Procedure for the use of chemical treatments on cattle tick carriers

This procedure must be followed when chemically treating cattle tick carriers for cattle tick. Cattle tick carriers are cattle, bison, buffalo, deer, sheep, goats, camelidae family (eg alpacas, llamas, Arabian camels) and Equidae family (eg horses, ponies, donkeys, mules)

Cattle tick carriers must be chemically treated to meet the chemical treatment risk minimisation requirement.

Types of chemical treatment

The chemical treatment used must be suitable for the cattle tick carrier being treated. Options include:

- Plunge dip
- Hand spray
- Injectable (high risk tick carriers only)
- Pour on (high risk tick carriers only)

Plunge dip

1. The acaricide concentration must be maintained at the appropriate level to ensure the treatment is effective.

   - The capacity of the dip must be accurately calibrated. This ensures the correct ratio of acaricide and water are added when replenishing the solution.

   - The dip volume must be monitored on a regular basis during the tick season to ensure it does not drop by more than 2,000 litres before being replenished.
     - The dip should be replenished as required to minimise the effect of stripping. The amount of chemical added must be calculated based on the volume of water added.
     - Water should only be added to offset the loss of water through evaporation.
     - The acaricide concentration should be adjusted in the event of flooding.

   - The chemical concentration of the dip should be adjusted promptly when needed. Analytical results that differ by +/- 30% from recommended concentration should be treated cautiously - partial adjustment is recommended pending results of a further sample.

   - The volume of the dip must be recorded before and after each day of dipping, and must always be measured at the same point.

   - The dip, sump, crush, draining pen and surrounding area must be kept clean to prevent pollution of the dip.

   - The acaricide must be measured accurately and premixed in water before adding to the dip. If possible, the chemical should be added on non-dipping days or stirred thoroughly prior to dipping.

2. The following records must be kept:

   - date of activity

   - loss of water through evaporation or excess water entering the dip through flooding
• volume of water added for evaporation loss
• volume of water and acaricide added for topping up or compensating for flooding
• volume of dipping fluid at commencement of dipping
• volume of dipping fluid at completion of dipping
• number and species of carriers dipped
• laboratory results of samples submitted

Samples must be submitted to a laboratory facility for testing either on a monthly basis during the recognised tick season, or within 30 days prior to using the facility.

A Biosecurity Queensland inspector or accredited certifier may take samples or require additional samples be collected and submitted to demonstrate that the chemical in the dip is at the correct concentration.

The following dip management processes do not form part of the risk minimisation requirements but are best practice methods to ensure carriers safety and optimal results.

• The plug between the dip and the sump or draining pen should be removed prior to dipping and replaced after dipping to prevent flooding.

• Adequate stirring should be undertaken prior to dipping carriers. Stirring can be done either mechanically by a pump, or by dipping a number of carriers (20 to 50 depending on the acaricide). Any carriers used as stirrers must be re-dipped.

• Over-heated or stressed carriers should not be dipped.

• Adults and young carriers should be dipped separately.

• Speed and frequency of carriers entering the dip should be monitored and regulated to prevent accidents and ensure the entire beast, including the head and ears are wet.

Hand spraying

1. Hand spraying may only be used to treat a high risk tick carrier if one of the following conditions are met.

• The carrier is able to be led and can be tied up during treatment.

• Small numbers of carriers require treatment when a plunge dip cannot be adequately stirred. In this case consideration may also be given to using an injectable or pour-on endectocide.

• Small numbers of carriers with wide sets of horns (e.g. longhorn or buffalo) are presented, and safe entry into a plunge dip cannot be ensured. In this case, consideration may also be given to using an injectable or pour-on endectocide.

2. Prepare and maintain the recommended concentration of acaricide in the spray unit by ensuring:

• the total capacity of the spray tank must be accurately measured so that the correct ratio by volume of acaricide and water are added.

• the spray tank must be calibrated so that the amount of acaricide and water prepared is correct to complete the treatment.

• the acaricide is measured accurately before being added to the water in the spray tank.
• for a **supervised treatment** – the acaricide is added to the water in the presence of the accredited certifier prior to treatment.

3. Spray units must be maintained as follows:

• Spray tank, hoses and hand piece must be kept in good working order. There should be no leaks from the hand piece, hoses or tank.

• The spray unit must deliver a low-pressure high-volume output and the hand piece must be able to be adjusted to control the required flow dependant on the situation.

• The acaricide solution must be stirred prior to spraying cattle tick carriers. Stirring can be done mechanically by using the hand piece to re-circulate the acaricide back into the spray tank.

4. The following information must be kept:

• Date of activity

• Volume of water and acaricide added

• Volume of spraying fluid at start of spraying

• Volume of spraying fluid at end of spraying

• Number and species of carriers sprayed

The following spraying processes do not form part of the risk minimisation requirements but are best practice methods to ensure optimal results:

• Start by aiming the nozzle at the animal's feet and bring the spray on as a fine spray at first, gradually increasing the volume output.

• Move up the front leg to the top line of the animal. Work the acaricide into the coat of the animal by directing the spray horizontally across the body, leaving the head dry, until the underline is reached.

• Inspect the animal to ensure that the rump and tail have been thoroughly sprayed

• Inspect under the front shoulder, the udder and the flank to ensure these areas have been thoroughly sprayed.

• Ensure the mane of equines has been thoroughly sprayed.

• Repeat the above steps on the opposite side of the animal.

• Commence spraying the head by standing either directly in front or slightly to the side of the animal. This should be first done as a fine spray, gradually increasing the volume output to thoroughly wet the area.

• Inspect the ears and under the jaw to ensure these areas have been thoroughly sprayed.

• Complete a thorough visual inspection of the whole animal to ensure no areas have been left untreated. Watch as the animal moves to ensure all hard to access areas have been treated.

**Injectable or pour-on products (high risk carriers only)**

1. An injectable or pour-on may be used if one of the following conditions are met:

• There is no plunge dip available to treat the cattle tick carrier.
• Small numbers of carriers require treatment and a plunge dip cannot be adequately stirred.

• Small numbers of carriers with wide sets of horns (e.g. longhorn or buffalo) are presented, and safe entry into a plunge dip cannot be ensured.

• There is known resistance to acaricides currently in use in the plunge dip.

Note: if high risk carriers are to be treated using injectables or pour-ons, calves must also be treated. Endectocides do not transfer from cow to calf through the milk.

2. Ensure that the weight of the cattle tick carrier can be accurately measured as follows:

• The weight of the carrier receiving the treatment must be accurately measured using digital livestock scales.

• For a supervised treatment an accredited certifier must supervise the weighing of the carriers

• For large mobs it is acceptable to visually assess the heaviest carrier in the mob and only weigh that animal. If this method is used, the dose rate must be for the heaviest carrier in the mob; or

• Draft the carriers into mobs that reflect different weight classes. The dose rate is then determined for the heaviest carrier in each class.

Exceptions:
• The weighing of carriers being moved from infested land to the infested zone need not be supervised by an accredited certifier.

3. Maintain application equipment in the following way:

• The applicator must be an automatic applicator that is able to be accurately calibrated.

• Hoses should be maintained in good working order. There should be no leaks from the applicator or hoses.

• Needles should be either 16 gauge or 18 gauge and no longer than 15mm, and must be replaced regularly when administering injectables.

• The applicator must be approved for application of the chemical by the manufacturer; this is particularly important when using pour-ons, as some endectocides must be applied in a specific way. For example in narrow strips or fanned.

• The applicator must be calibrated to ensure the required dose is being dispensed. To calibrate, a minimum of two doses are to be dispensed into a measuring container to verify the correct dose (by volume) is being administered.

• The barrel of the applicator should be inspected regularly to ensure it is filling completely between each dose dispensed.

4. Apply the chemical as follows:

• If using an injectable endectocide:
  o the treatment must be applied subcutaneously as per the manufacturer’s recommendation;
  o the dose must be administered subcutaneously and not into the muscle. The skin on the side of the neck is the preferred site for most endectocides. There should be no friction encountered when administering the dose. If friction is encountered retract the needle depth slightly until no friction is encountered;
• If using a pour-on endectocide:
  o apply steady pressure to the trigger of the applicator to minimise excessive splashing of chemical off the animal's back during treatment;
  o the pour-on must be applied topically along the mid-line of the back from the withers to the tail head of the carrier or as per the manufacturer’s recommendations;
  o do not apply the pour-on to wet carriers;
  o do not treat if heavy rain is threatening.

• All calves must be treated individually.

5. Keep detailed records of the following information:

  • Endectocide name
  • Endectocide application method
  • Expiry date of endectocide
  • Batch number of endectocide
  • Weight range of cattle tick carriers being treated
  • Dosage rate applied to the cattle tick carrier

**Treatment and re-inspection for failed inspections**

If a cattle tick carrier fails an inspection, the following re-inspection procedures apply:

1. For high risk carriers requiring a visual inspection and supervised chemical treatment, the carrier may be presented for re-inspection once in every 24 hour period following treatment, up to a maximum period of:
   • 4 days (96 hours) if treated with an acaricide; or
   • 6 days (144 hours) if treated with an endectocide.

   These periods apply until the carrier is found to be visually free of adult ticks (following the usual procedure for a visual inspection).

2. For cattle tick carriers that have undergone a manual inspection – if the carrier has been chemically treated, the carrier may be presented for re-inspection:
   • between 4 days (96 hours) and 7 days (168 hours) following treatment with an acaricide; or
   • between 6 days (144 hours) and 9 days (216 hours) following treatment with an endectocide.

   If the carrier fails an inspection within the above timeframes, the procedure of treatment and inspection should commence again until the carrier is found to meet the risk minimisation requirements. Re-treatment must take account of the chemical manufacturer’s recommendations regarding treatment intervals.

   The proposed movement of the carrier must not commence until the risk minimisation requirements are met.

**Time limits on moving a carrier to a prescribed facility**

High risk carriers must be moved to a prescribed facility in the free zone within:

• 96 hours of the risk minimisation requirements being met if the carrier has been treated with an acaricide; or
144 hours of the risk minimisation requirements being met if the carrier has been treated with an Endectocide.

**Definitions**

**acaricide** – an externally applied chemical with a label claim that effectively controls all life cycle stages of the cattle tick.

**chemicals** – acaricides or endectocides used for treatment of cattle tick carriers by plunge dipping, spraying, pour-on or injectable application that include a label claim for the control of cattle ticks.

**dip or dipping** – means to completely immerse a cattle tick carrier in an acaricide in a vat, bath or apparatus of any kind used in connection with the dipping of animals.

**endectocide** - an anti-parasitic chemical that is effective against internal and external parasites.

**hand-spray or spray** – means to thoroughly wet the entire skin of a cattle tick carrier with an effective acaricide using spray equipment that delivers a low-pressure high-volume output, either through a 12V or petrol/diesel driven motor.

**injectable** – means an effective external-parasite destroying endectocide which is applied to a cattle tick carrier subcutaneously (by injecting under the skin).

**owner treatment** – a treatment using one of the methods specified in this procedure, applied by a person moving a cattle tick carrier, to meet the risk minimisation requirements of the Biosecurity Manual.

**pour-on** – means an effective external-parasite destroying endectocide which is applied to a cattle tick carrier topically along the mid-line of the back, in a narrow strip between the withers and butt of the tail or as per manufacturer’s recommendations.

**resistance** – means a chemical treatment is no longer effective in killing cattle tick.