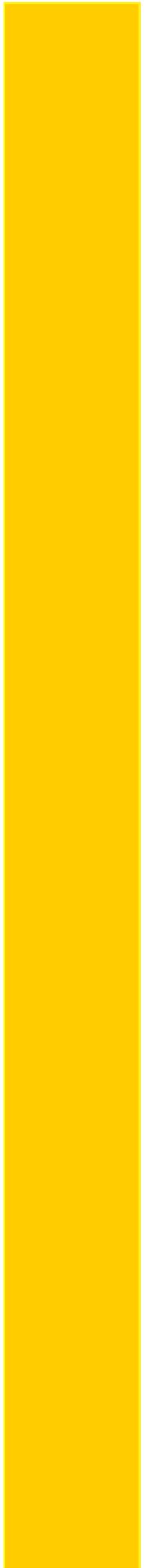


Department of Agriculture

Farm Management Handbook

Veterinary Section

(Colour code: Yellow)



ANIMAL MOVEMENT CERTIFICATE

The Animal Movement Certificate is a merging of two former documents: the Waybill and the Animal Transport Certificate (used by transporters). **The Animal Movement Certificate is for all commercial stock movements, not just those to the abattoir.**

This document is immensely important, and if incompletely filled, may result in refusal of stock at the abattoir. It covers three major facets of the EU abattoir accreditation:

1. Traceability of stock. This allows monitoring for disease in the abattoir as well as a fast and efficient response should a potentially infectious disease be identified in the carcass.
2. Good welfare for the animals when transported. This is important for the animals, for meat quality, to satisfy external audits, and to satisfy overseas customers. The modern consumer expects good welfare or refuses the product.
3. Control of drug residues entering the food chain.

Drug residues:

The control of drug and chemical residues is of vital importance. Each year the abattoir operates an EU approved programme of sampling for a wide range of chemical residues in meat. Positive tests can have a major impact on future exports and any future organic or part organic status. The last section of the form, Section 13, contains a farmer's declaration for any treatments administered within the past 5 months to the stock being sent. **THIS MUST BE FILLED IN.** This does not mean they cannot be killed. 5 months has been chosen because it covers some of the longest meat withdrawal times of any drug. It allows us to check that the animals have not been sent to slaughter for human consumption before the withdrawal time has passed. It also allows us to trace back and explain any anomalous lab results. For example: if the antibiotic Noracillin LA has been used, the withdrawal time stated on the bottle is now 60 days. If this was over 60 days ago there is no problem, but the drug still needs to be declared. All farmers should keep an animal medicine record book in their drugs cabinet for all treatments administered. It is good practice, provides quick and easy reference, and prevents mistakes. Perhaps one of the greatest risks posed comes from wormers, often used to finish off stock in the period before slaughter, and easily forgotten about. The injectable wormers particularly have long withdrawal times. If you are sending sheep to the abattoir, plan ahead, look up withdrawal periods and work out dates.

Withdrawal time:

The withdrawal time - otherwise known as the withholding period - is literally the period of time that must elapse after a treatment is given before the meat (milk/eggs) can be used for human consumption. This information is provided by the drug company and is an obligatory requirement where necessary. Some drugs and treatments, such as mineral supplements and most local anaesthetics, do not have a withdrawal time, but always check on the label or enclosed leaflet. If for whatever reason the information is missing, eg: the label has rubbed, contact the Veterinary Service. The department will provide the information for drugs dispensed already drawn up into a syringe. It should be noted that this also applies to meat destined for local consumption, whether pork, beef or mutton/lamb (as well as milk and even eggs). Falkland islanders need to be protected too!

Some common examples of withdrawal times (but always check container):

Drug	Action	Meat withdrawal period
Noracillin	Antibiotic	Cattle, sheep and pigs 7 days
Noracillin LA	Antibiotic	Cattle, sheep and pigs 60 days
Oxytetrin LA	Antibiotic	Cattle 14 days. Sheep 21 days. Pigs 35 days
Ivomec Classic Injection	Wormer	Cattle 35 days. Sheep 42 days
Ivomec Pour-on Cattle	Wormer	Cattle 28 days
Panacur 10%	Wormer	Cattle 12 days. Sheep 15 days.
Coopers Spot-On	Insecticide	Cattle 3 days. Sheep 7 days

Filling in the form on farm:

A filled in example will be found attached to the back of form pads. Transporters will also carry pads as a back up in case the farmer forgets to bring theirs to the stock pens - but don't rely on it! The following will act as reference:

Section 1: The full name and address of the owner.

Section 2: The 'address of the origin of the stock'. If same, just 'As Above'. But this may of course differ – a farmer may be based in say Fox Bay, but send stock from his land near Chartres, or live in Stanley and run stock on a plot near Fitzroy.

Section 3: 'Intended route of travel of the stock'. Fill this in to the best of your knowledge. The transporter may be able to help.

Section 4: 'Full name and address of person/company taking delivery of the stock'. This applies to the final destination eg: FIMCo., Sand Bay Abattoir, Stanley.

Section 5: 'Full address of the destination of the stock'. Usually the same as Section 4, in which case state 'As above'. Fill in if new owner of stock does not reside at the place where the stock will be held.

Section 6: 'Particulars of stock'. Three options are now available: (1) Official movement tags (record numbers including numbers missing due to mistagging etc); (2) Body brands (record official brand letters and paint colour); (3) Recognised and accepted farm specific ear tags. Fill in the number of stock accurately and the breed of animal.

Section 7: 'The name and signature of the owner or occupier of the farm of origin of the stock'. Self explanatory, except that the last box requires departure information (time and date). The departure time is actually the time you begin loading the stock (this records the maximum amount of time any one animal spends on the vehicle).

Sections 8-12: For others to fill in en route and on arrival. Section 8 will apply to the transporter receiving the animals on the farm. He will fill in the arrival time at his destination.

Section 13: 'Treatment declaration'. Please don't forget this. As explained above, this section will be checked at the abattoir and if incomplete the stock cannot be slaughtered. Either declare those used, or tick the box if none.

Retain the white copy for your records, and fax it to the abattoir ASAP if this is the destination of the stock. This needs to arrive ahead of the stock, and is used by the Official Veterinary Surgeon to plan and resolve any problems. **Pink copy to be sent to DOA when complete and yellow copy for person taking delivery of stock.**



Animal Movement Certificate

Please complete in BLOCK LETTERS

1. Full name and address of the actual owner of stock being travelled.		4. Full name and address of the person or company taking delivery of the stock.	
2. Full address of origin of the stock (if different from above)		5. Full address of final destination for the stock (if different from above)	
3. Intended route of travel of the stock.			

6. Particulars of stock. (Full and accurate details of the stock being travelled must be supplied below.)

Number of stock	Breed	Description/sex	Movement ID	<u>Trucker use</u>	<u>FIMCo use</u>
				<u>only</u> Number loaded	<u>only</u> Number received
Example only					

7. Name and signature of the owner or occupier of the farm of origin of the stock.	Name:..... Signature:.....	Start of loading: Time..... Farm departure: Date...../...../.....
8. First Movement Name and signature of person in charge of the stock being travelled.	Name:..... Signature:.....	Loading commenced: Time.....Date...../...../..... (same as farmers time above) Unloading completed: Time.....Date...../...../.....
9. Second movement (if applicable) Name and signature of person in charge of the stock being travelled.	Name:..... Signature:.....	Loading commenced: Time.....Date...../...../..... Unloading completed: Time.....Date...../...../.....
10. Third movement (if applicable) Name and signature of person in charge of the stock being travelled.	Name:..... Signature:.....	Loading commenced: Time.....Date...../...../..... Unloading completed: Time.....Date...../...../.....
11. Fourth movement (if applicable) Name and signature of person in charge of the stock being travelled.	Name:..... Signature:.....	Loading commenced: Time.....Date...../...../..... Unloading completed: Time.....Date...../...../.....
12. Name and signature of the person taking delivery of the stock at final destination.	Name:..... Signature:.....	Arrival at final destination: Date...../...../..... Unloading completed: Time.....
13. Treatment declaration: List all treatments administered in the 5 months prior to movement of any or all animals:		
Name of drugs used and date of administration:		
<input type="checkbox"/> Tick if no treatments given		



The Falkland Islands Government

Department of Agriculture, Veterinary Service, Stanley, Falkland Islands
Telephone: (500) 27366
Facsimile: (500) 27352
E-mail: sbowles@doa.gov.fk

National Arrangements for Cattle Identification and Traceability

From the 1st January 2013:

- Any property moving a bovine animal for slaughter or to another property must be **approved** by the Department of Agriculture.

From the 1st January 2014:

- **ALL** properties holding cattle must be approved.

To be approved the keeper of the property holding cattle must:

- Be officially listed by the DOA and be issued with a 2 or 3 lettered farm code (Annex 2).
- Use tags specified by the Department of Agriculture for cattle identification (annex 3).
- Double tag all calves born with approved tags bearing a 2 or 3 lettered farm code and a unique 4 digit number. The tag numbers must be identical in each ear.
- Double tag any untagged adults with approved tags bearing a 2 or 3 lettered farm code and a unique 4 digit number. The tag numbers must be identical in each ear.
- Ensure that any adults already bearing tags are uniquely identified with a number in each ear and the farm code.
- Ensure that all bovine cattle keep the same identification number throughout their lives.
- Have tag orders verified by the DOA (annex 4).
- If an animal should lose a tag a replacement bearing the same code and number as the one lost should be sought from the DOA within 2 weeks of the animal losing its tag (annex 5).
- The DOA will provide this tag within 2 weeks of receiving the application and the tag must be replaced into the animal within 4 weeks of its receipt.
- Have **all** cattle on the farm registered with the DOA.
- Register all adult cattle with the DOA within 1 month of tagging or before they leave the farm whichever comes first.
- Tag and register calves by the age of 5 months or before they leave the farm whichever comes first.
- Keep accurate farm registers that list:
 - all cattle on the property and their identifications
 - the dates of all cattle and other animals movements on and off the property
 - the dates of calves born on the property

- the dates of on farm deaths and slaughter
- any treatments that cattle have been subjected to and the date of treatment
- Inform the DOA of any on farm deaths or slaughter within 1 month of the event taking place.
- Complete an Animal Movement Certificate for any bovine animal moving off the property

When a farm is designated as 'approved' the need for registration docketts for animals on that farm will become obsolete.

The DOA will perform regular audits on each approved property to ensure these arrangements are followed.

Transitional Arrangements

From 1st August 2011 until 1st January 2013 the following transitional arrangements will apply:

- Any property may move bovine animals to another property providing the animals are registered with the DOA, double tagged with a number in each ear and are identified to the property of origin by a lettered code and an Animal Movement Certificate is completed for the movement.
- Any property may send animals to slaughter outside of a recognised EU export season providing the animals are individually numbered and identified to the farm of origin. This may be by means of tags or paint branding. An Animal Movement Certificate must be completed for the movement.
- During a recognised EU export season only approved properties may send bovine animals for slaughter as per the arrangements above.



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Annex 3

TAGS APPROVED FOR USE IN THE FALKLAND ISLANDS NATIONAL CATTLE IDENTIFICATION AND TRACEABILITY SCHEME.

ALLFLEX Lazatags Ultra tags Metal tags	LEADER Leader Flexible Tamperproof Tags (any size) Leadertronic HDX Cattle Tag Leader Jumbo EID Tag
RITCHEY (Falkland Farmers suppliers) Dalesman large Dalesman medium Stockman large Titan tag Titan medium Dalesman button Brass Stockman medium Stockman button Titan button	ZEE TAGS Zee Tag Large Zee Tag Medium Zee Tag – CoxMark Tag Zee Tag button Zee Tag EID Button
<u>Ketchum Manufacturing Co. Ltd</u> K-Tag large/medium K tag MP large/medium KS Primary/button K9 Tag primary Tamperproof No 2 K-Tag button KS electronic Button cattle	



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Annex 4

Tag order verification

Please send the following information to the DOA before placing your tag order.

When the form is returned with the verification box completed you may continue with your order. Thank you.

Name	
Farm address	
Farm tag code	
Date	
Make and type of tags	
Tag numbers to be ordered	
Previous tags numbers ordered	

DoA use only: check no duplicate tags ordered. Copy form and return original form to farmer with verification complete.

Date	
Previous order via DoA	
Current order verified	

Thank you – please continue with your tag order



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Annex 5

Replacement tag request

Please fill in details of tag(s) required and send form to DoA within 2 weeks of noticing the tag loss.

Date	
Name	
Farm address	
Farm tag code	
Replacement tag numbers needed	

DoA use only: keep copy of replacement tag order and return original with replacement tags.

Date replacement tags ordered	
Replacement tags received	

BOILS – CASEOUS LYMPHADENITIS (CLA)

The Disease

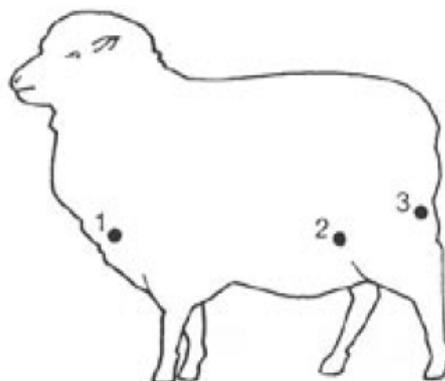
Known as 'boils', 'cheesy gland' and scientifically as caseous lymphadenitis (CLA) (literally: cheesy inflammation of the lymph glands). The causative organism *Corynebacterium pseudotuberculosis* is a bacterium that spreads via the bloodstream to infect the local lymph nodes, often spreading further into the internal tissues and organs, especially the lungs. Unlike organisms such as Clostridia, the boils organism does not exist on the farm as a separate entity, but is brought in with sheep or introduced on equipment such as shearing combs or marking knives. Thereafter it relies on sheep to sheep transmission. This can be direct sheep to sheep transmission (a sheep with a wound is in contact with an open boil on another sheep or the infected sheep coughs infected sputum into the wound), or indirect (an uninfected sheep with a wound rubs against objects contaminated by wounds or coughing from infected sheep). A boil found in the lungs does not necessarily indicate the organism was inhaled, although this is possible. The organism is tough and resistant to drying, being protected by an external fatty membrane. As a result, research indicates that it can survive off the sheep for:

- 8 months in soil;
- 2 months on hay and straw;
- **5 months in shearing sheds on wooden surfaces.**

The abscesses or boils formed are runny when young, firm and layered like an onion when old. The organism prefers to live without oxygen and releases chemicals that kill the defensive white blood cells. This cell death builds a castle of pus around the organisms which further protects them. Boils once acquired are therefore untreatable and remain for the lifetime of the animal.

Some Facts and Figures

- All lambs are born uninfected, but can be infected via the navel and at marking/docking from as early as 6 weeks of age.
- 80% of infections occur at the 2nd and 3rd shearings (as hoggets are normally shorn first in a clean shed with clean equipment).
- The older the sheep, the more likely it is to be infected, so average flock age affects incidence.
- Extensively managed flocks can reach a 30% level of infection, intensive flocks up to 50%. The average through the abattoir is currently 10% of all kills.
- At initial infection the animal runs a fever. This causes a one off 4-7% clean wool loss and a wool break. This is a relatively low cost.
- The usual external sites are the glands at 1. the shoulder, 2. the groin and 3. behind the knee. These glands drain the regions commonly nicked at shearing, neatly demonstrating one of the main causes.



- 50% of these will also have internal abscessation. This hidden level of disease can cause ill thrift, emaciation, higher mortality, poor fleece, reduced fertility and reduced lambing %. This is a much higher but unquantifiable cost.

The Costs of the Disease

Two areas:

(1) On the farm: (a) An average 5% clean wool loss at initial infection currently works out to approx. 1p per sheep per annum assuming a 30% level of flock infection ie: a relatively small cost; (b) Sheep with internal abscessation carry a much higher unquantifiable cost in lost wool and lambs, which is likely to be significant.

(2) At the abattoir: total and partial carcass condemnation, carcass trimming, added inspection and labour costs.

Control Measures:

(1) Vaccination. Vaccination is probably a non-starter in the Falkland Islands from the point of view of sheer cost, except possibly in the worst affected farms with a high incidence of internal abscessation. Vaccines such as Glanvac-3 or -6 reduce the cost by combining the 'boils' vaccine with the clostridial vaccines, however not only do lambs need two injections 4-6 weeks apart, but also annual boosters prior to shearing must be kept up or little effect will be seen. Even with regular boosters it takes at least 4 years to see a fall off in infection. The cost benefit of vaccination depends on the following factors:

- The prevalence of infection in the flock.
- The lamb/adult ratio (because the problem increases with average age of flock).
- The cost of vaccine.
- The value of wool.
- The value of meat (or possibly with stud flocks, the value of the animal).
- The on-farm incidence of clostridial disease.

It may have a role to play in the future and on some farms.

A vaccination trial carried out in the Falklands in the early nineties has left no conclusive results due to the trial seemingly being discontinued.

(2) Farm management. Farm management revolves around (a) hygiene measures; and (b) flock management, and is designed to prevent the spread of boils from infected to uninfected sheep.

Infection can occur at any time sheep are mobbed together, but shearing creates the perfect conditions. Following the bacteria's opportunities as it passes through the shed helps to understand the best management strategies:

The holding pens are a small potential source of spread, especially if the sheep are put in and held overnight to dry, but at this point the animals are still protected by a good depth of fleece. Coughing may be the main source, but wounds as entry points will be few. Nonetheless, some infected sheep have permanently discharging boils which will smear the infective bacteria along the sides of pens and especially races.

The shearing board is when the bacteria's opportunities soar. A nicked boil will contaminate the comb and cutter, the shearer's strides, shoes and even the shearing board itself. Because of the greasy nature of the organism it will persist unless specifically disinfected, and each subsequent sheep will be directly infected by the

handpiece, or from contact with these various surfaces as the animal is handled and shorn. It is no coincidence that the commonest external boils relate to nick sites.

The chute is a confined space where nicked sheep slide against the same contact surfaces. A ruptured boil will smear these surfaces and many subsequent sheep will become infected.

The counting out pens are a major site for further infection. Research indicates that the longer sheep are held in the counting out pens, the more they become infected. The sheep are shorn of their protective fleece, covered in nicks, and press and rub against each other, the perfect scenario for transmission of boils between animals. In addition coughing sheep will also infect the wounds.

Management Strategies:

Following on from the above:

1. Start the season with a clean shed. Muck out and scrub down all the surfaces paying particular attention to contact areas such as races, chutes and boards. Use good detergents as these dissolve fats. If lots of organic material is left on boards and fences it may hinder the action of the disinfectants. Finally spray such surfaces with disinfectant and don't rinse off. Ensure all handpieces, combs and cutters are properly disinfected, and shearers' strides and shoes are fresh. Bleaches are acceptable for scrubbing. Phenol or iodine based disinfectants are best for spraying equipment.
2. Shear the young sheep first so that only the cleanest equipment and facilities are used, and keep them apart from the older sheep after shearing.
3. Be firm with the shearers, but make it easy for them to comply. Have disinfectant solutions and cleaning cloths, perhaps handy sprays or dips, readily and easily available; ask them to routinely clean their gear at smokos and dinner; impress on them that without doing so they are in effect repeatedly injecting a disease that will persist until the animal dies.
4. If a boil is nicked, take action. Clean all infected gear, separate that sheep off and turn it out, spray the chute if it traveled down.
5. Any measures to reduce the holding time and the density of penned sheep will help. This especially applies to the counting out pens. Try to turn out off the shears – it is one measure that gets rid of a major site of infection.
6. Supply small hand pump sprays containing antiseptic solutions for the larger shearing wounds (eg: iodine solution).
7. Regularly throughout the day spray the main contact areas such as boards, chutes, and races with an appropriate non-foaming disinfectant. Showing diligence in front on the shearers will influence their actions. **Tip:** The organism is fatty and waterproof so not all disinfectants work. **Phenol** based disinfectants, which are readily available, are said to work well. The ideal type of sprayer would be a good volume garden rose sprayer with hand pump and adjustable spray nozzle.

VETERINARY SERVICES CONSULTATION HOURS

**By appointment only
Please call 27366 to arrange a time**

Monday, Wednesday, Friday

8:30 to 9:30am

1:15 to 2:15pm

4:00 to 4:30pm

Tuesday and Thursday

1:15pm to 2:15pm

3:45pm to 4:15pm

SURGERY TIMES

Tuesday and Thursday mornings

NEUTERING OF FARM (AND OTHER) DOGS

BITCHES:

Pro Speying

Convenience Reasons

When a bitch is speyed both her ovaries and uterus are removed. The ovaries are removed to prevent her from coming into season and the uterus is removed so as not to act as a reservoir for infection. As you know she will not be able to have (unwanted) puppies, she will be available for work all year round and there will be no distractions to the male dogs in the team. For house dogs there will be no bleeding on the carpets and furniture.

Medical Reasons

1. Pyometra - This is a condition where the uterus fills up with pus. Normally it occurs in older bitches though it has been known to occur in bitches as young as one year old. Classically it occurs shortly after a season. Sometimes the cervix is open in which case pus is seen to be coming out of the vagina, in other cases the cervix is closed. These are a lot harder to diagnose. Signs include general lethargy, drinking a lot of water and maybe vomiting. This is an emergency condition and the bitch needs to be speyed as soon as possible. With her being so sick there is a greatly increased anaesthetic risk.
2. Mammary Tumours – Mammary cancer in un-speyed bitches is more common than in women. It is often a particularly nasty form of cancer, having spread before it is noticed. It is very difficult to treat. Surgery is long and involved and the tumours have usually already spread to the lungs where they can't be treated.

Anti Speying

Convenience Reasons

Obviously once the bitch is speyed she will no longer to be able to have puppies. Some bitches do become overweight after they have been speyed. This should not be a problem with proper dietary control (they do need less food). Working breeds are less prone to obesity than say Labradors at a young age.

Medical Reasons

A very small proportion of bitches become incontinent and leak urine. This is more of a concern for house dogs. If large amounts of urine are being leaked the bitch will need to be treated. This is easily controlled by the use of tablets or syrup.

MALE DOGS

Pro Castration

Convenience reasons

Castrated male dogs are less likely to fight or wander. Ideally castration should be done at a young age before these vices become a habit.

Medical Reasons

1. Prostate gland – Older un-castrated male dogs frequently have enlarged or even cancerous prostate glands. This can lead to various problems like severe constipation.
2. Anal tumours – These are frequently seen in un-castrated male dogs.

Anti Castration

Apart from not being able to breed from the dog and a slight tendency to put on weight if the diet is not controlled, there are none.

SUMMARY

It is recommended that all bitches are spayed for medical reasons. It is quite disheartening treating the older bitches for mammary tumours or losing them from infected uteruses because either the condition has not been picked up or the bitch was not able to get to the surgery in time. With a potentially good working bitch that you might want to breed from it is recommended having puppies early in her life and then spaying her.

Male dogs with undescended testicles should be castrated. There is a high risk of cancer in the undescended testicle (as it is kept too warm). The condition is hereditary so the dog should not be bred from. The decision to castrate other male dogs is entirely up to the owner.

Spaying a bitch is a major operation as the ovaries lie deep inside the abdomen with a large blood supply. The operation is best performed at the clinic where there are trained staff to monitor the anaesthetic and ideal operating conditions. It is far far safer for the bitch to be operated on in Stanley. Dogs can easily be flown in from West Falkland by FIGAS.

Reproductive Statistics

Species	Cycle Length Days	Oestrus Duration Hours	Type of Ovul	Return to oestrus after parturition	Return to oestrus if not pregnant	Ovulation Time Hours	Pregn Length Days	Pseudo Pregn Days	Litter Size
EWE	16-17	24-36	<i>Spon/ind</i>	4-6 m	17-20 d	24	144-152	<i>n/a</i>	1-4
GOAT	20-21	32-48	<i>Spon/ind</i>	<i>Variable</i>	19-21 d	30-36	140	<i>n/a</i>	1-3
SOW	19-21	48-72	<i>spon</i>	5-6 w	20-21 d	36-48	112-115	<i>n/a</i>	8-15
COW	21-23	12-24	<i>spon</i>	21-28 d	3-4 w	12-15	270-290	<i>n/a</i>	1-2
MARE	19-25	4-8 d	<i>spon</i>	7-10 d	2-3 w	1-2 d	340-350	<i>n/a</i>	1-2
BITCH	61	7-13 d	<i>spon</i>	5-6 m	5-6 m	2-3 d	61	61	4-8
CAT	15-28	4-10 d	<i>ind</i>	1-21 w	13-15 d	24-36 pc	63	30-36	2-8

Pulse, Respirations & Temperatures

Animal	Pulse (beats per minute)	Respirations (per minute)	Temperature (degrees Celsius)	Temperature (degrees Fahrenheit)
SHEEP & GOATS	75-80	20-30	40.0	103-104
PIG	70-80	20-30	39.7	102-103
CATTLE	50-60	12-16	38.9	101-102
HORSE	38-43	8-12	38.0	100-101
DOG	80-90	15-25	38.6	101-102
CAT	110-120	20-40	38.6	101-102

KILLING FACILITIES ON FARMS

Killing facilities on farms have to meet certain minimum requirements with regard to offal disposal and denying access to offals by dogs or birds. This forms part of the strategy for controlling and eventually eradicating Hydatidosis from the Falkland Islands.

- 1) **Keep the killing shed clean.** Ideally the killing house should be a purpose-built facility with easily washable walls and floors. If you have to use a part of the shearing shed make sure you thoroughly clean up after each killing session. Don't leave blood to dry on the slats or collect under them – this just attracts vermin or flies in the future. Dispose of all the inedible parts (offals, heads, feet etc) immediately. Don't leave them lying about for days on the shearing shed floor.
- 2) In order to keep everything clean you obviously need **ample supplies of CLEAN, if possible hot, water.** Make sure you have an adequate supply before you start to kill.
- 3) **Keep all your instruments clean.** Clean your knives and steels regularly. If you are killing several animals in one day clean the knives thoroughly between each animal. To sterilise the blade you should immerse the knife in very hot water (>82°C) for several seconds or place it in a bowl of full chlorinated water (water with chloride bleach added to it) for a short period of time.
- 4) **As well as keeping the tools clean you need to keep yourself clean too.** You should wash your hands regularly (soap and warm water) paying particular attention to finger nails and areas between the fingers. Wash your hands between dressing separate carcasses and particularly after removing the guts or contaminating your hands. Wear clean protective clothing when handling the carcasses.
- 5) **Hang the carcass in a dry, cool, airy space protected from flies, birds and vermin.** Ideally they should be hung in a clean, airy meat storage area – designed for that purpose.
- 6) If the carcasses are to be transported **make sure they are adequately and hygienically covered.** Think about covering them in clean muslin or putting them in a large plastic sack rather than on pieces of cardboard or hessian sacks exposed to the elements where they can become covered by dust, dirt, oil, grease or anything else that might have been spilt in the back of the Land Rover.

HYPOTHERMIA OF NEW-BORN LAMBS

The normal temperature of a lamb is 39-40°C, 102-104°F. When the temperature drops below this the lamb is hypothermic. This is best assessed with a thermometer (it pays to practice reading one), the digital models can make life a lot easier.

There are 2 causes of hypothermia

- A) **Exposure** – especially wet new born lambs and in bad weather
- B) **Starvation** – the lambs energy reserves have been used up, more common in twins or lambs from ewes in poor condition. The ewe has not been able to provide enough milk for the lamb.

Lambs that have starvation hypothermia, will have a low blood glucose. If this glucose level is not corrected before the lamb is warmed it is likely that the lamb will die from a fit during warming. Lambs suffering from starvation hypothermia tend to be weaker than those suffering from the exposure type of hypothermia.

All hypothermic lambs should be first dried. There are then 3 options to be considered: -

A) **Warming**

Ideally with warm air of 35-37°C, 95-99°F. Infrared lamps are not ideal, as there is a serious risk of skin burns and overheating. A wooden box of not less than 1.5 meter square and 1 meter high (to prevent overheating), with a domestic fan heater (1-3kW) will work well. Don't forget to provide insulation (i.e. paper sacks) underneath the lamb. Monitor the temperature of the box with a household thermometer, (clinical thermometers don't measure a fall in temperature). Check the lamb's temperature every 1/2hour and when it exceeds 37° remove the lamb from the warmer. Lambs will die if warmed to 41°C, 106°F.

B) **Stomach Tubing**

This should always be used when feeding new-born lambs. A bottle and teat is suitable only for strong orphan lambs. The technique is safe to use on lambs that can lie on their brisket and hold their heads up. It is best to get a stomach tube especially designed for this job with a 60ml syringe. This should be rinsed after each lamb and cleaned with detergent daily.

The Feed

By far the best food is ewe colostrum. Colostrum can be collected (from a ewe with a single or dead lamb) and frozen in small containers. Boiling destroys the essential antibodies, the colostrum should be warmed by placing it in a bucket of warm water.

Cow's colostrum is the next best thing and much easier to obtain. Commercial colostrum substitutes are available in some countries. Milk replacer or cows milk is not a substitute for colostrum.

Routine

3 times daily

Large lamb 5kg 200ml each feed

Medium lamb 3.5kg 150ml each feed

Small lamb 2.5kg 100ml each feed

Technique

Sit down with lamb on your lap, or between your legs.

Gently introduce the tube via the side of the mouth. If the lamb show signs of discomfort, start again. The tube can be felt with there now being 2 tubes in the neck – the stomach tube and the wind pipe. However , if the lamb shows no sign of distress the tube **will be in the right place**.

Now either a) Attach the filled syringe and empty slowly (20sec)

Or b) Use the syringe as a funnel and allow gravity to let the
 colostrum flow

Remove the syringe and tube together.

C) Intraperitoneal Glucose Injection

Equipment

Sterile 50ml syringe

New 1 inch 19g needle (cream colour)

Glucose solution 20% or 40%

Terramycin spray or other disinfection for the injection site.

Dose –10ml per kg

Large lamb 5kg 25ml of 20% solution

Medium lamb 3.5kg 17.5ml of 20%solution

Small lamb 2.5kg 12.5ml of 20%solution

If using 40% solution withdraw one-half dose and dilute with recently *boiled* water. This will bring the solution to about the right heat. 20% solution needs to be warmed.

Technique

Shake the syringe to mix the contents and evenly distribute the temperature, check it is at blood heat.

Hold the lamb up by the front legs.

Prepare injection site by spraying with the Terramycin spray. This is half an inch to the side of the navel and 1 inch behind the navel.

Fully insert the needle with syringe attached aiming at the lamb's rump.

Empty the syringe

Dispose of the needle and boil the syringe before reuse.

Which Treatment When?

Consult the following table

<i>Temperature</i>	<i>Age</i>	<i>Treatment</i>
37-39°C 99-102°F	Any age	Dry the lamb Feed by stomach tube Give shelter with the ewe Check temperature again soon
Below 37°C, 99°F	0- 5 hours	Dry the lamb Warm the lamb in a warmer until the temperature recovers to 37°C Feed by stomach tube Return to ewe or transfer to 'weak lamb unit'
Below 37°C, 99°F	More than 5 hours and able to hold up its head	Dry the lamb Feed by stomach tube Warm the lamb in a warmer until the temperature recovers to 37°C Feed by stomach tube Return to ewe or transfer to 'weak lamb unit'
Below 37°C, 99°F	More than 5 hours and not able to hold up its head	Dry the lamb Give intraperitoneal injection of glucose Warm the lamb in a warmer until the temperature recovers to 37°C Feed by stomach tube Return to ewe or transfer to 'weak lamb unit'

Prevention is far better than a cure. Ewe condition is extremely important. Prompt use of the stomach tube will prevent many problems.

When dealing with twins consider removing both lambs from the ewe even if only one is weak. If they can be returned together it will avoid rejection problems.

If you intend to use any of the above techniques please prepare early. Cows colostrum should be collected and frozen and the equipment purchased.

Some Further Lambing Time Conditions.

Dystocia – this article is not intended to be a guide to lambing. The Veterinary Department would be delighted to assist with any difficult births. In order to get your ewe attended to as soon as possible we suggest that you bring her to the department rather than asking us to come out to your farm.

Umbilical Hernia – Occasionally the guts of the lamb will come out from a hole at its umbilical cord. Sometimes excess licking from the ewe can cause this. These lambs *can* be saved. Loosely wrap the lamb's abdomen with a clean towel and bring it down to the Department straight away. If the guts are broken it is unlikely that there will be a successful outcome.

Watery Mouth / Rattle Belly – Lambs suffering from this condition are miserable. Some will drool saliva (watery mouth) and others will have an enlarged stomach (which rattles if they are gently shaken). The condition is associated with intensive husbandry. Again these lambs can sometimes be saved. Contact the Department for advice.

Bloat

Abomasal bloat occurs in lambs being fed milk-replacer. Warm milk entering the abomasum (the 'true' stomach) provides the bacteria present (it is thought that *Sarcinia ventriculi* and Clostridial species are the main culprits) with an excellent environment for fermentation. Fermentation produces much gas which then causes the abomasum to expand. Lambs can become really distended within 1 hour of feeding and die quickly from abomasal rupture or from the extreme pressure on the organs of the abdomen and chest. Typical treatment includes using a trochar to release the trapped air but often it is too late for successful treatment so prevention is definitely better than cure.

Yoghurt containing *Lactobacillus* species ('good' bacteria) theoretically provides a stable environment in the abomasum that prevents the 'bad' bacteria colonising and multiplying in the gut. *Lactobacilli* are also said to improve immune function.

Ideal early feeding strategy for artificially reared lambs

On the day of birth try to give up to five feeds of colostrum if possible (ewes or cows) – about 600ml for a 4kg lamb (or 15% of the lambs body weight).

If you have fresh/frozen/powdered colostrum available then feed this on days 2-4 also. If lambs have had a feed of colostrum from the ewe they can go straight on to the yoghurt feed. If you have no colostrum and don't think the lamb will have had any from the ewe just start feeding the yoghurt on the day after birth and feed milk on the day of birth.

Yoghurt recipe for small numbers of lambs (under 20)

- Put 3L of warm water (40°C) in a 9L bucket

- Add 1kg calf milk powder. Mix with an electric stick blender. They recommend calf milk simply because it is cheaper. You can use lamb milk powder if you prefer. Fresh cows milk is also fine to use as long as it has no antibiotic residues as these will kill the 'good' bacteria.
- Add 200ml of acidophilus yoghurt. Mix, then cover with a lid or sheets of news paper. The yoghurt produced at the Dairy contains acidophilus, make sure you get natural flavour. Lamb might not like strawberry!
- Keep the mix warm for the next few hours, if the air temperature is too cold the milk will take a long time to ferment. (They suggest using a brewer's mat that you can buy but not that many of us here make beer! Their other suggestion is putting the bucket in a polystyrene box with a lid with a hot water bottle as the heat source in the box. The airing cupboard may be another good warm spot).
- The yoghurt should set within 8-12 hours and may have a soft crust on top with some liquid at the bottom or may resemble thick commercial yoghurt.
- Top up with cold water to the 8L mark on the bucket and mix well. Feed in the same quantities that you would feed milk.
- Remove 200ml of this liquid yoghurt for use as the starter for the next batch.

Points to remember:

- Replace every milk feed with this 'soured'milk.
- Have a gradual transition from feeding warm to cold liquid yoghurt over a period of 4-5 days.
- Introduce the liquid yoghurt to lambs from 5 days of age, although it can be given to lambs from 2 days old if insufficient colostrum is available.
- Treatment is effective under either ad lib or set feeding regimes (eg 1-2 times a day)
- Treatment does not add a lot of extra expense.

Feed the lambs meal, hay and water along with the yoghurt but if you have decent grass for them to nibble that will be just as good as hay and meal. Make sure there is always a plentiful water supply.

Milk Replacement Recipes

Lamb milk replacer

2 litres cows' milk

¼ cup cream

1 egg

Whisk egg and cream together and add milk

Feed every 3-4hrs for the first week

Cow's milk does tend to make things scour (diarrhoea) so if this happens it is important to keep your orphan (whatever it is) hydrated. We can send you electrolyte solutions which are probably the best option but in the immediate term you can make up 2L boiled water and add 20g salt and 60g glucose to it. Give the orphan some of this between feeds.

The best advice I can give is the old scout motto of 'be prepared'. Have commercial replacers on hand and ready for the spring.

Kitten milk replacer

-dissolve 1 small packet of gelatine in 12oz boiling water then stir in;

12oz evaporated milk

2 tablespoons mayonnaise

2 tablespoons plain yoghurt

1 tablespoon olive or vegetable oil

1 egg yolk

Put in fridge to cool, this forms a sort of jelly so you need to warm it to feed to the kittens. This recipe does not give a feeding guide but I would recommend feeding 1-3ml at the following intervals:

1-2 wks old: 10 feeds in 24hrs at 2-3hr intervals

2-4wks old: 7 feeds in 24hrs at 3-4hr intervals

4-5wks old: 5 feeds in 25hrs at 4-5hr intervals

Start introducing very moist solid food at 3-4wks of age.

Puppy milk replacer

½ cup evaporated milk (less likely to cause diarrhoea than cow's milk)

½ cup boiled water

1 teaspoon glucose (you can get liquid glucose from the baking section in shops or possibly powdered glucose from the pharmacy)

1 tablespoon plain yoghurt

1 egg yolk

Feed 15-20ml of milk replacer per 100g of bodyweight per day. Divide this total amount into 6 feeds per day. Monitor weight of pups using kitchen scales.

Foal milk replacer

3.5 pints cows' milk

½ pint lime water (this is calcium hydroxide added to water – you probably need to ring us for this!)

2 tablespoons glucose

6 drops cod liver oil

Lamb colostrum replacer

(just feed for 24hrs before starting on milk replacer as this is very rich)

Put 1 teaspoon of butter in a bottle, sit the bottle in hot water to melt the butter

Add 1 teaspoon of treacle or molasses

Fill the bottle with undiluted evaporated milk to the 8oz mark

Heat until warm

Add some soluble vitamins if you have them.

Examination of the ram for breeding

REASONS FOR EXAMINATION:

1. Fertility

- Sub fertile rams often have high libido, and can monopolise in season ewes or have weak conceptions knocking ewes out of cycle. High % of conceptions that do occur abort early. Result - reduction in overall lambing %.
- Poor fertility is hereditary in surviving ewe lambs and ram lambs, so poor fertility spreads into both sexes. Conversely good fertility also hereditary, so selection improves lambing %.
- Poor fertility requires excessive ram:ewe ratio.

2. **Ability to serve** eg: physical problems with penis, legs etc.

3. **Desirable vs. undesirable hereditary traits** eg: meat, wool, skin pigment, against teeth, feet, wool blindness.

4. **Monitoring for ovine brucellosis** (future DoA policy to replace blood tests).

WHEN:

Close to turnout eg: 4-6 weeks. Rams need to be sexually active for proper assessment of fertility (governed by day length).

HOW:

Full check list for a standard (non-stud) commercial flock:

1. **Wool/meat** characteristics.
2. **Eyes:** tendency to wool blindness, entropion (inturning lids), lid pigmentation vs. UV induced cancers.
3. **Feet:** check for deformity/infection (hereditary/serve poorly).
4. **Legs:** look for bowing (hereditary/short working life) and stiffness/joint swelling (arthritis - serve poorly).
5. **Teeth:** bad bite (hereditary). Poor food intake reflected in poor condition score and therefore fertility/ability to serve.
6. **Condition score:** ideally 3.5 to 4. May lose 15% of body weight. Ram with 40 ewes should be able to serve 200 times in 1 month. Underweight rams underperform 2 ways: poor sperm count and fewer services.
7. **Sex organs:** the penis, testicles and scrotum. SEE ON>>>

SEX ORGANS:

• Examination of the penis:

Turn ram onto rump.

1. Deviation/scarring/sheath infection (eg: severe shearing cuts)
2. If able to extrude (don't force – try gentle pressure at base), check for damage and presence of whip-like urethral process on tip.

• Examination of scrotum and testicles:

Most important and quickest way to assess fertility.

Either turn ram onto rump, or for large numbers and basic evaluation, line up in race and examine from behind. This can be a simple two-handed palpation of the

testes. For standing ram, left hand cups left testis, right hand cups right testis, draw each thumb from the neck of the scrotum, down the curvature of each testicle, to the base of the scrotum. The right degree of pressure between thumbs and fingers will allow assessment for size, lumps, symmetry, and firmness.

Check:

1. Scrotal skin disease? Even mild inflammation eg: eczema, raises temperature and reduces sperm count + + +.
2. Does the scrotal skin slide freely over the testicles? (No = scarring).
3. Entire? Two testicles?!
4. Lumps? Cysts? 'Boils' and other bacteria can cause lumps within/around the testicle, brucellosis causes large cyst-like structures especially head and tail of epididymis (see diagram).
5. Firmness (in breeding season). How firm? About the same as the ball of your thumb squeezed in a firmly clenched fist.
6. Symmetry? One too large = contains lump /inflamed (orchitis). One too small = damaged/scarred (atrophy).
7. Size. Length of each testicle should be approx twice width. A spherical testicle is wrong. There is a direct correlation between size of testicles and fertility – the easiest basic fertility check of all is to measure scrotal circumference at its widest point. Ideally mature rams should be at least 30cm (active rams may be 40cm+). (**Speed tip:** mark off/knot piece of string at 5cm intervals with red for 30cm and tie extra length to belt loop – easily pocketed, never lost) Rams with grossly undersized testicles should be culled.

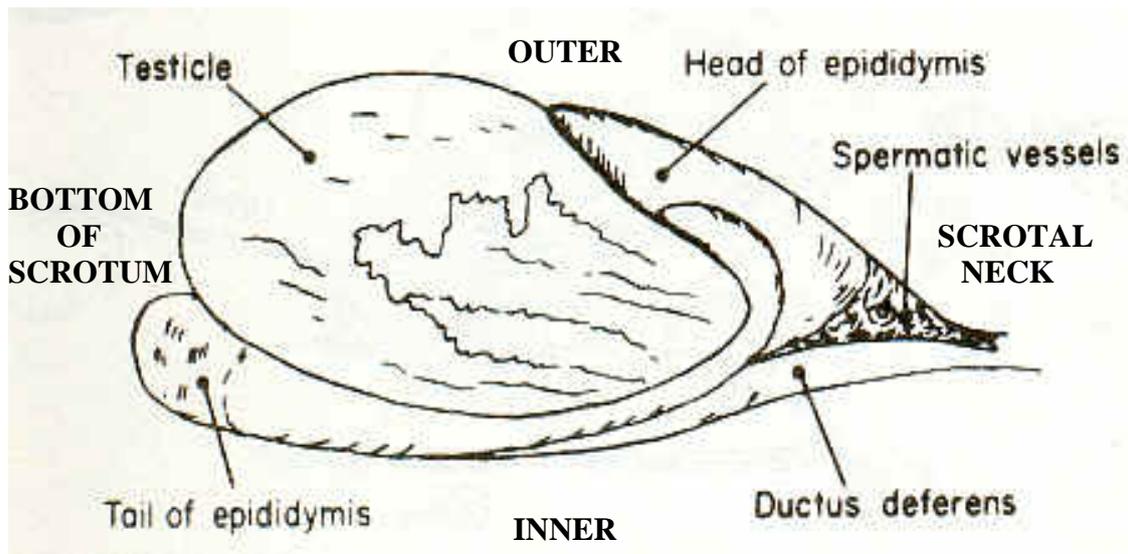
BRUCELLOSIS:

Brucellosis is considered to be eradicated in the Falkland Islands, but we must remain vigilant.

Typical abnormalities associated with *Brucella ovis* are:

1. **Orchitis** – inflammation of the testes resulting in a grossly enlarged, tender testicle.
2. **Atrophy** – the result of orchitis, a small, hard shrunken testicle.
3. **Epididymitis** – inflammation of the tubular structure that runs from the top (head) to the bottom (tail) of the testicle, resulting in abnormal swellings and cysts.
4. **Adhesions** – inflammation causing the normally free-moving scrotal skin to attach itself to the testicle.

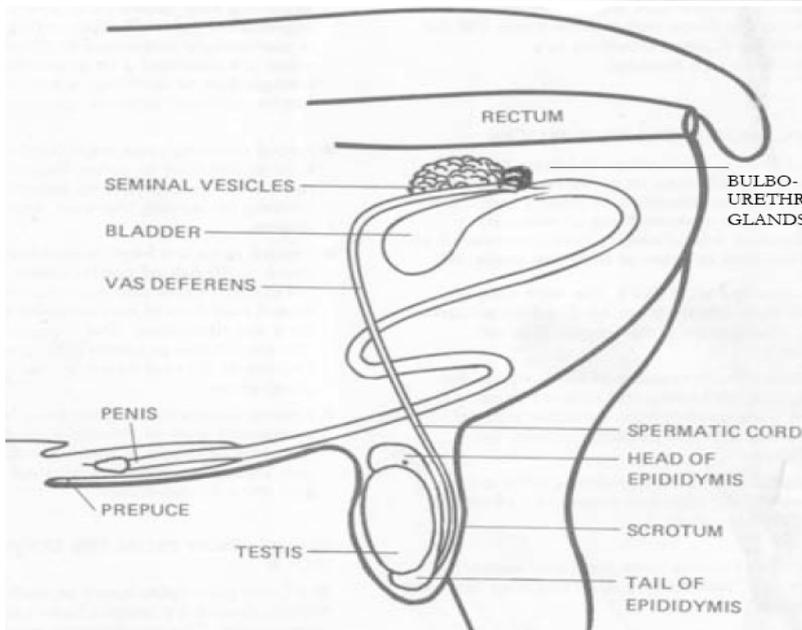
Anatomy of the ram's testicle



Testicle on left normal. Testicle on right is shrunken, tail of the epididymis is enlarged. Typical *Brucella ovis*.



Manual examination of the testicles and scrotum



Anatomical relationship

Ram's penis





FARM NOTE: TB Monitoring On Farm

What is bovine tuberculosis?

Bovine Tuberculosis (TB) is a contagious disease, which can affect most warm-blooded animals, including man. Tuberculosis is a contagious disease caused by a bacterial infection in the lymph nodes (glands) which spreads to other organs like the lungs. Tuberculosis affects both animals and humans.

Its importance world-wide is related to its ability to infect humans and cause significant livestock production losses.

Historically TB has been diagnosed in cattle in the FI but if still present very few cases would exist. Hence the reasoning behind ceasing regular intradermal testing and relying on visible signs of disease.

What are the signs of disease?

Bovine TB is usually a very slow disease to develop. Infected cattle can exhibit a wide range of clinical signs, ranging from none to progressive emaciation and death. Clinical signs are usually associated with the location of the lesions in the body. For example lung lesions can lead to chronic cough and bronchopneumonia or lymph nodes of the head and neck may become visibly affected and are seen to be enlarged or sometimes rupture and discharge pus.

What may be seen when cattle are killed on farm?

Tuberculosis lesions may be found in any organ or body cavity of diseased animals.

The obvious sign of TB in cattle is the presence of 'tubercles', which are knobby swellings within a lymph node or organ.

The tubercles are see-through and greyish when they are very small, as they get bigger they become opaque or yellowish-white in appearance. Eventually the centre of the tubercle dies, and appears cheesy in texture. Sometimes fibrous tissue forms a capsule around the tubercle and the centre becomes very hard (calcification).

Tubercles commonly occur in the chest, however they may be found in other major organs (such as the liver). In cattle, TB most commonly will cause lesions in the lymph nodes of an infected animal. Therefore, during post-mortem, the **lymph nodes**, especially those associated with the **head, chest, and gut**, are closely examined.

LOOK FOR :	'tubercles' especially in the lymph nodes of the head, chest and gut
-------------------	--

Location of key lymph nodes

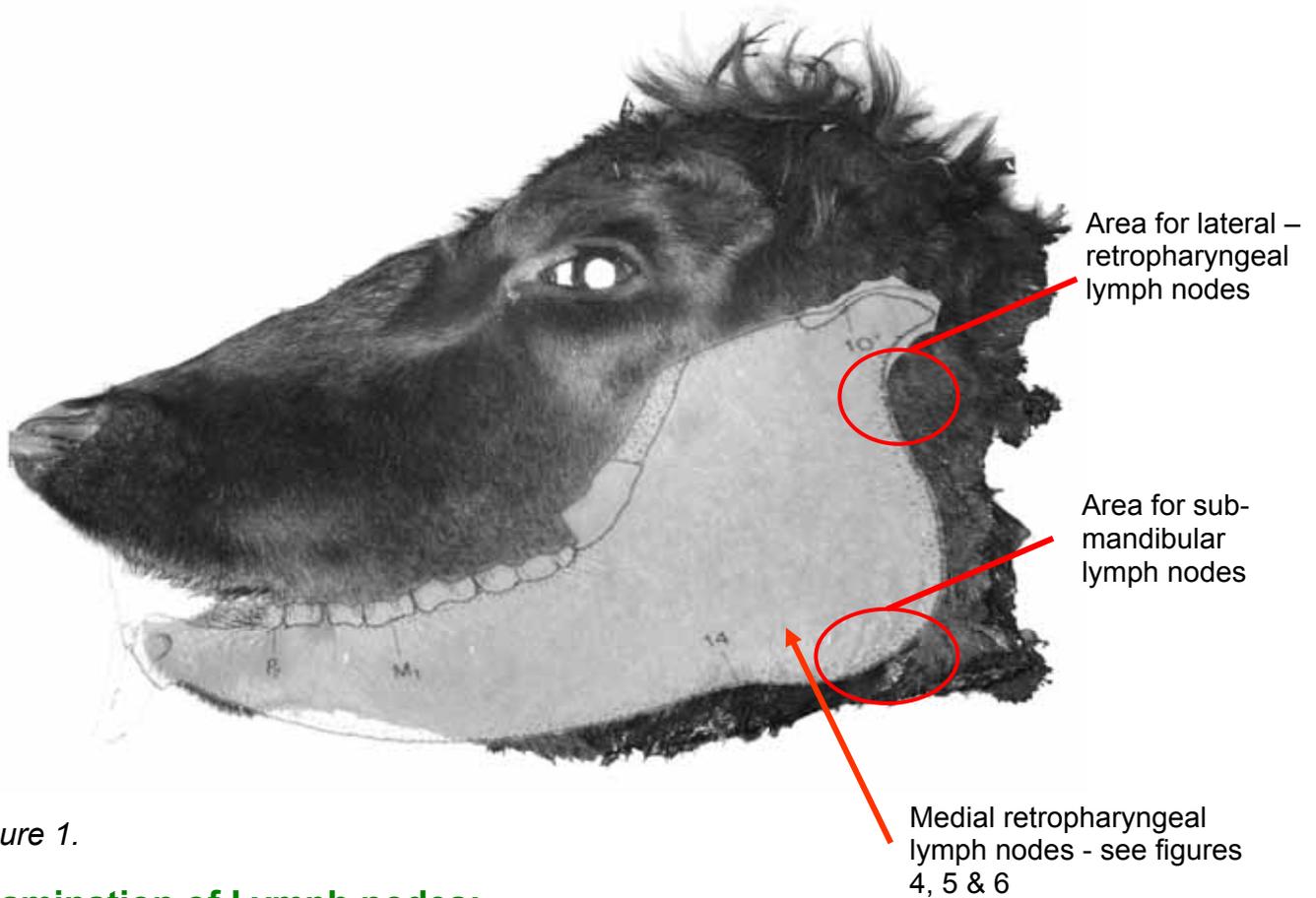


Figure 1.

Examination of Lymph nodes:

Normal lymph nodes vary a little in colour – they appear grey/brown/greenish. They are firm to touch – similar to how an unripe plum would feel if you squeezed it. When cut open they have a lighter outer layer and a darker middle. They vary in size depending on species and location in the body. Appendix 1 shows normal lymph nodes.

Head

The 3 key pairs of lymph nodes in the head are:

Mandibular lymph-nodes: (sometimes referred to as sub-mandibular): these are located in the tissue underneath the jaw bone in the area just before it angles up. Feel along the jaw bone and slice into the muscle and fat an inch or two before you can start to feel the angle of the bone changing from horizontal to vertical. There will be a lymph node on each side of the jaw (figure 1 & 2).

Lateral retropharyngeal lymph nodes: these are located in the tissue behind the vertical portion of the jaw, below where the ear starts. After finding and checking the mandibular lymph nodes cut up into the muscle, following the vertical part of the jaw bone. There will be a lymph node on either side of the head (figure 1 & 3).

Mandibular lymph

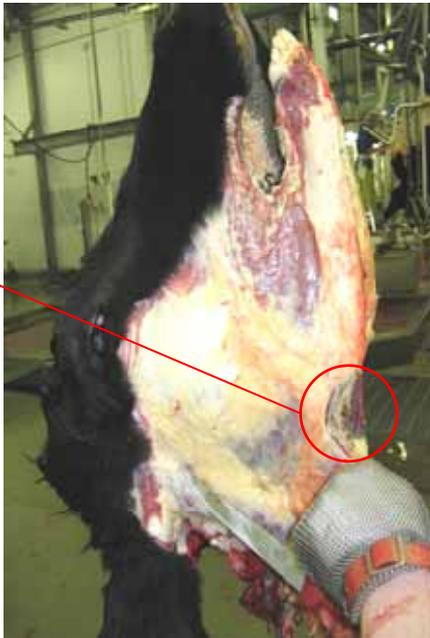


Figure 2.

Lateral pharyngeal lymph node

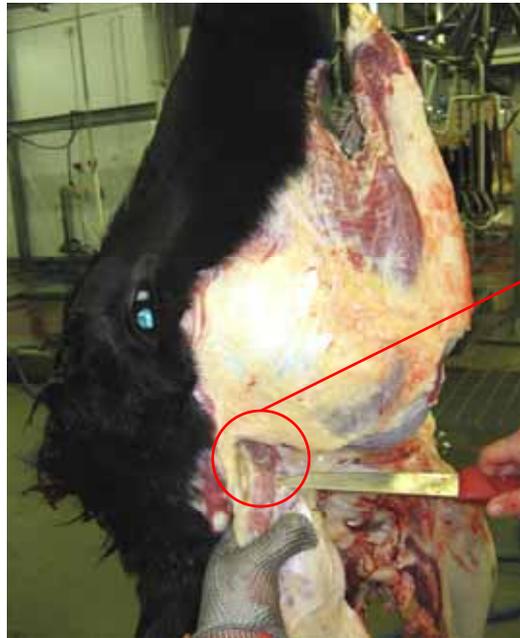


Figure 3.

Medial retropharyngeal lymph nodes: these are located deep in the head, one on either side of the base of the tongue. Cut into the muscles between the jaw bones on the underside of the lower jaw. Cut the muscles away and expose the tongue. Pull the tongue right back and cut down either side to find the lymph nodes (figure 4, 5 & 6).

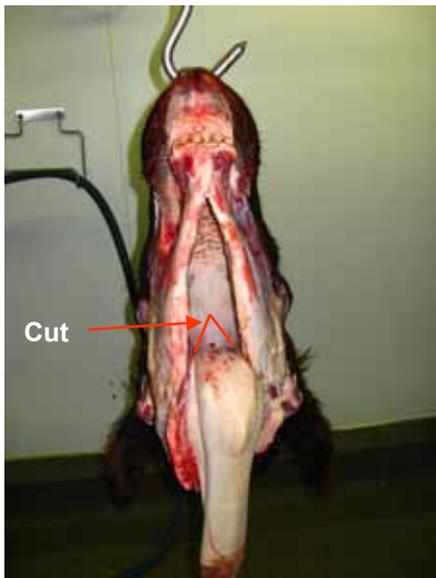


Figure 4.

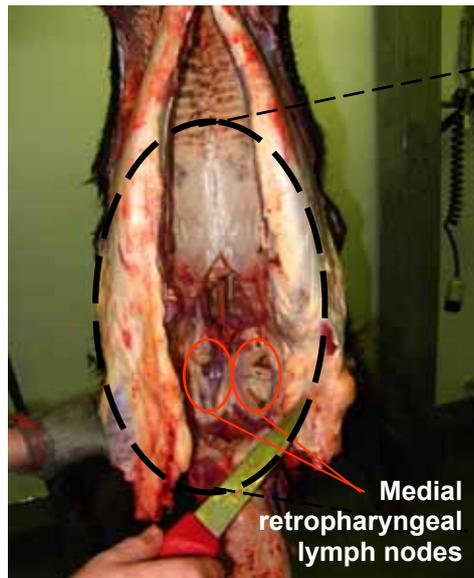


Figure 5.



Figure 6.

The mediastinal and tracheobronchial lymph nodes are located in the mediastinum which is the area between the 2 lungs in which the heart and trachea are situated. Feel down the trachea (windpipe) to where the lungs join and continue feeling down both sides of the trachea. Various pairs of lymph nodes will be situated along the trachea (figure 6).

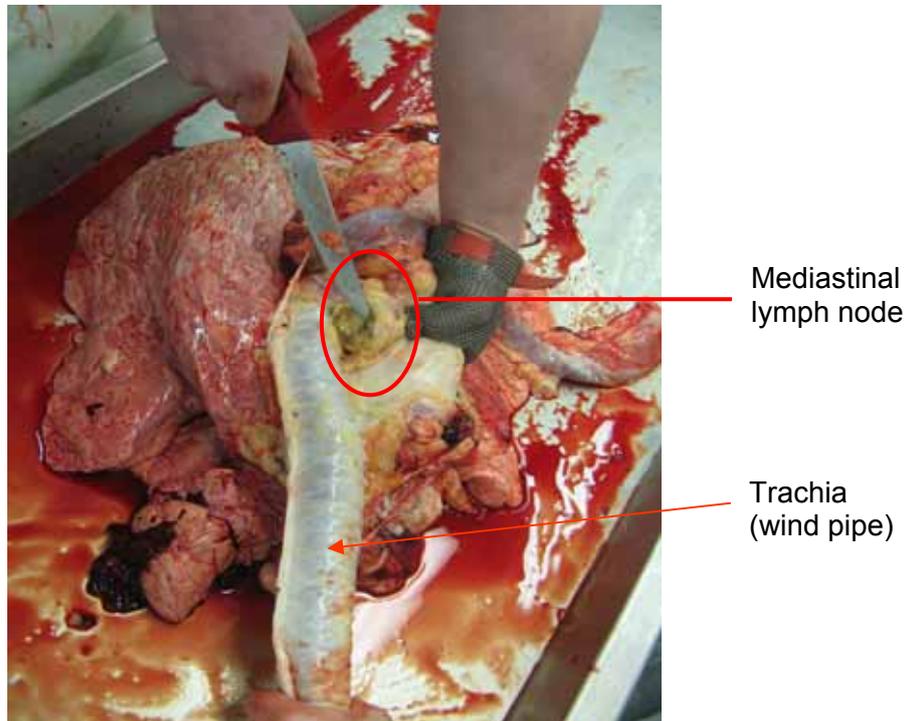


Figure 6.

Abdomen

The mesentery is the white fatty tissue that connects to all the intestines. Various mesenteric lymph nodes are found within this. **Spread the small intestine out and feel the mesentery, the lymph nodes are reasonably obvious lumps** (figure 7 & 8).

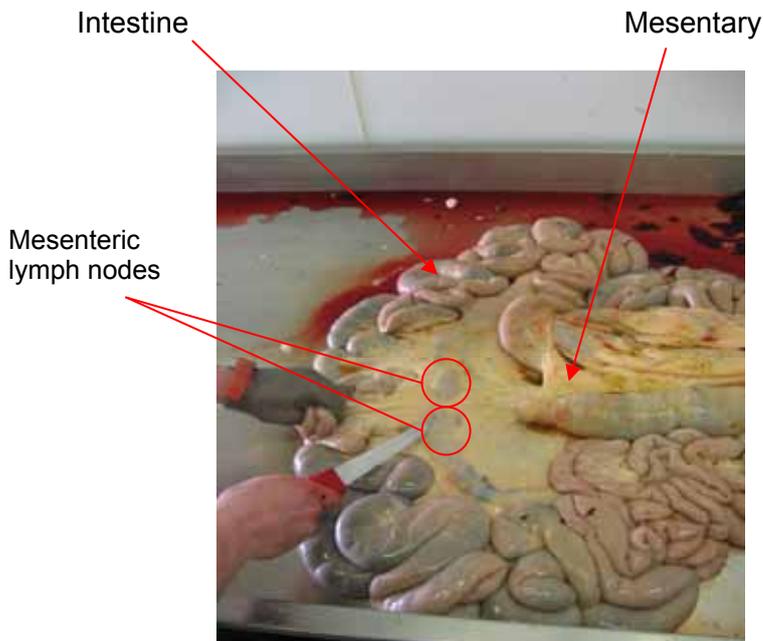


Figure 7.

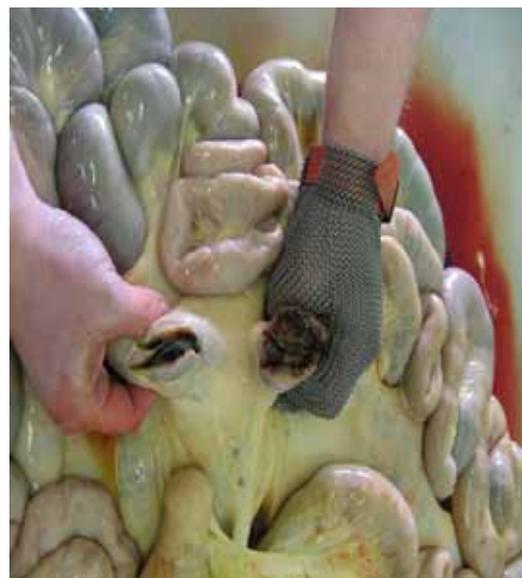


Figure 8.

Appendix 1: Normal appearance of lymph nodes (glands)

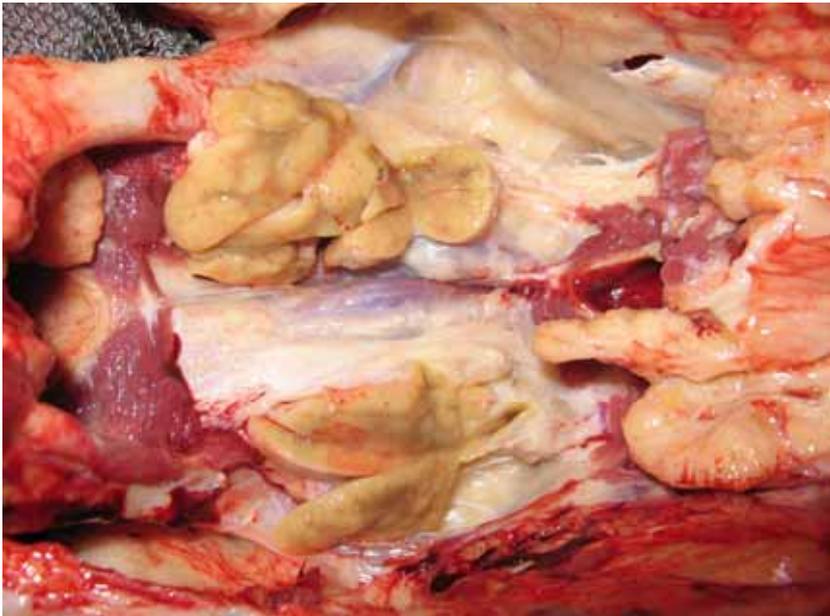


Figure 9.

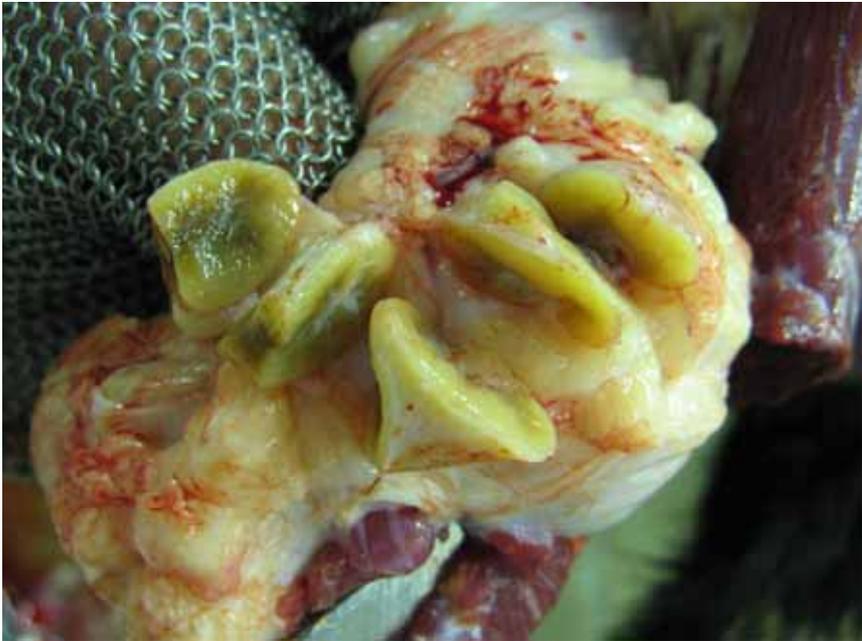
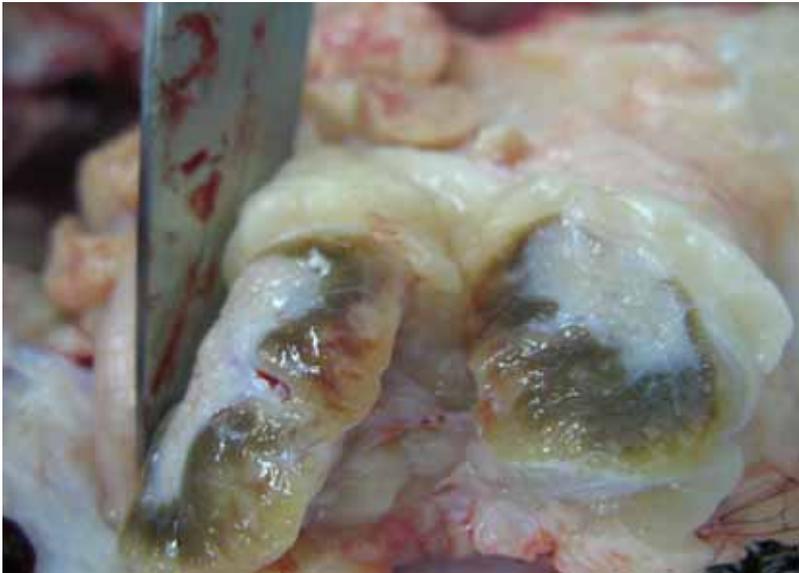
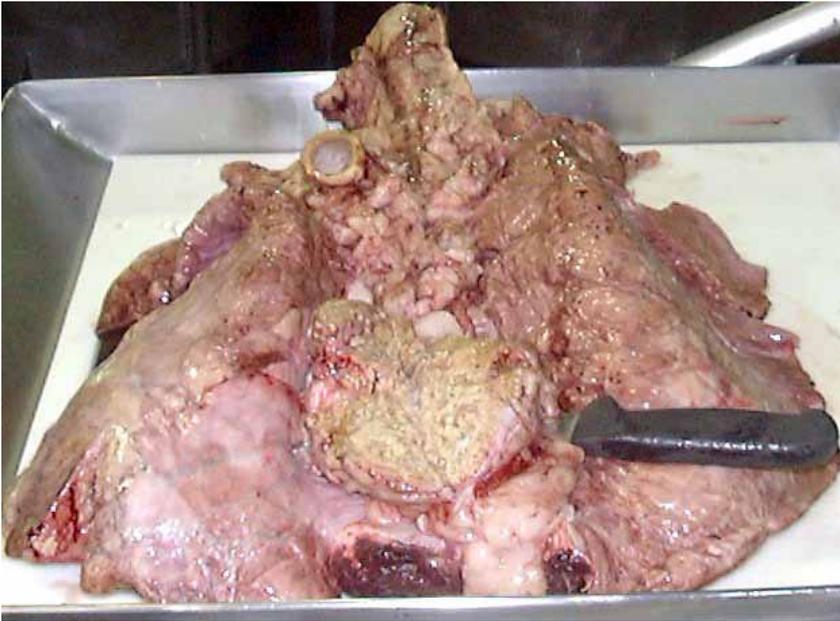


Figure 10.



Appendix 2: Examples of Advanced TB



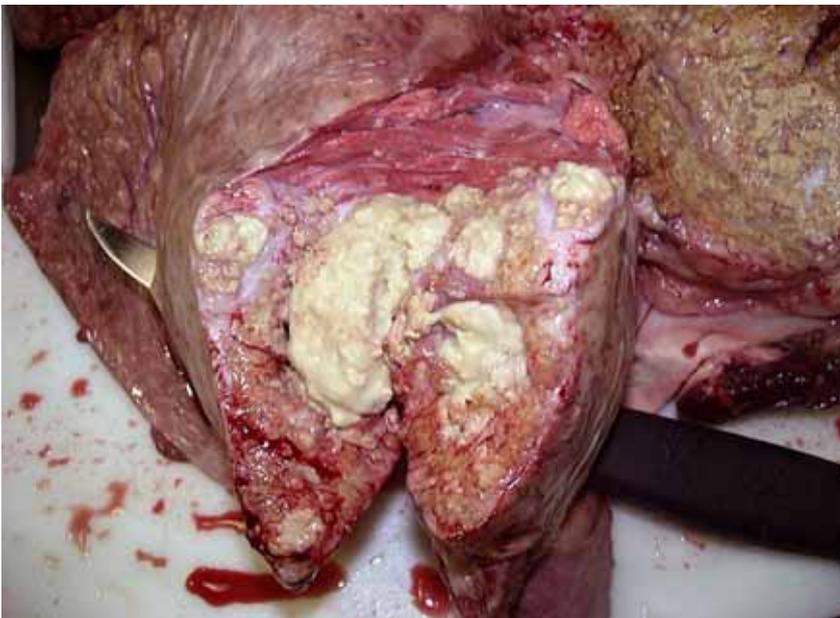
TB lesions from a 2 year old heifer

Note: There are other diseases capable of causing lesions that are grossly indistinguishable from tubercles.

Therefore, finding changes compatible with bovine TB is not conclusive evidence that the animal is infected with the disease. Further testing is required to make a definitive diagnosis of bovine TB.

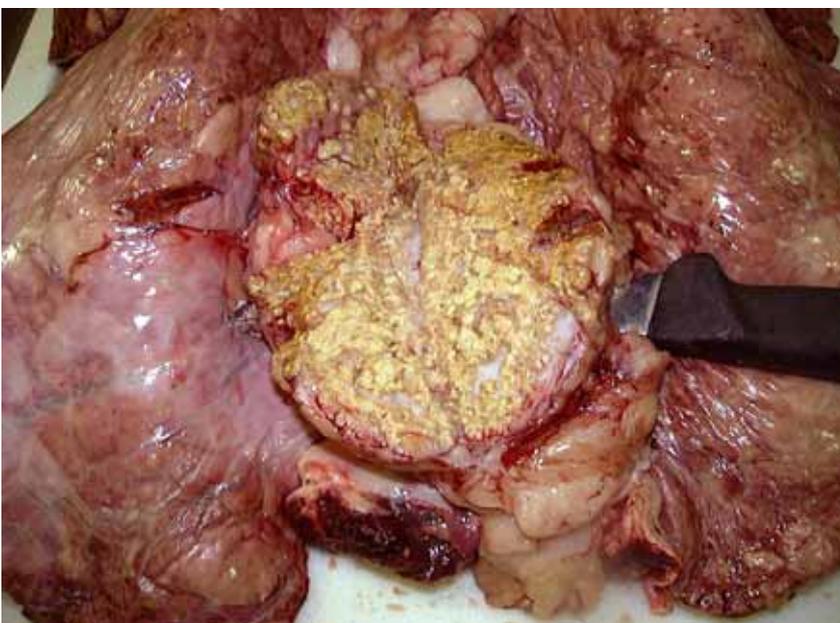
Post mortem examination of cattle and bacteriological examination of lesions are critical steps in the diagnosis of bovine tuberculosis.

- Finding of typical lesions may give a tentative diagnosis of TB.
- Histopathology may give a presumptive diagnosis.
- Isolation of *M. bovis* is required to give a definitive diagnosis.



Tuberculosis within the lymph nodes may be quite small.

NOT many lesions will be this advanced.



Appendix 3: What to do if you find suspect samples

1. Call the DOA for instructions

2. Sample Collection

1. Wear gloves remember TB can infect humans.
2. Keep samples as cleanly as possible – dirt etc. will prevent laboratory tests being meaningful.
3. Remove excess fat and muscle surrounding tissue.
4. If gut lymph nodes are included they need to be kept separate – bacteria from the gut pose a high risk of contaminating samples.
5. Keep samples in pots provided in the fridge and send to DOA asap.

3. Every time cattle are killed,

- 1. Fill in the form and send to the DOA .**

(Forms are available electronically, please contact Sarah Bowles on telephone 27366 or email sbowles@doa.gov.fk)



ON FARM BEEF KILL REPORT FORM

Property: _____

Name of Inspector: _____

Date	Breed	Age	Sex	Lymph Nodes Inspected			Suspect Samples Taken Y/N
				Head	Lungs	Guts	
<i>EG. 13/09/07</i>	<i>Angus</i>	<i>2</i>	<i>M</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>N</i>

Comments:

Please tick if you need more: pots
forms

WORMING HORSES

Overseas there is a wide range of internal parasites affecting different organs within the horse. However lab results at the Dept. of Agriculture suggest that there are only the following worms in the Falklands:

1. **Large strongyles (*Strongylus* spp.)**. Infest the large intestine. These are migratory, their larvae passing through the lining of blood vessels, liver and pancreas, depending on species. They cause damage to and inflammation of intestinal arteries, a common cause of colic, and can result in death. Larvae overwinter in pasture.
2. **Small strongyles**, also known as Cyathostomes or redworms. Infest the large intestine. Can be of major clinical significance. Non migratory, but larvae encyst and hibernate in the intestinal lining. Need specific wormers (see 'strategic dosing'). Mass emergence in late winter/spring can cause colic, severe diarrhea, and death, and heavily contaminate pastures.
3. ***Parascaris equorum*** (Ascarids). Infest the small intestine. A problem of foals. Large numbers have been associated with ill thrift and occasional death. Larvae migrate through lungs so signs of early infestation may include coughing/wheezing. Foals develop good immunity through exposure, but worming at 4 and 12 weeks of age advised to prevent overburden. Eggs resistant in pasture for up to 5 years, so not rearing foals on same pasture year after year provides good control.
4. ***Oxyuris equi*** or pinworm. Large intestine. A non-pathogenic worm, although causes tail rubbing.

Unlike the UK and Europe there are no bots in the Falklands. Tapeworm – of relatively low pathogenic importance although cases of intestinal obstruction have been recorded – does not appear to be present. However, as the latter is more of an unknown, occasional dosing may be advisable (see below for specific wormers).

Control measures:

A combination of:

1. Pasture management.
 2. Faecal worm egg counts.
 3. Anthelmintics.
1. Pasture management. All or some of these measures will reduce worm burden.
 - (a) Paddock rotation. Either complete annual rotation, or avoid previous year's horse paddock until end of December – overwintered pasture larvae die rapidly through spring and are dead by mid-summer.
 - (b) Grazing with sheep and/or cattle. Equine worms are harmless to these species, so act as hoovers. Use either as part of rotation to crop last

year's horse paddock, or for mixed grazing with horses to dilute worm burden.

- (c) Graze foals and nursing mares on 'clean' pasture.
 - (d) Remove dung at least twice weekly (mainly heavily used paddocks).
 - (e) In extreme cases, plough and reseed heavily infested paddocks.
2. Faecal worm egg counts (WEC). Used to detect anthelmintic resistance especially to Group 2 wormers, the benzimidazoles (see table), and to monitor level of local worm burden. Can adjust worming programme accordingly; helps reduce anthelmintic usage and development of resistance. Heavy grazing – perform WEC approximately 3 months after spring worming on about 20% of horses. Possibly repeat after worming again in the autumn (which should be a wormer which includes redworms). Extensive grazing – try to perform WEC on 10% twice annually. Faecal samples to be collected fresh and sent to Dept. of Agriculture ASAP.
3. Anthelmintics. Of all the wormers available there are just three drug groups (see table). Check the small print drug name, not the large print commercial name. Each group has different duration of activity and a different action. Tailor worming programme to circumstances: extensive grazing, worm in spring and autumn (latter using redworm anthelmintic – see table), and perhaps another occasion in between. Include occasional tapewormer (Group 1 wormer at double dose or combination wormer Equimax, done at spring or autumn worming). Monitor with WECs. Intensive grazing, especially multiple owners/communal grazing, may require more thorough worming regime. Note that pasture threat continues over winter.

General principles of anthelmintic use:

- (a) Treat all new arrivals.
- (b) Treat all horses simultaneously using same wormer.
- (c) Rotate wormers from year to year not through the year (exception being strategic dosing for redworm/tapeworm). The 3 wormer groups give a 3 year rotation. However, WECs often sometimes prove local worm resistance to Group 2 wormers, in which case drop them and go to 2 year rotation.
- (d) In communal grazing conditions where (a), (b) and (c) are not applied, worm more frequently. Rough guide to duration of effectiveness is: Group 1, 4-6 weeks; Group 2, 6-8 weeks; Group 3 – ivermectin 8-10 weeks, moxidectin 13 weeks.
- (e) Strategic dose using specific wormer for redworm (annually) and tapeworm (at least occasionally) (see above).

Weight Formula:

It is important to dose for the correct weight. Underdosing helps build anthelmintic resistance. Weighbands can be useful, otherwise use this formula:

$$\text{Weight (kg)} = \frac{\text{Girth (inches)}^2 \times \text{Length (inches)}}{600}$$

Girth is measured just behind the elbow. Length is from point of shoulder to ischial tuberosity (tail head)

ANTHELMINTICS AVAILABLE AT FALKLAND FARMERS		
Product	Drug	Comments
GROUP 1 Pyratape P Strongid P	Pyrantel Pyrantel	Not as good for killing strongyles and oxyuris, but use in wormer rotation. Kills tapeworms at double dosage.
GROUP 2 Telmin Panacur Lincoln Horse & Pony	Mebendazole Fenbendazole Oxibendazole	Do not kill tapeworm. Kill redworm, but for dangerous encysted form need to use Panacur over 5 days (increase cost). Resistance does occur.
GROUP 3 Equest Equimax Noromectin Furexel Vectin Eqvalan Efaquel	Moxidectin Ivermectin Praziquantel Ivermectin Ivermectin Ivermectin Ivermectin Ivermectin	Do not kill tapeworm, with exception of combination wormer Equimax. Kill redworm. Moxidectin most effective as kills encysted inhibited form of redworm and lasts 13 weeks.

Good Drenching Techniques

Drenching can be used for administering a number of liquid products to sheep and cattle, most commonly wormers or vitamin and mineral supplements. However like any management practice it is important to get it right for the sheep and the effectiveness of the product being administered.

Weight



Under dosing can be caused by underestimating the weight of the sheep. Weigh the largest sheep and use the recommended dose for the heaviest for the whole group. If there is a large variation of weight, separate them into smaller groups and again dose to the heaviest in the groups. **Make sure the weightcrate is accurate before starting!**

Maintenance of the Drench Gun

The gun should always be checked before drenching. Check the volume the gun is giving by discharging a dose into a measuring jug and checking it is correct. Adjust and check again if required. Maintain the gun by cleaning it with warm soapy water after use. Also check the gun to make sure everything is working and that no air bubbles will form. For reliable performance guns should be regularly replaced.



Correct Drenching Technique

Correctly drenching the sheep is an important part of making sure the wormer does the job.



Make sure the sheep are restrained properly to avoid serious injury or even death, make sure they can't run around while drenching so they swallow the whole dose. Place a hand under the head and tilt slightly to the side. Slot the nozzle into the gap between molar and incisor teeth and then over the tongue.

Storing Products

Store all products securely away from direct sunlight, also check the before date and use within the period of time stated on the label.

Important Note: always read the instructions on the labels no matter how often you have used the drench because the recommended dose rates and withdrawal periods do change.

For more information please contact the DoA on telephone 27355 or the Veterinary Section on 27366 or the drench manufacturer.



Ram MOT

Don't wait until scanning or lambing to find out if the ram has worked!

Ensure you do a ram MOT ten weeks before joining, this should give you time to correct problems if they arise.

How to check your rams

Toes

Check his locomotion and feet

Teeth

Check for under or over shot teeth, gaps and molar abscesses

Testicles

Measure and check firmness (flexed bicep) with no lumps or bumps

Tone

Aim for good body condition, ideally 3 (spine well covered)

Treat

Parasites or any other problems

Rams need to be fed well 10 weeks before joining.

If body condition is low or testicle tone or size is poor, good pasture or additional food can improve semen quality and quantity.

Ideally purchase rams well in advance of the breeding season.

To ensure they are fit and ready to work and acclimatised to your system. It will take 3 week for their rumen to adjust to any new pastures.

you would like any more information or help with your ram MOT please contact Warren Landles or Helen Thoday.



Bull MOT

Maximise bull potential by planning ahead to minimise poor fertility in bulls. Don't wait for preg checking or calving to find out how good your bull is.

Ensure you do a bull MOT a few weeks before joining, this should give you time to correct problems if they arise.

Always be aware when handling bulls. Always use sound appropriate handling facilities.

How to check your bulls

Toes

Check his locomotion and feet

Testicles

Look for an even pair of testicles, firm and springy and without lumps
Scrotal Circumference should be at least 34cm in bulls over 24 months
Clean the penis sheath if necessary

Test

Semen can be collected and evaluated to assess sperm quality

Tone

Bulls should be fit and the correct Body Condition. Condition Score of 3 is ideal
Bulls should be on a rising plane of nutrition as the breeding season begins

Treat

Identify any problems during the MOT and treat appropriately

Semen production takes 60 days so the bull must be in good condition and ready for work at least 8 weeks before the breeding season begins.

Assess mating ability and libido.
It does not stop at the MOT. Observe bulls serving cows and note dates and activity levels.



Location

L shaped brown building with a silver roof, on south side of By Pass Road, before the fuel station on the way to Stanley Airport

Consultations & Operations

Strictly by appointment only
(telephone 27366)

Operations are routinely carried out on Tuesday and Thursday mornings.

All fees are payable at the time of consultation or on collection of your pet.

Please remember to allow your dog a toilet visit before coming to the clinic.

Consultations by appointment only

Contact details:

Tel: +500 27366/Fax: +500 27352
After hours emergency number 55366

Senior Veterinary Officer

Steve Pointing BVSc, MSc, MRCVS
Email: spointing@doa.gov.fk

Veterinary Officer

Dr Claudia Glatzmeier
Email: cglatzmeier@doa.gov.fk

Practice Manager

Sarah Bowles
Email: sbowles@doa.gov.fk

Vet nurse/assistant

Teenie Ross
Email: tross@doa.gov.fk

Hydatidosis
in the
Falkland
Islands

Handout for dog owners

Plus contact details for the
veterinary service

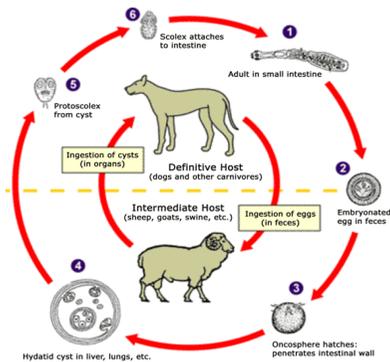


The disease & life cycle

Hydatid disease is a zoonosis (transmissible from animals to humans) that has probably been present in the Falkland Islands from the earliest introduction of sheep and sheep dogs.

Hydatids is caused by the tapeworm *Echinococcus granulosus* which lives in the gut of dogs. Its life-cycle also involves an intermediate host, mainly sheep. Sheep pick up eggs from pasture where infected dogs have defaecated; as a result, cysts form in the sheep and dogs become infected by eating infective cysts in raw offal of sheep (liver or lungs). Neither dogs, nor intermediate hosts, develop clinical signs following infection, so it's difficult to determine whether or not live animals are infected.

Occasionally humans can act as the intermediate host (like the sheep) with infection occurring most commonly in children who tend to be less careful about their personal hygiene after handling dogs or puppies that are shedding eggs. Because the cysts often grow at a very slow rate the person may not become aware that they have been infected until many years after infection actually occurred. Most infected sheep are killed or die naturally of old age long before showing any clinical symptoms relating to the development of cysts in various body organs.



The only way to detect infection in sheep and cattle is by examination of the offal of slaughtered animals. This occurs in the Sand Bay abattoir and any suspect hydatid cysts are sent to a laboratory for confirmation.



Background

The disease has been studied in the Falkland Islands since the early 1950's when the Ajax Bay freezer works were built. At that time the infection rate in sheep was found to be about 3.3%. Since then further surveys have been carried out and the Falkland Islands Government has enacted various pieces of legislation in an attempt to eradicate the disease from the Islands. To date this has only been successfully achieved in New Zealand, Tasmania and Iceland.

The infection rates (in sheep) in the Falkland Islands have fallen considerably since compulsory worming of all dogs was introduced in the 1970's.

The first piece of Falkland Island legislation connected with the control of Hydatids was introduced in 1965 (Tapeworm Eradication (Dogs) Order No 1). This was followed by the Tapeworm Eradication (Dogs) Order No 2 in 1970 which for the first time prohibited the feeding of sheep offals to dogs as well as requiring the regular worming of dogs.

In 1975 a further order was introduced (Hydatids Eradication (Dogs) Order) which tightened up previous controls and increased penalties for non-compliance.

The final piece of legislation enacted was the Hydatid Eradication (Dogs) Order 1981 and this is the Order that we are currently operating under. The legislation details methods for offal disposal and also states that 'No person shall feed or allow to be fed to any dog any liver, lung or heart of an herbivorous animal nor shall any person allow any dog access to such liver, lung or heart of any such animal'.

The main aim of our hydatid control programme is to ensure that dogs do not have access to sheep offal and ultimately the eradication of the adult and larval stages of *E. granulosus* from the definitive host (dogs) and intermediate host (sheep).

Thanks to excellent cooperation from dog owners and the farming community, in 2014 the prevalence of hydatidosis in the Islands stood at a mere 0.02% - excellent, but still not quite at the elusive 0% we strive to reach, making it all the more important to ensure the programme is always strictly adhered to.

Current Practices

All dog owners island-wide are responsible for worming their pets and must contact the Veterinary Service and confirm when this is done. Dog dosing dates for 2015/16 are shown below along with contact details for the veterinary service;

Telephone 27366 (if after normal working hours, please leave a message) or email sbowles@doa.gov.fk

Date	Drug
Wednesday 18 th March 2015	Droncit
Wednesday 22 nd April 2015	Droncit
Wednesday 1 st July 2015	Droncit
Wednesday 5 th August 2015	Droncit
Wednesday 14 th October 2015	Droncit
Wednesday 18 th November 2015	Droncit
Wednesday 2 nd December 2015	Droncit
Wednesday 9 th January 2016	Droncit

Please contact the Veterinary Service for up to date dog dosing dates

Rules to Remember

Treat your dog with the worming preparation supplied to you by the veterinary service on the dates given above, then contact us & confirm he/she has been wormed

Never feed offal (heart, liver or lungs) to your dogs

Always ensure your dog is confined unless being exercised under direct supervision

Thank you for your cooperation

A code of practice to help control CLA (boils)

Although it is probably not possible to completely control CLA by adopting good hygiene practices alone there are some good management practices you can adopt on the farm to try and minimise the spread of the disease throughout your flock. Codes of practice are most effective when they are kept short and to the point because you are more likely to remember them so please take time to read the recommendations before the start of each shearing season.

- 1) The disease is mainly spread from older infected sheep to younger non - infected sheep – so DON'T MIX AGE GROUPS IN THE SHEARING SHED OR COUNTING OUT PENS.
- 2) The disease is mainly spread post shearing while the shorn sheep are kept in close proximity to each other – so GET SHEEP OUT INTO THE Paddock AS SOON AS POSSIBLE POST SHEARING.
- 3) The bacteria which causes CLA gains entry into non - infected sheep via new shearing cuts – so KEEP SHEARING CUTS TO A MINIMUM AND DRESS FRESH WOUNDS WITH AN ANTISEPTIC SPRAY.
- 4) Most infection is caused by sheep to sheep transfer of the bacteria but a few cases may be caused by dirty shearing gear (equipment and clothing) or from dirty surroundings – so ASK SHEARERS TO KEEP THEIR SHEARING GEAR AS CLEAN AS POSSIBLE PARTICULARLY WHEN THERE ARE REST BREAKS AND AT THE START OF EACH DAY AND KEEP THE SHEARING BOARD AND SHEARING SHED AS CLEAN AS POSSIBLE.
- 5) Much of the spread of CLA in the Falklands is from sheep with lesions in their lungs (which you can't see) but some sheep have obvious lesions (boils) under their skin – so SEPARATE OUT THESE SHEEP POST SHEARING AND CONSIDER CULLING THEM.

All of the points listed above are sensible precautions to take when trying to reduce the prevalence of CLA on your farm but the 2 most important points are points 1 and 2. If you are unable to implement the first 2 points then it is unlikely that you will ever manage to bring CLA under control on your farm by management means alone. To achieve this goal you would also need to embark on a lengthy vaccination campaign over several years. Vaccination has been covered at length during farm meetings on both East and West Falkland and, subsequently, during Farmers Week in July 2014. If any farmer wants to know more about what vaccination against CLA involves then please call the Vet Section of the DoA on 27366 or email spointing@doa.gov.fk