

# SMS_logo_signature_72DPI_RGB.jpgMilk Hauler Biosecurity Guidance to Support RAW MILK Movement to processing dURING AN fmd OUTBREAK

## Purpose

This document provides recommended biosecurity performance guidelines for milk haulers to implement in support of rapid permitting for raw milk movement in the event of a foot-and-mouth disease (FMD) outbreak in the United States. Compliance with these performance guidelines is intended to reduce the chance of spreading FMD and increase the chance of timely permitting of raw milk from dairy premises not known to be infected to processing. The implementation of these performance standards will vary by premises based upon the unique features of each location and the final requirements will be established by the Incident Management Team for a specific response.

During an FMD outbreak, local, state and federal decision makers (Incident Management Team) will need to provide industry direction on handling raw milk on infected and uninfected dairy premises. The inability of dairies to continue to ship raw milk to processing will cause significant environmental, disease transmission, and economic challenges. The performance guidelines here coincide with business continuity response planning by minimizing unintended negative effects of a FMD response on agriculture, while at the same time achieving the goals of disease containment and control

This document seeks to provide pre-event, agreed upon protocols for raw milk movement from dairy premises not known to be infected located in a FMD Control Area to commercial processing. Establishing and maintaining communications between Incident Command, dairy producers, milk haulers, and processors is essential to convey and assure that biosecurity protocols are being effectively followed. Monitoring and verifying proper biosecurity protocol implementation will be necessary.

## Intended Audience

Milk haulers and any allied industries interacting with dairy operations need to be aware of biosecurity protocols which may be required by the Incident Management Team in order to enable raw milk movement during an FMD outbreak. Local, state, and national level officials involved in developing policy and/or managing an FMD outbreak (Incident Management) should be familiar with this document to aid in their timely decision making to permit raw milk movement off farm to processing. Veterinarians and animal health technicians who are members of the USDA-APHIS National Animal Health Emergency Response Corps (NAHERC) or their state or county veterinary response teams carrying out FMD surveillance or control efforts on dairy operations should also familiarize themselves with these protocols.

## Scope

These guidelines are initially focused on developing biosecurity performance standards for milk haulers with the intent that details of specific options for achieving these performance standards will be developed at a state or regional level as the project moves forward. These performance standards could be extended to other vehicular movements as permitted in the Control Area.

## Overarching Goal:

These performance standards are intended to provide guidance to assure FMD virus is not spread by milk tankers and the hauler/driver to/from dairy premises within or from an FMD Control Area and to/from dairy processing plants.

Initial Focus:

* Raw milk movement from a dairy premises with no evidence of FMD virus infection in an FMD Control Area via milk tanker to processing

Initial Assumptions:

* FMD has been diagnosed in the United States
* Control Area(s) have been established around Infected Premises
* Animal and product movement restrictions are in place for dairy farms in the Control Area
* Dairy premises with no evidence of FMD virus infection based on visual inspection need to continue to move raw milk to processing
* Biosecurity performance standards as outlined here are being implemented and verified
* Milk is picked up from one dairy premises and transported under permit directly to a processing plant – OR –
* Milk is picked up from multiple dairy premises by a single tanker and transported under permit to a processing plant
* Other product/animal/people movement will be examined as the project develops

# 1. Information about Foot-and-Mouth Disease

## 1.1 Species affected and clinical signs

Foot-and-mouth disease (FMD) is a highly contagious viral disease of cattle and other cloven-hooved animals such as pigs, sheep, and goats. FMD does not affect humans. Signs of illness in affected animals include fever, blisters that become ulcers on the mouth, tongue, feet or teats, increased salivation or slobbering, decreased feed consumption, and lameness. This may result in production and body condition loss but not typically death in adults. However, death rates in young animals can be high.

## 1.2 Incubation period

In cattle, the incubation period ranges from 2 to 14 days. FMD virus can be shed in milk up to 4 days before clinical signs appear.

## 1.3 Controlling FMD in the United States

The last known outbreak in the United States was in 1929; however, the disease is common in other parts of the world and therefore poses a risk to the U.S. If FMD is diagnosed in the U.S., the control measures would include movement restrictions which will affect over-the-road transport of live animals and animal products (milk, colostrum, semen, embryos).

## 1.4 Transmission of FMD

FMD virus can enter or exit an operation via:

* **Live animals** shedding virus (e.g., cattle, pigs, sheep, goats);
* **Live animals** transporting virus from place to place such as horses/dogs/cats/rodents (via contaminated fur, hooves, foot pads), and birds (via contaminated feathers);
* **Animal products** (unpasteurized milk, colostrum) carrying the virus;
* **Fomites** (contaminated inanimate objects) such as dead animals, feed, water, people’s clothing/footwear, human nasal passages (rare; carried less than 28 hours after contact with infected animals), transport vehicles (e.g., animals, feed, milk, rendering), off-farm vehicles or equipment contaminated with infected excretions (e.g., manure) or secretions (e.g., milk, colostrum, saliva);
* **Airborne** virus from infected animals in close proximity under ideal weather conditions

FMD virus can be transmitted to cattle through the following exposures:

* **Direct contact** with an infected animal
* Virus shed in nasal secretions, blood, milk, urine, feces, saliva, semen, or during pregnancy (from infected cow to calf)
* **Fomites** - contaminated inanimate objects such as coveralls, boots, truck tires, manure
* **Oral** - consuming contaminated feed, milk
* **Aerosol** - inhaling virus particles; highly variable by serotype, usually requires close contact with infected animals

## 1.5 Destroying the virus

FMD virus can be destroyed chemically or thermally. The U.S. Environmental Protection Agency has registered commercial disinfectants for use against the foot-and-mouth disease virus. During a large-scale FMD outbreak when there may not be a sufficient supply of readily-available EPA-registered commercial FMD virus disinfectants, the EPA may authorize the use of additional selected chemical disinfectants by the U.S. Department of Agriculture, State Departments of Agriculture, and sometimes farmers and any individual who needs to disinfect surfaces potentially exposed to FMD virus. Disinfectants are only effective if used appropriately. Normal high temperature short time (HTST) pasteurization (161oF [72oC] for 15 seconds) significantly reduces the viable FMD virus in milk with a pH <7.0 but does not completely eliminate it. Heating milk to 100oC (212oF) for 20 minutes will inactivate the virus. Ultra-high temperature (UHT) pasteurization (298oF [148oC] for 3 seconds) will completely kill FMD virus in milk. Manure slurry must be heated to 67oC (153oF) for three minutes to destroy FMD virus. For more information about disinfectants, please see section 5.

For more information about FMD, see:

* Foot and Mouth Disease Fact Sheet <http://www.cfsph.iastate.edu/Factsheets/pdfs/foot_and_mouth_disease.pdf>
* OIE Foot and Mouth Disease Fact Sheet <http://www.oie.int/eng/maladies/Technical%20disease%20cards/FOOT%20AND%20MOUTH%20DISEASE_FINAL.pdf>

# 2. Terms

Clean-in-place (CIP) – procedures that allow for the cleaning and sanitizing of equipment without dismantling, generally by means of an automated system. U.S. Food and Drug Administration (FDA) Pasteurized Milk Ordinance (PMO) requires CIP of milk tankers once every 24 hour period when in use. Clean-out-of-place (COP) requires equipment be dismantled to clean and sanitize it.

Dairy Premises – the physical location where cows are milked and milk is stored until picked up for over-the-road transport

Dairy Processing Plant – the facility that receives, stores, processes, distributes, and sells products made from milk

Direct Load – the practice of pumping milk rapidly cooled to less than 40oF, from the milking parlor on to a movable bulk milk tanker parked at the dairy premises without the use of a farm storage tank (stationary bulk tank, milk silos). The milk hauler/milk tanker driver picks up this milk tanker when it is ready to take directly to processing and leaves an empty milk tanker on farm to collect the next load of milk.

Disinfection Station – a physical location equipped with adequate water, soap (if vehicle is excessively dirty), effective disinfectant against the disease organism of concern, and the ability to capture or minimize run-off into waterways or animal housing or traffic areas. Personnel operating the disinfection station should be trained in proper selection and use of personal protective equipment and the principles of cleaning and disinfection. USDA-APHIS will provide guidance on selecting approved and effective disinfectants.

Foot-and-Mouth Disease (FMD) Outbreak – upon initial diagnosis of FMD in susceptible species (cloven hooved animals including cattle, sheep, goat, pigs, deer, etc.) in the United States, a series of response activities depending upon the specific situation and response goals will be initiated by State, Federal and Tribal authorities, as well as agriculture stakeholders. Activities may include implementing biosecurity protocols and animal/vehicle movement restrictions to achieve desired containment, using emergency vaccination, and culling infected animals to control or eradicate FMD.

Infected Premises – premises where a presumptive positive case or confirmed positive case exists based on laboratory results, compatible clinical signs, case definition, and international standards.

Manifolding – equipment needed to transfer the raw milk from the farm bulk tank or other bulk milk source to the milk tanker, generally associated with the tankers milk pump. Includes the crossover hose or pipe (connects tank truck milk pump to tank truck tank valve), clamps and short pipe sections. All of these items contact raw milk.

Milk tanker (also referred to as a milk truck) – the transport vehicle used to move milk from a dairy premises over-the-road to processing.

Milk hauler – the person licensed by the State regulatory agency responsible for milk measuring, sampling, pumping, and transporting over-the-road in a milk tanker; in some states, personnel on farm can become licensed to perform these tasks.

Milk tanker driver – a person responsible for driving a milk tanker and milk samples over-the-road; this person is not licensed by the State regulatory authority to measure, sample, or pump raw milk on a dairy premises.

Transfer hose – milk hose carried on a tank truck used to transfer milk into the tanker from a farm bulk tank or other bulk milk source when attached to the tank truck’s milk pump.

# 3. Controlling access to a dairy premises

All traffic entering the premises (e.g., vehicles, people, etc.) should be limited to one designated entry point on farm, which should be designated by posted signs. This is where the disinfection station for the premises should be located. The goal of the disinfection station is to remove FMD virus from conveyances before entering an operation. This disinfection station should be set up and operated by farm personnel. Training will be provided by government and industry partners to ensure personnel are safely and effectively implementing the recommended protocols. This will be periodically monitored by members of the Incident Management Team.

## 3.1 Milk Tanker

3.1.1 Only clean milk tankers will be permitted to travel to dairy premises in an FMD Control Area; the performance standard is no visible contamination externally or internally.

### **3.1.1.1 Evidence for internal tanker cleaning is monitored by seals on all access points and a wash tag identifying time/place of last interior tanker cleaning.**

### **3.1.1.2 Evidence for cleaning the interior of the cab should include the absence of all organic material on all surfaces.**

* There should be no trash, dirty clothing or footwear, or unnecessary supplies for that particular milk pickup in the cab.

### **3.1.1.3 Evidence for external cleaning includes the absence of organic material on all surfaces.**

* A written and signed log or receipts from an exterior truck wash documenting the date, time, and location of wash performed.

3.1.2 Milk haulers/milk tanker drivers should adhere to truck routes designated by the Incident Management Team as secure milk transportation routes; the performance standard is avoiding roadways contaminated with manure or other organic material.

### **3.1.2.1 The milk hauler/tanker driver should have the ability to communicate with their dispatcher and/or the Incident Management Team before and throughout their route.**

* Milk routes may change frequently pending environmental conditions.
* Notification of the farm personnel is important should there be delays to ensure the disinfection station is set up and ready to go upon arrival.

### **3.1.2.2 The Incident Management Team will communicate prohibited roadways to industry which in turn communicate with milk haulers/tanker drivers to determine alternate routes.**

3.1.3 Milk tankers release air from the vent during vacuum collection or pumping the on-farm bulk tank/silo and while transporting the milk to a processing plant; the performance standard is to mitigate the risk of FMD virus particles escaping the air vent with available resources.

### **3.1.3.1 A risk assessment was completed and experts have determined there is low or very low probability for aerosol generation during pumping, transport, and pumping at subsequent farms with susceptible animals.**

### **3.1.3.2 On single pickups, any aerosol particles released would only contain on-farm pathogens, thus a negligible risk to FMD introduction to that dairy premises.**

### **3.1.3.3 Filters designed to capture any aerosolized FMD virus particles released from tanker vents have only been evaluated experimentally and not in field conditions on tankers in the United States.**

### **3.1.3.4 Effective filters are not commercially available in the U.S.**

### **3.1.3.5 When loading milk onto a tanker, care should be taken to ensure tanker is not overfilled resulting in milk escaping from the vent or manhole.**

## 3.2 Dairy Premises

3.2.1 Upon arrival at a dairy premises, the performance standard is removal of all visible contamination on the milk tanker followed by disinfection:

### **3.2.1.1 The dairy premises should have a disinfection station set up at or near the entrance to clean and disinfect all milk tankers entering or leaving.**

* The area where the tanker is cleaned and disinfected should be free of dirt/mud (ideally on a hard/solid or gravel (well-drained) surface).
* The milk hauler/tanker driver should remain in the cab of the milk tanker.
* If the milk hauler/tanker driver must leave the cab for any reason, protocols under “3.3.1 Upon arrival at a dairy premises” should be followed.
* Designated on-farm personnel should be prepared to clean and disinfect the milk tanker prior to entry.
* This will require proper protective gear, spray equipment, and approved disinfectant (see sections 4 and 5).
* All protective gear and equipment should be stored at or near the disinfection station.

### **3.2.1.2 Mobile cleaning and disinfecting vehicles as approved by the Incident Management Team may be utilized**

* Refer to the bullets under 3.2.1.1

### **3.2.1.3 The transport vehicle should be cleaned (focusing on the tires, wheel wells, undercarriage, mud flaps, splash guards, steps) to remove visible contamination (see section 4).**

* Use the least amount of water necessary.
* Run-off should not come in contact with susceptible animals.
* Run-off should be contained per local and/or State regulations as it may contain virus and need to be deactivated before discharging into the environment/sewer system. State regulations.

### **3.2.1.4 The transport vehicle should be properly disinfected with an approved disinfectant that is applied for the recommended contact time per label directions before entry to the premises.**

* EPA-approved disinfectants against FMD can be found in section 5.

### **3.2.1.5 On-farm personnel should record all vehicle and personnel movements onto and off of the premises including: date, time of arrival and departure, origin of tanker, driver name, contact number, vehicle identification, and previous and next stop (name and location).**

* The milk hauler/tanker driver must be prepared to provide this information.
* All movements onto the premises should be maintained on farm and made available to animal health authorities in the event it is needed for a traceback or traceforward investigation.

3.2.2 In order to pick-up milk on farm, the performance standard is to provide a clean drive path for the tanker (free of animal excrement):

### **3.2.2.1 The SMS Dairy Premises Working Group recommends that milk should not be picked up on farms where milk tankers must drive across a visibly manure-contaminated cow path if the cow path area cannot be effectively cleaned and disinfected prior to tanker transit of that area; an alternative route to pick up milk on farm should be pre-planned to avoid skipped pickup.**

## 3.3 Milk Haulers and Milk Tanker Drivers

Milk haulers should carry a supply of protective outerwear and footwear with them on their routes. They should also carry a supply of approved disinfectant (see section 5). NOTE: Due to transportation regulations, the disinfectant should not be stored in the cab or with any milk samples. Milk haulers should also carry spray equipment (e.g., garden sprayer) capable of effectively applying disinfectant to their protective outerwear/footwear and small areas of milk spill on farm. This equipment should be supplied by the trucking company and would be used in a situation where the hauler is contaminated and does not have access to a personal disinfection station or needs to disinfect small areas of raw milk spill on farm.

3.3.1 Upon arrival at a dairy premises, the performance standard is to have only clean, protective footwear/clothing/gloves enter the farm:

### **3.3.1.1 Only the licensed milk hauler is allowed to leave the cab of the transport vehicle.**

* To minimize risk of disease spread, there should be no other passengers or animals in the cab of the vehicle.
* If there are other passengers or animals in the cab of the vehicle they are not allowed to leave the cab while on farm.

### **3.3.1.2 The cab should be considered and maintained as a clean, non-contaminated zone.**

### **3.3.1.3 Gloves should be put on before exiting the milk tanker to prevent contamination of hands.**

* The gloves should be disposable or waterproof to withstand washing and disinfection while being worn.
* An extra pair of gloves should be obtained and placed in a disinfectable outer container (plastic bag) and taped to the protective outerwear.

### **3.3.1.4 If an on farm bulk tank sample must be collected, obtain the sample collection vial(s) and a disinfectable outer container (plastic sealable bag) prior to exiting the cab.**

* All samples obtained on farm must be placed in a disinfectable outer container (plastic sealable bag).

### **3.3.1.5 Protective outerwear should be put on before stepping away from the driver’s door area to prevent contamination of street clothes.**

* The protective outerwear should cover the legs, arms, torso, head, and neck.
* The protective outerwear should be disposable or waterproof to withstand washing and disinfection while being worn.
* Protective eyewear should be available to the milk hauler if wearing waterproof outerwear that will be disinfected after use to prevent splashes of disinfectant into the eyes.

### **3.3.1.6 Protective footwear should be put on before stepping away from the driver’s door area to prevent contamination of street shoes.**

* The protective footwear should cover the shoes and socks.
* The protective footwear should be disposable or waterproof to withstand washing and disinfection while being worn.
* If disposable outwear is worn, the pant legs of the protective outerwear should be tucked into the protective footwear and the tops of the footwear sealed.
* If waterproof outerwear is worn, the pant legs should go over the boots but not touch the ground. This will allow water and disinfectant to remain on the outside of the protective footwear.

### **3.3.1.7 Dairy premises should keep a supply of protective wear (boots, gloves) in the event the hauler’s supply becomes depleted, damaged, or excessively contaminated.**

3.3.2 While on a dairy premises, the performance standard is no direct contact with animals and areas contaminated with animal excretions:

* Milk hauler should communicate, but have no direct contact, with farm personnel.
* Milk hauler should have no contact with any animals.
* Milk hauler should have no contact with animal housing or animal traffic areas.
* Milk hauler should have no contact with products to be fed to susceptible animals (e.g., raw or pasteurized colostrum, raw or pasteurized milk in open containers) or with equipment used in feeding of animals.

3.3.3 Milk Tankers Pumping from Bulk Tank(s) to Transport Vehicle; the performance standard is to minimize raw milk contamination of equipment, personnel, and the dairy premises:

### **3.3.3.1 For tankers carrying a transfer hose that was used to pick up milk on another premises, ensure it is capped and then spray its exterior and the coupling attachment with an approved disinfectant as it is being removed from the tanker prior to connecting to the bulk tank.**

* This may require assistance from on-farm personnel
* The spray solution should remain in contact with exterior hose surfaces for the recommended period of time.
* Rinse the exterior of the transfer hose and coupling attachment with clean water from the milk room.

### **3.3.3.2 Sample vial(s) collected/picked up on farm must be labeled and placed in a disinfectable outer container (plastic sealable bag).**

* The outside of the bag should be sprayed with an approved disinfectant.
* Disinfectant must not come into contact with the milk, the interior or exterior of the vial.
* The bagged sample collection vial(s) should be placed in a rack in a cooler on the milk tanker for delivery to the dairy processing plant.

### **3.3.3.3 Milk is pumped from bulk tank into tanker and transfer hose disconnected when done.**

* Transfer hose remains on farm and is sanitized with the rest of the equipment –or–
* For hoses transported on the tanker, the hauler should drain as much milk as possible from the hose into the milk house drain to minimize milk spillage near the tanker.
* Transfer hose is then capped and the exterior sprayed with an approved disinfectant before placing in storage compartment on tanker.

### **3.3.3.4 For tankers that did not undergo a full CIP prior to arrival, any milk drained, leaked or spilled outside the milk house should be disinfected using the equipment carried by the milk hauler (see section 5).**

* For milk leaks/spills on the tanker, spray the area with disinfectant before driving away from the milk house.
* Should the spill be larger than the hauler’s equipment can adequately disinfect, on-farm personnel should be alerted upon exit so that it can be addressed using equipment from the dairy premises disinfection station.

3.3.4 Direct Load Milk Tankers; the performance standard is to minimize the need for the milk hauler/milk tanker driver to exit the cab:

### **3.3.4.1 On-farm personnel should disconnect the transfer hose from tanker, rinse and disinfect any valve area with milk present, and place dust cap over valve.**

* On-farm personnel are responsible for ensuring transfer hose is cleaned and sanitized with the rest of the equipment on farm.

### **3.3.4.2 Milk hauler/tanker driver places empty tanker near milk house and remains in tractor cab.**

### **3.3.4.3 On-farm personnel meets milk hauler/tanker driver at cab and obtains seal(s) to place on dust cap and other designated locations.**

* Any paperwork from the previous pick up is provided to on-farm personnel at this time.

### **3.3.4.4 On-farm personnel disconnects tractor from empty tanker.**

* Note: Some companies do not allow this step for insurance and other operational reasons.
* If milk hauler/tanker driver must leave tractor cab but will have no contact with raw milk, at a minimum they should wear protective footwear and gloves.
* Should raw milk handling or direct contact with any equipment in the milk house be required by the hauler/driver while on farm, follow protocols under “3.3.1 Upon arriving at a dairy premises”.

### **3.3.4.5 Milk hauler/tanker driver moves tractor to filled tanker.**

### **3.3.4.6 On-farm personnel connects tractor to tanker.**

NOTE: Milk samples will either be collected from the milk tanker at the dairy processing plant or have been collected through an approved drip sample system at the farm. If collected on farm, on-farm personnel should label and place sample vials in a disinfectable outer container (plastic sealable bag).

* The outside of the bag should be sprayed with an approved disinfectant
* Disinfectant must not come into contact with the milk, the interior or exterior of the vial
* The bagged sample collection vial(s) should be placed in a rack in a cooler on the milk tanker for delivery to the dairy processing plant

3.3.5 Upon leaving a dairy premises, the performance standard is removal of all visible contamination on the milk tanker and milk hauler, followed by tanker disinfection:

### **3.3.5.1 Before entering cab of milk tanker, milk hauler should remove or disinfect protective outer clothing and footwear.**

* Disposable:
* Remove footwear first, gloves next, and outerwear last.
* Handle the outerwear with the ‘inside out’ principle – only touch the inner surfaces to remove it so as not to contaminate hands.
* Outerwear and footwear should be disposed of on-farm in a manner that does not contaminate personnel, equipment, or animals (option: before entering cab, place in a plastic bag and left for farm personnel to properly dispose).
* Waterproof:
* Protective eyewear is recommended when waterproof clothing is worn to prevent splashing disinfectant into eyes upon decontamination.
* From top to bottom, spray approved disinfectant so that it contacts all potentially contaminated surfaces of the outerwear, gloves, and footwear.
* Allow the recommended contact time.
* Outerwear and footwear may remain on the milk hauler; gloves should be removed and disposed of on the dairy premises in an appropriate manner.
* After removal, protective eyewear should be disinfected using the hauler’s spray equipment and stored in the cab of the tanker.
* Another option is to leave the cleaned and disinfected waterproof protective wear on the farm to be worn upon next pickup.

### **3.3.5.2 The milk tanker should go through the same cleaning and disinfecting steps as upon entry.**

* Refer to the steps under 3.2.1.1 through 3.2.1.4 for performance standards
* To minimize the time required for extensive cleaning, minimizing contamination of the tanker’s exterior during pick-up should be a priority.

## 3.4 Hauling Raw Milk to Designated Dairy Processing Plant

3.4.1 Milk haulers/milk tanker drivers should adhere to truck routes designated by the Incident Management Team as secure milk routes; the performance standard is avoiding roadways contaminated with manure or other organic material.

### **3.4.1.1 The Incident Management Team will communicate prohibited roadways to industry which in turn communicate with milk haulers/tanker drivers to determine alternate routes.**

### **3.4.1.2 Milk haulers/tanker drivers should keep a daily written log of additional stops (food, fuel, maintenance) en route to the processing plant.**

* This information should be provided to their dispatcher or Incident Command upon request.
* Minimizing cross contamination with other vehicles or people having contact with cattle, sheep, goats, or pigs should also occur once the hauler and tanker have left the farm.
* This information is important for traceback or traceforward purposes.

### **3.4.1.3 Only the licensed milk hauler or milk tanker driver will be allowed on the dairy processing plant premises; plan accordingly.**

## 3.5 Dairy Processing Plant

3.5.1 Upon arrival at a dairy processing plant premises, the performance standard is removal of all visible contamination on the milk tanker followed by disinfection:

### **3.5.1.1 The milk tanker should only enter the dairy processing plant via the cleaning and disinfection station.**

* The milk hauler/tanker driver should remain in the cab of the milk tanker during the cleaning and disinfection process.
* If the milk hauler/tanker driver must leave the cab for any reason, protocols under “3.5.2 Leaving the cab of the Tanker” should be followed.
* Designated plant personnel should be prepared to clean and disinfect the milk tanker upon entry to the plant premises.
* This will require proper protective gear, spray equipment, and an approved disinfectant (see sections 4 and 5).
* All protective gear and equipment should be stored at or near the disinfection station.

### **3.5.1.2 The transport vehicle should be cleaned (focusing on the tanker lid, sides of the tanker, tires, wheel wells, undercarriage, mud flaps, splash guards, steps) to remove all visible contamination.**

* Use the least amount of water necessary.
* Run-off should be contained so that it is prevented from entering water sources and traffic areas per State or local environmental regulations.

### **3.5.1.3 The transport vehicle should be properly disinfected and allowed adequate contact time before entry.**

* EPA-approved disinfectants against FMD can be found in section 5.

### **3.5.1.4 Plant personnel should record all vehiclur movements involving dairy products onto and off of the premises including: date, time of arrival and departure, origin of tanker, driver name, vehicle identification, and dairies from which milk was collected from prior to arrival at the plant.**

* The milk hauler/tanker driver should be prepared to provide this information.
* All movements onto the premises should be maintained and made available to animal health authorities in the event it is needed for a traceback or traceforward investigation.
* Any evidence of milk spilt on the outside of the transport vehicle should be noted so that this issue can be discussed and the reason resolved prior to future transport by that vehicle.

### **3.5.1.5 After the tanker is cleaned, the milk hauler/tanker driver can then drive over the scales and weigh-in or proceed to the receiving bay where milk is metered at off-loading**

* Any milk spillage that occurs at the scales should be cleaned and disinfected prior to the next use following the same cleaning and disinfection protocols described above for the transport vehicle.

### **3.5.1.6 When possible, the milk hauler/tanker driver should remain in the cab until the processing plant personnel have collected a milk sample from the tanker and cleared it for off-loading.**

* If the milk hauler/tanker driver must leave the cab for any reason, protocols under “3.5.2 Leaving the cab of the tanker” should be followed.

3.5.2 Leaving the cab of the tanker, the performance standard is to have only clean, protective footwear/clothing/gloves enter the processing plant premises and no direct contact with other personnel:

### **3.5.2.1 Haulers responsible for any tasks involving raw milk contact (off-loading/assisting with off-loading/cleaning pumps, hoses, collection equipment), should put on protective outerwear before stepping away from the driver’s door area to prevent contamination of street clothes.**

* The protective outerwear should cover the legs, arms, torso, head and neck.
* The protective outerwear should be disposable or waterproof to withstand washing and disinfection while being worn.
* Protective eyewear should be available to the milk hauler/tanker driver if wearing waterproof outerwear that will be disinfected after use to prevent splashes of disinfectant into the eyes.

### **3.5.2.2 All haulers exiting the cab should put on protective footwear before stepping away from the driver’s door area to prevent contamination of street shoes.**

* The protective footwear should cover the shoes and socks.
* The protective footwear should be disposable or waterproof to withstand washing and disinfection while being worn.
* If disposable outwear is worn, the pant legs of the protective outerwear should be tucked into the protective footwear and the tops of the footwear sealed.
* If waterproof outerwear is worn, the pant legs should go over the boots but not touch the ground. This will allow water and disinfectant to remain on the outside of the protective footwear.

### **3.5.2.3 All haulers exiting the cab should put on gloves before exiting the milk tanker to prevent contamination of hands.**

* The gloves should be disposable or waterproof to withstand washing and disinfection while being worn.
* Haulers responsible for any tasks involving raw milk contact should obtain an extra pair of gloves that will be placed in a disinfectable outer container (plastic bag) and taped to the protective outerwear.

### **3.5.2.4 If on farm bulk tank samples were collected, obtain the labeled sample collection vial(s) and previously disinfected container(s) (plastic sealable bag).**

* Provide the container(s) to designated plant personnel.

### **3.5.2.5 Haulers responsible for any tasks involving raw milk contact (off-loading/assisting with off-loading/cleaning pumps, hoses, collection equipment), should dispose of or disinfect contaminated protective outerwear/footwear once tasks are complete.**

* Contaminated disposable outerwear/footwear should be disposed of properly within the receiving bay prior to entering the cab of the tanker (see steps under 3.3.5.1)
* Contaminated disposable outerwear/footwear should not be worn in any other areas of the processing plant.
* Adhere to all plant protocols designating foot traffic and use of facilities.

### **3.5.2.6 Haulers not responsible for any tasks involving raw milk contact (off-loading or cleaning pumps/hoses/collection equipment), should go directly to, then remain in, the designated area (break room).**

* Haulers should have no direct contact with processing plant personnel, raw milk handling equipment, or other milk transport vehicles.
* Haulers should not enter the milk processing area.
* Adhere to all plant protocols designating foot traffic and use of facilities.

### **3.5.2.7 Processing plants should keep a supply of protective wear (boots, gloves) in the event the hauler’s supply becomes depleted, damaged, or excessively contaminated.**

*3.5.3 During off-loading milk, the performance standard is to address raw milk spills immediately:*

### **3.5.3.1 Raw milk spilled on the ground during the connection/disconnection of the transfer hose(s) should be disinfected as soon as all connections are made and before personnel walk through the area (see Section 4).**

3.5.4 After off-loading milk, the performance standard is to ensure no residual raw milk in the tanker and hoses leaks upon leaving the receiving bay at the processing plant:

### **3.5.4.1 The Pasteurized Milk Ordinance (PMO) requires CIP of milk tankers once every 24 hour period when in use.**

### **3.5.4.2 In the absence of full CIP or performing a sanitary rinse of the tanker after each off-load, all access points to raw milk on the tanker should be completely sealed to prevent leaking.**

* Complete CIP of the tanker after each off-load may not be possible in many situations (lack of CIP equipment, lack of waste water permits, lack of off-loading capacity for incoming loads, etc.).
* A sanitary rinse may not be possible due to the lack of a permit for waste water disposal.
* Residual milk may leak on subsequent dairy premises pickups; Section 3.3.3 of the Milk Hauler Biosecurity Performance Standards document (18 Dec 2011) provides the guidance to mitigate this on a dairy premises).

### **3.5.4.3 Once the tanker is externally cleaned and disinfected as per section 3.5.1 of this document, it should be permitted to move to the next location.**

* The next location could be an off-site CIP facility or another dairy premises for raw milk pick-up.

3.5.5 Upon leaving a dairy processing plant premises, the performance standard is removal of all visible contamination on the tanker or milk hauler/tanker driver:

### **3.5.5.1 Before entering cab of milk tanker, milk hauler/tanker driver should remove protective outer clothing and footwear.**

* Disposable:
* Remove footwear first, gloves next, and outerwear last.
* Handle the outerwear with the ‘inside out’ principle – only touch the inner surfaces to remove it so as not to contaminate hands.
* Outerwear and footwear should be disposed of at the dairy processing plant in a manner that does not contaminate personnel or equipment (placed in a plastic biohazard bag in a designated trash can at the plant for proper disposal).
* Waterproof:
* Protective eyewear is recommended when waterproof clothing is worn to prevent splashing disinfectant into eyes upon decontamination.
* From top to bottom, spray approved disinfectant so that it contacts all potentially contaminated surfaces of the outerwear, gloves, and footwear.
* Allow the recommended contact time.
* Outerwear and footwear may remain on the milk hauler/tanker driver; gloves should be removed and disposed of on the dairy premises in an appropriate manner.
* After removal, protective eyewear should be disinfected using the hauler’s spray equipment and stored in the cab of the tanker.
* Another option is to leave the cleaned and disinfected waterproof protective wear at the processing plant to be worn upon next delivery.

### **3.5.5.2 The milk tanker should go through the same cleaning and disinfecting steps as upon entry.**

* See 3.5.1.1 through 3.5.1.3 for specific details

## 3.6 Milk Tanker Storage

When not in use, milk tankers should be stored in a secured and monitored facility once cleaned and disinfected internally and externally. Tankers should be stored at a location that does not require travel through a Control Area or roadways contaminated by manure or other organic material. Storage at alternate facilities, including the milk hauler/tanker driver’s home, should be approved by Incident Command. No tankers will be allowed onto farms housing cattle, pigs, sheep, or goats without a permit for picking up milk.

3.6.1 The performance standard of monitoring milk tankers prior to use for milk pick up ensures it has been not tampered with after it has been cleaned and disinfected.

### **3.6.1.1 Seals or padlocks must be placed on all access points on the tanker. Seals must be accounted for and rectified with a written log at the dairy processing plant.**

* Information about sealing bulk milk trucks can be found in “Guideline for Sealing Bulk Milk Tanks”, DPC 105 from the Dairy Practices Council, March 2005.

### **3.6.1.2 Once the tanker cab interior is cleaned, doors should be locked. Tamper proof sealing tape can be placed across the outer door edge.**

# 4. Cleaning and Disinfection

The virus that causes FMD has been shown to be stable in the environment and in organic material (mud, manure, feed, and bedding). Virus stability increases at lower temperatures and with protection from sunlight. FMD virus is inactivated at pH below 6.5 or above 11. Effective disinfectants for hard, nonporous surfaces only are listed in section 5. Proper cleaning procedures are essential in order for the disinfectant to adequately contact the virus and have time to inactivate it.

## 4.1 Proper Cleaning Procedures for Vehicles

4.1.1 Wear personal protective equipment

### **4.1.1.1 Gloves, coveralls, rubber or disposable boots, and goggles and a mask if you are generating splashes (eye protection) or dust (respiratory protection).**

4.1.2 Soak the most visibly contaminated areas to aid in washing

### **4.1.2.1 Soak the area with water and a detergent or cleaning agent (soap) starting with the dirtiest area and working towards the cleaner areas.**

* This will aid in the removal of organic material on the tires, wheel wells, undercarriage, mud flaps, splash guards, and steps.
* May need to drive the vehicle forward slightly to ensure the tire contact surface is soaked.

4.1.3 Wash

### **4.1.3.1 Wipe, spray or scrub the area, starting with the dirtiest and working towards the cleaner areas.**

* The use of pressure washers can enhance organic matter removal on the tires, wheel wells, undercarriage, mud flaps, splash guards, and steps.
* Washing the dirtier areas may cause splatter onto the cleaner areas; hence starting with the dirtiest areas will allow removal there first and subsequent removal of splatter from the cleaner areas last.
* Decontamination exercises in North Carolina have shown that approximately 125-150 gallons of water are needed with a time requirement of 19 minutes for large milk tankers.

4.1.4 Rinse

### **4.1.4.1 Remove all detergent/soap residues by applying a low pressure water rinse on all surfaces, starting with the top of the tanker and working down.**

## 4.2 Proper Disinfection Procedures for Vehicles

4.2.1 Read the product label

### **4.2.1.1 Handle the solution correctly to ensure safety of the handler and effectiveness of the disinfectant.**

* Personal protective equipment may be needed to mix up solutions.
* Note the recommended dilutions, water temperature, environmental temperature, and the need for ventilation when using the product.

4.2.2 Disinfect

### **4.2.2.1 Apply the product to the cleaned areas of the vehicle, starting with the tires to maximize contact time before moving.**

* Vehicle can be slowly rolled forward to allow the disinfectant to contact all parts of the tire.

### **4.2.2.2 Allow the product adequate contact time (per label directions) with all surfaces to inactivate the virus.**

# 5. Approved Disinfectants for FMD Virus

In the U.S., the Environmental Protection Agency (EPA) regulates disinfectants under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This law requires that all label use directions and safety precautions be followed. The labeling for each EPA-registered disinfectant lists the disease agents it effectively inactivates. In the case of the FMD virus, only a few products are currently labeled for this virus on hard, nonporous, nonfood contact surfaces. There is only one food contact surface sanitizer registered for use against FMD virus. In emergencies, when EPA registered products may not be available, EPA may grant exemptions for unregistered uses of registered pesticides, or uses of unregistered pesticides, to USDA-APHIS personnel, State Departments of Agriculture personnel, or possibly farmers or individuals to use a specific pesticide for a limited time by designated personnel. USDA-APHIS has an exemption in place for sodium hypochlorite (bleach), sodium hydroxide and sodium carbonate for use against Foreign Animal Disease (FAD) agents in the event that registered pesticides are not available during an FAD outbreak.

## 5.1 Safety

Follow all safety precautions and use directions listed on the product label during the handling and mixing of disinfectant solutions. Wear eye and respiratory protection when mixing or spraying disinfectants. Wear gloves to avoid skin contact with caustic materials. Immediately wash off any disinfectant that contacts bare skin.

## 5.2 Contact time

Before disinfecting, all surfaces must be cleaned (see section 4). Disinfectants will not be effective unless the surface they are applied to remains visibly wet for the required period of time. Read label directions for this contact time. Disinfectants mixed with water are susceptible to evaporation in hot or windy conditions and in direct sunlight and thus will not be completely effective unless reapplied. Curved surfaces that cause disinfectants to run off (like milk tankers) may require reapplication to keep the surface wet for the required contact time. Dairy equipment can be damaged by inappropriate uses of disinfectants, so proper use is critical to destroying the virus while maintaining the equipment.

## 5.3 Proprietary products

EPA registered products with a claim to inactivate FMD virus are listed in Table 1. Any of these products may be selected and used according to their labels. For more detailed information about available products, refer to the official label currently filed by the EPA by searching (product name or registration number) on the U.S. EPA Pesticide Product Label Search website at <http://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1:1719419566286576>.

|  |
| --- |
| **Table 1. Pesticide Products Approved by EPA For Use Against FMDv** |
| **EPA Reg. No.** | **Product Name** | **Company** | **Active ingredient(s)** | **Use sites** |
| 1677-129 | Oxonia Active | Ecolab, Inc. | Hydrogen peroxide Peroxyacetic acid | Food and mouth disease virus in/on livestock barns, livestock premises, animal quarters, animal cages, milking equipment, dairy equipment, and agricultural premises  |
| 6836-86 | Lonza DC 101 | Lonza, Inc. | Alkyl dimethyl benzyl ammonium chloride Didecyl dimethyl ammonium chloride Octyl decyl dimethyl ammonium chloride Dioctyl dimethyl ammonium chloride  | Foot and mouth disease virus in/on livestock premises, livestock feeding and watering equipment, and livestock equipment |
| 70060-19 | Aseptrol S10-TAB | BASF Catalysts, LLC | Sodium chlorite Sodium dichloroisocyanurate dihydrate | Foot and mouth disease virus in/on animal cages, animal stables, animal feeding/watering equipment, animal equipment, and animal transportation vehicle  |
| 70060-30 | Aseptrol FC-TAB | BASF Catalysts, LLC | Sodium chlorite Sodium dichloroisocyanurate dihydrate | Foot and mouth disease virus in/on livestock premises, livestock feeding equipment, livestock watering equipment, livestock equipment, livestock transportation equipment, hog barns/houses/parlors/pens, animal quarters, animal cages, animal feeding and watering equipment, animal equipment, animal transportation vehicles, and shoe baths. |
| 71654-6 | Virkon S | E.I. du Pont de Nemours & Company | Sodium chloride Potassium peroxymonosulfate  | Foot and mouth disease virus in/on animal feed equipment, livestock barns, livestock pens, livestock stalls, livestock stables, livestock equipment, cattle feedlot, hog farrowing pen premises, hog barns/houses/parlors/pens, animal quarters, animal feeding and watering equipment, animal equipment, agricultural premises, agricultural equipment, animal transportation vehicles, and human footwear |

## 5.4 Exemptions for use of registered products

USDA-APHIS has an exemption in place for sodium hypochlorite (bleach), sodium hydroxide and sodium carbonate in the event the proprietary products are not available. As with all disinfectants, all label use directions and safety precautions must be followed. For more information, see: <http://www.aphis.usda.gov/emergency_response/tools_train.shtml> - select “Pesticides to use against selected foreign animal diseases”.

5.4.1 Sodium hypochlorite 6.0% (household bleach)

A 1000 parts per million solution of sodium hypochlorite 6.0% is made by adding 1/3 cup of chlorine bleach to 1 gallon of water (reference). Mix thoroughly.

* Recommended contact time is 10 minutes.
* This solution must be mixed fresh prior to each application because it is unstable in warm, sunny conditions (above 59oF).
* USDA-APHIS has an exemption for use of sodium hypochlorite against FMD virus by USDA APHIS personnel, any State Departments of Agriculture personnel, farmers, and any other individuals who need to use this disinfectant on surfaces potentially exposed to FMD (EPA Quarantine Exemption issued to USDA, 2002).

5.4.2 Sodium hydroxide (lye, NaOH)

A 2% sodium hydroxide solution is made by adding 1/3 cup of NaOH pellets (2.7 ounces of lye) to 1 gallon of cold water. Add lye to the water. Mix thoroughly.

* Recommended contact time is 10 minutes.
* This solution is highly caustic (skin burns, damages metals).
* Use protective clothing (water resistant), rubber gloves, and safety goggles when mixing, handling.
* Always add the lye to the water – NEVER pour the water over the lye.
* Sodium hydroxide may be applied by certified applicators or under the supervision of USDA/PPQ, VMO's, or State officers that are certified applicators (EPA Quarantine Exemption to USDA, 2002).

5.4.3 Sodium carbonate (soda ash)

A 4% sodium carbonate solution is made by adding 5.33 ounces sodium carbonate to 1 gallon of hot water (or 1 pound to 3 gallons). Mix thoroughly.

* Recommended contact time is 10 minutes.
* Sodium carbonate can be deactivated by hard water.
* The solution is mildly caustic (irritate skin).
* Can dull paint and varnished surfaces.
* Sodium carbonate may be applied by certified applicators or under the supervision of USDA/PPQ, VMO's, or State officers that are certified applicators (EPA Quarantine Exemption to USDA, 2002).

The SMS Working Group Members thank USDA-APHIS and EPA for reviewing and providing content for Sections 1.5, 4, and 5.

# Content is still under review and development

## For more information or to submit comments, please contact:

Secure Milk Supply – Premises Biosecurity Working Group Chairpersons:

Danelle Bickett-Weddle, DVM, MPH, PhD, DACVPM

Associate Director, Center for Food Security and Public Health

2176 Veterinary Medicine

Iowa State University

Ames, IA 50011

Phone: 515-294-1492

dbweddle@iastate.edu

Tim Goldsmith, DVM, MPH, DACVPM

Assistant Clinical Professor

Center for Animal Health and Food Safety

University of Minnesota

St. Paul, MN 55108

Phone: 612-625-0883

gold0188@umn.edu

# SMS_logo_signature_72DPI_RGB.jpgFactors to Consider pre-Event for Industry, State and Federal Planning

#### The following table highlights the Performance Standards that Working Group Members felt would benefit from pre-event communication, coordination and planning on a more local/regional level prior to an actual event.  The standards, factors to consider, some possible options or approaches, and tasks for government and industry to address pre-event are listed. Please refer to the full BPS document for additional details.

| **Performance Standard (PS)** | **Factors to Consider and Options** | **Government Tasks** | **Industry Tasks** |
| --- | --- | --- | --- |
| 3.1 Milk Tanker 3.1.1 Only clean milk tankers will be permitted to travel to dairy premises in an FMD Control Area; the performance standard is no visible contamination externally or internally.* These PS are designed to prevent potential FMD virus spread throughout the roadways in a Control Area
 | * Internal tanker cleaning must be done in a facility approved for food grade tankers; some facilities are listed on the Bulk Transporter website: <http://bulktransporter.com/tank-cleaning/2009-tank-cleaning-directory/>
* Identification and mapping existing truck wash facilities with capabilities should be one step in response planning
* Some external contamination may be unavoidable but this can be mitigated by the C&D at the farm before pickup.
* Establish definitions of “clean” and “no visible contamination” so compliance can be monitored; this could include a checklist, visual examples, written explanations
* Provisions for how to accommodate snow and ice will need to be decided upon
 | * Communicate with truck washing facilities pre-event regarding their capabilities and options for restriction of their use to only vehicles moving to and from an FMD Control Area
* Consider location of dairy premises, processing plants, and available truck washes in defining the shape of possible Control Areas
* Communicate expectations for clean/no visible contamination with industry
* Determine acceptable accommodations for inclement weather with industry
* Determine frequency and personnel resources necessary to monitor tanker cleanliness; communicate this with industry.
* Determine availability of C&D supplies and facilities likely to be offered, including sources of mobile options
 | * *Haulers:* Communicate plans for interior and exterior truck wash with government pre-event
* *Processors* that cannot wash at the receiving bay should communicate this to their SAHOs
* *Haulers:* Determine feasible accommodations for inclement weather and discuss with government
* *Haulers:* Communicate expectations for clean/no visible contamination with drivers
 |

| **Performance Standard (PS)** | **Factors to Consider and Options** | **Government Tasks** | **Industry Tasks** |
| --- | --- | --- | --- |
| 3.1.2 Milk haulers/milk tanker drivers must adhere to truck routes designated by the Incident Management Team (IMT) as secure milk transportation routes; the performance standard is avoiding roadways contaminated with manure or other organic material.* Also applies to 3.4.1
 | * Back roads need to be clearly marked with name or route number. During communication between haulers/tanker drivers, dispatchers, and incident command, the name/number that appears on the road sign should be used.
* There are potential ways that milk tankers could be contaminated, such as unpaved roads necessary to get to a farm and cross traffic. A standard of “minimizing” contamination (rather than “avoiding”) should be established so that all parties are satisfied with the condition of the tanker.
 | * Identify personnel responsible for monitoring routes and communicating information to industry
* Identify areas of local (police) and national (DOT, National Guard) governmental support related to control of traffic including roadblocks, patrols, and fines, and communicate information with industry
 | * *Haulers:* Emphasize the importance of strict adherence to designated routes by drivers
* *Haulers:* Communicate with dispatch any contaminated roadways during the event
 |
| 3.1.2.1 The milk hauler/tanker driver must have the ability to communicate with their dispatcher and/or the Incident Management Team before and throughout their route. | * Routes will be designated on an operational period basis (24 hour) by the Biosecurity group in the Operations section of Incident Command
* The communication link would be via the permit process
* Permits are anticipated to be issued on a day-to-day basis
 | * Identify industry key points of contact pre-event and communicate protocols with industry on transportation routes during event
* Define the 24-hour operational period that will be used for route designation
* Determine if and how routing will be linked to premise classification and permitting; communicate this with industry
 | * *Haulers*: Provide contact information to government
* *Haulers:* Obtain the necessary equipment to effectively communicate with dispatch
* *Haulers*: Identify and communicate protocols and schedule with haulers/tanker drivers on transportation routes
* *Haulers:* Maintain contact information for all premises on route in case of a delay or preventing milk pickup
 |
| 3.1.2.2 The IMT will communicate prohibited roadways to industry which in turn communicate with milk haulers/tanker drivers to determine alternate routes. | * A possibility is instant transmission of routing information from a dispatch center to the hauler through GPS technology. This could be added to trucks without GPS in a short time period (6 hours).
 |  | * *Haulers:* Identify best technology for sharing route information with their drivers en route, and work towards implementation pre-event.
 |

| **Performance Standard (PS)** | **Factors to Consider and Options** | **Government Tasks** | **Industry Tasks** |
| --- | --- | --- | --- |
| 3.1.3 Milk tankers release air from the vent during vacuum collection or pumping the on-farm bulk tank/silo and while transporting the milk to a processing plant; the performance standard is to mitigate the risk of FMD virus particles escaping the air vent with available resources. | * A proactive risk assessment is being conducted to evaluate presence and risk of aerosolized virus from FMD. Once completed, progress can continue, if necessary, towards production of a filter that is acceptable for venting and for capture of virus particles, and whether that will be available commercially or through NVS or some other supplier during an outbreak.
 | * Complete risk assessment and pass on for industry review
* Once reviewed by industry, work with haulers to arrive at protocols to reduce virus release during transport via aerosol or spillage
 | * *Hauler*s: Review risk assessment summary document once available
* *Haulers*: Work with government to arrive at protocols aimed at mitigation of virus release during transport via aerosol or spillage
 |
| 3.2 Dairy Premises 3.2.1 Upon milk tanker arrival at a dairy premises, the performance standard is removal of all visible contamination on the milk tanker followed by disinfection* These PS are designed to prevent potential FMD virus entry to the dairy premises
 | * Encourage industry and State Animal Health Officials (SAHOs) to discuss feasible options for achieving this PS in the local setting, including premises’ ability to contain waste water
* Availability and selection of an appropriate “disinfection station” could vary at the local and regional level
* A possibility is a high pressure spray rig to follow tankers. This may be useful for removing gross contamination, but disinfection on the premises would still be necessary.
* A possibility is establishing a regional C&D station focused on cleaning (removal of visible contamination) and a station at the farm gate focused on disinfection
* A possibility is one verified disinfection station for multiple farms, provided producers are willing to take this risk (suggest signing an agreement accepting risk for “group biosecurity”)\*
* \*The Dairy Premises Biosecurity Working Group believes that grouping premises by location and status is less than ideal.
 | * Identify exterior truck washing facilities in state, region
* Communicate expectations and any available resources with industry
* Identify government agencies that will need to be worked with, such as environmental and health authorities, and provide contact info to premises and haulers.
* Identify if and how expectations may vary in inclement weather and communicate this with industry
* Determine the frequency and personnel who will monitor farm biosecurity procedures during an outbreak; this should be accounted for in the ICS structure.
 | * *Premises:* Communicate with State Animal Health Officials (SAHOs) regarding ability to accomplish task and resource needs
* *Premises:* Work with environmental and health authorities, ideally pre-event, to discuss disinfection protocols, including appropriate contact times in various weather conditions
* *Haulers:* Obtain accurate contact information to ensure farm personnel are available when tanker arrives
 |
| 3.2.1.1 The dairy premises should have a disinfection station set up at or near the entrance to clean and disinfect all vehicles entering or leaving.* The milk hauler/tanker driver should remain in the cab of the milk tanker.
 | * This will vary based on climate and truck idle regulations in some states. If the driver needs to exit the vehicle, they should do so per 3.3.1
 | * Communicate with haulers the idle regulations of the state
 | * *Haulers*: Communicate with government regarding idle regulations
* *Haulers*: Prepare to have protective wear available if needed
 |
| 3.2.1.2 The transport vehicle should be cleaned (focusing on the tires, wheel wells, undercarriage, mud flaps, splash guards, steps) to remove visible contamination. | * A plan needs to be established that meets local regulations for waste water handling; is recapturing it, deactivating it and spreading it an option?
* Decontamination exercises in North Carolina have shown that approximately 125-150 gallons of water are needed with a time requirement of 19 minutes for large milk tankers
* Importance of compliance and training materials could be provided through a variety of entities; Examples: milk hauler associations, state and national cattle associations, SMS website, state officials
 | * Identify training resources for farm personnel to safely and effectively implement protocols
* Work with environmental protection to determine acceptable and feasible run-off collection procedures
 | * *Haulers:* Be prepared for delays due to length of time for cleaning and disinfecting tanker exterior on farm
 |
| 3.2.1.5 On-farm personnel should record all vehicle and personnel movements onto and off of the premises including: date, time of arrival and departure, origin of tanker, driver name, contact number, vehicle identification, and previous and next stop (name and location). | * To trace movements, multiple options could be utilized depending on requirements by officials, resources available and capabilities of industry; Examples: GPS on trucks, electronic weigh bills, preprinted labels carried by the haulers and left on farm, information on permit carried by hauler, etc.
 | * Determine what information must be collected at the farm level and in what format
* Communicate expectations to industry (premises, haulers and processors)
 | * *Haulers:* Be prepared to provide details as required by the incident
 |
| 3.2.2 In order to pick-up milk on farm, the performance standard is to provide a clean drive path for the tanker (free of animal excrement)3.2.2.1 The SMS Dairy Premises Working Group recommends that milk should not be picked up on farms where milk tankers must drive across a visibly manure-contaminated cow path if the cow path area cannot be effectively cleaned and disinfected prior to tanker transit of that area; an alternative route to pick up milk on farm should be pre-planned to avoid skipped pickup* This PS is designed to decrease the potential infectious burden to remove upon farm exit
 |  | * Individual states may decide that driving across a contaminated path is acceptable with appropriate exit disinfection
* Communicate expectations with industry
 | * *Premises:* Plan a clean path for tanker to drive on to pick up milk
* *Premises:* Communicate with *hauler* and *processor* pre-event to ensure acceptance of drive path during an event
 |
| 3.3 Milk Haulers and Milk Tanker DriversMilk haulers should carry a supply of protective outerwear and footwear with them on their routes. They should also carry a supply of approved disinfectant (see section 5 of Dairy Premises BPS document). NOTE: Due to transportation regulations, the disinfectant should not be stored in the cab or with any milk samples. Milk haulers should also carry spray equipment (e.g., garden sprayer) capable of effectively applying disinfectant to their protective outerwear/ footwear and small areas of milk spill on farm.  | * All entities (premises, haulers, processors and government) should determine the responsible party for obtaining the necessary protective outerwear, footwear, disinfectants, and disinfection equipment and communicate these expectations prior to a response
* In the UK, they welded platforms onto the trucks to carry pressure washers, etc.
* The exterior of the sprayer carried by the hauler should be disinfected at the disinfection station upon exit.
 | * Determine if, and what, resources will and will not be made available to industry, communicate this with industry
* SAHOs should communicate with federal officials to determine steps to enter into buying contracts to purchase PPE
* Work with the department of transportation to determine any regulations to carrying disinfectant and communicate findings with industry
 | * *Haulers*: Determine options to carry protective outerwear, footwear, disinfectant, and spray equipment
* *Haulers*: Have a plan to obtain resources in an FMD outbreak
 |
| 3.3.1 Upon arrival at a dairy premises, the performance standard is to have only personnel with clean, protective footwear/ clothing/gloves enter the farm3.3.1.7 Dairy premises should keep a supply of protective wear (boots, gloves) in the event the hauler’s supply becomes depleted, damaged, or excessively contaminated.* This PS is designed to prevent potential FMD virus entry to the dairy premises
 | * Early in an outbreak, supplies may be hard to rapidly obtain from a supplier; determine acceptable barriers to protect the hauler from contaminating their clothing and footwear with raw milk
* Determine whether the premises or hauler will be responsible for supplying the protective wear, and any additional backups.
* Brainstorming a suggested/ required supply list that can be distributed to premises/haulers/ processors to have on hand in case of an outbreak will be helpful; Examples: lab coats, butchers apron, garbage bag with head/arm holes, palpation sleeves, gloves, plastic boots, etc.
* To eliminate the hauler/driver from leaving the cab, consider working with the FDA and requesting a waiver of the PMO rules in an FMD outbreak, and have dairy personnel do all sampling and connections to the tanker
* Processors and consumers will need to accept non-licensed milk haulers as first level of quality screening if PMO is waived
* Importance of compliance and training materials could be provided through a variety of entities; Examples: milk hauler associations, state and national cattle associations, SMS website, state officials incorporated into licensed milk sampler/hauler training at the state level, etc.
 | * Determine feasibility of obtaining a Pasteurized Milk Ordinance (PMO) waiver requiring the licensed milk hauler to collect samples and connecting to the tanker during an FMD outbreak and allowing farm personnel to complete these steps
* Determine protective wear expectations for those entering the premises and communicate this to producers
 | * *Haulers*: Determine options and have a plan to obtain resources needed to accomplish task and location to complete this task
* Communicate expectations between the *premises* and *hauler*, including supply of protective wear
* Ensure *haulers* obtain the necessary training to effectively implement protocols
* *Premises:* Ensure farm personnel obtain the necessary training to properly collect samples and connect to the tanker (if PMO waiver allowed)
 |
| 3.3.1.4 If an on farm bulk tank sample must be collected, obtain the sample collection vial(s) and a disinfectable outer container(s) prior to exiting the cab.* This sub-PS is designed to prevent cross contamination
* Also applies to 3.3.3.2
 | * Normally samples are collected from all bulk tanks and tested at the processing plant; determine if this will still the case in an FMD outbreak situation
* Determine via pre-event testing whether carrying samples in a plastic sealable bag or other disinfectable outer container will affect the requirement to maintain the sample temperature between 32 and 40 degrees.
 | * Determine if bulk tank samples will be collected in an FMD outbreak
 | * *Premises and Haulers:* Discuss expectations with government officials and processors
* *HHHaulers:* Determine appropriate container, temp requirements for carrying milk sample if needed
 |
| 3.3.3 Milk Tankers Pumping from Bulk Tank(s) to Transport Vehicle; the performance standard is to minimize raw milk contamination of equipment, personnel, and the dairy premises* For tankers picking up milk from more than one farm, this PS is designed to prevent the potential spread of FMD virus between farms
 | * Training on proper procedures could be provided through videos available from milk hauler associations, state officials, SMS website, others
* Standard Operating Procedures should be established for trucks that pick up more than one farm per load, or more than one farm without a clean-in-place of transfer hose, pump
* SOP should focus on trucks that haul their own transfer hose, pump
 | * For tankers performing multiple farm pickups between off-loads, determine protocol for dealing with spills occurring on the premises during pumping of milk; communicate this with premises, haulers
 | * *Haulers*: Have a plan to obtain resources needed to accomplish tasks
* *Premises and Haulers*: Communicate expectations
* Ensure *haulers* obtain the necessary training to effectively implement protocols
* *Haulers*: Develop protocols for reporting spills to the IMT for evaluation and action
* Communicate plan between the *premises*, *hauler*, and *processor* pre-event to ensure acceptance of process during an event
 |
| 3.3.3.1 For tankers carrying a transfer hose that was used to pick up milk on another farm, ensure it is capped and then spray its exterior and the coupling attachment with an approved disinfectant as it is being removed from the tanker prior to connecting to the bulk tank. | * Multiple personnel may be needed for disinfection of transfer hose at time of removal
 |  | * *Haulers*: Determine options to ensure the exterior of the transfer hose is disinfected and milk from the tanker is not spilled on subsequent farms
* *Haulers:* Determine if farm personnel will be needed to assist in hose disinfection process
 |
| 3.3.4 Direct Load Milk Tankers; the performance standard is to minimize the need for the milk hauler/milk tanker driver to exit the cab* This PS is designed to decrease driver/hauler exposure to the farm and vice versa
 | * Insurance/risk managers of hauling companies may be willing to balance the liability of having dairy farm personnel disconnect/connect trailers and tractors with the risk of the hauler/driver exiting the cab becoming contaminated during an FMD outbreak.
* Standard Operating Procedures should be established for farm personnel that describe the steps to disconnect/connect tankers to tractors
 |  | * *Haulers:* Work with insurance companies and risk managers pre-event to determine if dairy farm personnel can disconnect/connect trailers
* *Haulers:* Obtain accurate farm contact information to ensure farm personnel are available when tanker arrives
* *Premises*: Ensure farm personnel obtain the necessary training to safely disconnect/connect tankers
 |
| 3.3.5 Upon leaving a dairy premises, the performance standard is removal of all visible contamination on the milk tanker and milk hauler, followed by tanker disinfection * This PS is designed to prevent potential FMD virus leaving the dairy premises
 | * Depending on the farm, only minimal exterior tanker cleaning may be required to remove visible contamination, thus speeding up the exit process
* Options for reducing contamination from dirt driveways at the premises should be explored and discussed
 | * Same tasks as under 3.2.1 plus:
* Determine if disinfectant contact time can occur over the road or if the tanker should remain on farm
 | * Same tasks as under 3.1.1 plus:
* *Premises*: Ensure farm personnel are available to clean and disinfect the tanker, tractor
* *Premises:* Explore options for reducing contamination on the tanker from dirt or gravel drives
 |
| 3.3.5.1 Before entering cab of milk tanker, milk hauler should remove or disinfect protective outer clothing and footwear. | * Contaminated outerwear/footwear should remain on the farm of origin
* Disposable or waterproof outerwear could be used, each with their benefits and drawbacks
* An SOP of expectations should be developed and communicated
 | * Determine if disposable or waterproof outerwear is more appropriate based on climate, industry capabilities, ability to adequately disinfect, and resources available
 | * *Premises*: Ensure farm personnel are available to collect and properly dispose of hauler outerwear
* *Premises*: Have a dedicated storage area available for waterproof outerwear should this be the option selected
 |
| 3.5 Dairy Processing Plant3.5.1 Upon arrival at a dairy processing plant premises, the performance standard is removal of all visible contamination on the milk tanker followed by disinfection.* This PS is designed to prevent potential FMD virus entry to the dairy processing plant
 | * Establishing cleaning and disinfection stations will vary between plants.
* State Animal Health Officials (SAHOs) and processors should discuss feasible options for achieving this PS in the local setting; including at an off-site location that is in close proximity to the plant entrance
* Waste water will need to be managed per local/state regulations
* Local climatic conditions need to be considered when determining the SOP to accomplish this PS
* This PS may only need to be performed once if trucks can leave the unloading bay via an uncontaminated exit
* Industry and SAHOs should discuss options for verification of this PS
* Processing plant written plans or proposed options should be reviewed by and discussed pre-event with government officials from all states that ship milk to that plant
 | * Communicate expectations and any available resources with industry, accounting for local and inclement weather conditions
* Review and pre-approve site specific biosecurity plans to speed implementation during an actual outbreak
* Partner with industry to develop and provide training to ensure processing plant personnel are safely and effectively implementing the recommended protocols.
* Determine the frequency and personnel who will monitor processing plant biosecurity procedures during an outbreak
 | * *Processors:* Develop a site specific FMD response plan which meets the biosecurity PS. Review/share plan with local/regional animal health officials for pre-approval if possible.
* *Processors:* Determine state and local regulations for waste water management when developing FMD plan
* *Processors:* Partner with government to ensure personnel obtain the necessary training to safely and effectively implement protocols
 |
| 3.5.1.5 After the tanker is cleaned, the milk hauler/tanker driver can then drive over the scales and weigh-in or proceed to the receiving bay where milk is metered at off-loading. | * In some states weigh master rules require that the driver exit the cab for weigh-in. In an emergency it would be advisable to consider waiving that requirement to minimize the number of times a driver is required to exit the vehicle to minimize the number of times a driver is required to wear protective wear.
 | * Determine likelihood and approval process for altering the rules in an emergency and communicate that to industry
 | * *Processors:* Incorporate hauler options into the plant FMD response plan based on input from government
 |
| 3.5.1.6 When possible, the milk hauler/tanker driver should remain in the cab until the processing plant personnel have collected a milk sample from the tanker and cleared it for off-loading. | * This may vary based upon climatic conditions and truck idle regulations in some states. The driver should remain in the vehicle if possible.
* If haulers need to exit the vehicle, they should do so per 3.5.2.
 |  | * *Processors:* Communicate with government regarding whether haulers must leave the cab during disinfection and prepare to have protective wear available if needed; include info in FMD response plan
 |
| 3.5.2 Leaving the cab of the tanker, the performance standard is to have only clean, protective footwear/clothing/gloves enter the processing plant premises and no direct contact with other personnel.* This PS is designed to prevent potential FMD virus entry to the dairy processing plant
 | * All entities (premises, haulers, processors and government) should determine the responsible party for obtaining the necessary protective outerwear, footwear, disinfectants, and disinfection equipment and communicate these expectations prior to a response
* Early in an outbreak, supplies may be hard to rapidly obtain from a supplier; determine acceptable barriers to protect the hauler from contaminating their clothing and footwear with raw milk
* Brainstorming a suggested/required supply list that can be distributed to haulers/processors to have on hand in case of an outbreak will be helpful; Examples: lab coats, butchers apron, garbage bag with head/arm holes, palpation sleeves, gloves, plastic boots, etc.
 | * Determine if, and what, resources will and will not be made available to industry; communicate this with industry
* SAHOs should communicate with federal officials to determine steps to enter into buying contracts to purchase PPE
 | * *Haulers and Processors*: Determine options and have a plan to obtain resources needed to accomplish task
* *Processors:* Incorporate procedures for obtaining and expectations for wearing necessary protective wear into plant FMD response plan
* Ensure *haulers* obtain the necessary training to effectively implement protocols
 |
| 3.5.3 After off-loading milk, the performance standard is to ensure all residual milk remaining in the tanker and hoses is removed while at the dairy processing plant.* For tankers picking up milk from more than one farm, this PS is designed to prevent the potential spread of FMD virus between farms
 | * It has been noted that not all plants have CIP on site to clean the interior of the tanker. Per PMO, this normally occurs once per 24 hours
* Full CIP is a time-intensive process (30-40 minutes) that could greatly impact the ability to pick up milk in some parts of the country. A CIP required for each load could increase the daily occurrence by a factor of 6-8 in some areas.
* A water rinse to remove residual milk has been suggested; more information (risk assessment) is needed to understand effectiveness.
* Residual milk that leaks from a tanker can be managed both at the plant and on farm per steps included in the Milk Tanker and Milk Processing Plant BPS documents.
* Definitions of specific protocols that are appropriate for use, such as manual rinsing compared with high-pressure and volume rinses should be established if full CIP is not required
* The effect of washing hoses, pumps, etc. in lieu of CIP should be determined
* A plan needs to be established for waste water handling; is recapturing it, deactivating it and spreading it an option? Another possibility for emergency waste-water containment is pumping into a secondary tanker, or off-site, sealed location, for later disposal.
 | * Determine if a full CIP will be required on every off-load. Communicate decision to industry.
* If a full CIP is not required, provide acceptable protocols to industry, including definitions of procedures.
 | * *Processors:* Communicate capabilities to perform CIP on every load of raw milk delivered to SAHOs and haulers.
* *Processors:* Communicate other challenges, such as high numbers of loads, multiple unloading bays, no waste water permit, etc. with SAHOs and haulers pre-event
* *Premises*: Residual milk may leak on subsequent dairy premises pickups and producers receiving these tankers need to be aware of that possibility. Communicate with *haulers* and *processors* any concerns. There are mitigation steps in the Milk Tanker and Dairy Premises Biosecurity Performance Standards documents (24 Aug 2011).
 |
| 3.5.4 Upon leaving a dairy processing plant premises, the performance standard is to removal of all visible contamination on the tanker or milk hauler/tanker driver.* This PS is designed to prevent potential FMD virus leaving the dairy processing plant
 | * Same as 3.5.1, also:
* This step may be unnecessary if the tanker enters clean and cross-contamination is prevented
 | * Determine if the processing plant will require a second C&D upon departure, communicate this to industry
 | * *Processors:* Determine traffic pattern that will prevent cross-contamination and include that in the plant FMD response plan to share with government
* *Processors*: Have a dedicated storage area available for waterproof outerwear should this be the option selected
 |
| 3.6 Milk Tanker StorageWhen not in use, milk tankers must be stored in a secured and monitored facility once cleaned and disinfected internally and externally. Storage at alternate facilities must be approved by Incident Command. [More in BPS doc]3.6.1 The performance standard of monitoring milk tankers prior to use for milk pick up ensures it has been not tampered with after it has been cleaned and disinfected.* This PS is designed to monitor the accidental or intentional contamination with FMD virus.
 | * Seals/padlocks/tamper proof sealing tape must be placed on all access points on the tanker
* The use of existing seals may be appropriate for verification of cleaning and disinfection without tampering, as long as the system is standardized and thorough records are kept. Broken seals should be retained and delivered to appropriate authorities to verify that seals are broken at the plant.
* If seals are broken on-farm, containment of the seal in a disinfectable outer container will reduce the risk of the seal being a fomite at the processing plant
* Information about sealing bulk milk trucks can be found in “Guideline for Sealing Bulk Milk Tanks”, DPC 105 from the Dairy Practices Council, March 2005.
* For dairy premises with their own milk tanker, permits will be required, as will the C&D steps on and off the operation
 | * Determine acceptable tools and protocols for ensuring that tankers have not been tampered with; communicate this with industry (premises, haulers, processors)
* Determine SOP for collection and verification of appropriately broken seals; communicate with industry (premises, haulers, processors)
* Determine reporting process for dealing with seals that were not broken appropriately, communicate info with industry (premises, hauler, processors)
 | * *Premises and Haulers:* Develop protocol of securing and monitoring tankers during storage
* *Premises and Haulers:* Obtain necessary training to effectively implement protocols.
* *Premises and Haulers:* Verify protocol pre-event, if possible, with SAHO.
 |
| 5. Approved Disinfectants for FMD Virus | * Obtaining approved disinfectants is an area all involved need to determine
* Contact time in various climate conditions needs to be considered
* When determining the SOP, determine how often fresh solution needs to be mixed based on product selected, environmental temperature, storage
* Some products have a USDA-APHIS exemption for use and only USDA personnel may use it as described; communicate with USDA prior to an event about proper use
 | * Discuss options with USDA and communicate what will be made available to industry
 |  |
| Other considerations and questions posed by WG members: | * Additional planning is needed to clarify how to handle milk sample pick up by sample transport couriers
* Who is responsible for getting processors in a Control Area to take and process milk if it is not from their own producers?
* What role will farm inspectors have during an FMD outbreak?
* Any specific protocols for sanitizing the sample dippers before leaving farm?
 |