

# Salmonella sampling for deep litter sheds with pens or partitions using drag swabs

**Purpose/Scope:** This SOP provides a method for conducting *Salmonella* sampling in deep litter sheds with pens or partitions

**FREQUENCY**  
Every 12 to 15 weeks



## MATERIALS NEEDED

- Cotton gauze swabs, can use either:
  - See instructions on how to make your own\*or,
  - Tampons or,
  - Supplied by laboratory
- 1.5m cotton string
- Disposable latex gloves
- Sample transport liquid (peptone water)
- ^Whirl-Pak® bags or screw top plastic jar
- Scissors
- Permanent marker
- Laboratory sample submission form
- Plastic post satchel for transporting swabs to the laboratory
- Plastic container for swabbed samples

\* Making cotton gauze swabs

^ <https://www.whirl-pak.com/whirl-pak-bags-general-information>

## MAKING THE COTTON GAUZE SWABS

- 1 Obtain a 10cm x 10cm cotton gauze and fold onto itself in a pleated pattern.



Figure 1  
Image: Michael J et al. 2020

- 2 Continue folding gauze to form a pad.



Figure 2  
Image: Michael J et al. 2020

- 3 Tie the cotton string around the centre of the cotton gauze.



Figure 3  
Image: Michael J et al. 2020

- 4 Wind string around the cotton gauze.



Figure 4

- 5 Place the required number of swabs for each shed into their own plastic container or Whirl-Pak® bag.

- 6 Store the rest in a dry, secure place.

## PROCEDURE

## Step 1

### Get prepared

- 1 Notify the laboratory 24 hours in advance of sending the swab samples.
- 2 Obtain a sample submission form from the laboratory.
- 3 Prepare **two (2) swabs** for each pen/ partition (see Example 1.)

Example 1. Number of swabs required based on number of pens/ partitions

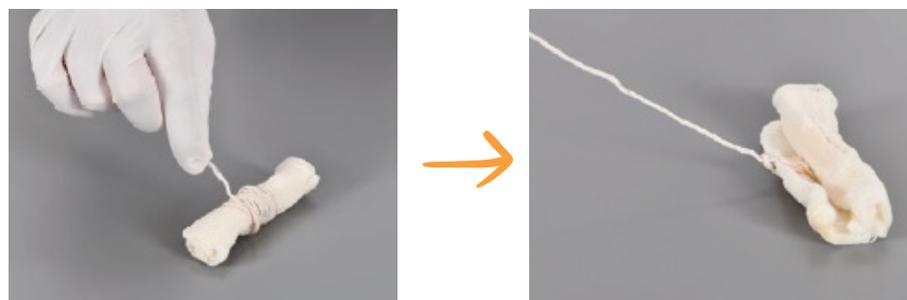
Number of pens/ partition	Number of swabs required
2	4
3	6
4	8
5	10

## Step 2

### Swab the shed

- 1 Wash your hands.
- 2 Put on a pair of disposable latex gloves.
- 3 Moisten **Swab 1** with water from the drinkers or solution provided by the laboratory.
- 4 Hold **Swab 1** by the string and unravel (Figure 5).

Figure 5. Hold the swab by the string and unravel (Romer Labs)



PROCEDURE

- 5 Drag **Swab 1** twice the full length of the pen or partition as described in Figure 6 (2 pens/ partition) or Figure 7 (3 pens/ partitions).

Figure 6. Swabbing procedure for deep litter sheds with two pens or partition

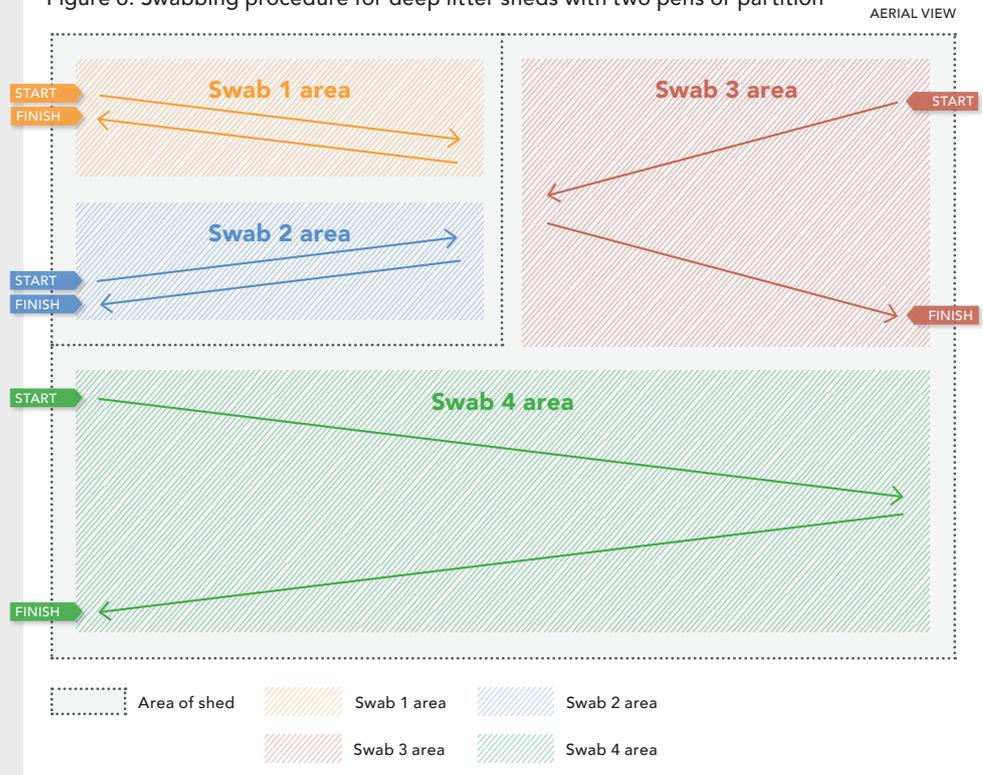
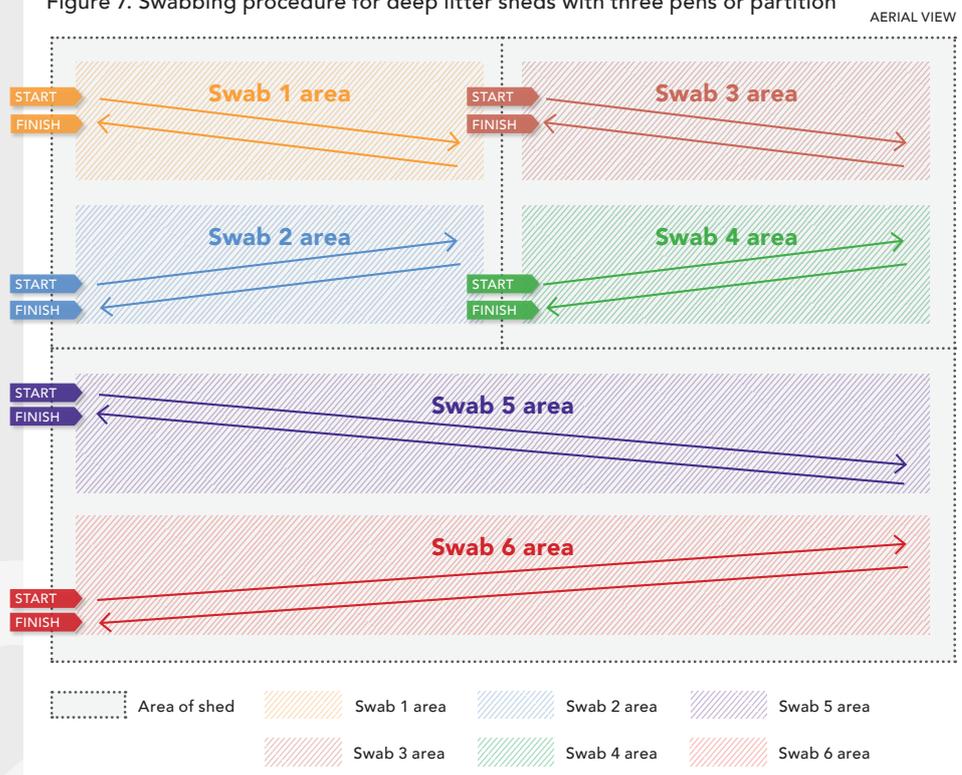


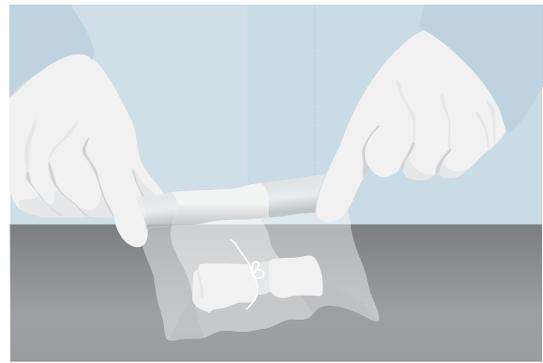
Figure 7. Swabbing procedure for deep litter sheds with three pens or partition



## PROCEDURE

- 6 As per Figures 6 and 7, **Swab 1** should be considered finished when the swab is back to where it started from.
- 7 The string should not be included in the sample sent to the laboratory, cut the string from **Swab 1** with a pair of scissors.
- 8 Place **Swab 1** in a Whirl-Pak® bag or screw top plastic jar (Figure 8).

Figure 8. Put swab into Whirl-Pak® bag (Romer Labs)

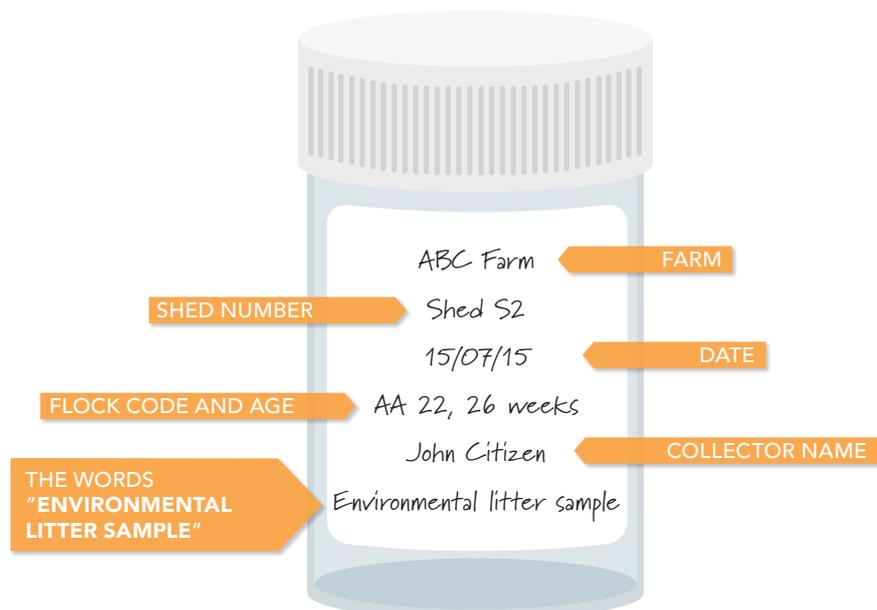


- 9 Seal the bag or plastic jar.
- 10 **Repeat procedure 3 to 9 with Swab 2, Swab 3**, etc using one Whirl-Pak® bag or plastic jar per swab. If gloves come into contact with litter or manure they should be changed between swabs.

### Step 3 Pack the samples

- 1 Each sample should be placed in it's own Whirl-Pak® bag or screw top plastic jar. Clearly label each bag or jar with permanent marker.
- 2 Include information as per Example 1.

Example 1. Information to include on the Whirl-Pak® bag or screw top plastic jar



- 3 Complete the laboratory sample submission form (always record on submission sheets as "ENVIRONMENTAL LITTER SAMPLES").

## PROCEDURE

## Step 4

### Submit the samples

- 1 Pack the swabs that are in the bags (Figure 9A) securely into a plastic container (Figure 9B) and put the container into a plastic post satchel (Figure 9C).

Figure 9. Pack swab samples



<https://ie.vwr.com/store/product/17962031/sample-container-with-screw-cap-sterilin#gallery-1>



<https://auspost.com.au/shop/product/flat-rate-small-satchel-10-pack-059049131?fm=recommendations:shop:1>

- 2 Put the completed sample submission form into the same plastic post satchel as the swabs.
- 3 Post the samples to the diagnostic laboratory.
- 4 If the swabs cannot be posted on the same day, store the swabs in the fridge (between 4 and 8°C) until ready to be posted. Conduct procedures 1 to 4 as soon as possible.

Swabs must not be frozen.

## REFERENCE

Michael J. Sikorski, Myron M. Levine 2020 Reviving the “Moore Swab”: A Classic Environmental Surveillance Tool Involving Filtration of Flowing Surface Water and Sewage Water To Recover Typhoidal *Salmonella* Bacteria

Applied and Environmental Microbiology, 86 (13) e00060-20; DOI: 10.1128/AEM.00060-20)

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