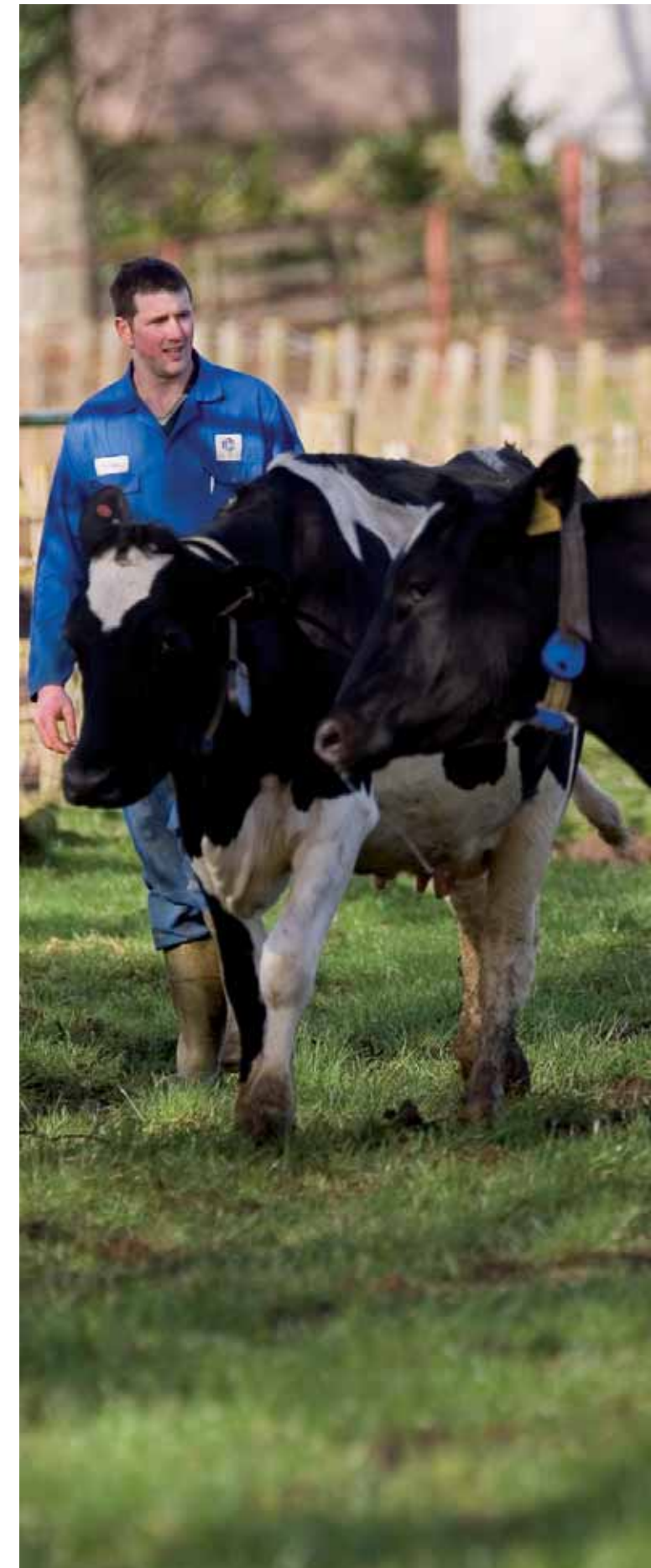
A copy of the booklet has been sent to all registered milk production holdings in Scotland. All those involved in the production of milk should find it a valuable tool in their day-to-day operations.



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Acknowledgements

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Key sources of contamination of raw milk

Milk can be contaminated at any point in the milk production process.

It is the responsibility of the food business operator (milk producer) to identify these points and implement control measures to protect milk from contamination.



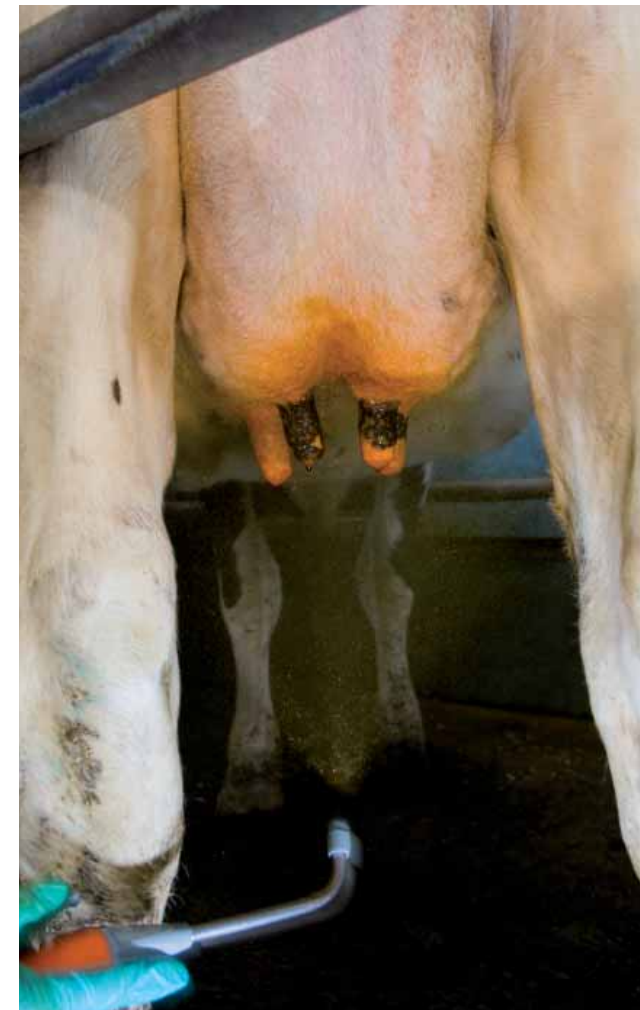
The key sources of contamination are:

- faecal contamination from soiled animals – especially teats, udders and tails;
- bacterial contamination from poor milking practices, soiled hands, soiled equipment and failure to clean and disinfect teats prior to milking;
- contamination due to failure to detect abnormal milk (mastitis pathogens, blood and clots);
- physical contamination, especially from perished components in milking machines and bulk tanks, dust, bedding materials, dung, insects and animal hair;
- bacterial contamination from inadequate cleaning and disinfection of milking equipment and bulk milk tanks;
- chemical contamination from veterinary product residues, cleaning chemicals and use of non-food-grade equipment.

Reducing the risk of contamination

Animal cleanliness

- All animals should be kept clean.
- All lying areas should be of sufficient size and should be kept clean and dry.
- Passageways and access routes should be free from accumulations of dung and slurry.
- Fields, tracks and gateways should be well maintained and kept free from accumulations of dung, slurry and mud.



Milking practices

- Milk from each animal must be examined for physical, chemical and organoleptic abnormalities and, where abnormal milk is detected, this milk must be rejected.
- Teats, udders and adjacent parts must be clean before milking.
- Hands, contact surfaces and milking equipment must be kept clean at all times.

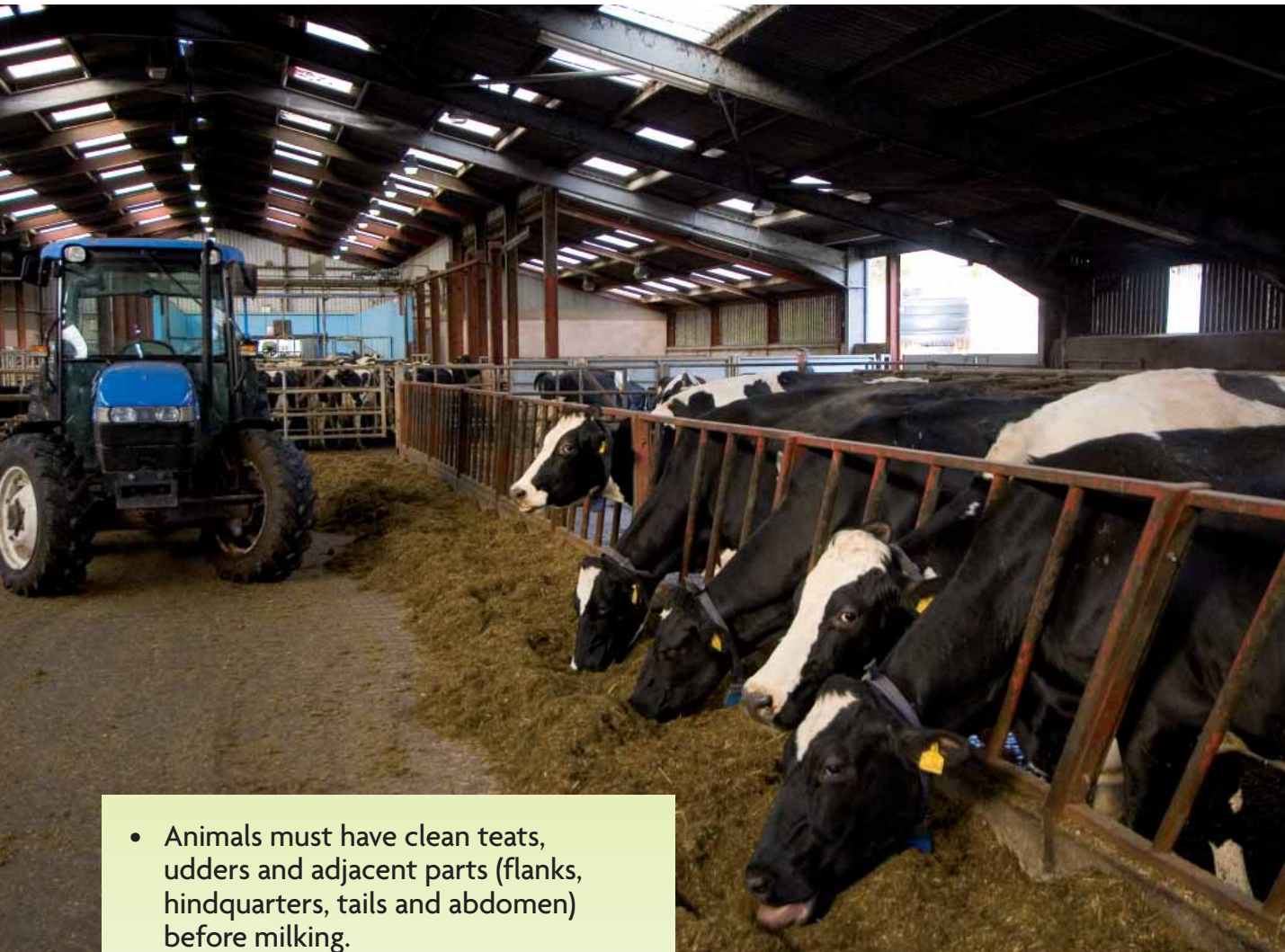
Milking equipment

- Milk contact surfaces must be appropriately cleaned and disinfected immediately after each milking.
- All equipment must be kept clean and in good condition.

Milk storage and cooling

- Milk must be protected from contamination during transfer and storage.
- Milk must be cooled quickly to minimise bacteria multiplication.
- Bulk tanks must be cleaned and disinfected after each milk collection and kept in good condition.





- Animals must have clean teats, udders and adjacent parts (flanks, hindquarters, tails and abdomen) before milking.
- Housing must be managed to avoid soiling of the animals.
- Milk from animals showing a positive reaction to a test for either tuberculosis or brucellosis must not be used for human consumption.
- Milk for human consumption must come from animals that are in good health.

Cleanliness management

In addition to good design and management of housing, there are several measures that can be implemented to improve animal cleanliness.

- Trim or clip tails at housing and turn-out. Cows with a clean, trimmed tail will attract fewer flies.
- Flaming of udders and/or clipping of flanks, bellies and udders reduces the amount of soil or faeces which can adhere to these areas.
- Remove dirt manually and encourage grooming with cow brushes.
- Clean animals are more likely to remain disease-free and are less likely to contaminate the milk with harmful bacteria at milking time.

General health

Where there is evidence that an animal is not in good health – and especially where there is a discharge from the genital tract, enteritis with diarrhoea and fever or an infection of the udder – the milk must not be used for human consumption. Milk from cows failing a test for brucellosis or for Tuberculosis, or that have three inconclusive tests, must not be used for human consumption.

Cubicles

There should be at least one cubicle per cow, designed to encourage cows to lie down in them. Dimensions should be calculated to accommodate the largest cows in the herd. Brisket boards and head rails should be adjusted so that animals do not soil the beds. Cows that refuse to use cubicles and become heavily soiled must be cubicle-trained, culled or accommodated where they can be kept clean (loose-housed or at grass).

Good bedding helps to minimise soiling and improves animal comfort. Where mats or mattresses are fitted, absorbent bedding material should also be used. All passageways, loafing areas and cubicles should be kept free of accumulations of dung, slurry and stale feed.

Loose yards

Loose yards should not be overcrowded. For average cows of 600kg, a bedded area of 6.5m² and loafing area of 2.5m² per animal is recommended.

The recommended bedded area per animal for goats is 1.8m² and for sheep is 1.4m².

Water troughs should not be sited in the bedded area.

Good yard management includes at least daily bedding, with complete removal of the bedding recommended every four to six weeks.

All passageways and loafing areas should be kept free of accumulations of dung, slurry and stale feed.

Access routes

Access between the milking area, the housing or pasture should be kept free from accumulations of dung and slurry, be kept in good condition and be free-draining.





- The milking area must be sited and constructed to ensure satisfactory hygienic conditions during milking.
- The milking area and immediate surroundings must be kept clean.
- Sufficient potable water must be available in the milking area for hand washing, udder and teat washing, and for rinsing and cleaning equipment. Clean water can be used for other purposes.

Structure

Design features must minimise the risk of contamination from any source, including dust, flies, birds or other animals. Open parlours can be accepted in situations where hygiene risks are minimised and very high standards of management are maintained. They are not permitted if birds can gain access or where there is excessive dust contamination from adjacent areas. A parlour that can be properly sealed off from other buildings is the best practice.

Floors should be impervious to water and be free-draining. Sufficient fall from the area under the udder is important to ensure this area can be kept clean and free from pooling during milking.

Doors and walls should be smooth and impervious and easy to keep clean. For walls, good quality, smooth cement rendering is adequate. Alternatives are available, including sealed plastic cladding, smooth concrete panels or direct-bonding fibreglass.

Roof or loft floors should be made of dust-proof sheet material and be easy to clean. Any false ceiling should be of an impervious material and steps must be taken to prevent vermin infestation in the void.

Sufficient ventilation is required to provide clean air and avoid condensation.

Artificial lighting – ideally strip lights with shatterproof and waterproof diffusers – is essential to provide good visibility for all milking and cleaning operations.

All drainage should discharge to a suitable drainage system.

Management

A hose of sufficient volume and force to wash equipment and cow standings thoroughly should be used during and after milking.

Warm running water, preferably containing a suitable disinfectant, should be available. This is to rinse hands, protective clothing, udders and equipment whenever they become soiled. Paper towels should also be available.

A suitable bin should be available for the disposal of used towels and other waste. This should be emptied after each milking.

Within a milking area, all floors, walls, fittings and touch points should be cleaned thoroughly after each milking. The upper walls and ceiling should be kept free from accumulations of dust and cobwebs.

Animals may have access up to the entrance and exit of the milking area between milkings but dung, slurry and other noxious materials must be prevented from accumulating on floors, walls and fittings in these areas.

Cowsheds

Where cows are housed and milked in a cowshed, the area under the cow, the dung channels and any operator walkways should be cleaned immediately before milking and be managed to control the risk of contamination during milking. The milking units should not be stored in the cowshed.

Automatic milking systems

In automatic milking systems (AMS) the milking area should be closed off as much as is practicable. Positive pressure ventilation may be required to force air away from the milking area.

Floors under and adjacent to the AMS should slope away from the milking area.

No dung or slurry storage is permitted within close proximity to the AMS.

Please contact your local authority environmental health department if you are considering the installation of an AMS.



A good milking technique is essential for the production of safe raw milk.



- Teats, udders and adjacent parts must be clean before cluster attachment.
- Teat dips and sprays must be used in accordance with the manufacturer's instructions.
- Milk from each animal must be examined at each milking.
- When identified, abnormal milk must be kept separate and not used for human consumption.
- Milk from animals showing clinical signs of udder disease must be kept separate and not used for human consumption.
- Animals producing milk that is unfit for human consumption must be clearly identified.
- Milking equipment must be kept clean at all times.
- Hands must be cleaned before milking and kept clean during milking and milk handling. Exposed skin wounds must be hygienically covered.

Operator hygiene

The operator must wear clean clothing during milking and when handling milk.

Operators must wash their hands and forearms thoroughly before milking, and these parts (as well as gloves, if worn) must be kept clean during milking and milk handling.

Smoking is not permitted in the milking area.

Teat cleaning

It is important to clean teats before milking to remove both visible soiling (e.g. faeces, bedding, mud or residual post-milking disinfectants) and bacteria that could contaminate the milk.

Research by the Food Standards Agency (FSA) has shown that the amount of bacteria on teats is not necessarily linked to visible cleanliness, so all cows should be cleaned, not just those with visibly soiled teats.

Thorough washing and drying can be followed by wiping with disinfectant-impregnated towels or by treating with an approved pre-dip solution, which must be effectively removed before the cluster is attached. Dry wiping is not recommended as research has shown this method does not remove bacteria effectively.

Fore-milking

Milk from each animal must be checked for physical, chemical and organoleptic abnormalities. In most situations, this is most effectively done by taking fore-milk or by a combination of fore-milking and another method.

Fore-milking assists early detection of mastitis, removes potentially contaminated milk from the teat canal and stimulates milk let-down.

Abnormal milk

Animals producing abnormal milk or showing clinical signs of udder disease must be clearly identified. Milk from these animals must not be used for human consumption. The recommended means of excluding abnormal milk are:

- milking affected animals last (with a full sanitiser cleaning routine after each milking);
- milking into a dump bucket or dump line (with a clean, well-maintained separate cluster and milk tube).

Pre- and post-milking disinfectants

These must be used in accordance with the manufacturer's instructions. Dip cups and spray devices should be kept visibly clean.

Equipment cleaning

Any soiling of the milking equipment must be washed off before cluster re-attachment.

Excessive faecal matter should be cleaned off floors and stallwork as soon as is practicable, and before another animal or batch enters the milking area.

Milking environment

The movement of dusty feeds or bedding materials should not be carried out close to the milking area immediately before or during milking.

The air should be clean, as very large volumes of air are drawn in to the machinery during cluster attachment and removal, through air bleeds and during milk transfer. The equivalent to the entire volume of air in the milking area may be drawn into the equipment during milking.



- Equipment must be made from appropriate food-grade material and must be kept clean and in good condition at all times.
- Immediately after milking, equipment must be cleaned, disinfected and rinsed with potable water.



Recommended cleaning systems

Equipment should be hosed clean during milking. After each milking and prior to circulation cleaning, exterior surfaces should be scrubbed with warm sanitiser solution.

Interior surfaces should be cleaned after each milking by either:

- hot circulation cleaning – a warm pre-rinse, a hot re-circulation wash with a sanitiser solution and a final cold rinse (ideally containing 25ml hypochlorite/40l of water). Use of a milkstone remover is recommended where necessary to prevent scale build-up inside the equipment;
- or:
- acidified boiling water cleaning – a once through hot wash with acid solution (use a hypochlorite solution weekly in place of acid) – to prevent a build-up of a protein (biofilm).

In all cases:

- clean the vacuum pipelines at least monthly;
- check and clean 'blind' areas daily – e.g. clawpiece bungs, buttons, screw-threads and recorder jar reject taps.

Hot water recommendations

Circulation cleaning – 10–15l per milking unit. Water temperature should be as per manufacturer's instructions or start at 85°C and end at a temperature not less than 50°C.

Acidified boiling water – 14–18l per milking unit. Start at a minimum of 96°C. All milk contact parts of the equipment must reach 77°C for at least two minutes.

Check and record the hot water temperature regularly – at least every month.

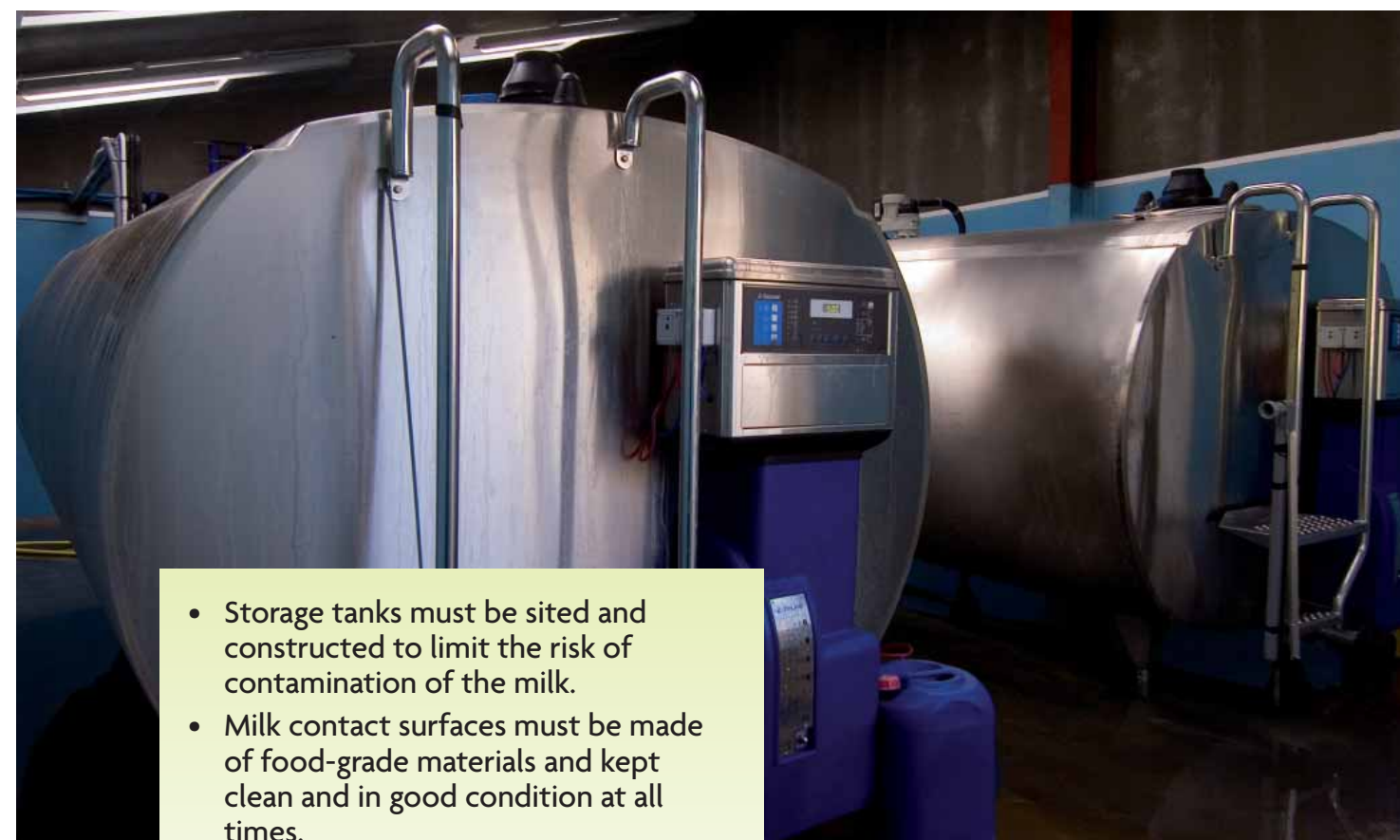
Cleaning efficiency

Even when meeting the hot water requirements, cleaning efficiency will still depend on:

- correct use and strength of chemicals;
- adequate flow rate of the cleaning solution;
- correct 'circulation balance' to ensure an even distribution of the cleaning solution.

Maintenance

Regularly inspect and renew perishable items to maintain them in good physical condition.



- Storage tanks must be sited and constructed to limit the risk of contamination of the milk.
- Milk contact surfaces must be made of food-grade materials and kept clean and in good condition at all times.
- Milk must be cooled quickly after each milking.
- Storage tanks must be adequately sealed to prevent physical contamination of milk.

Siting

Allow at least 600mm clear space around the tank to enable effective cleaning.

If any part of the tank or silo is sited outside the milk storage area, the tank outlet, air vent and inspection hatch must be constructed and managed to prevent contamination of the milk.

Milk cooling

Immediately after milking, milk must be cooled to not more than 8°C in the case of daily collection, or not more than 6°C if collection is less frequent.

Protection of milk

Keep bungs and covers in place at all times. During milking, there should be a closure around the delivery pipe into the milk tank.

Cleaning

The interior surfaces of the tank must be cleaned each time the tank is emptied. They should be:

- rinsed with potable water;
- cleaned with sanitiser solution;
- rinsed with potable water.

The exterior of the tank should be kept clean.

Acceptable cleaning methods include the following:

Manual cleaning with an iodophor solution or chemical powder paste, allowing 10 minutes' sanitiser contact time. Ensure less accessible areas (such as under tank bridges, around tank bungs and inside the outlet pipes) are cleaned.

Automatic cold cleaning using an iodophor or acid-based cleaning solution. A weekly manual clean with hypochlorite cleaning solution or powder is needed to maintain cleanliness.

Automatic hot cleaning using a hypochlorite-based sanitiser. Periodic treatment with milkstone remover is usually needed. Regularly check that the automatic cleaning systems are working. Manual cleaning of the outside surfaces of the tanks is necessary to maintain acceptable conditions.

Milk storage area

As a food storage area, the milk storage room needs to be managed to minimise the risk of contamination.



- The approach and surrounds must be kept clean.
- Doors should be kept closed.
- Vermin, birds and other animals must be excluded.
- The milk storage room must be kept clean at all times.
- The structure of the milk storage room must not expose milk to the risk of contamination.
- The milk storage room should not be used for purposes other than the cooling and storage of milk, and the cleaning and storage of milking equipment.

Siting and structure

The milk storage room must be sited in a clean area, away from obvious sources of contamination. The structure of the milk storage room must protect the milk from contamination and be kept clean and vermin-free. Siting of compressors in the milk storage area is not recommended.

Access

The access should have a hard standing, normally concrete. This needs to be large enough to allow clean access for the tanker driver to get from cab to milk storage area and for the collection hose to be positioned on a clean surface.

Access to other areas

Direct access between the milk storage room and livestock housing or handling areas, toilets or feed stores is not allowed, and direct access to parlours, motor rooms and offices is not recommended.

Floors and drainage

Floors should be impervious to water and free-draining, with a good slope to a suitable trapped drain, preferably within the milk storage room. External drainage must not be allowed to enter the milk storage area.

Walls and doors

All surfaces should be in good condition to full height. Surfaces liable to soiling should be smooth, impervious and easy to clean. Pervious masonry can be smooth-cement rendered, covered with wall cladding or smooth coating materials. Joints around and between cladding sheets need to be sealed. Doors may be hinged or sliding, but must fit well. Self-closing doors are recommended.

Roof and ceiling

These areas should be constructed to minimise the entry of dust and should be smooth, impervious and easy to clean.

Windows and lighting

Where windows are fitted, they should be free from damage and kept closed, unless protected with fly-proof mesh. Artificial lighting is required and all areas should be well lit. Light fittings should be free from rust or flaking paint and fitted with shatterproof covers.

Ventilation

Sufficient natural or fan-assisted ventilation should be provided. To avoid condensation, wash troughs should be covered and water heaters sited outside the milk storage area in a clean environment.

Fittings

To ensure effective cleaning, all fittings within the milk storage area should be smooth and impervious. They should be free from flaking paint and rust. This includes electrical fittings, which will generally need to be waterproof.



Protection against vermin

The milk storage room must be protected against vermin. Refer to page 14 for further details.

Separate washrooms

Where a separate washroom is provided for the washing of milking equipment, it must be constructed and managed to avoid contamination of the milk (i.e. in the same way as the milk storage area).

Management

The whole area must be managed to ensure satisfactory hygiene conditions. The approach and surrounds must be kept clean at all times. Doors should be kept closed. Walls and floors must be kept clean. Areas that become soiled must be washed after every milking. Upper areas and fittings should be cleaned regularly to prevent accumulations of dirt, dust and cobwebs.

The aim is to create a dedicated, clean food storage room. It should not be used as a thoroughfare, storeroom or general delivery point. It should be a restricted area for storing and cooling milk for human consumption and for the washing of milking and milk storage equipment. Only items immediately necessary for these processes may be stored in the milk storage room. Milk must be protected from contamination and steps must be taken to minimise the risk of contamination (e.g. avoid using the area for the preparation of calf feed, feeding other animals, or washing and storage of calving aids or calf buckets).

Poisons, medicines and veterinary materials should not be kept in the milk storage room, neither should it be used as a tearoom, office or for general boot washing or by veterinary or A.I. personnel.

A small, covered bin may be provided but should only be used for the disposal of any rubbish generated in the milk storage room. To prevent the accumulation of damp and dirty material, the bin should be emptied daily.

Smoking is not permitted in the milk storage area.

- Adequate measures must be taken to control insects, rodents and birds on the premises to avoid contamination.
- Animals must be isolated if they are infected, or suspected of being infected, with any disease transmitted to man through milk.
- All staff engaged in milk production must be trained in food hygiene, health risks and use of equipment.
- Appropriate records must be kept on feed supplies, veterinary products, disease that may affect the safety of the milk, and any results of samples and checks made on animals or their products.
- Sufficient potable water must be available in the milking area for hand washing, udder and teat washing, and for rinsing and cleaning equipment. Clean water can be used for other purposes.

Water supply

All water used in the parlour and milk storage room must be either potable water or clean water. A sufficient supply of potable water is required for hand washing, udder and teat washing, and for rinsing and cleaning equipment. Clean water can be used for other purposes.

If you are using a private water supply for dairy purposes you should contact your local authority Environmental Health Department for further advice on the required standards.

Header or storage tanks must be properly protected from contamination by rodents, birds, insects and dust.

Chemical composition of the supply will be important in choosing detergents. It will also determine the need for periodic treatments to prevent excessive scale in water heaters or deposits in milking equipment.



Pests, vermin and other animals

Adequate measures must be taken to control insects, rodents and birds on the premises to prevent contamination.

Control measures include:

- removal of rubbish and vegetation from around the milking and milk storage areas;
- keeping all feed in closed containers and removing waste feed from mangers after every milking;
- removing waste milk from the milk storage area after every milking;
- when baiting for the control of rodents, sketch baiting points and record renewal of materials.

Milk storage areas must be protected from vermin. As well as general vermin control, it may be necessary to use physical exclusion such as fitting fly screens on any openings (e.g. windows), sealing holes in walls (especially where pipes or wires pass through), fitting brush or rubber flaps to loosely fitting doors and to protecting drainage outlets.

Birds (including poultry), cats and dogs should not be allowed in the milk storage area, milking area or animal housing.

Veterinary supervision of dairy farms

Animals must be in a good state of health with no udder or uterine infection likely to infect the milk, and no symptoms of infectious diseases communicable to humans through milk. Animals that have been treated with a veterinary product must be clearly identified and any specified milk or meat withdrawal periods must be observed. Records of purchase and use of veterinary products must be kept and all veterinary products should be kept in a secure place. Records should be up to date (within 72 hours) and include the details given in the following table.

Minimum acceptable records of veterinary product use:

- date of administration
- identification of animal(s)
- product name
- quantity used
- milk withdrawal period
- meat withdrawal period

Veterinary products should be securely locked away when unattended, preferably not within the milk storage room.



Simple measures to prevent antibiotic contamination of milk

- All cows should be easily identifiable (using freeze branding, large ear tags or similar).
- All treated cows should be clearly marked using coloured tape or spray. Details of treated cows should be displayed in the milking area.
- Records should be kept of all treated cows. Records must identify the cow treated, the date and time of treatment, the product used and dose given, and the withdrawal period.
- Milk from treated cows should be withheld for the recommended time. Read instructions on medicines carefully and note the withdrawal period. Check withdrawal periods with your vet when a milking cow is injected with a drug or antibiotic. This is especially important when combined treatments have been administered.
- Milk from recently calved or bought-in cows should be withheld and tested. Be aware of cows calving early after dry cow therapy and cows that hold antibiotics in their systems longer than usual. On-farm testing kits are now available.
- Treated cows should be milked into a dump bucket or dump line using a separate cluster. If this is not possible, you should milk treated cows last, with the delivery pipe removed from the tank. You should also ensure that the plant is adequately cleaned to remove antibiotic residues.
- You should inform your milk buyer if antibiotic-contaminated milk enters the bulk tank. A sample will be tested before collection. On-farm testing kits are now available.
- You need to ensure that relief milkers (and anyone else involved in the milking parlour) are aware of your systems for identifying treated cows and withholding milk from these animals. A simple instruction/procedure sheet may be helpful.

Isolation facilities

Milk from animals with positive results for tuberculosis or brucellosis tests must not be used for human consumption. These animals must be kept in isolation, milked last, with the milking equipment subsequently cleaned with a full sanitising wash routine and the milk disposed of appropriately.

Where animals are suspected or confirmed to be suffering from infectious diseases, they must be isolated.

The isolation facilities should have separate drainage and air space, be secure with an anti-slip floor, have good ventilation and suitable lighting and be easy to clean and disinfect.

Consideration should also be given to the need to milk animals in isolation and the ability to remove carcasses.

Personnel

Persons suffering from an illness or those classed as carriers of a disease which could contaminate the milk (e.g. food poisoning) must not carry out milking or handle milk.

All personnel must have clean hands, wear clean clothing and carry out clean practices. Adequate hand washing facilities and a hygienic method of hand drying should be available close to the milking area.

A first aid kit containing waterproof dressings to cover sores, cuts and open wounds when in the milking or milk storage areas should be easily accessible.

Smoking is not permitted in areas used for milking, milk storage or washing up.

Food business operator – persons responsible, naturally or legally, for ensuring that food law requirements are met.

Contamination – presence or introduction of a hazard.

Milk storage area – dairy tank room.

Milking area – shippon, cowshed, bail or parlour.

Potable water – water satisfying the requirements of Council Directive 98/83/EC of 3 November 1998.

Clean water – water that does not contain micro-organisms, harmful substances or toxic plankton in quantities capable of directly or indirectly affecting the health quality of food.

Sanitiser – a chemical that both cleans and disinfects.

Disinfection – a process of reducing the number of bacteria to an acceptable level.





Legislation

REGULATION (EC) NO 852/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 on the hygiene of foodstuffs

Article 6 – Official controls, registration and approval

1. Food business operators shall cooperate with the competent authorities in accordance with other applicable Community legislation or, if it does not exist, with national law.
2. In particular, every food business operator shall notify the appropriate competent authority, in the manner that the latter requires, of each establishment under its control that carries out any of the stages of production, processing and distribution of food, with a view to the registration of each such establishment.

Food business operators shall also ensure that the competent authority always has up-to-date information on establishments, including by notifying any significant change in activities and any closure of an existing establishment.

Annex 1 – Primary production

Part A: General hygiene provisions for primary production and associated operations

I. Scope

1. This Annex applies to primary production and the following associated operations:
 - (a) the transport, storage and handling of primary products at the place of production, provided that this does not substantially alter their nature;
 - (b) the transport of live animals, where this is necessary to achieve the objectives of this Regulation.

II. Hygiene provisions

2. As far as possible, food business operators are to ensure that primary products are protected against contamination, having regard to any processing that primary products will subsequently undergo.

3. Notwithstanding the general duty laid down in paragraph 2, food business operators are to comply with appropriate Community and national legislative provisions relating to the control of hazards in primary production and associated operations, including:
 - (a) measures to control contamination arising from the air, soil, water, feed, fertilisers, veterinary medicinal products, plant protection products and biocides and the storage, handling and disposal of waste; and
 - (b) measures relating to animal health and welfare and plant health that have implications for human health, including programmes for the monitoring and control of zoonoses and zoonotic agents.
4. Food business operators rearing, harvesting or hunting animals or producing primary products of animal origin are to take adequate measures, as appropriate:
 - (a) to keep any facilities used in connection with primary production and associated operations, including facilities used to store and handle feed, clean and, where necessary after cleaning, to disinfect them in an appropriate manner;
 - (b) to keep clean and, where necessary after cleaning, to disinfect, in an appropriate manner, equipment, containers, crates, vehicles and vessels;
 - (c) as far as possible to ensure the cleanliness of production animals;
 - (d) to use potable water, or clean water, whenever necessary to prevent contamination;
 - (e) to ensure that staff handling foodstuffs are in good health and undergo training on health risks;
 - (f) as far as possible to prevent animals and pests from causing contamination;
 - (g) to store and handle waste and hazardous substances so as to prevent contamination;

- (h) to prevent the introduction and spread of contagious diseases transmissible to humans through food, including by taking precautionary measures when introducing new animals and reporting suspected outbreaks of such diseases to the competent authority;
 - (i) to take account of the results of any relevant analyses carried out on samples taken from animals or other samples that have importance to human health;
 - (j) to use feed additives and veterinary medicinal products correctly, as required by the relevant legislation.
5. Food business operators producing or harvesting plant products are to take adequate measures, as appropriate:
 - (h) to use plant protection products and biocides correctly, as required by the relevant legislation.
 6. Food business operators are to take appropriate remedial action when informed of problems identified during official controls.

III. Record-keeping

7. Food business operators are to keep and retain records relating to measures put in place to control hazards in an appropriate manner and for an appropriate period, commensurate with the nature and size of the food business. Food business operators are to make relevant information contained in these records available to the competent authority and receiving food business operators on request.
8. Food business operators rearing animals or producing primary products of animal origin are, in particular, to keep records on:
 - (a) the nature and origin of feed fed to the animals;
 - (b) veterinary medicinal products or other treatments administered to the animals, dates of administration and withdrawal periods;
 - (c) the occurrence of diseases that may affect the safety of products of animal origin;

- (d) the results of any analyses carried out on samples taken from animals or other samples taken for diagnostic purposes, that have importance for human health; and
- (e) any relevant reports on checks carried out on animals or products of animal origin.

REGULATION (EC) NO 853/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 laying down specific hygiene rules for food of animal origin

Annex III – Section IX: Raw milk and dairy products

Chapter 1: Raw milk primary production

Food business operators producing or, as appropriate, collecting raw milk must ensure compliance with the requirements laid down in this Chapter.

I. Health requirements for raw milk production

1. Raw milk must come from animals:
 - (a) that do not show any symptoms of infectious diseases communicable to humans through milk;
 - (b) that are in a good general state of health, present no sign of disease that might result in the contamination of milk and, in particular, are not suffering from any infection of the genital tract with discharge, enteritis with diarrhoea and fever, or a recognisable inflammation of the udder;
 - (c) that do not have any udder wound likely to affect the milk;
 - (d) to which no unauthorised substances or products have been administered and that have not undergone illegal treatment within the meaning of Directive 96/23/EC; and
 - (e) in respect of which, where authorised products or substances have been administered, the withdrawal periods prescribed for these products or substances have been observed.

2. In particular, as regards brucellosis, raw milk must come from:
 - (a) cows or buffaloes belonging to a herd which, within the meaning of Directive 64/432/EEC¹, is free or officially free of brucellosis;
 - (i) Council Directive 64/432/EEC of 26 June 1964 on animal health problems affecting intra-Community trade in bovine animals and swine (OJ L21, 29.7.1964, p. 1977/64). Directive as last amended by the 2003 Act of Accession. 25.6.2004 EN Official Journal of the European Union L 226/69.
 - (ii) sheep or goats belonging to a holding officially free or free of brucellosis within the meaning of Directive 91/68/EEC²; or
 - (iii) females of other species belonging, for species susceptible to brucellosis, to herds regularly checked for that disease under a control plan that the competent authority has approved.
 - (b) As regards tuberculosis, raw milk must come from:
 - (i) cows or buffaloes belonging to a herd which, within the meaning of Directive 64/432/EEC, is officially free of tuberculosis; or
 - (ii) females of other species belonging, for species susceptible to tuberculosis, to herds regularly checked for this disease under a control plan that the competent authority has approved.
 - (c) If goats are kept together with cows, such goats must be inspected and tested for tuberculosis.
3. However, raw milk from animals that do not meet the requirements of point 2 may be used with the authorisation of the competent authority:
 - (a) in the case of cows or buffaloes that do not show a positive reaction to tests for tuberculosis or brucellosis, nor any symptoms of these diseases, after having undergone a heat treatment such as to show a negative reaction to the phosphatase test;

- (b) in the case of sheep or goats that do not show a positive reaction to tests for brucellosis, or which have been vaccinated against brucellosis as part of an approved eradication programme, and which do not show any symptom of that disease, either:
 - (i) for the manufacture of cheese with a maturation period of at least two months; or
 - (ii) after having undergone heat treatment such as to show a negative reaction to the phosphatase test; and
 - (c) in the case of females of other species that do not show a positive reaction to tests for tuberculosis or brucellosis, nor any symptoms of these diseases, but belong to a herd where brucellosis or tuberculosis has been detected after the checks referred to in point 2(a)(iii) or 2(b)(ii), if treated to ensure its safety.
4. Raw milk from any animal not complying with the requirements of points 1 to 3, in particular any animal showing individually a positive reaction to the prophylactic tests vis-a-vis tuberculosis or brucellosis as laid down in Directive 64/432/EEC and Directive 91/68/EEC, must not be used for human consumption.
 5. The isolation of animals that are infected, or suspected of being infected, with any of the diseases referred to in point 1 or 2 must be effective to avoid any adverse effect on other animals' milk.

II. Hygiene on milk production holdings

A. Requirements for premises and equipment

1. Milking equipment, and premises where milk is stored, handled or cooled must be located and constructed so as to limit the risk of contamination of milk.
2. Premises for the storage of milk must be protected against vermin, have adequate separation from premises where animals are housed and, where necessary to meet the requirements laid down in Part B, have suitable refrigeration equipment.

3. Surfaces of equipment that are intended to come into contact with milk (utensils, containers, tanks, etc. intended for milking, collection or transport) must be easy to clean and, where necessary, disinfected and be maintained in a sound condition. This requires the use of smooth, washable and non-toxic materials.
4. After use, such surfaces must be cleaned and, where necessary, disinfected. After each journey, or after each series of journeys when the period of time between unloading and the following loading is very short, but in all cases at least once a day, containers and tanks used for the transport of raw milk must be cleaned and disinfected in an appropriate manner before re-use.

B. Hygiene during milking, collection and transport

1. Milking must be carried out hygienically, ensuring in particular:
 - (a) that, before milking starts, the teats, udder and adjacent parts are clean;
 - (b) that milk from each animal is checked for organoleptic or physico-chemical abnormalities by the milker or a method achieving similar results and that milk presenting such abnormalities is not used for human consumption;
 - (c) that milk from animals showing clinical signs of udder disease is not used for human consumption otherwise than in accordance with the instructions of a veterinarian;
 - (d) the identification of animals undergoing medical treatment likely to transfer residues to the milk, and that milk obtained from such animals before the end of the prescribed withdrawal period is not used for human consumption; and
 - (e) that teat dips or sprays are used only if the competent authority has approved them and in a manner that does not produce unacceptable residue levels in the milk.

2. Immediately after milking, milk must be held in a clean place designed and equipped to avoid contamination.

It must be cooled immediately to not more than 8°C in the case of daily collection, or not more than 6°C if collection is not daily.
3. During transport the cold chain must be maintained and, on arrival at the establishment of destination, the temperature of the milk must not be more than 10°C.
4. Food business operators need not comply with the temperature requirements laid down in points 2 and 3 if the milk meets the criteria provided for in Part III and either:
 - (a) the milk is processed within two hours of milking; or
 - (b) a higher temperature is necessary for technological reasons related to the manufacture of certain dairy products and the competent authority so authorises.

C. Staff hygiene

1. Persons performing milking and/or handling raw milk must wear suitable clean clothes.
2. Persons performing milking must maintain a high degree of personal cleanliness. Suitable facilities must be available near the place of milking to enable persons performing milking and handling raw milk to wash their hands and arms.

III. Criteria for raw milk

1. The following criteria for raw milk apply pending the establishment of standards in the context of more specific legislation on the quality of milk and dairy products.
2. A representative number of samples of raw milk collected from milk production holdings taken by random sampling must be checked for compliance with points 3 and 4.

¹ Council Directive 64/432/EEC of 26 June 1964 on animal health problems affecting intra-Community trade in bovine animals and swine (OJ L21, 29.7.1964, p. 1977/64). Directive as last amended by the 2003 Act of Accession.

² Council Directive 91/68/EEC of 28 January 1991 on animal health conditions governing intra-Community trade in ovine and caprine (OJ L 46, 19.2.1991, p. 19). Directive as last amended by Regulation (EC) No 806/2003 (OJ L 122, 16.5.2003, p. 1).

The checks may be carried out by, or on behalf of:

- (a) the food business operator producing the milk;
- (b) the food business operator collecting or processing the milk;
- (c) a group of food business operators; or
- (d) in the context of a national or regional control scheme.

3. (a) Food business operators must initiate procedures to ensure that raw milk meets the following criteria:

(i) for raw cows' milk:

Plate count at 30°C (per ml) < 100 000*

Somatic cell count (per ml) < 400 000**

*Rolling geometric average over a two-month period, with at least two samples per month.

**Rolling geometric average over a three-month period, with at least one sample per month, unless the competent authority specifies another methodology to take account of seasonal variations in production levels.

(ii) for raw milk from other species:

Plate count at 30°C (per ml) < 1 500 000*

*Rolling geometric average over a two-month period, with at least two samples per month.

(b) However, if raw milk from species other than cows is intended for the manufacture of products made with raw milk by a process that does not involve any heat treatment, food business operators must take steps to ensure that the raw milk used meets the following criterion:

Plate count at 30°C (per ml) < 500 000*

*Rolling geometric average over a two-month period, with at least two samples per month.

4. Without prejudice to Directive 96/23/EC, food business operators must initiate procedures to ensure that raw milk is not placed on the market if either:

(a) it contains antibiotic residues in a quantity that, in respect of any one of the substances referred to in Annexes I and III to Regulation (EEC) No 2377/90³, exceeds the levels authorised under that Regulation; or

(b) the combined total of residues of antibiotic substances exceeds any maximum permitted value.

5. When raw milk fails to comply with points 3 or 4, the food business operator must inform the competent authority and take measures to correct the situation.

REGULATION (EC) NO 854/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption

Chapter 2 – Article 4

Member States shall ensure that food business operators offer all assistance needed to ensure the official controls carried out by the competent authority can be performed effectively.

They shall in particular:

- give access to all buildings, premises, installations or other infrastructures;
- make available any documentation and record required under the present regulation or considered necessary by the competent authority for judging the situation.

Annex IV – Raw milk and dairy products

Chapter 1: Control of milk production holdings

1. Animals on milk production holdings must be subject to official controls to verify that the health requirements for raw milk production, and in particular the health status of the animals and the use of veterinary medicinal products, are being complied with.

The Food Hygiene (Scotland) Regulations 2006

Part 3: Administration and enforcement

Obstruction etc. of officers

1. Any person who:
 - (a) intentionally obstructs any person acting in the execution of the Hygiene Regulations; or
 - (b) without reasonable cause, fails to give any person acting in the execution of the Hygiene Regulations any assistance or information which that person may reasonably require of him for the performance of functions under the Hygiene Regulations, is guilty of an offence.
2. Any person who, in purported compliance with any such requirement as is mentioned in paragraph (1)(b):
 - (a) furnishes information which he knows to be false or misleading in a material particular; or
 - (b) recklessly furnishes information which is false or misleading in a material particular, is guilty of an offence.
3. Nothing in paragraph (1)(b) shall be construed as requiring any person to answer any question or give any information if to do so might incriminate that person.

Schedule 6, Regulation 32: Restrictions on the placing on the market of raw milk and raw cream intended for direct human consumption

1. No person shall place on the market raw milk, or raw cream, intended for direct human consumption.
2. Any person who contravenes paragraph 1 is guilty of an offence.
3. In any proceedings for an offence in respect of a contravention of paragraph 1, it shall be a defence for the accused to prove that the raw milk or raw cream in respect of which the offence is alleged to have been committed was intended for export:
 - (a) to England, Wales or Northern Ireland or to a Member State other than the United Kingdom and that the milk or cream complies with Regulation 853/2004 and with any national rules applicable to that part of the United Kingdom or to that Member State, made pursuant to Article 10.8(a) of Regulation 853/2004;
 - (b) to a third country in accordance with Article 12 of Regulation 178/2002 as read with Article 11 of Regulation 852/2004.

³ Council Regulation (EEC) No 2377/90 of 26 June 1990 laying down a Community procedure for the establishment of maximum residue limits of veterinary medicinal products in foodstuffs of animal origin (OJ L 224, 18.8.1990, p. 1). Regulation as last amended by Commission Regulation (EC) No 546/2004 (OJ L 87, 25.3.2004, p. 13).

Further information

If you have any comments or questions concerning these guidelines or The Food Hygiene (Scotland) Regulations 2006 or any proposed changes to your premises or practices, please contact your local authority Environmental Health Department or the Food Standards Agency Scotland:

Food Standards Agency Scotland

6th Floor

St Magnus House

25 Guild Street

Aberdeen

AB11 6NJ

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A full copy of these regulations is available online at www.opsi.gov.uk

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