

## Joint New South Wales/Victoria *Salmonella* Pullorum Monitoring & Accreditation Program Guidelines

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### Version

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## 1. Purpose

The guidelines outline the Joint-New South Wales/Victoria *Salmonella* Pullorum Monitoring & Accreditation Program (the 'Program') for New South Wales (NSW) and Victoria (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. An audit template checklist can be found at <https://www.dpi.nsw.gov.au/animals-and-livestock/poultry-and-birds/health-disease/jnswvic-spmmap>, which can be used as a guide for compliance with OIE Code Chapters 6.4 and 6.5.

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

## 3. Definitions

Term	Definition
Accredited enterprise	Includes all the flocks on the enterprise
Boot swab	Sock, surgical shoe cover or mob cap
Closed flock	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
Drag swab	Two 5-8 cm gauze pads moistened with peptone water connected to a cord of a suitable length
Elite flock	Grandparent, Great Grandparent, Nucleus flocks
Fancy flock	A flock of poultry that consists of one breed or different breeds of poultry raised for the purpose of breeding, exhibition and sale
Flock	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
Grandparent flock	A flock that produces fertile eggs for hatching into Parent stock
Great Grandparent flock	A flock that produces fertile eggs for hatching into Grandparent stock
Initial test	When a flock of unknown SP status is tested for the first time
Nucleus flock	A flock that produces fertile eggs for hatching into Great Grandparent stock and the next generation of Nucleus stock
Parent flock	A flock that produces fertile eggs for hatching into commercial flocks
Pooled samples	Individual samples that are collected from several locations or several birds or objects from one flock and pooled together

## 4. Background

### 4.1. Pullorum disease

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 poults 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.

SP 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.

### 4.2. Australian disease status

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.

### 4.3. Human health implications

SP has no human health implications.

## 5. Accreditation requirements

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

#### 5.1.1. Parent, Grandparent, Great Grandparent and Nucleus flocks

Initially, sample serological testing (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 baskets/tray liners, providing a sample surface area of 1m<sup>2</sup>.

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

Replacement birds must be sourced from accredited flocks.

Continuous annual flock monitoring, including replacement flocks, is required, either SST or microbiological monitoring (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). However, a biosecurity assessment by an approved veterinarian will be required.

### 5.1.2. 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 baskets/tray liners, providing a sample surface area of 1m<sup>2</sup>. 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.

## 5.2. SP accreditation for other poultry species

### 5.2.1. 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 baskets/tray liners, providing a sample surface area of 1m<sup>2</sup>.

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.

Biosecurity standards must meet the OIE requirements.

### 5.2.2. 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 baskets/tray liners, providing a sample surface area of 1m<sup>2</sup>.

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. However, a biosecurity assessment by an approved veterinarian will be required.

Flock biosecurity standards must meet the OIE requirements.

### 5.3 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 Program Administrator
- 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 Program Administrator supporting accreditation
- Annual registration fees are received in a timely manner by the Program Administrator

The following flock records must be kept for at least 2 years after the disposal of the flock:

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

## 7 Fees

Fees will be charged on a cost-recovery basis.

The following initial accreditation fee applies:

- \$176
- \$240 (late accreditation fee)

The following annual re-accreditation fee applies:

- \$176
- \$240 (late accreditation fee)

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.

## 8 Administration

The Program will be administered by the Administrator.

The Administrator, in consultation with animal biosecurity staff, 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 Administrator subject to appropriate consultation with internal and external stakeholders.

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

For further information, please contact:

Jo Collins  
Program Administrator  
Phone: 02 6391 3607  
Email: [jo.collins@dpi.nsw.gov.au](mailto:jo.collins@dpi.nsw.gov.au)

## 9 Approved tests

Approved tests must be done in accordance with the diagnostic techniques outlined in the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2017, available at <http://www.oie.int/en/international-standard-setting/terrestrial-manual/access-online/>.

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 baskets/tray liners to provide a minimum of 1 m<sup>2</sup> 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 hatch tray sampling of pipped embryos and hatchery waste to provide a total sampled surface area of 1 m<sup>2</sup>. Subsequently, if morbidity and/or mortality rates exceed 0.5% in the first 10 days then sampling of chicks that are clinically diseased, moribund or freshly dead.

## 10 Approved testers

Testers approved to conduct sampling for the Program include:

- Registered veterinarians with poultry health knowledge and experience approved by the Program Administrator
- Lay persons under the supervision of an approved veterinarian
- Hatchery personnel for hatch basket/tray liner 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 Program Administrator

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 must be emailed to [avian.labresults@dpi.nsw.gov.au](mailto:avian.labresults@dpi.nsw.gov.au) in a timely manner.

Positive SP results must be reported to [Biosecurity NSW](#) and the [Chief Veterinary Officer Unit](#) - Victorian DEDJTR (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 Program Administrator in a timely manner.

## 13 Application process

A flock owner or company wishing to join the Program should submit an application to the Program Administrator.

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)
- Name of a nominated approved veterinarian
- Biosecurity assessment from 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



## 15 Re-accreditation

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

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.