



PRODUCT STEWARDSHIP

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BEST PRACTICE ADMINISTRATION GUIDE

zoetis

SECTION 1

PRODUCT STEWARDSHIP: APPROPRIATE ADMINISTRATION IS OF UTMOST IMPORTANCE

Intramammary products play an important role in maintaining good animal health, productivity and milk quality on dairy farms. They include antibiotics administered during lactation or at drying off and internal teat sealants administered to lactating cows at drying off or to maiden heifers prior to calving.

The manner in which intramammary products are administered affects not only their performance, such as cure in the case of antibiotic dry cow therapy, but also the risk of an adverse event like clinical mastitis occurring. All veterinary medicines should be used carefully. Because intramammary products are widely-used, the adverse effects of inadequate hygiene or physical injury can be applied across large numbers of animals. When authorising intramammary products, veterinarians should ensure operators are well-trained in order to not only maximise the return on investment but also to minimise risks to animal welfare.

Including a best practice administration discussion in milk quality consultations ensures that farmers receive a timely reminder of its importance and demonstrates excellent product stewardship. Offering an on-farm training or administration service is even better. Zoetis encourages veterinarians to actively drive best practice administration and has produced several resources to support veterinarians. Please contact your Zoetis area manager or veterinary advisor if you are interested in learning more.

NON-ANTIBIOTIC

- Teatseal is a non-antibiotic internal teat sealant for the prevention of mastitis in the dry period and around calving. It is administered to cows at drying off like antibiotic dry cow therapy, either alone or in combination with antibiotics. Teatseal can also be used in heifers prior to their first calving. Excellent hygiene is essential when administering Teatseal.

WHY IS HYGIENE SO IMPORTANT?

- ALL intramammary treatments must be hygienically infused – they are not formulated to kill bacteria introduced by poor technique.
- Infections associated with poor hygiene can cause potentially fatal mastitis.
- Looking clean is not good enough. Teat ends must be cleaned until the alcohol impregnated teat wipe or cotton ball comes away completely clean.



SECTION 2

PREPARATION



Plan well in advance to avoid a last-minute rush and to allow latitude for bad weather, because administering intramammary products to animals with water running down their teats is a known risk factor for severe mastitis. Avoid drying cows off on the very last day of the season if cows need to be transported or if continuity of care may be compromised due to staff changes. Pay attention to withholding periods of antibiotic dry cow therapy, especially for late dry off cows.

- Identify who will be administering the Teatseal and/or dry cow therapy and ensure they are trained. It is essential that everybody in the team follows a consistent protocol to avoid confusion and mistakes. Ensure personal protective equipment is available to protect operators from infectious diseases like leptospirosis and campylobacter. Also, all operators should be aware of the standard dairy farm hazards and should be competent in working around cows due to the risk of physical injury.
- Work out how many people you need, which is a function of the number of heifers/cows you will treat at one time. If you need a large team, make sure it is clear who the team leader is, because they will need to coordinate drying off and ensure it is being done correctly.
- Consider how many animals you can treat in one day, which is affected by the number of operators you have, how clean the teats are, and how long the animals will be standing in the yard. As a rough guide, expect to treat about 10-15 heifers or 10-25 cows per operator per hour (but the job should take as long as it needs to do it properly). Only treat enough animals in one sitting to ensure cows do not spend more than two hours between milking and drying off. If Teatsealing heifers, bring the heifers onto the yard from the paddock in subgroups to keep yard time down. The longer animals are yarded, the dirtier their teats become and the slower they are to clean. For cows, their udders fill with milk (dry cow therapy should be given to milked out udders) and their teat ends close (which makes it harder to insert the syringes). Finally, the longer animals are yarded, the hungrier and more agitated they become and they are more likely to run back to the paddock and potentially lose their dry cow therapy. Keeping sessions short also keeps operators fresh and reduces the chance of mistakes.
- Dry cow therapy should be administered immediately after the last milking for cows. Heifers are typically Teatsealed about one month prior to the heifer planned start of calving. It is not recommended to administer dry cow therapy while other cows are being milked into the vat for supply because a cow might be inadvertently cupped after being dried off. Even a tiny amount of dry cow therapy on somebody's hands is enough to set off an inhibitory substance grade.
- Milk production may need to be reduced in the week prior to drying cows off if they are producing more than 10L per day. Do not practice skip-a-day milking as it is a risk factor for early dry period mastitis, and never withhold water from cows. For more information about management of cows at drying off, go to www.zoetis.co.nz/dairywellness.

SECTION 3

ADMINISTERING TEATSEAL AND DRY COW THERAPY



- Check the facilities. If you are Teatsealing heifers, make sure the heifers can be kept tightly grouped so they can't move around when being Teatsealed. The ideal facility is a herringbone shed or a purpose-built heifer Teatsealing trailer.
- When Teatsealing heifers it is essential that all operators are calm and quiet. There should be no dogs, prodders or other devices that will agitate the heifers. If you are Teatsealing heifers in your cow shed, acclimatising the heifers by running them through the shed several times in the fortnight before Teatsealing will make the job run smoother.
- Choose paddocks with no bare dirt or lying water for cows that have just been dried off.

ALL OPERATORS SHOULD AT LEAST HAVE THE FOLLOWING EQUIPMENT

PERSONAL PROTECTIVE EQUIPMENT

- Boxes of gloves
- Milking sleeves or arm-length gloves
- Aprons or waterproof overalls
- Hats

DRY COW THERAPY EQUIPMENT

- Dry cow therapy (ensuring you have enough to allow for dropped syringes)
- Paper towels for drying hands
- Disinfectant
- Warm water
- Buckets
- Teat wipes or cotton wool balls in a container for cleaning teats
- Warming buckets (for warming dry cow therapy if necessary)
- Towels for drying excess moisture off clothing
- Paint for marking cows
- Mastitis treatments (if clinical mastitis cases are found)
- Recording pads for documenting any animals with mastitis or teat problems
- Head torches for dimly-lit sheds
- Teat spray

ZOETIS TEATWIPES INCLUDED

Zoetis Teatwipes are produced to the highest quality and have a 99% bactericidal effect*. They are specifically designed to clean and disinfect surfaces and are made from textured cloth. They come in a convenient dispensing container which supports our Best Practice Administration recommendations when using Teatseal or Dry Cow products. Upon request, 2 containers of wipes can be provided with every bucket of Teatseal.



* Independently tested by New Zealand Laboratory Services.

BEFORE YOU START

- Double check that your team has a consistent method and that everybody knows which cows are getting what dry cow therapy.
- Identify who is doing what and avoid people jumping in to help if they are not trained to your protocol. It's a good idea to do a refresher before each session.
- Check the weather. If it is raining and water is running down the teats, postpone.
- If it is cold, you may choose to warm the syringes to make them easier to infuse, but this is not essential. The best way to warm the syringes is to float the dry cow therapy bucket in a larger bucket containing warm water. The syringes must always remain dry. If you do choose to warm the syringes, they need only be warmed to approximately 20 degrees Celsius. Overheating the dry cow therapy could burn the cows' teats, possibly damage the dry cow therapy and could make it so runny that it leaks out of the cows' teats.
- As you set the shed up, think about the light. In herringbone sheds, cows are best rowed up on the wall side so the light is shining on their udders. It can be difficult to find the teat orifice in dim light, especially in cows or heifers with black teat ends, and this increases your risk of damaging teats.
- Set everything up so it is within reach but sheltered from contamination. Keep the lids on dry cow therapy buckets. Set up buckets of warm water with disinfectant for washing hands between animals and change as needed. Make sure there are rubbish bins available so syringes, caps and wipes don't block effluent systems. Operators should have dry cow therapy syringes, teat wipes and paint on their person in easy-to-reach positions, with the syringes protected from contamination.
- Record the batch and expiry numbers of products.

GENERAL ADVICE

- Ensure the animals are loaded so they are not too loosely packed and mobile.
- As well as working clean, you need to work dry. Your hands, the syringe and the cow's teat end should all be dry. You should wash and dry hands between every animal.
- Clean and administer one teat before moving onto the next to minimise the time between cleaning and administering.
- Only take enough syringes to treat one animal at a time. If you carry more than enough for one animal, you run the risk of inadvertently missing or double-treating a quarter.
- When you approach the cow or heifer, let her know you are there.
- Mark her up as required.
- It is a good idea to check for clinical mastitis first. If you find a case of clinical mastitis, always change your gloves to prevent cross contamination.
- Try to keep one hand on the teat the whole time instead of taking it on and off, which will unsettle the cow. If the cow is agitated, check you aren't pulling the long hair around her teat.

CLEANING THE TEAT

- Dirt must be physically removed. It is not good enough to spray meths or teat spray without physical cleaning.
- The same person should clean the teat and administer the dry cow therapy.
- Ideally use the teat wipes that come with the Teatseal or dry cow therapy. Alternatively, balls of cotton wool soaked in 70% methylated spirit, 30% water can be used but excess fluid should be squeezed out before cleaning the teat as it needs to evaporate to kill microbes.
- Treat one surface of the wipe as the clean side and the other as the "dirty" side in contact with your hand. Do not use the "dirty" side to clean the teat.
- Make sure your hands are clean and dry, otherwise you will transfer dirt from your hands to the teat as you clean the teat.
- Cleaning should focus on teat ends, not the whole teat.
- Rub the teat end vigorously with your thumb through the teat wipe.
- The definition of clean is when the wipe comes away clean after firm pressure. You should use as many wipes as it takes to clean the teat, not a set number like one per teat or one per animal.
- If teats are heavily contaminated, you can send somebody ahead to remove heavy contamination first. However, cows should be treated straight after milking, so their teats should be clean. Reassess the process if teats are heavily contaminated (perhaps the cows have been yarded for too long).
- Do not brush the teat wipe against contaminated surfaces, such as the side of the teat or your wrist.
- The teat end should be dry when you come to administer the dry cow therapy.
- Do not spray anything (e.g. teat spray or methylated spirit) onto the teats until after you have finished treating all teats. Droplets hanging from the teat end harbour contaminants.
- In the case of heifers, it is normal for some secretion to come out of the teat orifice when you clean the teats. It can range from colourless to dark brown in colour.



ADMINISTERING THE PRODUCT

- Take a syringe and remove the cap and drop the cap into a bin. This is best done by gently bending the tip until the cap releases. Do not use your mouth because you might contaminate the syringe or damage the syringe tip with your teeth.
- Strip some milk out if you cannot see the teat orifice.
- In the case of heifers, do not expect to be able to infuse Teatseal into every quarter of every heifer. Approximately 1.5% of heifers have quarters that are blind at the time of Teatsealing. It is essential that these be recorded.
- Use the hand that is holding the teat to anchor the hand holding the syringe so you have better control.
- Keep the teat straight and not kinked.
- Partially insert the syringe tip, taking care not to brush stray hairs or unclean parts of the teat. If the syringe tip touches anything else, discard it and take a new syringe. DO NOT clean the syringe tip and re-use it. The syringe only needs to be inserted far enough to ensure the product goes up the teat canal – a maximum of three millimetres.



ANTIBIOTIC DRY COW THERAPY

Antibiotic treatments need to disperse into the udder so they should be infused into the teat and then massaged up into the udder.

INTERNAL TEAT SEALANT

Unlike antibiotic treatments, Teatseal needs to stay in the teat. Gently pinch the base of the teat when you dispense the Teatseal and DO NOT massage it up into the udder.

ANTIBIOTIC DRY COW THERAPY AND TEATSEAL IN COMBINATION

Always administer the antibiotic first, massage it up into the udder and then re-clean the teat before administering the internal teat sealant.

SECTION 4

WHAT NOT TO DO

Drying off practices are changing. A higher standard of hygiene is being applied as awareness of the risks of taking shortcuts is increasing and also because we are using less antibiotic dry cow therapy. We have taken advice from vets and farmers around the world and seen for ourselves what works. We have also found out what doesn't work. By avoiding these common mistakes, farmers set themselves up for an easier spring with less mastitis because they took more time at drying off.

- Having a clear plan and a consistent team approach eliminates a lot of mistakes. When the job has been rushed and done at the last minute, things tend to go wrong.
- If the job is held up and starts late, do not make up for lost time by speeding things up. Instead, you will need to dry off fewer cows. This relates back to planning ahead to allow for contingencies and not planning to dry cows off on the last possible day.
- Try to resist the temptation to dry off hundreds of cows in one go.
- Don't administer an intramammary product without checking the wipe has come away clean.
- Don't administer dry cow therapy during heavy rain if the water is running down the teats.
- Never wash cows' teats with a hose, and make sure hoses aren't being used while cows are being dried off.
- Never warm syringes by floating them directly in water, even if it contains an antiseptic.
- Don't have one person going ahead cleaning teats and somebody else administering the dry cow therapy.
- Teat wipes come free with dry cow therapy. Don't scrimp by using only one wipe per cow, or recycling the wipe that was used to get the worst off for fine cleaning of the teat end. If your hands are dirty and they are making the teat wipe dirty, clean your hands and come back.
- Remember to keep the lid on your dry cow therapy buckets. If the syringes are getting splashed, you have compromised your hygiene. There shouldn't be any moisture inside. If there is, your hands are too wet.
- DON'T put animals on a feed pad or stand them in a race immediately before or after using Teatseal or dry cow therapy.
- Don't let cows run back to the paddock. If you see that happening, you have possibly held cows off feed for too long.
- Don't use a syringe if the tip is contaminated. Discard it. Do not attempt to clean the tip.
- Don't spray anything on teats between cleaning and administration.

FOR ALL INTRAMAMMARY PRODUCTS

- Record any blind quarters, clinical mastitis cases or other unusual findings on our recording sheet.
- If you become heavily contaminated during the job, stop and clean yourself.
- Sometimes the product will run out down the syringe instead of going up into the teat. That means that the syringe tip isn't properly positioned in the teat canal. If that happens, it is best to withdraw the syringe and ask somebody to hold it while you re-clean the teat end. Gently squeezing some milk out will help open the teat and show you where the orifice is. If you are finding it difficult to insert the syringe tip into a lot of cows, they have probably waited too long in the yard.
- After you have treated all four teats, apply teat spray at the high strength concentration, ensuring proper coverage, and mark the animal as treated. Each operator should mark their animals with a unique colour to help troubleshoot any mastitis cases that occur.

Before you move on to the next animal, wash and dry your hands and take another set of syringes. It is not acceptable to wipe your hands down with teat wipes, as this only spreads the contamination evenly across your hands. It is also not acceptable to wash your hands without drying them.



SUMMARY, USING COMBINATION THERAPY AS AN EXAMPLE

- 1 Clean teat.
- 2 Insert dry cow antibiotic first.
- 3 DO massage dry cow antibiotic up teat into udder.
- 4 Re-clean the teat with a teatwipe.
- 5 Then insert Teatseal.
- 6 Occlude teat where it meets the udder while inserting.
- 7 DON'T massage Teatseal up teat.
- 8 Spray teats with teatspray.
■■■repeat with the other 3 teats.



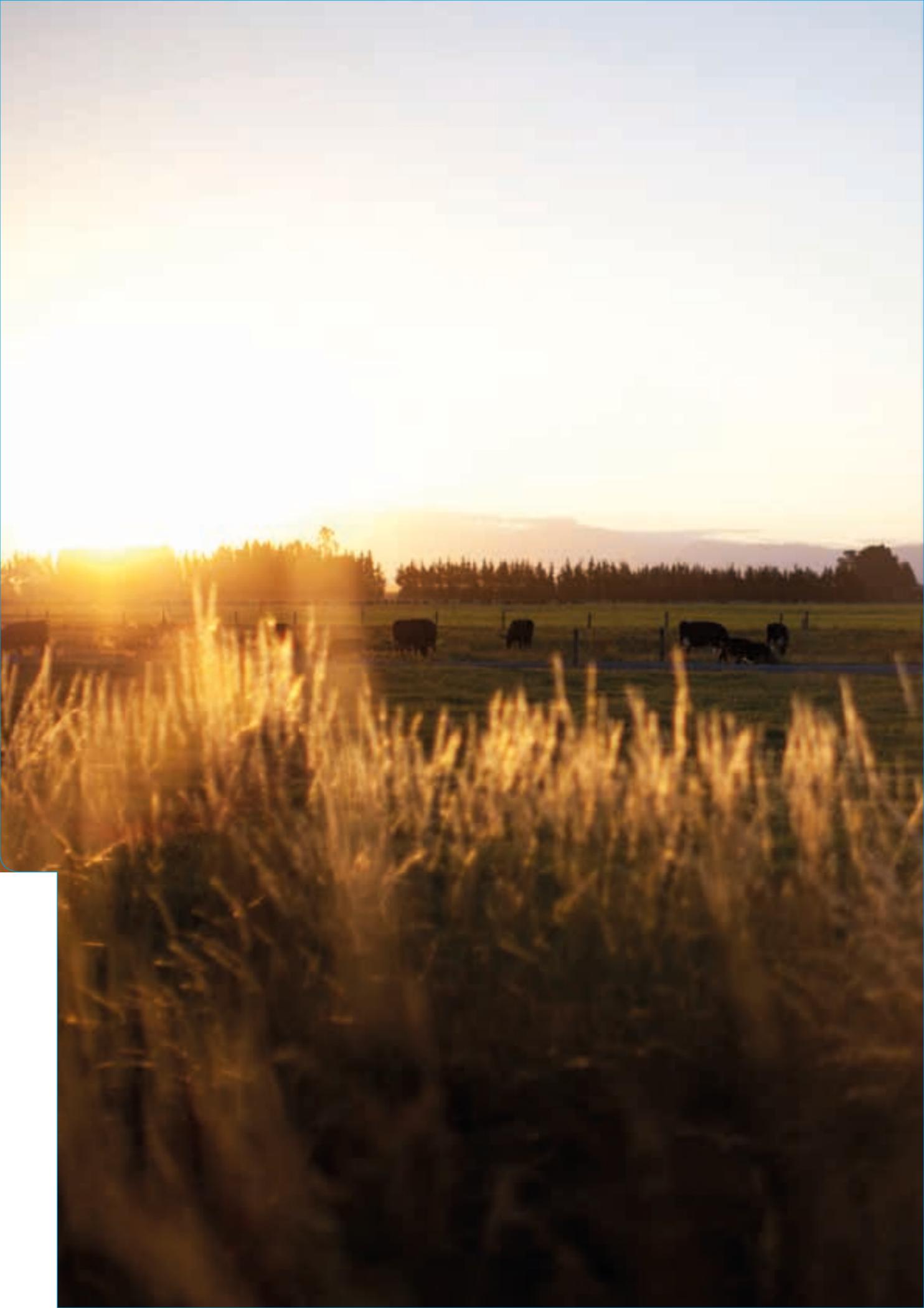
SECTION 5

TEATSEALING WITH A TRAILER



TEATSEALING WITH A TRAILER

AFTERCARE



ITEMS REQUIRED FOR TEATSEALING

- Teatseal
- Water & buckets (x2)
- Warming buckets & hot water (if cold in the morning)
- Teat wipes &/or 70% alcohol solution and cotton wool balls
- Milking gloves
- Paper towels
- Teatspray & hand held sprayer
- Disinfectant to be used for cleaning hands in water
- Methylated spirits (for cotton wool)
- Overalls, jacket and/or apron with breast pockets to put Teatseal tubes in
- Teatseal aprons
- Old towels (In case a major wash down is required)
- Large table to place Teatseal, wipes, paper towels etc.
- Rubbish bin
- Broom/brush and water/hose to wash down at end of job
- A gazebo or shelter to protect gear from sun/wind

ADDITIONAL ITEMS NEEDED

- Spare water
- Rope & or chains to fully secure the trailer to the yard/fences or gates
- A spade (to level bumps out)
- A scraper or wide hard broom for cleaning muck off floor
- Some tools e.g. a knife, crescent (tighten nuts for stabilisers, pliers, and screw driver)
- Side gates or small mobile yards (e.g. Prattley yards) so positioning of the trailer can be flexible and to help hold 5 heifers so they can be rapidly loaded on to the trailer.



HELPFUL HINTS FOR USING A TEATSEAL TRAILER;

BEFORE TAKING THE JOB

- Visit the yards and check that the trailer can fit
- Make sure the farmer is fully committed to providing enough staff to help load the heifers. At least 3 staff are required
- Ensure staff treat heifers quietly
- The farmer must have a tractor near-by to help park the trailer if too muddy for the vet truck (also in the event it gets stuck)

FOR THE VET TEATSEALING TEAM

- Before the Teatsealing season starts, run a team meeting to ensure the whole team follows best practice Teatseal administration technique
- Watch the video on dairywellness.co.nz. Run daily refreshers on technique during the season and pay attention to each team member
- Take time to place the trailer in a safe suitable place. It can take around 30 - 45 minutes to set up the trailer correctly
- Test that the head bar is set correctly for the “average” size heifer
- 4-6 heifers can fit on the trailer depending on heifer size
- There is space for 4-5 operators to Teatseal the heifers
- Ensure the ramp is aligned with the yards so the heifers flow smoothly onto the trailer without turning
- All hands should be on deck when loading to ensure that the first two heifers get on facing the correct way. Quickly load the next 2 to 4 and shut the back gate promptly. Some heifers may need to have their tails held. A second person is needed on the other side to help load and shut the gate
- Try as much as possible to keep the heifers calm
- Make sure that any Teatseal tubes that get muck/drips on the tip prior to insertion are discarded (ensure the farmer is aware of this policy)
- If very frosty in the morning, leave Teatseal in the cab with the heater on



Don't rush when Teatsealing heifers - hygiene is of paramount importance. If you are doing more than 50 per hour, double check your technique to ensure you are maintaining hygiene standards.

SECTION 6

AFTERCARE WHEN USING TEATSEAL OR DRY COW THERAPY

There are some simple things you should do to get the most out of your dry cow therapy.



AFTERCARE

ADMINISTRATION

Hygienic administration of Teatseal is essential to avoid introducing bacteria into the udder and causing mastitis. Ensure that Teatseal is only administered by Certified Teatseal Administrators.

HEALTH AND SAFETY

It is recommended to ensure that all heifers are fully vaccinated for leptospirosis to protect the teatsealing team. It is not recommended to Teatseal unvaccinated heifers.

WASH DOWN

Wash the trailer down as soon as possible after use with a hose or water blaster. Removing all debris is essential for infection control.



IN THE DRY PERIOD

Avoid prolonged yarding or lying on the ground or transport in the early dry period. When the quarters fill up with milk, holding the cows tightly may encourage leakage, which will be more problematic if the cows spend a lot of time lying on contaminated surfaces.

Teatseal reduces the incidence of clinical mastitis over the dry period and at calving but it does not necessarily prevent it altogether. Mastitis will still occur if the challenge is high, so you should still take steps to minimise environmental mastitis challenge.

Observe cows and heifers daily for the first fourteen days of the dry period, looking for signs of clinical mastitis. Do not bring cows back through shed to check them because that will encourage them to let their milk down. Consult your veterinarian if clinical mastitis occurs.

AT CALVING TIME

It is generally recommended to milk heifers and cows prior to calving if they are dripping milk. Dripping of milk can still happen even when internal teat sealants are used (although it will happen to a lesser extent). As soon as animals drip milk, the teats are open to the environment and at risk of mastitis. Heifers that develop udder oedema are particularly prone to mastitis because the teats swell up and no longer close properly.

Avoid excessive walking and lying for cows that are tightly bagged up before calving as it may dislodge the Teatseal plug.

Make sure milking staff always manually strip each quarter of freshly calved cows that have Teatseal on board at least ten times to remove the plug. If after five or so strips there is no more Teatseal, keep going because there is usually more. It is normal for some quarters to have less Teatseal present due to calf suckling. Research has shown that Teatseal does not prevent calves from suckling and getting colostrum from their mothers.

All dry cow therapies, including Teatseal, have an eight milking withholding period after calving. Do not shortcut this withholding period.

Make sure you can tell the difference between flecks of internal teat sealant and clinical mastitis. Internal teat sealant is typically waxy, a brilliant white colour and does not dissolve when rolled between your fingers, unlike mastitis clots.

images of Teatseal flecks vs clinical mastitis.



