Draft 19/4/18

FACTORS WHICH MAY REDUCE OR INCREASE RISK of PATHOGEN CONTAMINATION IN RAW MILK

Factors REDUCING Risk	Factors which MAY INCREASE Risk
MILKING ANIMALS, FEED, GRAZING & HUSBANDRY	
- Registered production Holding - Breed of cow less susceptible to mastitis eg Dairy Shorthorn - Third Party Inspection or Accreditation/Contract with national milk buyer cooperative - Closed herd - Numbers in herd: staff ratio - Culling programme - Geographical location - TB free within 6 months - Brucellosis free - Vet consultation (animal health) contract - Mastitis and SCC control - Potable water source for drinking - High roughage diet eg hay,barley (less liquid slurry) - No bird roosts on farm - Cut faces of silage protected from birds - Soil spoilage minimal in silage - Feral animal access to feed - No grazing on land slurried within 10 days - No maize feed - Managed grazing areas (cows per acre) - Drying off management - Bedding type: paper mache, straw, sawdust - Regular scraping of yards and housing alleyways - Clipped clean rear ends - Regular, well-established, trained or supervised herdsmen - Minimal reliance on relief or agency staff - Herdsmen can * relate status of individual cows * understand source of pathogens * understand requirements of raw milk and pasteurised cheesemaking * understand effect of Antibiotics - Well-maintained health and A/B treatment records & applied tail tags -	- No registration - No current contract - No accreditation - Bought in cattle from TB risk areas - Sudden increase in herd numbers - No planned culling - Pathogen incidence high risk area - No vet programme - Regular flooding over grazing land - Cows drink in standing water eg ponds, river banks - Bird roosts or geese grazing - Feral or domestic animals around housing and feed stores esp silage and maize - Dog walkers/footpath through land - cool wet summers when cows are out - Regular scavenging bird roosts eg crows, rooks, magpies, starlings - Slurry accumulation - Sparse and dirty bedding - Muddy cows - Regular agency or relief herdsmen - Low level of knowledge/training in records and poor inspection interview responses - Inaccurate, illegible, incomplete animal health records

Factors REDUCING Risk	Factors which MAY INCREASE Risk
OTHER MANAGEMENT ACTIVITIES	
- Current Hazard Analysis for primary production which • Identifies specific pathogens and correlated controls (eg as listed in this document) • Identifies other contaminants and specified controls eg antibiotics, mycotoxins in feed	- No hazard analysis - Minimal understanding of source of pathogens and prevention measures
- Sampling & testing which includes hygiene indicators and pathogens - History of minimal pathogen occurrence	- No pathogen testing - History of routine presence of pathogens - - Erratic and high SCCs
- History of low level of TVC (eg <10,000) and/or Bactoscan (eg <50,000)	
- May have made raw milk cheese in past	
- Specified farms or herds for supply - Inspection or visit to farm with assessment of these risk factors	- Buying in Raw Milk - Irregular or untrained relief staff - No agreement or spec for raw milk supply
- Occasional visits during inspection of cows and milking. (One cheesemaker in Shropshire selects 'cows of the day'!)	- Family disputes
- Higher payments (?)	- Untreated bore hole or spring water
- Pest Control measures / contract - Filter micro testing	- Evidence of rat runs, droppings or daytime sightings
- Incubation test for souring or faecal indicators	
- *Delvotest SP* Inhibitory Substance test	
- Pasteurised milk also supplied and this can be offered if eg. reactors are identified and a Heat Treatment Order is issued	

Factors REDUCING Risk	Factors which MAY INCREASE Risk
PARLOUR, PREPARATION & MILKING EQUIPMENT	
- Able to exclude milk of animals which eg • show signs of illness/off colour • have individual traits eg lying off bedding with udder in gutter • irregularities in udder signs • unsatisfactory foremilk • accidentally standing on udder when getting up • have pendulous or crenelated/warty skin on udders - complete milk let down and timely removal of clusters - 30 mins standing after milking for teat sphincter to close - Well-appointed, clean, unsoiled walls, pit and floors - Well lit for inspection - Paper, towels, gloves & H/Washing facilities for herdsmen - Equipped with hoses, dump buckets, churns etc for removal of spillages and reject milk - Established & validated udder preparation & post-milking treatments for the herd - Adequate CIP chemicals • Caustic with EDTA and acid chemicals • Temp • Time • Validated with milk results or swabs - Robotic milking system - Retractable clusters - Cluster flush (peracetic acid) between udders - Maintained and clean vacuum joints and seals - Milking parlour service contract – 6 or 12 monthly? - Inspection jars? - Inspection of filter	- Dusty, soiled, cracked, missing surfaces - Neglect of herdsmen's hand hygiene - No facilities for dumping reject milk - Over or under milking - No standing time - Hard water area and no water softening - Temperature not maintained and unable to check chemical dosage - Minimal or no udder and animal inspection prior to applying clusters No maintenance: perished seals, joints, O rings and valves
BULK TANK	
- Possible to carry out internal inspection including • spray balls for scale & effective clean • Sensory inspection of milk. - Capable of maintaining • Less than 10°C • Less than 8°C for single day collection • < 6°C for 2 day collection - LED temp display validated and probe located and known - Adequate CIP chemicals • Caustic with EDTA and acid chemicals • Temp • Time • Validated with milk results or swabs - Lid and outlet valve and seals inspected and replaced as necessary. - Jacket integrity tests? - Access for sampling - Access security	- Restricted or no access - Unable to maintain legal temperatures

Factors REDUCING Risk	Factors which MAY INCREASE Risk
TRANSFER OR TRANSPORT OF MILK **Eg from different farm holdings or herds rather than direct pipeleine**	
INDUSTRY EX-Farm ROAD TANKER/barrel	
- Dedicated to milk - Barrel not hired - Adequate CIP chemicals • Caustic with EDTA and acid chemicals • Temp • Time • Validated with milk results or swabs - CIP at least once per working day - **If contracted**: - Cleaned on hauliers own site or major dairy site - Log or printout confirming time, temperature and litres of CIP volumes - regular trained experienced driver - DTAS accredited with procedure & driver training on special collection requirements which will include- • CIP prior to specified farm collection • First and exclusive collection of cheesemaker's raw milk and delivery prior to remainder of collections • Sampling procedure • Rejection procedure • Sensory check - Inspection of filter & flexi	- Independent road tanker which may carry other foodstuffs inc allergens or is not dedicated to dairy - Reload or sub-contracted - Hard water area and no water softening - Temperature not maintained and unable to check chemical dosage - Not cleaned at food tanker station - CIP logs inconsistent - Different or agency drivers - Hired, replacement barrel - Tankers where visual inspection not possible as top manway is absent - No sampling or inspection point at arrival at Cheesemaker's No maintenance: perished seals, joints, O rings and valves
IBCs or Churns	
- Clean flexi - hygienic connection to floor level outlet - Sheltered unloading - Procedures to prevent external contamination of churns- • When transferring into dairy • Removal of lid • Lm when holding base of container to empty • External soil entering vat	- Owned/provided by supplying farmer but details of • Cleaning schedule • Cleaning records • Validation of cleaning method • Dedicated use • Storage when not in use • Cannot be provided or validated
Small mobile tanker	
- Owned and cleaned by proprietor who can present schedules, records and verification - Collection made by proprietor - Dedicated to milk	- Owned/provided by supplying farmer but details of • Cleaning schedule • Cleaning records • Validation of cleaning method • Dedicated use • Storage when not in use • Scope of use cannot be provided, verified or validated

Factors REDUCING Risk	Factors which MAY INCREASE Risk
BOTTLE FILLERS & VENDING MACHINES	
The room and equipment are well-appointed , clean and well lit with the presentation of food handling or retail standards and not agricultural/workshop standards. Cleaning and disinfection schedules in place Equipment and utensils dedicated to that room and its filling or dispensing operations Removal of outerwear at entrance especially during wet or winter weather Cleaning, dismantling, reassembly and filling carried out in accordance with food handling/retail standards. Work surfaces above floor level to clean, drain or dry equipment. Potable and hot water supply. Handwashing facilities available Hygienic storage of containers and tops Chilled storage of finished product Shelf-life determined, with policy of disposal of waste or unsold product. Correct Raw Milk marking or labelling stipulation	- General walk through through or multi use room - No cleaning and disinfection facilities in place - No treated or potable water supply - No hot water provision for cleaning - Filling or capping operations near floor level - Generally not fabricated or appointed to food/retail handling standards