Joint-New South Wales/Victoria Salmonella Pullorum Monitoring & Accreditation Program (J-NSW/VIC SPMAP) Guidelines

Version

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1. Purpose

The Guidelines outline the J-NSW/VIC SPMAP for NSW and VIC commercial producers exporting day old chicks, hatching eggs and other poultry products to overseas markets.

2. Scope

The Guidelines focus on testing requirements and accreditation processes for *Salmonella* Pullorum (SP) freedom. The Guidelines do not explicitly cover other critical elements of a SP control program such as hazard analysis critical control point (HACCP) systems or biosecurity requirements. However, the Guidelines are aimed primarily at breeder flocks where a high level of biosecurity is expected.

The Office International Epizootics (OIE) biosecurity requirements for breeder establishment should guide assessment of biosecurity under this Program (Article 6.4.1). Click here for further information.

Poultry species covered in the Guidelines include chickens, turkeys, ducks and quails.

3. Definitions

<table>
<thead>
<tr>
<th>Term</th>
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<tbody>
<tr>
<td>Boot swab</td>
<td>Sock, surgical shoe cover or mob cap</td>
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<tr>
<td>Closed flock</td>
<td>A flock to which birds from any source of different SP status to the flock in question have not been introduced since the initial testing</td>
</tr>
<tr>
<td>Drag swab</td>
<td>Two 5-8 cm gauze pads moistened with peptone water connected to a cord of a suitable length</td>
</tr>
<tr>
<td>Elite flock</td>
<td>Grandparent, Great Grandparent, Nucleus flocks</td>
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<tr>
<td>Fancy flock</td>
<td>A flock of poultry that consists of one breed or different breeds of poultry raised for the purpose of breeding, exhibition and sale</td>
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<tr>
<td>Flock</td>
<td>A flock is all the birds in a shed, paddock or in a number of sheds or paddocks managed as a biosecure unit and separate and discrete in terms of physical contact from other units</td>
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<tr>
<td>Grandparent flock</td>
<td>A flock that produces fertile eggs for hatching into Parent stock</td>
</tr>
<tr>
<td>Great Grandparent flock</td>
<td>A flock that produces fertile eggs for hatching into Grandparent stock</td>
</tr>
<tr>
<td>Initial testing</td>
<td>When a flock of unknown SP status is tested for the first time</td>
</tr>
<tr>
<td>Nucleus flock</td>
<td>A flock that produces fertile eggs for hatching into Great Grandparent stock and the next generation of Nucleus stock</td>
</tr>
<tr>
<td>Parent flock</td>
<td>A flock that produces fertile eggs for hatching into commercial flocks</td>
</tr>
<tr>
<td>Pooled samples</td>
<td>Individual samples that are collected from several locations or several birds or objects from one flock and pooled together</td>
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4. Background

4.1 Salmonella Pullorum

Pullorum disease is an infectious poultry disease caused by the bacterium SP. The disease affects mainly young chicks. The organism may also be associated with disease in turkey poult and may be carried sub-clinically or lead to reduced egg production and hatchability plus a range of atypical signs in older birds. Reduced egg production and hatchability may be the only signs of Pullorum disease.

Post-mortem signs of Pullorum disease in newly hatched chicks are peritonitis with generalised congestion of tissues and an inflamed unabsorbed yolk sac. Longer standing infections commonly lead to infection of the caecum with development of necrotic caecal casts and small necrotic foci in the liver, lungs and other organs.

Ovarian transmission is the most significant mode of transmission, occurring by contamination of the ovum following ovulation or by localisation of the organism in the ovules before ovulation. Up to one-third of the eggs laid by an infected hen may be infected with SP.

SP infection in commercial poultry could have a significant impact on the chicken and turkey sectors of the Australian poultry industry.

Pullorum disease in poultry is a notifiable disease in Australia. This means there is a legal obligation to notify authorities if you know or suspect that poultry are infected with this disease. Click here for further information.

4.2 Pullorum Accreditation Scheme

The Pullorum Accreditation Scheme (PAS) was introduced in NSW in 1949. In 1965, following a national outbreak of SP, considerable national effort was directed towards the eradication of this disease from the commercial poultry industry. In May 1976, comprehensive regulations concerning the control and eradication of Pullorum disease were introduced in NSW prescribed under the Stock Diseases Act 1923.

Since 1977, no positive reactors have been detected serologically or microbiologically in NSW in commercial poultry flocks. No data is available on the incidence of the disease in other avian species or backyard and fancy chicken flocks.

In 1992, the Stock Diseases Regulation 1936 that provided the legal anchorage to most aspects of the PAS was repealed. Consequently, the PAS was no longer functional although the disease status of the flocks had not changed. The potential impact of this on the export trade in poultry and poultry products was recognized by the NSW Poultry Health Liaison Group at its meeting on 26 July 1994. It was agreed at this meeting that a set of guidelines should be developed with a view to implement a voluntary accreditation program to replace the previous PAS. This also coincided with the establishment of a Salmonella Enteritidis (SE) voluntary accreditation program.

The previous PAS testing regimens were aimed primarily towards eradication of a disease that was known to exist in commercial poultry flocks. The Australian status for OIE listed diseases (2016) states that SP has been eradicated from commercial chicken flocks. The last reported case was in a fancy flock in 1992. Click here for further information.
The old guidelines that governed the accreditation program under the previous PAS are not appropriate for routine monitoring. The Guidelines adopt the principles of accreditation programs in the European Union and United States of America. The principles are also consistent with OIE guidelines for breeder establishments.

### 4.3 Human health implications
SP has no human health implications.

### 5. Accreditation requirements

#### 5.1 SP accreditation for flocks accredited under the previous PAS

**5.1.1. Grandparent, Great Grandparent and Nucleus flocks**
All flocks that were accredited under the previous PAS and elected to join the new voluntary accreditation program are subjected to either sample serological testing (SST) [allowing 95% confidence of detecting infection present at the 5% level] or microbiological monitoring (MM) once when the flocks reach the production stage.

**5.1.2. Parent flocks**
All flocks that are derived from accredited elite flocks and conform to the OIE requirements do not require additional testing.

**5.1.3. Fancy flocks**
No fancy flocks were accredited under the previous PAS. See 5.2.2. for entry requirements.

#### 5.2. SP accreditation for new entrants (chickens and turkeys)

**5.2.1. Parent, Grandparent, Great Grandparent and Nucleus flocks**
Initially, a SST (allowing 95% confidence of detecting infection present at the 5% level) with negative results is required when birds reach the production stage. This should be followed 6 months later with another SST with negative results. During this period the flock should also be monitored at least once by sampling and testing hatch tray liners, providing a sample surface area of 1m².

After this initial testing protocol and subject to a biosecurity assessment by an approved veterinarian the flock owner can apply for accreditation.

Continuous annual flock monitoring is required, either SST or MM. Testing of each flock should commence when the flock has reached 18 -20 weeks of age (chickens) or 28-30 weeks of age (turkeys).

Parent flocks derived from elite flocks that have been accredited for 2 years or longer do not require any additional testing when a clear genetic hierarchical structure exists within the company and the flocks comply with the OIE requirements (Article 6.4.1).

**5.2.2. Fancy flocks**
Fancy flocks are not eligible to participate in the Program unless:

- they are closed flocks with no new genetic material input from other sources; or
- genetic material is purchased from other fancy flocks of known SP-free status.
Other requirements include:

- Clear identification of individual birds
- Biosecurity standards that meet the OIE requirements

Fancy flocks are likely to be multi-age flocks raised in one location, but occupying different areas of the site. They usually do not have a hierarchical structure of elite flocks. For these reasons, initially a serological test on 100% of the flocks with negative results is required. This should be followed 6 months later with another serological test on all birds on site with negative results.

During this period the flock should also be monitored at least twice by sampling and testing the hatch tray liners, providing a sample surface area of 1m². If natural incubation is practised, the meconium (the dark green first dropping of chicks) of chicks hatched during this period requires testing.

After this initial testing protocol and subject to a biosecurity assessment by an approved veterinarian the flock owner can apply for accreditation.

Continuous annual flock monitoring is required - SST (allowing 95% confidence of detecting infection present at the 1% level) and MM at least once a year.

5.3. SP accreditation for other poultry species

5.3.1. Quail

Although SP can affect quails it is uncommon and reported isolations are when this species is in close contact with chickens.

Quails start their breeding cycle as early as 6 weeks of age.

In breeder flocks, initially a SST (allowing 95% confidence of detecting infection present at the 5% level) with negative results is required. The test should be done when the flock is 6 - 8 weeks of age. The initial testing should be followed by one more serological test on a sample of the flock. This testing should be done within 1-2 months of the initial test. During this period the flock should also be monitored at least once by sampling and testing hatch tray liners, providing a sample surface area of 1m².

After this initial testing protocol and subject to a biosecurity assessment by an approved veterinarian the flock owner can apply for accreditation.

Continuous annual flock monitoring is required - either SST (allowing 95% confidence of detecting infection present at the 5% level) or MM. This needs to be done when the replacement flocks reach 6-8 weeks of age.

Flock biosecurity standards must meet the OIE requirements.

5.3.2. Ducks and Geese

Although SP can affect ducks and geese it is uncommon and reported isolations from these species are rare.
Testing should be as per quails, except flocks should be tested initially when the birds start to produce eggs usually around 20 -24 weeks of age. A second test should be carried out within a period of 6 months. During this period the flock should also be monitored at least once by sampling and testing hatch tray liners, providing a sample surface area of 1m².

After this initial testing protocol and subject to a biosecurity assessment by an approved veterinarian the flock owner can apply for accreditation.

Continuous annual flock monitoring is required – either SST (allowing 95% confidence of detecting infection present at the 5% level) or MM. This needs to be done when the replacement flocks reach 20-24 weeks of age.

When a clear genetic hierarchical structure exists within the company, Parent flocks do not require additional annual testing after 2 years of elite flocks obtaining accreditation status.

Flock biosecurity standards must meet the OIE requirements.

5.4. SP accreditation for new entrants that acquired imported genetic material through an approved Australian Government importation program (chickens, turkeys and ducks)

The Australian Government importation programs require genetic stock from overseas flocks to be of negative SP, Salmonella Gallinarum (SG) and SE status. Additionally, the imported genetic stock once hatched in quarantine is tested for freedom from group D Salmonella serovars (SP, SG and SE). This establishes/confirms the Pullorum status of these flocks and it should be regarded as the initial testing. A second test should be undertaken when the flock starts to produce eggs. This will vary between poultry species and breeds.

After this initial testing protocol and subject to a biosecurity assessment by an approved veterinarian the flock owner can apply for accreditation.

Continuous annual replacement flock monitoring is required - either SST (allowing 95% confidence of detecting a 5% level) or MM when the replacement flocks start laying eggs.

When a clear genetic hierarchical structure exists within the company, Parent flocks do not require additional annual testing.

6. Accredited Status

Flocks are eligible for Accredited Status (AS) under the Program once all of the following conditions are met:

- Sampling and testing is done in accordance with the Guidelines and results have been forwarded to the Registrar
- All test results are negative for SP
- The OIE Biosecurity Guidelines for breeder establishments are met
- A satisfactory on-farm biosecurity assessment by an approved veterinarian with recommendations made to the Registrar supporting accreditation
- Annual registration fees are received in a timely manner by NSW DPI
The following flock records must be kept for at least 2 years after the disposal of the flock:

- Movement of stock onto and off the premises
- Production performance
- Laboratory tests with results
- Place of origin of the poultry
- Visitors and deliveries

7. Administration

The program will be administered by the Registrar.

The Registrar may initiate any investigations and impose conditions deemed necessary to ensure that the credibility of the Program is maintained.

The Guidelines may, if deemed necessary, be revised by the Registrar subject to appropriate consultation with stakeholders.

The Registrar will keep a computerised register of accredited flocks and maintain a dedicated Program web page on the NSW DPI external website.

Flock accreditation may be suspended or cancelled at any time if a breach of the Guidelines is suspected or reported or if the flock tests positive by any of the approved tests.

For further information, please contact:
Amanda Lee
Registrar J-NSW/VIC SPMAP
Office: (02) 4640 6308
Mobile: 0417 316 918
Email: amanda.lee@dpi.nsw.gov.au

8. Fees

Fees will be charged on a cost-recovery basis.

The following initial accreditation fee applies:

- $240 < 4 flocks
- $270 > 4 flocks

The following annual re-accreditation fee applies:

- $155 < 4 flocks
- $155 > 4 flocks

All costs incurred obtaining and maintaining accreditation in the Program (including sampling, testing and approved veterinarian biosecurity assessment), are the responsibility of the owner/s of flocks enrolled in the Program.

Flocks already enrolled in the Joint-NSW/VIC Salmonella Enteritidis Monitoring & Accreditation Program (J-NSW/VIC SEMAP) are exempt from these charges.
Flocks enrolled in the Program wishing to join the J-NSW/VIC SEMAP are exempt from additional charges.

9. Approved tests

Approved tests will be done according to the techniques described in the Australian Standard Diagnostic Techniques for Animal Diseases, No 12, Pullorum Disease.

The following are approved serological tests:
- Rapid whole blood agglutination test
- Rapid serum agglutination test
- Standard tube agglutination test
- Salmonella ELISA test for group D antigens

Any required bacteriological examinations should be conducted on:
- Positive serological reactors
- Dead-in-shell embryos
- Chicks (early MM)
- Hatch tray liners to provide a minimum of 1 m² surface area

Serological sampling size is based on either 100% initial sampling in case of fancy flocks or sampling required to obtain a 0.95 probability of detecting SP if the disease is present at 5% in the case of commercial poultry flocks with a hierarchical genetic structure. The latter is consistent with EU directive (Poultry Health Scheme [PHS] Handbook, September 2013).

MM requires chick samples that are clinically diseased, moribund or freshly dead when the flock is 7-10 days old or alternatively the meconium from randomly sampled 100-150 chicks or sampling of hatch tray to provide a total sampled surface area of 1 m².

10. Approved testers

Testers approved to conduct sampling for the Program include:
- Registered veterinarians with poultry health knowledge and experience approved by the Registrar
- Lay persons under the supervision of an approved veterinarian
- Hatchery personnel for meconium and hatch tray sampling

11. Approved laboratories

Approved laboratories for the Program include:
- State Veterinary Diagnostic Laboratory, Elizabeth Macarthur Agricultural Institute, Woodbridge Road, Menangle NSW 2568
- Microbiological Diagnostic Unit, Peter Doherty Institute for Infection and Immunity, The University of Melbourne, Parkville VIC 3010
- Private laboratories that are National Association of Testing Authorities certified for Salmonella testing and have been approved by the Registrar
SP testing must be done by an approved laboratory employing a microbiologist or a veterinarian. The laboratory must have the capacity to differentiate Group D (SP, SG and SE) from other *Salmonella* groups.

### 12. Reporting

Results of any SP testing under the Program should be emailed to the Registrar in a timely manner.

Positive SP results must be reported to the Registrar and the Victorian DEDJTR Chief Veterinary Officer Unit (for VIC results) within 24 hours.

It is the responsibility of the laboratory to ensure that *Salmonella* results (down to serovar or phage type level) are emailed to the Registrar in a timely manner.

### 13. Application process

A flock owner wishing to join the Program should submit an application to the Registrar.

The submission should include the following:

- Details of the flock/s that require accreditation (i.e. location, property identification code, number of birds, type of housing, and type of enterprise)
- The name of a nominated approved veterinarian
- A biosecurity assessment from the nominated approved veterinarian (following investigations to evaluate the ability of the flock/s to meet the Guidelines of the Program i.e. closed flock/s and meeting OIE guidelines)

Eligible flocks will be accepted for accreditation, but will not gain AS until the second negative test.

### 14. Loss of accreditation

Accreditation may be suspended or cancelled if:

- Application for renewal is not carried out within 1 month of the due date
- Testing for renewal of accreditation is not carried out within 1 month of the due date
- Payment of renewal fees are not received within 1 month of the due date
- There is any breach or suspected breach of the Guidelines of the Program
- Positive serological and/or microbiological samples are reported
- There is suspicion that the flock/s are associated with clinical cases of SP

The loss of accreditation due specifically to the detection of SP will not affect SE accreditation status. The loss of accreditation due specifically to the detection of SE will not affect SP accreditation status.

### 15. Re-accreditation

Re-accreditation after suspension is subject to a review of each individual case by the Registrar.

Re-accreditation after loss of accreditation due to the detection of SP positive birds in a flock may proceed subject to the relevant requirements that apply to new entrants.
16. Change of ownership

When the ownership of an accredited flock changes, the flock may be re-registered in the new owner’s name provided the new owner applies for accreditation and undertakes to comply with the Guidelines of the Program.