

Cattle tick – use of amitraz dips

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Animal Biosecurity and Welfare, NSW DPI

Background

Cattle dips are used to control external parasites, primarily tick species, on the North Coast of NSW.

NSW DPI manages a dip when cattle are being dipped as part of a regulated program to eradicate cattle tick (*Rhipicephalus [boophilus] microplus* or *australis*).

Amitraz, also known as Taktic®, is used in plunge dips for eradication programs.

When a regulated eradication program is not underway, the owner of the dip is responsible for maintaining the dip structures and dipwash concentration.

Prior to dipping stock the yards are prepared and the dipwash is tested to confirm it has the correct concentration of pesticide. The cattle are mustered to the yards, moved through the crush and put through the dip one at a time. They are held in the draining pen for at least one minute to drain and then let into the holding yard. When all the cattle have been dipped the dip is secured, the safety mesh cover is lowered over the dipbath and the stock removed to their paddock.

Safety procedures

Personal safety

Training

Various training providers offer courses in safe use of chemicals. This is useful for anyone handling and mixing chemicals used in dips..

Chemical use

The chemical should be securely stored off site.

Read safety directions on the tickicide container and product material safety data sheets and follow these directions.

Avoid direct contact with the tickicide. Wear protective clothing when handling either the concentrate or diluted solution and while dipping cattle.

Amitraz is combustible and is hazardous if inhaled. Do not use in a confined space or near naked flames or sparks.

Empty Amitraz containers should be triple rinsed and crushed before being disposed of at either a council land-fill under the direction of council officers or at a pesticide container recycling day.

Protective clothing

Wear personal protective clothing as directed on the product label or the Material Safety Data Sheet (MSDS). Clean and maintain your protective clothing as recommended by the National Farm Chemical Use Training Program.

Have soap and water available to wash yourself if splashed with either chemical concentrate or dipwash and change your clothes as soon as possible.

Yard structures

Repair any damage to the childproof mesh over the dipbath.

Check that the yards are in safe working condition and there is no material lying about which may cause an accident.

Check that all gates including sliding gates work smoothly before you start dipping.

Environmental safety

Ensure the draining pen is not damaged and all dipwash collected in it will return to the dip. Repair the draining pen if it is damaged before starting dipping.

Change the pen plugs immediately before dipping so that dipwash returns to the dipbath.

Livestock safety/ Welfare

Do not dip overheated or stressed stock.

Do not dip mixed age groups together.

Regulate the rate of stock movement into the dipbath to prevent stock from jumping on top of the animal in front.

Sometimes a calf will turn around in the dip or get into difficulty. A broom or calf hook can be used to turn the calf around and assist it from the bath to reduce your contact with dipwash.

Use of Dips

Preparation of Dip and Yards

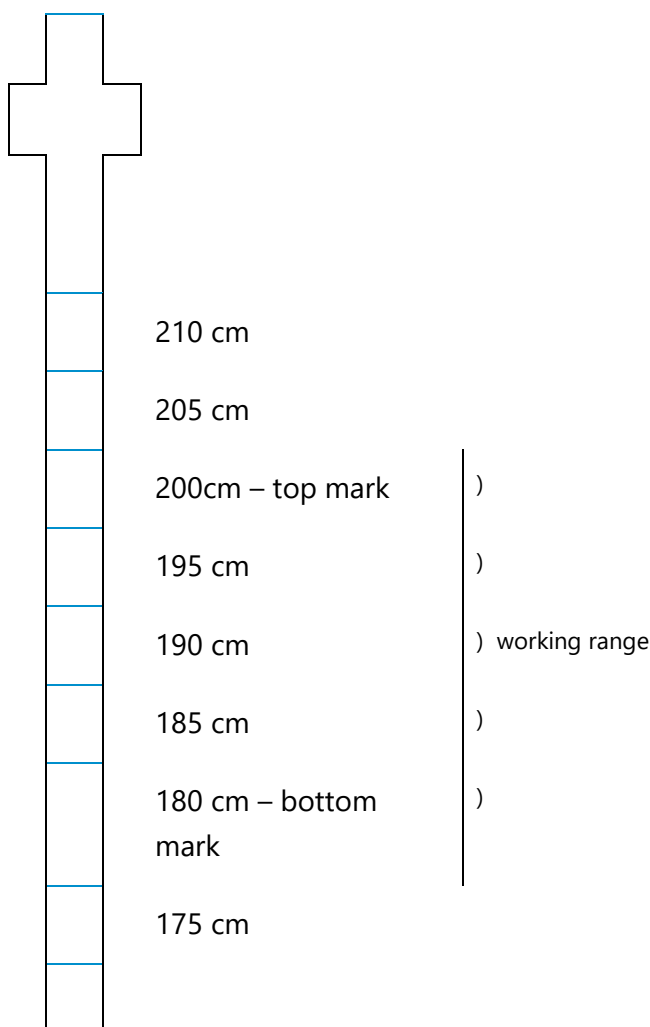
- Check the last laboratory report on the dipwash to confirm it is the correct concentration.

- Rectify dipwash concentration if required (see later instructions).
- Lift the childproof mesh cover and fix it securely in the raised position.
- Change the plug from the draining pen drain so that dipwash from the draining pen returns to the dip.
- Remove hair and scum from the surface of the dipwash with the yard broom and store this material in a suitable container to prevent dipwash leaking. The liquid which drains from the hair is later returned to the dipbath.
- Check the height of the dip as recorded in the dip book after last use.
- Using the dip measuring stick (see diagram below), measure and record the dip height. The cross bar is placed on the dip's edge, the stick is then removed and the height read and recorded in the dip book.

The working range of the dip is between 180cm and 200cm. Cattle should not be dipped when the dip is lower than 180cm as they may be injured and/ or incompletely dipped.

Cattle should not be dipped if the dip is above 200cm as overflow into the dipyard may occur.

Diagram of Dipstick



The dipping process

Muster the cattle to the holding yard and then, in small groups, into the forcing pen and then into the crush. Inspect them for cattle ticks while they are in the crush.

Cattle tick is listed as a notifiable pest in Schedule 1 of the Biosecurity Regulation 2017. If you find or suspect cattle tick you must notify the Local Lands Services or NSW Department of Primary Industries within 1 working day.

Dip the cattle by allowing them to jump into the dip one at a time. Control their movement through the dipbath by using the sliding gate at the take-off at the front of the crush.

The dip solution is in suspension so it needs to be well mixed to be effective and this is usually done by running the first 10 head through twice (see section on topping up the dip).

The cattle move through the dip to the draining pen. Do not overcrowd the draining pen as this can cause injury to stock and damage the pen. Allow at least one minute for each pen full to drain properly. Once this has occurred open the pen gate so the cattle can move into the yard.

Once dipping is complete measure the dip height with the dipstick and record in the dip book. Also record the details of additions to the dip and the number of cattle dipped.

Once all stock have been dipped:

- lower and secure the childproof mesh;
- close the sliding gates to the dip;
- sweep the fluid in the draining pen into the dip bath;
- change the drain plugs from the draining pen to prevent rain entering the dip; and
- close the gates to the dipyard once all cattle have been removed.

Repair any damage to the dipyards before you next use the yards.

Dip sampling

You should sample the dip every 3-4 weeks and after every rectification.

Set up a dip sampler as soon as the last beast has gone through. Place an empty dip bottle in the sampler which is then placed one metre out from the take off and one metre under the surface. Fill the bottle by pulling the string to uncover the top.

Wear impervious gloves to remove the bottle from the dipbath and screw on the cap.

Complete the dip sample form which includes the dip height and recent dipping history.

Deliver the dipwash sample and dip sample form to the DPI Cattle Tick Program office in Kyogle or Wollongbar. NSW DPI currently covers the cost of the laboratory testing.

The results of the sample testing and any rectification required will be sent to you and the DPI Cattle Tick Program.

Rectification of dips

You may need to add either water or amitraz or both to the dipwash, if:

- flooding has diluted the dip;
- evaporation has affected the concentration;
- evaporation has reduced the depth to less than 180cm;
- dip has been lost through the dipping process; or
- the dip is leaking

The dip laboratory will advise you if the dipwash concentration is not at an effective level and what action you need to take to rectify it. Always resample the dipwash after a rectification.

If the last dip lab report stated that the concentration was acceptable but the level of the dip is now low:

Level	Action
Lower than last record in dip book but above 180cm; can be attributed to losses from evaporation*	None
Lower than 180cm; can be attributed to losses from evaporation*	Add water to 180-200cm depth; mix**
Lower than 180cm; cannot be attributed to losses from evaporation*	Top up to 180-200cm with dip (See below); mix**
Lower than 180cm and much lower than last record in dip book; cannot be attributed to losses from evaporation*	Top up to 180-200cm with dip; mix**; report suspected leak to Cattle Tick Program

*If the weather has been hot, dry and/or windy

** Mix using 20 head of stock (see below)

Topping up the dip

All dips in Northern NSW are a standard volume and depth. Amitraz dips are topped in 7cm increments of surface level.

For each 7cm increment:

- add 7cm of water;
- pour a 10kg bag of lime along the length of the dip bath;
- mix 500gm of amitraz powder with water in a bucket using the dip stirrer;
- pour the amitraz solution into the dip along its length;
- rinse the stirrer and bucket with fresh water and pour the rinse water into the dip.

Following the top-up the dip must be mixed. This is normally done by dipping at least 20 large, strong cattle. These cattle must be re-dipped after the mixing dip. Alternatively the dip could be mixed by recirculating the mixture with a pump for 20 minutes or by using a mechanical stirrer .

Flooded dips

Dips sometimes become flooded due to extra water entering the dipbath. This may be due to not changing the plugs on the dipbath and the draining pen acting as a catchment.

If the dip is within the working range (180-200cm) dipping can proceed. If the dip is above the working height do not dip any animals as dip fluid will surge into the dipyard.

To rectify a flooded dip, the new dip level is first measured, the level is then reduced to within the working range by pumping the excess water into a water tank (which may be used for topping up later on). If you do not have a tank available, ring the Cattle Tick Program on 02 66261110 for advice.

Dipwash must not be pumped out into the dipyard.

The new level is compared with the height recorded when the dip was last used to calculate how much additional water had entered. For every 7cm of additional water top the dip with amitraz solution and mix as described above.

The dipwash concentration will then be within the ideal range for dipping stock. It must be sampled after dipping.

More information

NSW DPI tick page at

<https://www.dpi.nsw.gov.au/animals-and-livestock/beef-cattle/health-and-disease/parasitic-and-protozoal-diseases/ticks>

Qld Department of Agriculture and Fisheries Biosecurity manual and procedures at

https://www.daf.qld.gov.au/_data/assets/pdf_file/0004/379138/qld-biosecurity-manual.pdf

For general inquiries regarding biosecurity, phone 1800 680 244 or email

animal.biosecurity@dpi.nsw.gov.au

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