Food Authority

NSW GOVERNMENT

Food Safety Scheme Manual

Appendix 6: *Salmonella* Enteritidis testing for egg producers

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This document is adapted from '*How to comply with the Biosecurity (Salmonella Enteritidis) Control Order 2024'* published by DPIRD in June 2024.

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Introduction

Salmonella Enteritidis (SE) must be managed in order to minimise public health and safety risks and to maintain consumer confidence in the egg industry. Biosecurity and testing are the best form of defence and the measures in place will assist with protecting the industry.

Food Regulation 2025 requires egg primary food production business to undertake analyses for *Salmonella* Enteritidis at each individual shed and each individual poultry housing area.

The number of samples collected, and the location of sample collection is important. This is why farms must implement environmental sampling and testing that is in line with recognised industry practices. This document provides instructions on environmental sampling for SE, as required by the Food Regulation 2025.

Variations in poultry house design might require adaptations for collecting representative environmental samples. In those situations, any alternative environmental sampling method that is used must be at least equivalent to the method set out in this document in accuracy, precision, and sensitivity in detecting SE. Growers are strongly encouraged to consult an industry professional to obtain advice before conducting sampling and testing.

Important notes:

- Samples must be collected and sent for testing every 12 to 15 weeks.
- You can ask the laboratory to pool all the swabs and test them as one sample.
- Sample must be tested for *Salmonella* Enteritidis.
- Testing must be done at a laboratory accredited by NATA for the *Salmonella* spp. testing in environmental samples and has the capacity to differentiate Group D from other *Salmonella* groups.

How to collect samples and send them for testing

1. Gather the materials required

- Cotton gauze swabs approximately 10 cm square or organic tampon or commercial boot swabs or swabs provided by the laboratory
- Ball of cotton string
- Latex gloves
- Distilled water or PBS solution or sterile water (boiled water in a sterile container and allowed to cool)
- Ziplock bag or plastic screw top specimen jars
- Scissors
- Permanent marker
- Laboratory submission form
- Plastic post satchel to post the swabs.

2. Calculate the number of swabs required

- The number of swabs required depends on the size of the facility and the production method used.
- See the sampling plan below for information on the number of swabs required per shed for different shed or housing layouts or calculate the number of swabs according to SE sampling procedure being implemented on the farm.

3. Prepare the swabs

- If the laboratory supplies the swabs, please use them. Otherwise, boot swab kits are available for purchase commercially.
- To make your own drag swab: roll the gauze swab and tie a 1-meter-long string around the middle of the cotton gauze making a bow or tie the 1-meter string to the tampon string.
- Place swabs into a plastic jar or zip lock bag and store in a dry secure place.

Figure A6.1. Example of a drag swab, boot covers and commercially available swabs

4. Collect the samples

For each swab:

- wash your hands and put on latex gloves.
- moisten the swabs using the solution provided by the laboratory or in the test kit or distilled water or PBS solution or sterile water.
- drag or boot swab the shed area. Each type of shed structure needs to be sampled differently (see the sampling plan section below).
- after sampling an area using the sampling plan appropriate for your shed, place the swab in the zip lock bag or screw top jar. If using boot swabs, remove the swabs and place it in the provided bag.
- wash your hands thoroughly after sampling.

5. Label the sample

- Label each sample bag or jar. The laboratory will provide you with instructions on how to label the samples.
- Generally, the sample should be labelled with the name of the farm, details about where the sample was taken, the date the sample was taken, collector's name and a brief description of the sample.
- The laboratory will provide information on how to store the sample before packaging and posting.

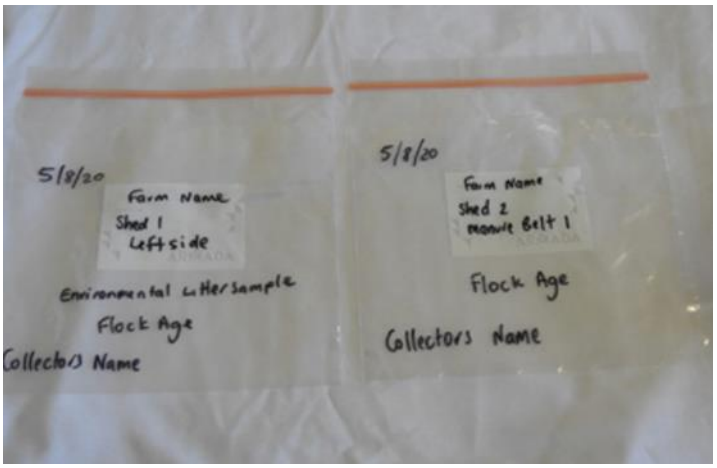


Figure A6.2. Correctly labelled sample bags

6. Send the sample for testing

- Complete the laboratory submission form.
- Package swabs securely along with the laboratory submission form.
- Send the samples according to the advice from the laboratory.
- Send the sample using express post and do not delay in sending the sample so they can be tested as soon as possible.
- It is recommended to take samples and send them to the laboratory early in the week to avoid samples being delayed over the weekend.

Sampling plan

The sampling plan differs for each type of the poultry housing environment. Variations in shed design could require adaptations for collecting representative environmental samples. Any alternative environmental sampling method that is used must be at least equivalent to the method set out in this document in accuracy, precision, and sensitivity in detecting SE.

This sampling plan is designed to ensure that the poultry housing area is thoroughly sampled, covering as much area as practically possible.

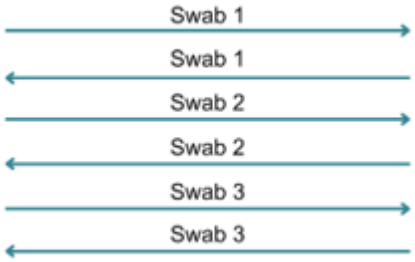
1. Cage – with manure belt

Sample type	How many swabs?	Where to sample?
Drag swab	2 swabs per row or per manure belt	End of manure belts

How to sample?

- Tie each of the 2 swabs by the string below where the manure falls from the belts, leaving the swabs dangling down.
- Once manure belts are started, manure from the top levels should be falling directly onto the swabs.
- Place the swabs in a zip lock bag or screw top plastic jar.
- Repeat for every row/manure belt.
- Repeat for all sheds/poultry housing on the farm.

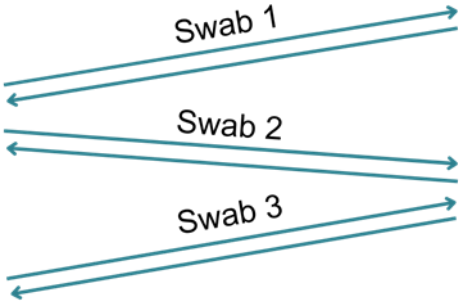
2. Cage – with manure pit (no manure belt)

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab	3 swabs per shed	Manure piles beneath cages	

How to sample?

- Attach moistened swab by the string to a pole or a broom handle.
- Walk between the cage rows for the full length of the shed, dragging the swab over the top of the litter piles as shown in the Sampling Plan Diagram by the arrow “Swab 1”.
- Repeat in the opposite direction, along a new row with “Swab 1” as indicated in the diagram.
- Cut the string from Swab 1 with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.
- Repeat for another 2 rows and manure pits.
- Repeat for all sheds/poultry housing on the farm.

3. Barn – deep litter

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab	Sheds with no pens or partitions – 3 swabs per shed	Litter/manure floor surface	

How to sample?

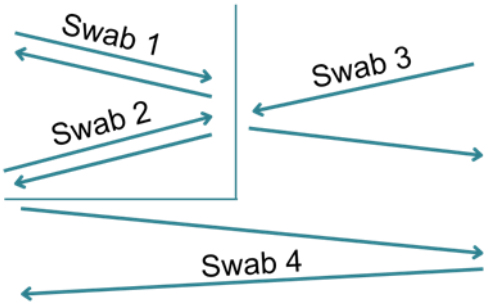
Drag swab

- Hold the swab by the string and drag it from one end of the shed to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Retrieve the swab when you have dragged the swab the length of the shed and returned to near where you started.
- Cut the string from the swab with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.
- Repeat for the other 2 swabs.
- Repeat for all sheds/poultry housing on the farm.

Boot swab

- Place plastic boot covers over your shoes.
- Then place boot swabs over the boot covers.
- Don't use a foot bath once you have the boot covers on.
- Walk from one end of the shed to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Remove boot swabs when you have walked the length of the shed and returned to near where you started.
- Place the boot swabs in the bag or container they were removed from.
- Repeat for the other 2 of swabs.
- Repeat for all sheds/poultry housing on the farm.

4. Barn – deep litter with one or more pens or partitions

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab	Sheds with pens or partitions – 2 swabs per pen	Litter/manure floor surface	

How to sample?

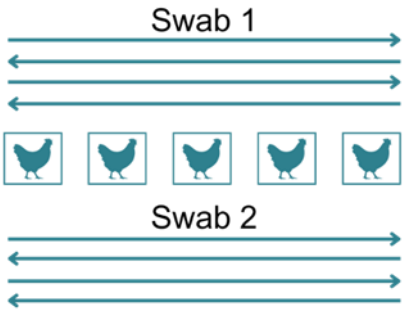
Drag swab

- Hold the swab by the string and drag it from one end of the shed to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Retrieve the swab when you have dragged the swab the length of the shed and returned to near where you started.
- Cut the string from the swab with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.
- Repeat for the rest of swabs.
- Repeat for all sheds/poultry housing on the farm.

Boot swab

- Place plastic boot covers over your shoes.
- Then place boot swabs over the boot covers.
- Don't use a foot bath once you have the boot covers on.
- Walk from one end of the shed to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Remove boot swabs when you have walked the length of the shed and returned to near where you started.
- Place the boot swabs in the bag or container they were removed from.
- Repeat for the rest of the swabs.
- Repeat for all sheds/poultry housing on the farm.

5. Barn – slatted floor

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab	Sheds with no pens or partitions – 2 swabs per shed	Floor/slatted surface. One swab each side of the nest boxes.	

How to sample?

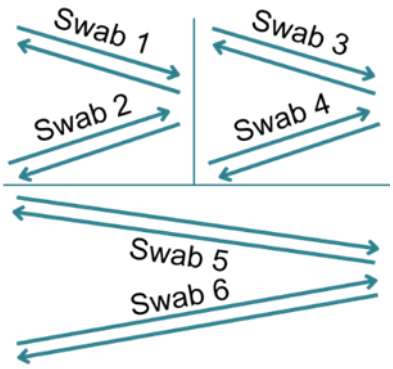
Drag swab

- Hold the swab by the string and drag it the full length of the shed four times. Each time drag the swab over different areas of the slats in the patterns shown in the Sampling Plan Diagram.
- Retrieve the swab when the end of the shed is reached for the 4th time.
- Cut the string from the swab with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.
- Repeat this process on the other side of the shed.
- Repeat for all sheds/poultry housing on the farm.

Boot swab

- Place plastic boot covers over your shoes.
- Then place boot swabs over the boot covers.
- Don't use a foot bath once you have the boot covers on.
- Walk from one end of the shed to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Remove boot swabs when the end of the shed is reached for the 4th time.
- Place the boot swabs in the bag or container they were removed from.
- Repeat this process on the other side of the shed.
- Repeat for all sheds/poultry housing on the farm.

6. Barn – slatted floor with one or more pens or partitions

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab	Sheds with pens – 2 swabs per pen or per level	On the floor and on the slats on each side of the shed	

How to sample?

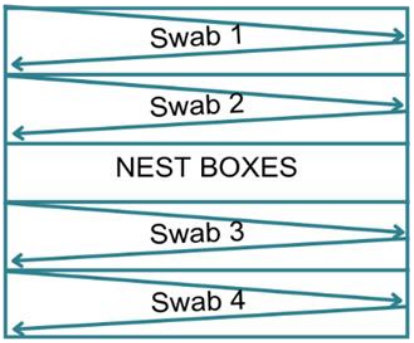
Drag swab

- Hold the swab by the string and drag it from one end of the pen and back again over different areas of the pens in the patterns described in the Sampling Plan Diagram.
- Retrieve the swab when you have dragged the swab the length the of the pen and returned to near where you started.
- Cut the string from the swab with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.
- Repeat for the rest of swabs.
- Repeat for all sheds/poultry housing on the farm.

Boot swab

- Place plastic boot covers over your shoes.
- Then place boot swabs over the boot covers.
- Don't use a foot bath once you have the boot covers on.
- Walk from one end of the pen to the other and back again, over different areas of litter in the patterns as shown in the Sampling Plan Diagram.
- Remove boots swabs when you have walked the length of the pen and returned to near where you started.
- Place the boot covers in the bag or container they were removed from.
- Repeat for the rest of swabs, with two (2) pairs boot covers per pen.
- Repeat for all sheds/poultry housing on the farm.

7. Barn – deep litter and slatted floor

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab	4 swabs per shed	On the floor and on the slats on each side of the shed	

How to sample?

Drag swab

Step 1

- Drag Swab 1 by the string from one end of the litter area and back again, over different areas of the floor in the patterns described in the Sampling Plan Diagram.
- Retrieve the Swab 1 when you have dragged the swab the length of the litter area and returned to near where you started.
- Cut the string from Swab 1 with a pair of scissors.
- Place the swab in a zip lock bag or screw top plastic jar.

Step 2

- Drag Swab 2 by the string from one end of the slatted area and back again over different areas in the patterns described in the Sampling Plan Diagram.
- Retrieve the Swab 2 when you have dragged it the length of the slat area and returned to near where you started.
- Cut the string from Swab 2 with a pair of scissors.
- Place the Swab 2 in a zip lock bag or screw top plastic jar.
- Repeat steps 1 and 2 on the other side of the shed.
- Repeat for all sheds/poultry housing on the farm.

Boot swab

Step 1

- Place plastic boot covers over your shoes.
- Then place boot swabs over the boot covers.
- Don't use a foot bath once you have the boot covers on.
- Walk from one end of the litter area and back again, over different areas of the floor in the patterns described in the Sampling Plan Diagram.
- Remove boot swabs when you have walked the length of the shed and returned to near where you started.
- Place the boot swabs in the bag or container they were removed from.

Step 2

- Place boot swabs over your boot covers. Walk from one end of the slat area and back again over different areas in the patterns described in the Sampling Plan Diagram.
- Remove boot swabs when you have walked the length of the slats and returned to near where you started.
- Place the boot swabs in the bag or container they were removed from.
- Repeat steps 1 and 2 on the other side of the shed.
- Repeat for all sheds/poultry housing on the farm.

8. Mobile shed or housing structure

Sample type	How many swabs?	Where to sample?	Sampling Plan Diagram
Drag swab or boot swab Note: sponge swabs can also be used	2 swabs per shed/house	Under the shed or on the slats/grating	Choose a sampling plan appropriate to the shed layout in order to collect the representative environmental samples. For example, on the grating and under the structure where visible manure is present. 

How to sample?

- Use the procedure for one of the sampling methods described above that will allow swabbing the area where most of the recently produced manure has been deposited.
- See the information on cage (manure pit) or barn (slats, deep litter, or deep litter and slats).

More information

- Visit foodauthority.nsw.gov.au
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- Phone 1300 552 406

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