

# NATIONALLY AGREED STANDARD OPERATING PROCEDURE (NASOP)

**Title:** Vaccinating livestock on a property for foot and mouth disease

**Version:** 1.1

**Prepared by:** Subcommittee on Emergency Animal Diseases

**Approved by:** Animal Health Committee

Revision history:	Version	Date of approval	Comments
	1.0	28/09/2008	Original
	1.1	02/05/11	Approved by AHC

NASOPs support national consistency and provide guidance to response personnel undertaking operational tasks.

## 1. Purpose

- This NASOP provides vaccination teams with information to enable effective vaccination of livestock as part of an approved FMD control program.

## 2. Application/scope

- This NASOP covers all aspects of use of FMD vaccine on premises, from the collection of vaccine from the Designated Vaccine Centre (DVC) to the return of all vaccine equipment, wastes and records to the DVC.
- This NASOP does not cover vaccine control at the DVC (see NASOP 14: *Control of Foot and Mouth Disease vaccine at a Designated Vaccine Centre*) or activities on a property before vaccination (see NASOP 16: *Assessing and inspecting a property prior to administration of Foot and Mouth Disease vaccine*).
- This NASOP is written for an inactivated, non-genetically modified, oil-adjuvant vaccine as contained in Australia's FMD vaccine bank.

## 3. Resources/equipment

### 3.1 Plan, permissions and authorities

- plan for the allocated vaccination task
- authorisation under jurisdiction legislation for team members to possess and administer FMD vaccine
- authorisation under jurisdiction legislation for inspectors of stock/ equivalent personnel to enable enforcement of vaccination activities
- authorities to vaccinate specific animals on specific premises
- movement permits for travel in/ through declared areas if required
- legal notices/ forms to enable enforcement of vaccination activities if required
- product label including leaflet from manufacturer

### 3.2 Animal handling equipment

- additional facilities as identified in property assessment (conducted as per NASOP 16: *Assessing and inspecting a property prior to administration of Foot and Mouth Disease vaccine*.)

### 3.3 Vaccination equipment

- cool-box with ice packs for vaccine transport and storage to ensure that vaccine is maintained at +2°C to +8°C, without freezing

- data loggers or temperature indicator strips to monitor temperatures during storage and transport
- adequate supply of approved vaccine.
- adequate number of vaccine applicators (see Appendix A - details may change with time) to undertake the allocated tasks and spare equipment to allow for breakages
- vaccination must be by deep intramuscular injection, therefore an adequate supply of Luer needles is required:
  - 18 Gauge x 1 inch for large ruminants and pigs
  - 19-21 Gauge x ½ inch for small ruminants and piglets (< 4 weeks)
  - 18 Gauge x ½ inch for withdrawing vaccine from bottles
  - 23 Gauge x 2 inch for allowing air to enter vaccine bottles

### 3.4 Animal Identification

- marker paint and brushes or crayons for temporary identification of vaccinated animals
- identification suitable to species on property. National Livestock Identification System (NLIS) tags/boluses to be used wherever possible
- spare 'emergency' tags including orange post-breeder NLIS cattle tags issued to DVC Property Identification Code (PIC)
- ear mark pliers
- spare permanent animal identification devices (e.g. ear tags)
- tag applicators for sheep, cattle and pigs with spare pins and disinfectant

### 3.5 Recording equipment

- appropriate recording systems for vaccine usage and animal identification as required
- NLIS tag reader with plastic bag taped over data box and switches and/ or other recording system suitable to species on property
- Receipt/delivery form-FMD Vaccine (Appendix B), premises vaccination records (Appendix C), return of unused FMD vaccine and waste (Appendix D) and FMD Field Team vaccine Inventory (Appendix E)

### 3.6 OHS

- security provisions for staff if necessary.
- first-aid kit, including tape for fingers to prevent blisters
- Material Safety Data Sheet (MSDS) for vaccine
- APVMA label safety directions
- emergency procedure in case of injury or self-injection

### 3.7 Biosecurity

- personal decontamination kit (as described in NASOP 01: *Personal decontamination—entry and exit procedure*)
- clinical waste bags and sharps containers for disposal of contaminated waste, vaccine bottles, needles and other waste

### 3.8 Extension

- information sheets on FMD vaccination for person in charge of animals

#### 4. Warnings

- FMD vaccines with oil emulsion adjuvant should be used with great care to avoid self injection. In the event of accidental self-injection, allow the wound to bleed freely, do not squeeze, wash with soap and water, keep clean and dry, and seek medical advice immediately.
- The operations centre should arrange for local medical facilities to prepare for treatment of accidental human vaccination.
- Read APVMA label safety directions for the vaccine
- A one-handed technique should be used to vaccinate animals. Under no circumstances should the free hand be used to 'tent' the skin.
- It is essential to maintain the cold chain (+2°C to +8°C, without freezing) at all stages of vaccine storage, transport and handling).
- Opening of cool-boxes should be minimised to keep temperatures in the range of +2°C to +8°C, and to protect vaccine vial from exposure to light.
- Vaccination teams must read the Australian Pesticides and Veterinary Medicines Authority (APVMA) permit and use FMD Vaccine in accordance with the permits issued by the Australian Government Department of Agriculture, Fisheries and Forestry and the APVMA PERMIT NUMBER PER 11606.
- The APVMA requires that the vaccine may be released only on the authority of the Chief Veterinary Officer in each state or territory, and used only by authorised personnel acting under their direction or persons otherwise authorised under state/territory legislation. The product must be used in accordance with the label instructions and Standard Operating Procedures as may be specified by the Consultative Committee on Emergency Animal Diseases.
- Animals should not be vaccinated, tagged or scanned unless properly restrained to avoid injury to the animal and the operator.
- There may be sub-clinical active infection with FMD on any of the premises visited. Precautions must be taken to ensure that FMD is not transmitted by the vaccination team.
- If FMD infection is suspected, vaccination should not continue and advice should be sought from the operations centre.
- Vaccination needles used for injecting animals must not be inserted into vaccine vials. Specific sterile needles must be used for withdrawing vaccine.
- Only persons authorised under jurisdiction legislation may possess or administer vaccine.
- Data in the NLIS tag reader should not be cleared until the tag files have been successfully transferred to a secure and backed up office based computer.

## 5. Description of activities

### 5.1 Collection and transport of vaccine from the DVC

- The vaccination team leader will receive and sign for all equipment and vaccine at the DVC and ensure that adequate cold storage capacity is available (see Appendix B for Receipt/ delivery form – FMD vaccine), and transport the vaccine to the premises to be vaccinated ensuring that temperature is maintained at +2°C to +8°C, without freezing.

### 5.2 On-property operations

- The team should enter the premises in accordance with NASOP 01: *Personal decontamination—entry and exit procedure*.
- For small numbers of animals, the appropriate number of doses of vaccine can be drawn up in a 50 ml plastic repeater injector for transfer onto the premises.
- The person in charge of vaccinated animals should be provided with a standard information sheet including advice on monitoring stock for adverse reactions for 6 weeks, monitoring the general efficacy of vaccination, vigilance for clinical signs of FMD and who to contact to report concerns.
- Ask the person in charge of the animals whether any signs of FMD have been observed.
- Conduct a general inspection of the herd/flock.
- In the event that a vaccination team suspects the presence of active FMD on any farm where vaccination is to be carried out, do NOT complete the vaccination and seek advice from operations centre. Return to the DVC for equipment decontamination/disposal. The team will be withdrawn from the vaccination programme for a period determined by current policy. The Team should exit the premises in accordance with NASOP 01: *Personal decontamination—entry and exit procedure*.
- Identify and establish a suitable area that will ensure integrity of vaccine and operations. This area should be clean, secure from gross contamination and protected from the weather. In the area set up:
  - supply of disinfectant
  - vaccine
  - vaccination equipment
  - recording materials
  - identification resources.
- Withdraw vaccine doses from the cool box as required. Gently shake bottle before withdrawing vaccine. Keep cool boxes shut when not withdrawing vaccine.
- If using a repeater vaccination gun, in order to withdraw vaccine from the bottle, a 23 G needle is inserted to allow air to enter the bottle, and a 18 G needle used to withdraw the vaccine. These two needles remain permanently in the vial and needles that are used on animals are never used to recharge the syringe.
- Restrain animals to be vaccinated.
- Animals are vaccinated intramuscularly (according to label instructions). In all cases, deep intramuscular injection in the neck is used, inserting the needle at a 45° angle to avoid leak-back. Care should be taken with suckling calves and lambs as neck injections may impede their ability to suckle. The use of the rump in suckling animals may be considered and also in dairy cattle to facilitate vaccination during milking.
- Handle animals in accordance with animal welfare principles.
- Wherever possible, livestock handling should be the responsibility of the person in charge of the livestock.
- Change needles regularly.
- Identify/record identification (ID) of animals as soon as they have been vaccinated (e.g. while still in race).
- For each new mob of cattle, create a new session in the NLIS reader.

- Enter the amount of vaccine actually used on each property (including wastage) on a vaccine use register (see Appendix C – Premises vaccination records – FMD Vaccine)
- Use appropriate equipment for handling or disposal of sharps.
- Gather and decontaminate all equipment. Vaccination equipment that is to be re-used must not be subjected to chemical disinfection so must be rinsed with water and double-bagged for removal from premises. Vaccination equipment must be sterilised before using on another property. This must be done by the DVC.
- Seal empty vaccine bottles in a transparent plastic bag and mark with premises PIC or other ID.
- Seal part used vaccine bottles in a separate transparent plastic bag for and mark with premises PIC or other ID.
- Any bottles opened on one premises must not be used on any other premises.
- Handle all waste according to decontamination NASOP 01: *Personal decontamination—entry and exit procedure*.
- Leave the property in accordance with NASOP 01: *Personal decontamination—entry and exit procedure*.
- Vaccinated animals should be monitored for adverse reactions for up to 6 weeks post vaccination. All reactions must be reported.

### **5.3 Return of unused vaccine and waste disposal**

- On return to the DVC:
  - return all used equipment and personal protective equipment (PPE) for disinfection or disposal
  - return unused equipment and PPE
  - return all vaccine containers in accordance with NASOP 14: *Control of Foot and Mouth Disease vaccine at a Designated Vaccine Centre*.
    - any opened bottle of vaccine, that has been on a premises, must be packed in transparent plastic bags for disposal on returning to the DVC.
    - return all unopened bottles of unused vaccine for further storage.
  - The registers of vaccine use must be retained by the DVC for later auditing as required; all vaccine must be accounted for.
  - Fill in the Return of unused FMD vaccine and waste 'form' (Appendix D)

### **5.4 Acquittal of vaccine stocks**

- The vaccination team leader is responsible for acquitting all vaccine used by the field teams (see Appendix E for FMD field team vaccine inventory).
- Clean and disinfect vehicle and equipment according to the operations centre's policy.

## 6. References

- AUSVETPLAN Disease strategy Foot-and-Mouth Disease
  - AUSVETPLAN manuals are available at <http://www.animalhealthaustralia.com.au>
- Operational Procedures Guidelines. Vaccination for Contagious Disease. (Draft). National Animal Health Emergency Management System Guidelines - U.S. Department of Agriculture, 2003
- Merial booklet 'Guidance for Foot and Mouth Disease vaccination'
- APVMA PERMIT NUMBER PER 11606
- NASOP 01: *Personal decontamination—entry and exit procedures*
- NASOP 14: *Control of Foot and Mouth Disease vaccine at a Designated Vaccine Centre*
- NASOP 16: *Assessing and inspecting a property prior to administration of Foot and Mouth Disease vaccine*
- NASOP 24: *Ordering of Foot and Mouth Disease vaccine and distribution to states and territories*

## 7. Appendices

- **Appendix A: Equipment required for FMD vaccine**
- **Appendix B: Receipt/ delivery form – FMD vaccine**
- **Appendix C: Premises vaccination records – FMD vaccine**
- **Appendix D: Return of unused FMD vaccine and waste**
- **Appendix E: FMD Field team vaccine inventory**

## Equipment required for FMD vaccination

The vaccine equipment identified for use in FMD vaccination has been tested by the supplier - NJ Phillips - against the vaccine adjuvant (a light mineral oil) to ensure compatibility. In this case the off-the-shelf products are those best suited to the adjuvant.

1. Order Code EAS1161. The 3ml variable plastic disposable injector, complete with feed tube, draw-off and pack of 12 needles. No spare parts available.



2. Order Code EAS1162. The 50ml plastic repeater injector (1 ml increments) for use in small scale situations, complete with pack of 12 needles.



3. Order Code WX1111. Spare part kit for 50ml Repeater, consists of 1x barrel and 1 x Piston O-Ring.



4. Order Code WX965. Draw-off and feed tube kit.



5. Order Code SP150. Pack of 12 - 18G x ½ inch Luer needles.
6. Order Code SP\*\*\*. Pack of 12 – 18G x 1 inch Luer needles.
  - 18 Gauge x 1 inch Luer needles for large ruminants and pigs
  - 19-21 Gauge x ½ inch Luer needles for small ruminants and piglets (< 4 weeks)
  - 18 Gauge x ½ inch Luer needles for withdrawing vaccine from bottles
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**RECEIPT/DELIVERY FORM – FMD vaccine****Delivered to:**

Name of the person taking delivery: \_\_\_\_\_

Vaccination team code/name: \_\_\_\_\_

Phone/radio: \_\_\_\_\_

**Vaccine**

Unused Good Quality Vaccine: \_\_\_\_\_ boxes (\_\_\_\_\_ doses)

Type: \_\_\_\_\_ Batch: \_\_\_\_\_ Expiry: \_\_\_\_\_

Bar codes: \_\_\_\_\_

**Equipment**

Tag Reader Brand: \_\_\_\_\_ Serial Number: \_\_\_\_\_

GPS Unit Brand: \_\_\_\_\_ Serial Number: \_\_\_\_\_

Vaccination guns: Type: \_\_\_\_\_ Number: \_\_\_\_\_

Vaccination guns: Type: \_\_\_\_\_ Number: \_\_\_\_\_

**Other items/equipment**

\_\_\_\_\_

\_\_\_\_\_

**Receipt**

Items listed above have been received

Date: \_\_\_/\_\_\_/\_\_\_

Signed: \_\_\_\_\_

**Vaccine was issued/delivered by:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Vehicle registration (if applic.): \_\_\_\_\_

Vaccine stored in: \_\_\_\_\_

Vaccine was maintained between +2 and +8 degrees Celsius from \_\_\_\_\_  
in DVC store until delivery (if applic.).

Date: \_\_\_/\_\_\_/\_\_\_ Signed: \_\_\_\_\_(person delivering, if applic.)

**Attachments:**

APVMA Fact Sheet

MSDS

APVMA Permit





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**RETURN OF UNUSED FMD VACCINE AND WASTE****Collected from/delivered by:**

Name/code of the vaccination team: \_\_\_\_\_

Phone/radio: \_\_\_\_\_

**Vaccine**

Unused Good Quality Vaccine: \_\_\_\_\_ boxes ( \_\_\_\_\_ doses)

Type: \_\_\_\_\_ Batch: \_\_\_\_\_ Expiry: \_\_\_\_\_

Bar codes: \_\_\_\_\_

**Part used bottles**

No of bottles: \_\_\_\_\_ Total ml of vaccine: \_\_\_\_\_

Bar Codes: \_\_\_\_\_

**Empty bottles**

No of bottles: \_\_\_\_\_ Bar Codes: \_\_\_\_\_

**Other waste**

Sharps: \_\_\_\_\_ Used gloves: \_\_\_\_\_ Overalls: \_\_\_\_\_

Disposable vaccination guns: \_\_\_\_\_ Other: \_\_\_\_\_

**Equipment**

Microchip Reader Serial Number: \_\_\_\_\_

GPS Unit Serial Number: \_\_\_\_\_

Vaccination guns: Type: \_\_\_\_\_ Number: \_\_\_\_\_

Vaccination guns: Type: \_\_\_\_\_ Number: \_\_\_\_\_

**Receipt**

Items listed above have been received.

Date: \_\_\_/\_\_\_/\_\_\_ Signed: \_\_\_\_\_ (DVC officer)

**Unused Vaccine etc was delivered to \_\_\_\_\_ DVC store by:**

Name: \_\_\_\_\_

Vaccine stored in (e.g. esky): \_\_\_\_\_

Unused Vaccine was maintained between +2 and +8 degrees Celsius at all times in the field until delivery back to \_\_\_\_\_ DVC store.

Date: \_\_\_/\_\_\_/\_\_\_ Signed: \_\_\_\_\_ (for field team)

FMD Field Team Vaccine Inventory																
Field team: _____																
Date	Event (incl AHa Barcode Nos) e.g. 'Vacc. PIC ABCD1234 AH B/c 123'	Doses* vaccine rec'd	CED in unopen bottles	CED in opened bottles	CED injected	CED wasted in field**	Vaccine Balance (CED)	No. Ret. Emt. bot. + B/c	CED in ea. open bott. + B/c	Vacc. kept at +2 to +8°C	No. cattle vacc.	No. sheep vacc.	No. pigs vacc.	No. other spp. vacc.	Returns accepted by	Signature of DVC officer
	Brght fwd balance (if any)															
	Close and Carry Forward balance															
* Doses in Cattle Equivalent Doses (CED) of 2 ml per CED																
** Including bottles spoiled by opening on premises and wasted on farm (e.g. spilt)																
Complete daily																
Rule off with Carryover / Carry Forward balance each day																
								This form is to summarise a day's use of FMD vaccine by a field team. This completed form, all Premises Vaccination Record forms, all full/empty/part-used bottles, and all wastes must be returned to DVC.								