Preparing an Udder

for milking, collecting a sterile sample & drying off

Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK.
Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Year Group: BVSc 1+

Booklet Contents

There are several sections in this booklet describing to each of the relevant skills.

Each main section begins with a list of equipment and any considerations for the station/skill. Please read these before starting the skill.

The subsections are:

A. Preparing an Udder for Milking

B. Preparing an Udder for Collecting a Sterile Milk Sample for Bacteriology

C. Drying Off:

C(i) Preparing an Udder for Drying Off

C(ii) Administering Dry Cow Therapy

C(iii) Administering Teat Sealant

D. Post Dipping

After practising each skill, at the end of the booklet please read and refer to:

- 'Resetting the station'
  - Please read this page when finishing each skill, and tidy up and reset the station for the next student/s
- 'I wish I'd known…'
  - Tips related to the skills described in the booklet

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A: Preparing an Udder for Milking

When this skill would be used:

- The udder preparation technique is used for preparing an udder for machine milking or for hand stripping when checking for mastitis (looking for changes in the milk).

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Equipment list:

A: Preparing an Udder for Milking

Equipment for this station:

- Cow model (fitted with milking udder) or simple udder model
- Vinyl gloves
- Paper towels
- Teat dip bottle

Considerations for this station:

- When working with a cow, ensure she is aware of your presence before touching the udder, so you do not take her by surprise.
- Clean gloves are cleaner than clean hands, therefore clean gloves should always be worn when handling an udder.
- The instructions in this booklet describe using a teat dip cup. On some farms a spray is used for teat preparation.
- Depending on the parlour type, the udder may be approached from behind (e.g., in a herringbone), or the side (e.g., in an abreast or tandem).
- **When using the model in the CSL approach from the side.**

Anyone working in the Clinical Skills Lab must read the 'CSL_I01 Induction' and agree to abide by the 'CSL_I00 House Rules' & 'CSL_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.

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Clinical Skills:

A: Preparing an Udder for Milking

Put on a **clean** pair of disposable gloves.

Wyndhurst farm

In the CSL

The teat dip bottle contains a suitable pre-dip solution. Squeeze the bottle to fill the cup on top with foam or liquid (depending on the type of pre-dip in the bottle). There should enough in the cup for all 4 teats.

In the CSL the pre-dip has been replaced with a dilute iodine handwash solution, which will foam. This solution is used to prevent damaging the model.

Dip each teat in turn (the order does not matter) with the pre-dip by placing the cup over the teat for a few seconds. Each teat should now be covered with pre-dip. The pre-dip solution should be left on the teat for at least 30 seconds before moving onto step 4.

After 30 seconds, wipe the teats dry. Use a new clean paper towel for each teat (the order does not matter).

Note: In the parlour you would teat tip each cow in the line and then come back to dry the teats (by which time approximately 30 seconds would have elapsed).

Before applying the cluster, discard 10-15ml of milk from each teat by stripping (i.e. draw 3 to 4 good strips of milk). The order does not matter. To do this, grip the base of the teat between your thumb and index finger. Then bring your other fingers towards your palm consecutively, from middle finger to little finger, squeezing the teat in a downwards motion.

The udder is now ready for milking.

After milking, perform post-dipping:

- Go to Section D

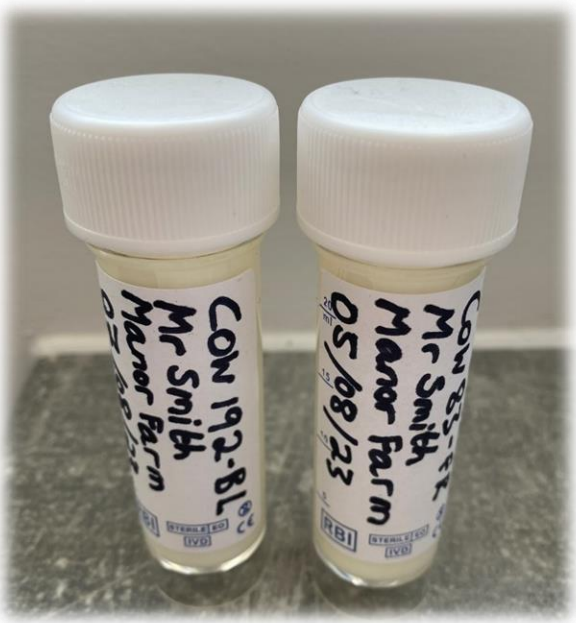
Further steps are required to:

- *Collect a sterile milk sample – see Section B*
- *Prepare an udder for drying off – see Section C*

B: Preparing an Udder for Collecting a Sterile Milk Sample for Bacteriology

When this skill would be used :

- Milk samples are collected to determine the pathogen(s) that are causing mastitis.
- The vet and the farmer use the information so that treatment protocols and management changes can be applied appropriately.
- It is important to take a sterile sample, to determine which pathogens are causing the mastitis.
- Contamination of the sample with e.g., faecal material, other dirt, etc. will give a false result.



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Equipment list:
B: Collecting a Sterile Milk Sample for Bacteriology

Equipment for this station:

- Cow model (fitted with milking udder) or simple udder model
- Vinyl gloves
- Paper towels
- Teat dip bottle
- Bottle of 'surgical spirit'
- Cotton wool
- Milk sample pots
- Marker pen

Considerations for this station:

- The surgical spirit has been replaced by water in the clinical skills lab to avoid damage to the rubber teats.
- Labelling samples correctly is extremely important so that the results can be matched to the correct cow and appropriate action implemented accordingly.

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Clinical Skills:

B: Collecting a Sterile Milk Sample for Bacteriology

Having completed steps 1-6 in Section A, now prepare the udder for collecting a sterile milk sample.

Put on a new pair of gloves before preparing the udder for sterile milk sampling.

Apply surgical spirit to a clean cotton wool swab.

If practising in the CSL, the surgical spirit has been replaced with water to avoid damage to the rubber teats.

Disinfect the teat end by thoroughly cleaning (scrub gently) with the surgical spirit swab; only make contact with the teat end**.** Repeat with new surgical spirit swab/s until the cotton wool comes away clean.

Do not touch the teat again with gloves or hands.

If any dirt is splashed onto the udder, repeat previous steps before progressing any further.

Remove sample pot lid and hold in the palm of your hand with the inside of the lid against your palm. This will keep the inside of the lid clean.

Collect a sample by drawing 4 strips of milk from the teat into the collection pot (using the technique described in Section A).

The pot should be held at an angle to help prevent any dirt falling into it.

Put the lid on immediately after collecting the sample.

Label the sample pot with the cow identification number, quarter sampled, date, farmer's name and the farm name.

Now perform post-dipping:

- Go to Section D

C: Drying Off

Section C: 'Drying Off' has 3 subsections:

C(i) Preparing an Udder for Drying Off

C(ii) Administering Dry Cow Therapy

C(iii) Administering Teat Sealant

When this skill would be used :

- Cows are dried off at the end of their lactation period, to allow the udder a period of time to recover in preparation for the next lactation.
- Drying off is usually done after milking. The cows should be milked as normal, the milking parlour should be thoroughly cleaned and then the cows to be dried off are brought back into the milking parlour.
- It is important that cows are dried off in a sterile manner to prevent introducing infection into the udder.
- It is important to identify cows that have been dried off. Such cows are typically identified using e.g., spray paint and/or tail tape, and details must be entered into the farm recording system (diary or computer program).

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Equipment list:

C: Drying Off

Equipment for this station:

- Cow model (fitted with milking udder) or simple udder model
- Vinyl gloves
- Paper towels
- Teat dip bottle
- Bottle of ‘surgical spirit’
- Cotton wool
- Intramammary tubes

Considerations for this station:

- The surgical spirit has been replaced by water in the clinical skills lab to avoid damaging the rubber teats.
- In the CSL the same intramammary tubes are used to practise administering dry cow therapy and teat sealant, and they do not contain any product.
- Note: The same preparation as described for drying off is used before infusing an intramammary tube to treat mastitis.

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Clinical Skills:

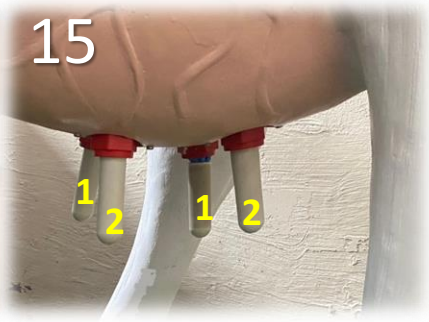
C(i): Preparing an Udder for Drying Off

Having completed steps 1-6, now prepare the udder ready to dry off the cow.

Put on a new pair of gloves before preparing the udder for drying off.

Apply surgical spirit to a cotton wool swab.

If practising in the CSL, the surgical spirit has been replaced with water to avoid damage to the rubber teats.



Start by disinfecting the teats furthest away from you (both numbered '1' in the photo above), then disinfect the teats nearest to you (both numbered '2').

This is done to avoid accidental contamination of previously disinfected teats.

Disinfect the teat end *(start with one of the far teats)* by thoroughly cleaning (gently scrub) with the surgical spirit swab; only make contact with the teat end**.** Repeat with new surgical spirit swab/s until the cotton wool comes away clean.

Do not touch the teat again with gloves or hands.

Repeat step 16 for each of the other teats. Do the other far teat next ('1'), and then the two near teats (both numbered '2' in the photo).

If any dirt is splashed onto the udder, repeat previous steps before progressing any further.

Once all four teats have been disinfected, the udder is ready for dry cow therapy and teat sealant.

If using a dry cow antibiotic, this must be inserted BEFORE the teat sealant – go to Section C(ii).

If no antibiotic is required, go to Section C(iii).

Clinical Skills:
C(ii): Administering Dry Cow Tubes

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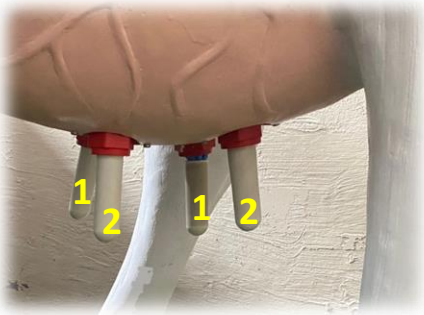
Cows that have been identified as needing antibiotics at drying off will receive a dry cow antibiotic tube and a teat sealant in all teats at drying off.



Having prepared the udder for drying off (steps 13-18), the udder is now ready for dry cow antibiotic tubes.

Administer a tube into each teat, **start with the teats closest to you** (both numbered '2' in the photo).

Note: In the CSL the antibiotic tubes and the teat sealant tubes are the same, and do not contain any product.

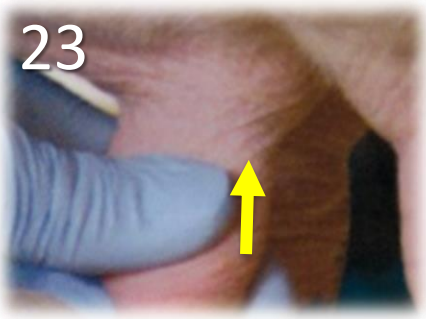
21

Remove the lid from the antibiotic tube as shown above.

22

Stabilise the teat with your hand without occluding it. Then gently insert the nozzle of the tube into the teat orifice. Then press the plunger to inject the entire contents of the tube into the teat.

23



Massage the teat in an upwards motion, to infuse the antibiotic into the udder.

24

Repeat the process for the other teats. Do the other near teat next ('2' in the photo above), and then the two far teats (both numbered '1' in photo).

Before moving onto administration of a teat sealant in Section C(iii), repeat disinfection of the udder - see steps 13-18.

Clinical Skills:
C(iii): Administering Teat Sealant

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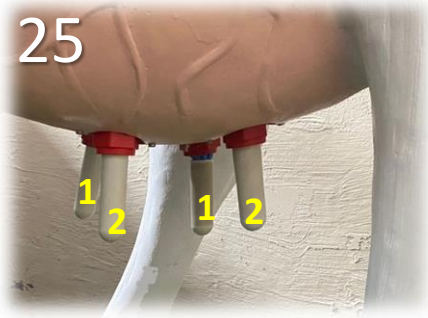


Having completed steps 13-18, the udder is now ready for teat sealant.

Apply the sealant to each teat, start with the **nearest** teats (both numbered '2' in the photo above).

Note: In the CSL the antibiotic tubes and the teat sealant tubes are the same, and do not contain any product.

26

Remove the lid from the teat sealant tube.

27

Grasp the base of the teat between your index finger and thumb where the teat meets the base of the udder and gently squeeze.

This is to prevent any of the teat sealant going up into the udder.

28

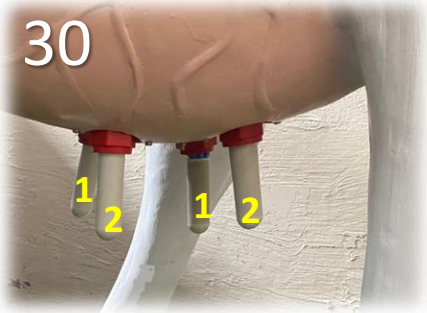
Without releasing the pressure on the teat, gently insert the nozzle of the teat sealant tube into the teat orifice.

Then slowly press the plunger to inject the sealant into the teat canal and into the teat cistern, without releasing the pressure applied to the teat base.

29

After infusion DO NOT massage or squeeze the teat as this may dislodge the sealant.

30



Repeat the process for all teats. Do the other near teat next ('2' in the photo above), and then the two far teats (both numbered '1' in the photo).

Now the udder has been dried off, go to Section D for post-dipping.

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Clinical Skills:

D: Post Dipping

Perform post dipping immediately after:

- Milking
- Collecting a sterile milk sample
- Administering dry cow therapy
- Administering teat sealant

Teat dip all teats with teat dip solution and leave to air dry.

Remove used gloves and dispose of them in a bin.

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Resetting the station:

Preparing an Udder for Milking, Collecting a Sterile Sample & Drying Off

1. If the model cow is empty, please report to a member of the CSL team.
2. Wipe the teats clean with a wet wipe.
3. Dispose of used towels, gloves and cotton wool swabs in the bin.
4. Empty the sample pot and replace in the box on the table.
5. Place all equipment used back on the table.

Station ready for the next person:

Please inform a member of staff if equipment is damaged or about to run out.

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I wish I'd known:

Preparing an Udder for Milking, Collecting a Sterile Sample & Drying Off

- Cows can kick, so be careful where you put your arms.
- If needing to bend down to take a milk sample: never kneel, always crouch. You can then move away quickly if necessary to avoid getting kicked.
- Excessively dirty udders should be washed off with clean water in the parlour prior to preparing the udder.
- When in the parlour with a line of cows ready for milking, you would prepare the udder of each cow in turn i.e., all cows are teat dipped etc., before applying the clusters.
- When collecting a sterile milk sample:
  - Correct labelling is **essential** when taking samples. Don't forget to include:
    - Cow ID, quarter sampled, date, farmer's name and the farm name
  - Samples should be stored in a fridge and sent to the laboratory as soon as possible (within 24 hours).
  - If it is likely to be more than 24 hours before sample/s are sent in the post, the sample/s can be put in the freezer.
- Drying off:
  - It is important to identify cows that have received treatment or been dried off. Such cows are typically identified using e.g., spray paint, tail tape, and details must be entered into the farm recording system (diary or computer program).
  - Do not massage the teat sealant up into the udder. The teat sealant must remain in the teat cistern in order to be effective.
- Useful links:
  - Selective Dry Cow Therapy (nadis.org.uk)