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Standard operating procedure to be followed during brucella vaccination

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Abstract

Brucella Control Program (BCP) is a government initiative in India aimed at eradicating Brucellosis by 2030 by vaccinating all eligible female calves aged 4-8 months. To achieve the program's objectives, vaccinators must adhere to a standard operating procedure that includes four key steps: vaccine storage, transport, vaccination, and disposal of used materials. These steps are interconnected, and failure to follow the necessary precautions at any stage can lead to inadequate sero positivity results and disease transmission to the vaccinator. The vaccine used in the program is Brucella Strain 19 (S19), a live vaccine that requires additional precautions during administration.

VACCINE STORAGE:

- Store the vaccine at a temperature between 4°C - 8°C.
- Avoid storing the vaccine in freezing chambers.
- Ensure adequate ventilation for air circulation.

VACCINE TRANSPORT:

- Utilize a cool box for vaccine transportation.
- Verify the expiration date and check for any visible changes in the vaccine vial and diluent.
- Place the vaccine and diluent vials on a cool pack.
- Prepare a kit with all necessary materials (syringes, needles, surgical spirit, cotton, INAPH tags, and applicator) for the vaccination camp.
- Carry the cool box and vaccination kit always when traveling for vaccination.

VACCINATION:

- Restrain the animal properly to prevent loss of the vaccine and accidental pricking or intramuscular injection.
- Gather all eligible animals at one place and vaccinate them at a time to minimize vaccine wastage.
- Wear an apron, mask, goggles, and gloves.

- d) Transfer a small amount of chilled diluent into the vaccine vial.
- e) Mix the freeze-dried vaccine gently to create a uniform suspension.
- f) Withdraw the entire suspension from the vaccine vial.
- g) Transfer the vaccine suspension into the diluent vial carefully.
- h) Avoid creating aerosols by securely attaching the needle to the syringe and gently pushing the plunger.
- i) Mix the vaccine gently and store it in the cool box. Use the reconstituted vaccine immediately.
- j) Withdraw only a single dose at a time from the vial, ensuring that no air bubbles form in the syringe. If air bubbles are seen remove them carefully so as to avoid spillover of the vaccine on hands and face.
- k) Use a separate needle for vaccinating each animal.
- l) Administer the vaccine subcutaneously.
- m) Identify all vaccinated animals by ear tagging.

DISPOSAL OF MATERIALS USED:

- a) Dispose the used vaccine, diluent vials syringes and needles in sealable containers.
- b) Remove and dispose of aprons, masks, and gloves in sealable containers.
- c) Disinfect all used and disposed materials (previously sealed) with Sodium hypochlorite @ 0.5% concentration for adequate contact time.
- d) Transfer the disinfected materials back into sealable containers and reseal.
- e) Dig a pit at least 4 feet deep.
- f) Place the container with disinfected materials in the pit and close it.
- g) Sprinkle lime powder liberally.
- h) Disinfect goggles, ensuring adequate contact time with the disinfectant. (Common disinfectants are Alcohol@ 70%; Chlorine and chlorine compounds@ 500-600ppm and Formaldehyde@ 0.2-0.4%.
- i) Ensure the kit (Kit is things to be discarded in sealable cover) is properly sealed before departing.

In the event of accidental pricking during vaccination, the following actions should be taken:

- a) Confirm that the needle was indeed used to vaccinate the calf.
- b) If there is any doubt about the needle being used, it is recommended to take a course of antibiotics, regardless of the presence of symptoms, for 14 days. The recommended antibiotic is Doxycycline, 500mg per day.
- c) It is important to note that the incubation period for Brucellosis can vary from 7 to 90 days. Therefore, if a vaccinator has been accidentally pricked with a Brucella vaccine needle, it is advisable to take a preventive antibiotic course to avoid any potential infection.
- d) If symptoms still develop after taking the preventive antibiotic course, a fresh serum sample should be sent to the Sero Epidemiology Laboratory for confirmation.
- e) It is crucial to emphasize that if an individual develops symptoms or is diagnosed with Brucellosis, they should not panic and instead seek medical treatment, as the disease is treatable with antibiotics.

