



Department of
Primary Industries

NSW OVINE BRUCELLOSIS ACCREDITATION SCHEME GUIDELINES

DEVELOPED BY:

DEPARTMENT OF PRIMARY INDUSTRIES

BREED SOCIETIES

AUSTRALIAN VETERINARY ASSOCIATION



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Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (June 2019). However, because of advances in knowledge, users are reminded of the need to ensure that information on which they rely is up to date and to check the currency of the information with the appropriate officer of the NSW Department of Primary Industries or the user's independent advisor.

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Foreword

The NSW Ovine Brucellosis Accreditation Scheme was introduced in 1981 to provide biosecurity management guidelines which enable sheep breeders to sell rams that are low risk of carrying ovine brucellosis infection. The Scheme was developed in consultation with sheep industries and the veterinary profession and is managed by the NSW Department of Primary Industries (DPI). The Scheme is similar to, though independent of, schemes operating in other States.

The Scheme is well accepted and supported by the sheep industry. At the time of writing, there are 779 flocks, some of which have maintained continuous accreditation since the Scheme's inception.

Contents

Foreword	iii
Background	1
Definitions	1
Responsibilities of participating parties	3
Flock Owners	3
Approved Veterinarians	3
Department of Primary Industries	4
Breed Societies and Australian Veterinary Association (AVA)	4
Biosecurity guidelines for accredited flocks	5
Flock management principles	5
Introductions	5
Shows and sales	6
Agistment and ram depots	6
Straying sheep	6
Artificial insemination	7
Commercial flocks	7
Testing	8
General guidelines	8
Approved laboratories	8
Interpretation of test results	8
Action with <i>Brucella ovis</i> CFT reactors	9
Accreditation protocols	12
Accreditation timeline	12
Assessment of flock management and biosecurity	12
Property inspection	12
Management assessment	13
Initial accreditation	13

Annual accreditation	15
Biennial accreditation	15
Triennial accreditation	16
Application for temporary extension of expiry date	17
Application for permanent variation of expiry date	17
Accreditation in the absence of rams	17
Flocks which fail to meet re-accreditation requirements	18
Response to detection of infection in accredited flocks	18
Requirement of veterinarian to notify	18
Requirement of flock owner to notify	18
Investigation of the cause of breakdown	18
Eradication of brucellosis following breakdown in a flock	18
Role of ewes in maintaining infection	19
Re-entry to the scheme after breakdown	19
Suspension of accreditation	19
Cancellation of flock accreditation	20
Withdrawal from the scheme	20
Re-entering the scheme after cancellation or withdrawal	20
Approval of veterinarians under the scheme	21
Application for approved veterinarian status	21
Avoiding potential conflict of interest	21
Cancellation of approved veterinarian status	21
Administration	22
Further Information	23
Websites	23
Contacts	23
Appendix 1: Ram testing sample size calculator	24
Appendix 2: Investigation of inconclusive reactors	25
Appendix 3: Summary of testing requirements	26

Background

Ovine Brucellosis is a bacterial infection of sheep caused by *Brucella ovis*. It is an economically important cause of epididymitis, orchitis and impaired fertility in rams. *B. ovis* is occasionally associated with abortion in ewes, and can cause increased peri-natal mortality in lambs.

Ovine Brucellosis is present in many sheep flocks in New South Wales. It occurs in all districts, in any breed and can cause considerable economic loss through ram wastage, low lamb-marking percentages and extended lambing periods.

Additional information on Ovine Brucellosis can be found on the Department of Primary Industries website (see page 23).

Definitions

Approved laboratory

Approved laboratories are those accredited under the Australian National Association of Testing Authorities (NATA).

Approved test

The approved test is the *Brucella ovis* Complement Fixation Test (CFT), or any other test approved by the Chief Veterinary Officer (CVO) in NSW.

Approved veterinarian

A veterinarian who is registered with the NSW Veterinary Practitioners Board and authorised by the state coordinator of the NSW Ovine Brucellosis Accreditation Scheme.

Biosecurity

Measures designed to protect a country, state or individual farming property from the entry and spread of unwanted animals, pests, diseases and weeds. These may include secure fencing, management of introductions, vaccinations etc.

Breakdown

Brucella ovis infection is detected in the flock by blood test, semen culture or culture of the reproductive tract.

Cancellation

Permanent removal of accreditation under the scheme. This can be voluntary or imposed as a result of non-compliance with these Guidelines.

CFT

Complement fixation test for *Brucella ovis*

DPI

NSW Department of Primary Industries

Expiry date

End of the month and the year to which accreditation is valid.

Infected animal

A sheep which has returned a positive titre (32, 64 or 128) on a blood test, or from which *Brucella ovis* has been recovered from the reproductive organs at slaughter or from semen or milk.

Isolation facility

A secure area on the property for holding sheep of unknown or suspect status until their status is clarified.

MAP administrator

The Department of Primary Industries market assurance program administrator who is responsible for the administration of the NSW Ovine Brucellosis Accreditation Scheme.

Owner agreement

A document available on the [DPI website](#) (see page 23) which must be signed by the flock owner at the initial accreditation and each subsequent flock re-accreditation.

Qualification date

The date at which a second negative blood test qualifies a group of rams for initial accreditation. Accreditation intervals and renewal dates will be based on this date into the future.

State coordinator

The NSW Department of Primary Industries veterinarian responsible for overall supervision, technical support, industry liaison and coordination in relation to the NSW Ovine Brucellosis Accreditation Scheme.

Suspect animal

A sheep suspected to be infected with *Brucella ovis*.

Suspension

Temporary withdrawal of accreditation. This occurs during investigation of a suspected breakdown or non-compliance with scheme requirements.

Teaser

Vasectomised ram.

Titre

A measure of the concentration of antibodies in the blood. The reported titre for a sample refers to the highest dilution factor of the sample which produces a positive result.

Complement fixation test (CFT) titres are expressed as numerical values: 8, 16, 32, 64, and 128. The higher numbers indicate greater dilution (due to more antibodies in the blood sample), and therefore a more strongly positive result.

Responsibilities of participating parties

Flock Owners

Flock owners work with an approved veterinarian of their choice to achieve ovine brucellosis accredited status in accordance with these Guidelines.

Owners must demonstrate, to the satisfaction of their approved veterinarian, their ability to maintain sound flock management and biosecurity to prevent introduction of infection. In particular they must:

- Maintain sheep proof fences, particularly boundary and ram paddock fences.
- Provide adequate facilities for isolation, examination and testing of rams.
- Keep adequate property and livestock records, including records of introductions to the flock.
- Provide a property map and a property plan.
- Prevent contact between sheep from the accredited flock and any sheep of unknown status.
- Ensure protocols are in place to deal with:
 - stray sheep found on the property, or
 - strays from the accredited flock which have been returned.
- Ensure all rams on the property are individually permanently identified and presented for testing as required in the Guidelines.

Owners must also promptly notify the approved veterinarian of any:

- sheep introductions.
- changes or alterations to management which might affect their accreditation.
- stray sheep which come into contact with the accredited flock, or returned stray sheep.

In the event of a confirmed breakdown and after discussion with the veterinarian, owners must notify recent ram purchasers of the possibility that the purchased rams are infected with ovine brucellosis.

Approved Veterinarians

Approved veterinarians are responsible for recommending to DPI whether a flock meets all of the requirements for accreditation under these Guidelines. To do this, the approved veterinarian must assess whether the client has met and will continue to adopt all the requirements of the Scheme.

Registered veterinarians may apply to the State Coordinator for approval to undertake work in the Scheme (see [Approval of veterinarians under the scheme](#) on page 21).

In a multi-veterinarian practice, each veterinarian undertaking accreditation scheme work must be individually approved under the Scheme.

Before making a recommendation, approved veterinarians must:

- Discuss all aspects of ovine brucellosis and the biosecurity measures described in these Guidelines with flock owners.
- Conduct an assessment of the flock management and biosecurity as per these Guidelines.

- Personally carry out all manual examination of rams, check that all rams are identified and collect blood samples as required in the Guidelines.
- Interpret test results. Technical support can be sought from the State Coordinator if required.
- Provide advice to owners as required.
- Maintain an adequate record of the testing and biosecurity management evaluation for each individual property participating in the scheme. This record must be available for review when requested by the MAP Administrator or State Coordinator.

In addition, approved veterinarians must:

- Notify the MAP Administrator immediately should any suspicion or confirmation of disease occur in an accredited flock.
- Provide written recommendations to the MAP Administrator for suspension or cancellation of accreditation, and the reasons for the decision.
- Investigate to determine the reasons for any breakdown in an accredited flock and advise the MAP Administrator of those reasons as soon as possible.

The MAP Administrator advises the State Coordinator of any breakdowns, significant breaches of the Guidelines, and other major developments.

Department of Primary Industries

The Department of Primary Industries:

- Maintains overall supervision of and administers the accreditation scheme.
- Maintains lists of approved veterinarians and accredited flocks on the [DPI web site](#) (see page 23) which are regularly updated.
- Determines the fees that must be paid for initial and reaccreditation.
- Reserves the right to reassess and modify the Guidelines and fees at any time.

Breed Societies and Australian Veterinary Association (AVA)

The responsibilities of the Breed societies and AVA are to:

1. Promote awareness of the Scheme with new and existing members.
2. Ensure that when advising show committees or organising shows, exhibits or sales, accredited sheep will not be able to come in contact with non-accredited sheep.
3. Liaise with the Department of Primary Industries to resolve any issues in relation to administrative principles and Scheme Guidelines.

Biosecurity guidelines for accredited flocks

Accreditation as a low-risk flock for ovine brucellosis is achieved through a combination of risk assessment, management of introduced sheep, on-farm biosecurity, blood testing and manual testicular examination of rams at regular intervals. One element alone (such as blood testing a particular ram) is not sufficient to provide a high level of assurance of freedom from infection.

Implementing a high standard of on-farm biosecurity is the key to maintaining accreditation in the NSW Ovine Brucellosis Accreditation Scheme.

Regular blood testing and manual testicular palpation of rams is a monitoring process used in the accreditation scheme to provide quality assurance for the accreditation status. It does not protect from infection or maintain disease freedom.

There is no blood testing equivalent to accredited flock status.

Only veterinarians approved by the State Coordinator may undertake work under the NSW Ovine Brucellosis Accreditation Scheme. See [Approval of veterinarians under the scheme](#) on page 21 for further information.

These guidelines set the minimum standards required for flocks enrolled in the NSW Ovine Brucellosis Accreditation Scheme. Flock owners should read these carefully before deciding to apply for accreditation. Approved veterinarians must be familiar with these requirements and be able to advise and assess flock owners on their implementation.

Flock management principles

Introductions

It is important for the approved veterinarian to remind their client at each re-accreditation of their obligation to notify them of all sheep introductions.

The veterinarian must be satisfied that the introductions have come from accredited flocks or, if not, that the sheep have been isolated and rams tested negative and ewes managed as outlined below.

Introduction of rams and teasers

From accredited flocks

Rams or teasers introduced directly from other accredited flocks require no testing or isolation.

Details of the source flock's accreditation must be provided and recorded.

From non-accredited flocks

Before entry to rest of the flock, rams or teasers from non- accredited flocks must:

- be clinically normal,
- held in isolation, and
- have 2 negative blood tests taken by an approved veterinarian between 60 - 120 days apart

Introduction of ewes (stud and commercial)

From accredited flocks

Ewes introduced directly from other accredited flocks require no testing or isolation.

From non-accredited flocks:

Non-pregnant ewes must:

- be kept isolated and not joined for one month

Pregnant ewes must:

- be lambed in isolation and not joined for four months post-lambing

Ram lambs

Rams born to introduced non-accredited pregnant ewes should be weaned early (by 12 weeks), and prior to mixing with other ram groups must be isolated, palpated and blood tested negative.

Introduction of wethers

There are no restrictions on the introduction of wethers into accredited flocks.

Shows and sales

Rams from accredited flocks will lose their accredited status if they are exhibited at any sheep event including a show, display or sale venue unless all rams present are from accredited flocks. This includes ram lambs.

Organising committees that declare sheep entries must be from accredited flocks must specify the entry requirements at the time of nomination and that the ovine brucellosis status of all ram entries is checked on arrival at the venue. This may be done by requiring a copy of the current Ovine Brucellosis Accreditation Scheme certificate or a completed [National Sheep Health Statement](#) (see page 23) to be provided on arrival at the event. The latter form can also be used for shows where segregation for the Johne's Disease Market Assurance Program (JD MAP) is maintained.

Rams sold from an accredited flock to a new property which does not hold accredited status will lose their accredited status on arrival. They cannot be on-sold as accredited rams.

Where rams at a show or sale are found by an approved veterinarian or government veterinarian to have epididymitis, they shall advise the organisers of the event that all rams from that property are required to be immediately isolated, blood sampled for CFT testing and returned directly to the property of origin (not sold or moved to another show or to any other property).

Agistment and ram depots

Rams and ewes from an accredited flock must not be grazed anywhere other than the property covered in the OB management plan except with prior inspection and approval by the flock's approved veterinarian. The veterinarian must ensure that facilities and management are of an equivalent standard to that required for accreditation.

If long distances are involved, another approved veterinarian may do the property inspection.

Straying sheep

Owners must notify their approved veterinarian of:

- any stray sheep which come into contact with the accredited flock, and
- any sheep from the accredited flock which have strayed and been returned.

The accredited flock should have a plan in place to deal with these situations if they arise as part of their OB management plan.

The veterinarian should take action appropriate for the individual situation. This may include isolation of the exposed sheep and testing where necessary to maintain the accreditation status of the flock. The veterinarian should report and discuss the situation with the MAP Administrator or State Coordinator if they suspect a serious risk to flock biosecurity has occurred.

Artificial insemination

Ewes from an accredited property may only be artificially inseminated with semen from:

- accredited rams, or
- non-accredited rams which have been held in isolation and had:
 - a negative manual testicular palpation examination for Ovine Brucellosis, and
 - two negative *B. ovis* CFT 60 – 120 days apart. *The second test must be no more than 14 days prior to semen collection.*

Commercial flocks

Commercial flocks which run on the same property as accredited flocks must be subject to the same biosecurity and management conditions as the accredited flock. Rams used in the commercial flock must be included in the ram groups sampled for accreditation scheme testing as per the protocols described in these Guidelines.

The only exception will be where the flock owner can clearly demonstrate to the satisfaction of the approved veterinarian that the two flocks are run as completely separate entities on separate areas of land with sound sheep proof boundary fencing between them. The approved veterinarian must make a note of this in the veterinary report and accreditation forms submitted for this property.

Testing

General guidelines

Flock owners seeking to enter the scheme need to discuss flock management and testing requirements with their nominated approved veterinarian. The timing of the initial testing should be arranged to coincide with normal management practices, as renewals will occur in the same month in the future.

Testing should not be carried out within 6-8 weeks of completion of joining due to an increased risk of false positives occurring with the *B. ovis* CFT.

The cost of all testing for ovine brucellosis is the responsibility of the sheep owner or sample submitter.

An approved veterinarian must personally;

- carry out all manual ram scrotal palpations,
- check that all rams are permanently individually identified, and
- collect blood samples.

All samples must be correlated with individual animals and recorded on the specimen key list available on the [DPI website](#) (see page 23). All testicular lesions must also be recorded using the key attached to the form. The completed form is sent with the samples to an approved laboratory.

All veterinarians in a group practice who take samples for flock accreditation must be individually approved under the Scheme even if they work in the same practice.

Testing protocols for the different levels of accreditation are described on pages 14 to 16.

The approved veterinarian must promptly notify the MAP Administrator of any serological reactors or infected animals.

Approved laboratories

Approved laboratories are those accredited under the Australian National Association of Testing Authorities (NATA). This includes NSW Department of Primary Industries' State Veterinary Diagnostic Laboratory at Elizabeth Macarthur Agricultural Institute (EMAI) at Menangle and some private laboratories.

The laboratory should be advised in advance if large numbers of samples are being submitted.

Interpretation of test results

The approved veterinarian is responsible for interpreting all test results and providing reports and advice to flock owners. If necessary, the veterinarian can discuss interpretation of tests and their implications with the State Coordinator. However, it is up to the approved veterinarian to assess whether the client has met all the requirements of the scheme and make the appropriate recommendation.

Brucella ovis CFT results are provided as serological readings of negative, 8, 16, 32, 64 or 128.

Any result other than negative requires further investigation.

Rams with reactions on *B. ovis* CFT must not be disposed of until their status is resolved.

Brucella ovis CFT results	Interpretation
Negative	Negative No further action
8, 16	Inconclusive Serological reading of 8 or 16 in rams from a flock with no history of infection <i>See below and Appendix 2 attached for actions to resolve status</i>
32, 64, 128	Positive Serological reading of 32, 64, 128 in rams with or without lesions See below and page 18 Eradication Program
Anti-complementary	Problem with the sample Correct handling of samples and prompt despatch to the laboratory will minimise the risk of an aberrant reaction occurring. <i>Retest within 4 weeks. If still anti-complementary, see below for further actions to resolve status.</i>
Risk of False positive	Is more likely when testing rams that have recently been joined As all reactors must be fully investigated to resolve the flock status, to avoid the risk of having to undertake an unnecessary investigation, AVOID testing rams in the period 6-8 weeks after joining has finished.
Where <i>Brucella ovis</i> infection has been confirmed in a flock, any animal with lesions or giving any reaction on CFT is classified as infected.	

Action with *Brucella ovis* CFT reactors

Any test reaction, including an anti-complementary reaction, is considered significant and requires follow up investigation.

Positive reactions

Any ram returning a CFT result of 32 or higher is considered infected whether clinical lesions are present or not.

The approved veterinarian must recommend that accreditation be **cancelled** immediately.

If intending to re-enter the Scheme, all infected animals detected by serology or bacteriology must be isolated immediately and slaughtered or sold for slaughter-only within 14 days.

Anti-complementary results

Anti-complementary reactions to serological tests are a poorly understood phenomenon. Around 50% of rams which initially test anti-complementary will test normally at the second or subsequent test.

Sometimes problems occur with samples during collection or transport to the laboratory which leads to the reporting of anti-complementary reactions. To minimize this risk on retest, collect the blood carefully to avoid haemolysis and let the sample stand at room temperature for 3-4 hours. Once the clot has formed properly, decant 1-2 ml of sera (which should look very clear) into another sample tube without spinning down.

Sampling is only one factor which may cause an anti-complementary reaction. Other cases are believed to be due to the presence of some compound in the blood which prevents the test reagent from working.

It must be emphasised to owners that ***under no circumstances should anti-complementary reactors be destroyed without further investigation.***

The steps and options for resolving a ram which gives an anti-complementary result are as follows:

1. Hold the ram in isolation.
2. Retest the ram within 4 weeks. If the result is negative, the flock may be accredited. If an inconclusive or positive reaction is found, proceed as described elsewhere in this section.
3. If the result is still anti-complementary, either
 - take a second round of blood samples from the same sample of rams and cull the anti-complementary ram - if this second test is negative, the flock application can proceed; or
 - semen culture the ram - if the semen culture is negative, the flock application can proceed; or
 - post-mortem the ram and submit specimens for testing as described under inconclusive reactions option 1 below - if the bacteriology and histopathology are negative, the flock application can proceed.

Action with inconclusive reactors (CFT titre 8, 16)

It must be emphasised to owners that ***under no circumstances should inconclusive reactors be destroyed without further investigation.***

In the absence of other evidence of infection in the flock, inconclusive reactors must be retested while in approved isolation. In some special cases, supplementary test procedures may be required.

If the approved veterinarian considers that there is a disease risk, they must recommend that accreditation be **suspended** immediately until the status of any reactor is clarified.

When reactors are slaughtered without further examination for evidence of infection, the flock is presumed infected and cannot be recommended for accreditation or reaccreditation without further testing of in-contact rams.

The following examinations of inconclusive reactors are necessary to ensure the flock is free from disease.

Inconclusive reactors with no clinical evidence of disease

1. The rams must be isolated immediately.
2. The rams must be re-bled 4 weeks after the initial bleeding.
3. A semen sample *may* be taken for bacterial examination at this stage (optional). If the semen culture is positive, the ram is considered infected.

4. If the ram gives a negative CFT titre on the second test, the ram should be considered negative and no further testing is necessary.
5. If the ram continues to give a CFT titre of 8 or 16, there are 2 options.

Option 1

For any reactor ram which has a persistent titre:

- The approved veterinarian should undertake a post-mortem and submit a serum sample and the entire reproductive tract including the accessory sex glands to an approved laboratory for bacteriological and histopathological examinations. Prior arrangements should be made with the laboratory.
- The tail of the epididymis, seminal vesicles and ampullae should be routinely cultured for evidence of *B. ovis*:
- If no evidence of infection is found on laboratory examination, the ram and the flock can be considered free from *B. ovis* infection.

Option 2

Valuable rams may be re-examined using serology and semen examination while held in isolation. To be considered free from disease, the ram must on 3 occasions when sampled at 4 weekly intervals:

- not show an increase in titre on serology, and
- return negative semen cultures

If any semen culture is positive, the ram is considered positive.

On rare occasions, ewes have been implicated in flock breakdowns and *B. ovis* has been cultured from mammary gland tissue and milk. See the section on [Roles of ewes in maintaining infection](#) on page 19 for further information.

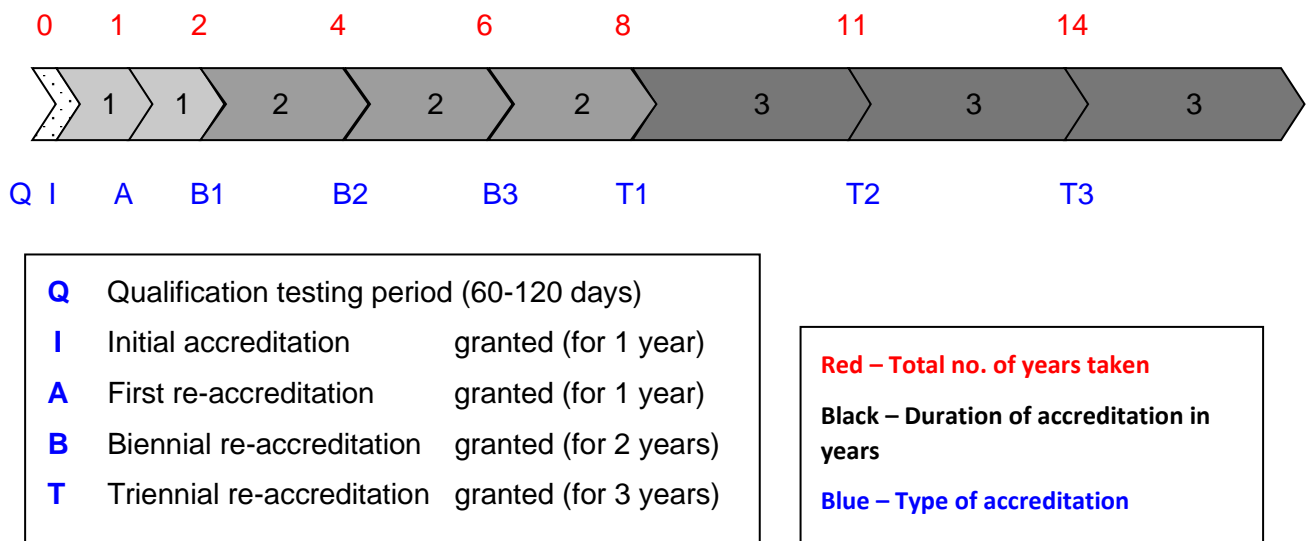
Inconclusive reactors with clinical evidence of disease (palpable scrotal lesions)

When inconclusive reactors with clinical lesions are detected on any accreditation testing, they should be slaughtered and sampled for histopathological examination and culture as in option 1 (above). Repeat blood testing and semen culture is not appropriate in these cases.

Accreditation protocols

Accredited flocks move through the scheme starting from initial accreditation, then annual, biennial and finally triennial re-accreditation. The biosecurity requirements are the same for all flocks, but the sampling requirements and testing intervals change as flocks progress through the scheme. The requirements for each type of accreditation are detailed in the following sections. The accreditation timeline is a graphical representation of how flocks progress through the scheme.

Accreditation timeline



Assessment of flock management and biosecurity

Property inspection

Property fencing

The veterinarian must be satisfied that the fencing, particularly boundary and ram paddock fences are sheep proof.

Handling facilities

Yards and other facilities must be adequate for the examination and testing of rams, and to allow isolation of sheep from the main flock when required.

Property location

Property location in relation to access roads, proximity to public roads, stock routes and reserves needs to be assessed to determine the potential risk of introduction of infection via exposure to travelling stock and strays.

Neighbouring properties

The type of enterprise on neighbouring properties together with any known disease status of neighbouring flocks needs to be considered. Any risks identified must be addressed in the management plan.

Management assessment

Property management

The veterinarian must be satisfied that the level of property management is adequate to maintain accreditation. The owner's ability to control other diseases on the property and the ability to obtain clean musters needs to be considered.

Property and livestock records must be adequate (eg ability to provide evidence of introductions, lambing and lamb marking percentages).

Flock management

The veterinarian should consider the

- size of the flock and relative importance of the enterprise,
- number of nucleus rams and teasers,
- approximate number of sale rams and age at sale,
- ability to segregate young sale rams from other groups,
- length of joining and lambing periods,
- use of artificial breeding,
- age at weaning, and
- methods of individual animal identification.

Flock history

The veterinarian should assess:

- any previous history of ovine brucellosis,
- records of past examination and testing of rams,
- the reproductive performance of the flock including lambing percentage,
- the reason for any lowered fertility,
- origin of recent ram and ewe introductions, and
- reasons for disposal of rams over the past 5 years.

Property plan and ram list

The owner must provide the veterinarian with a plan of the property and a complete list of all rams and teasers, together with their age and origin. This includes any stags or hormone treated wethers to be used in the breeding program.

Initial accreditation

It is important for the approved veterinarian and flock owner to determine the most convenient time of year for testing to occur, considering shearing and joining times and show and sale dates. This is important because **re-accreditation will always be due on the last day of the month in which the final pre-accreditation test was completed.**

Flock and managerial assessment

The approved veterinarian must make an initial assessment of the flock and its management as set out in the section on [Flock management principles](#) on page 5.

The results of this should be recorded on the form titled '*Veterinary report and recommendation for initial accreditation*' which can be found on the [DPI website](#) (see page 23).

An owner agreement form must be signed.

Testing protocol

The approved veterinarian may recommend initial accreditation for a flock when the following conditions have been met. The first *B. ovis* CFT must not be undertaken until at least 60 days after full biosecurity measures are in place, particularly secure fencing.

- All **ram lambs between 4 and 10 months** of age on the property must have been manually palpated, and any with lesions have been individually identified, isolated, blood sampled and tested negative to the *B. ovis* CFT twice 60 to 120 days apart.
- All **rams over 10 months** of age on the property including stud sires and teasers must be permanently individually identified and have a manual testicular palpation examination.
 - Any rams with testicular lesions from this group must be isolated, blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart.
 - All **stud sires and teasers intended for use on the property** must be blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart.
- In addition to any rams detected with lesions on palpation and stud sires and teasers, a **statistically significant sample of all rams over 10 months** of age must also be blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart. See [Appendix 1: Sample Testing](#) for statistical sampling table.

Special considerations

Initial accreditation may be recommended based on one negative palpation and *B. ovis* CFT of the stud sires and teasers and young rams as above if:

- The new flock is made up of sheep purchased from currently accredited flocks. Certificates should be sighted or the web listing checked to confirm accreditation status. The blood samples must be collected at least 60 days after arrival at the new property.

OR

- The flock owner has kept good records of introductions and there has been regular negative testing for ovine brucellosis in the flock over the preceding 5 years.

Administrative requirements

Please ensure all the required documents are submitted on the current forms and at the same time to the MAP Administrator or your application may be delayed. The required documents are:

- Veterinary report and recommendation for initial accreditation
- Copies of all laboratory reports
- Completed and signed owner agreement form
- Property map
- Payment of initial accreditation fee

The MAP Administrator assesses the information to confirm that it is complete and in accordance with these Guidelines. If all of the requirements have been met, the MAP Administrator updates the DPI database and sends an accreditation certificate to the approved veterinarian for their signature and delivery to the flock owner.

Annual accreditation

This is the first reaccreditation for the new flock and occurs one year after initial accreditation. If successful the flock will progress to Biennial accreditation at the expiration of this annual accreditation.

Flock and managerial assessment

The approved veterinarian must assess the management of the flock and biosecurity of the property as set out in the section on [Flock management principles](#) on page 5.

The results of this should be recorded on the form titled '*Veterinary report and recommendation for re-accreditation*' which can be found on the [DPI website](#) (see page 23).

A new owner agreement form must also be signed.

Testing protocol

- All rams from the property must be accounted for, including those sold and deceased.
- **All rams over 10 months** of age on the property must be permanently individually identified and have a testicular palpation examination.
 - Any rams over 10 months with palpable testicular lesions must be isolated on detection, blood sampled and test negative on *B. ovis* CFT.
- All **stud sires and teasers intended for use on the property** must be blood sampled and test negative on *B. ovis* CFT.
- In addition to any rams detected with lesions on palpation and stud sires and teasers, a **statistically significant sample of sale rams over 22 months old** must be blood sampled and test negative on *B. ovis* CFT. See [Appendix 1: Sample Testing](#)

Administrative requirements

Please ensure all the required documents are submitted on the current forms and at the same time to the MAP Administrator or your application may be delayed. The required documents are:

- Veterinary report and recommendation for re-accreditation
- Copies of all laboratory reports
- Completed and signed owner agreement form
- Payment of reaccreditation fee

The MAP Administrator assesses the information to confirm that it is complete and in accordance with these Guidelines. If all of the requirements have been met, the MAP Administrator updates the DPI database and sends an accreditation certificate to the approved veterinarian for their signature and delivery to the flock owner.

Biennial accreditation

Flocks which have completed their initial and annual accreditation terms may progress to biennial re-accreditation (testing every 2 years) if they satisfy the following requirements.

Flock and managerial assessment

The approved veterinarian must assess the management of the flock and biosecurity of the property as in the section on [Flock management principles](#) on page 5.

The results of this should be recorded on the form titled '*Veterinary report and recommendation for re-accreditation*' which can be found on the [DPI website](#) (see page 23).

A new owner agreement form must also be signed.

Testing protocol

- All rams from the property must be accounted for including those sold and deceased.
- **All rams over 10 months** of age on the property must be permanently individually identified and have a testicular palpation examination.
 - Any rams over 10 months with palpable testicular lesions must be isolated on detection, blood sampled and test negative on *B. ovis* CFT.
- All **stud sires and teasers intended for use on the property** must be blood sampled and test negative on *B. ovis* CFT.

Blood testing a sample of sale rams is no longer required. It is strongly recommended that all sale rams be manually palpated prior to sale.

Administrative requirements

Please ensure all the required documents are submitted on the current forms and at the same time to the MAP Administrator or your application may be delayed. The required documents are:

- Veterinary report and recommendation for re-accreditation
- Copies of all laboratory reports
- Completed and signed owner agreement form
- Payment of reaccreditation fee

The MAP Administrator assesses the information to confirm that it is complete and in accordance with these Guidelines. If all of the requirements have been met, the MAP Administrator updates the DPI database and sends an accreditation certificate to the approved veterinarian for their signature and delivery to the flock owner.

Triennial accreditation

After the third biennial accreditation certificate expires a flock will progress to Triennial accreditation. This will normally take eight years.

Flock and managerial assessment

The approved veterinarian must assess the management of the flock and biosecurity of the property as in the section on [Flock management principles](#) on page 5.

The results of this should be recorded on the form titled '*Veterinary report and recommendation for re-accreditation*' which can be found on the [DPI website](#) (see page 23).

A new owner agreement form must also be signed.

Testing protocol

- All rams from the property must be accounted for including those sold and deceased.
- **All rams over 10 months** of age on the property must be permanently individually identified and have a testicular palpation examination.
 - Any rams over 10 months with palpable testicular lesions must be isolated on detection, blood sampled and test negative on *B. ovis* CFT.

- All **stud sires and teasers intended for use on the property** must be blood sampled and test negative on *B. ovis* CFT.

Blood testing a sample of sale rams is no longer required. It is strongly recommended that all sale rams be manually palpated prior to sale.

Administrative requirements

Please ensure all the required documents are submitted on the current forms and at the same time to the MAP Administrator or your application may be delayed. The required documents are:

- Veterinary report and recommendation for re-accreditation
- Copies of all laboratory reports
- Completed and signed owner agreement form
- Payment of reaccreditation fee

The MAP Administrator assesses the information to confirm that it is complete and in accordance with these Guidelines. If all of the requirements have been met, the MAP Administrator updates the DPI database and sends an accreditation certificate to the approved veterinarian for their signature and delivery to the flock owner.

Application for temporary extension of expiry date

On rare occasions it may be necessary to apply for an extension of time to complete flock re-accreditation testing. Examples include disruptions due to floods, bushfires and medical emergencies.

The approved veterinarian must apply to the MAP Administrator in advance of the expiry date with full details of why the extension is necessary. The length of time granted will be determined by the MAP Administrator up to a maximum of 3 months.

A temporary extension of expiry date must not be requested if the approved veterinarian has any suspicion that flock management or biosecurity standards are inadequate.

Application for permanent variation of expiry date

A flock owner may request a permanent change to the expiry date of their flock's accreditation to better fit in with other management procedures. The approved veterinarian should send the request to the MAP Administrator.

Accreditation in the absence of rams

Flocks can be accredited even though there may be no rams or teasers to blood test or palpate.

Flocks in which no rams are present and artificial breeding techniques are utilised instead may become ovine brucellosis accredited if:

- semen is sourced in accordance with the section on [Artificial insemination](#) on page 7, and
- all the requirements for flock and managerial assessments in Section 1 are met.

In small flocks there may be periods of the year when no rams are present. In these cases the timing of accreditation assessment should be changed so that rams are present when testing is due.

Flocks which fail to meet re-accreditation requirements

Approved veterinarians must not recommend a flock for re-accreditation if they are not confident that the standards detailed in these Guidelines are being upheld. Approved veterinarians are encouraged to discuss difficult cases with the MAP Administrator or State Coordinator prior to making a recommendation for or against re-accreditation.

Where re-accreditation cannot be recommended for a flock, the approved veterinarian must advise the MAP Administrator in writing. Details of why the decision was made should be included to allow the MAP Administrator or State Coordinator to assist in resolving any dispute which may arise. The MAP Administrator advises the State Coordinator of any breakdowns, significant breaches of the Guidelines, and other major developments.

Response to detection of infection in accredited flocks

If infection with ovine brucellosis is confirmed in an accredited flock, the flock's accreditation will be cancelled immediately.

Requirement of veterinarian to notify

Approved veterinarians must notify the MAP Administrator immediately if ovine brucellosis is suspected or confirmed in an accredited flock.

Requirement of flock owner to notify

After confirmation of infection and discussion with the approved veterinarian, the flock owner must notify recent ram purchasers of the possibility that the rams were infected with ovine brucellosis at the time of sale.

In cases where it has been more than one year since the last CFT test of the flock, the approved veterinarian must make a risk assessment to determine which years' sale rams may have been exposed to infection. Notification of purchasers is required for all sale groups determined to be at risk since the last negative test.

Investigation of the cause of breakdown

The approved veterinarian must investigate to determine the reason for any breakdown. **In a flock previously free of the disease, a breach of biosecurity must have occurred.** This needs to be identified so there will be confidence that an eradication program can be successful.

The approved veterinarian must advise the MAP Administrator of the reasons identified for the breakdown as soon as possible. The MAP Administrator advises the State Coordinator.

Eradication of brucellosis following breakdown in a flock

Where infection in a flock is confirmed and accreditation cancelled, the owner must decide whether or not to carry out an eradication program. In some situations it might not be feasible to consider a salvage operation for the existing rams and the owner should consider culling all rams.

Veterinary advice should be sought before commencing an eradication program. The flock owner should consult with their approved veterinarian and review the technical information on ovine brucellosis to ensure they have a full understanding of all options available and the consequences of each option.

An epidemiological assessment is required. The whole flock may be infected or infection may be confined to certain groups of sheep in the flock, for example sires only, or in breed groups, or in sale rams, or it might be spread throughout the flock including ewes. Epidemiological

considerations will determine an appropriate course of action and help predict the likely level of success when attempting an eradication program.

The ram flock must be the first priority and a testing protocol for all rams should be devised with the aim of achieving two consecutive negative blood tests on the entire ram flock (or identified at-risk group). All rams must be permanently individually identified and accounted for at each round of testing. All *B. ovis* CFT reactor rams must be removed as soon as possible after each test is reported to limit the potential for them to spread the infection within the ram group.

A testing round cannot qualify as a negative test for re-entry to the ovine brucellosis accreditation scheme if:

- reactors are found (inconclusive or positive titres), or any rams are unaccounted for in the sampling group.

Role of ewes in maintaining infection

In extremely rare cases, eradication attempts which focus on testing and culling infected rams have been unsuccessful. In one case a reservoir of infection was discovered in ewes.

The role of ewes in maintaining infection in a flock is complex and uncommon in Australian conditions. Ewes can be identified as reactors to the *B. ovis* CFT, and in ewes with high titres (32 or higher) the bacteria can be recovered from mammary tissue. Evidence of infection of the ram progeny of ewes with mammary gland localisation of *Brucella ovis* has been described. This situation was discovered in a flock where juvenile rams or sale ram groups were infected but the stud sires were negative.

In this flock, infection was cleared once the persistently infected ewes were identified via *B. ovis* CF testing and removed.

Persistent infection of ewes is an uncommon occurrence but should be considered where the epidemiology of disease in the flock is unusual.

Re-entry to the scheme after breakdown

Re-accreditation after a breakdown will be considered after 2 consecutive negative *B. ovis* CFT flock tests 60 to 120 days apart. The approved veterinarian must be satisfied that the cause of the breakdown has been addressed and is no longer a risk to flock biosecurity.

The flock returns to Initial Accreditation status (see page 13).

Suspension of accreditation

The approved veterinarian must recommend suspension of accreditation if:

- A *B. ovis* CFT positive is found, pending further testing.
- Animals have been introduced to the property or returned from non-accredited shows or sales without the necessary isolation and testing.
- There is evidence that stray sheep have been in contact with the flock and the approved veterinarian has not been advised.
- Other breaches of the Guidelines are found, pending further investigation or testing.

The status of a flock is suspended by the MAP Administrator if:

- A valid veterinary report and recommendation for reaccreditation with payment is not received within two months of the expiry date, without prior arrangements having been made for an extension.

- The veterinary report and recommendation contains insufficient or invalid information, or provides information which indicates that the Guidelines have not been complied with, pending clarification and provision of further information.
- The approved veterinarian recommends suspension pending further testing or investigation.
- The flock owner/manager requests voluntary suspension.

A person cannot lawfully promote or sell sheep as ovine brucellosis accredited while the flock status is suspended.

Cancellation of flock accreditation

The approved veterinarian must recommend cancellation of accreditation if:

- Infection is confirmed in any sheep in the flock.
- The owner does not demonstrate the ability to comply with the Guidelines, or declines to sign a new owner agreement.

The status of a flock is cancelled by the MAP Administrator if:

- A valid veterinary report and recommendation for reaccreditation with payment is not received within two months of the expiry date.
- The veterinary report and recommendation or other information confirms that the flock is infected or that the rules of the Scheme have not been complied with.
- The approved veterinarian recommends cancellation.
- Suspension has exceeded 12 months.
- The owner/manager advises that they are withdrawing from the Scheme.

A person cannot lawfully promote or sell sheep as ovine brucellosis accredited once accreditation is cancelled

Withdrawal from the scheme

When properties are sold and or flocks are dispersed, the owner should advise their approved veterinarian and the MAP Administrator. The MAP Administrator will then remove the flock from the register of accredited flocks.

If a property and flock is sold to another owner who wishes to remain in the scheme, a new agreement and management plan is required to be drawn up between the new owner and approved veterinarian. The flock then reverts back to initial testing requirements.

There may be situations where the flock had been at triennial testing and the approved veterinarian is satisfied the management of the flock throughout the sale and transfer has continued as an accredited flock. In this circumstance, the veterinarian may request the State Coordinator to approve the flock revert back to biennial testing requirements only.

Re-entering the scheme after cancellation or withdrawal

When a flock that has been previously accredited but has been removed from the accredited register wishes to re-enter the accreditation scheme, the owner must apply for [Initial Accreditation](#) (see page 13).

Approval of veterinarians under the scheme

Application for approved veterinarian status

Registered veterinary practitioners must be approved by the State Coordinator before they can provide accreditation services (ram tests, biosecurity evaluation and status recommendations) to flock owners.

Government and district veterinarians must not provide accreditation services to flock owners unless there is no approved private veterinarian within travelling distance and they have the prior approval of their supervisor and the State Coordinator.

Individual veterinary practitioners wishing to be approved under the Ovine Brucellosis Accreditation Scheme must read these Guidelines and then apply in writing to the State Coordinator. The application must include a signed declaration, and completed assessment test. Instructions on how to apply for approved status, the application form and the assessment test can be found under *Information for veterinarians* on the [DPI website](#) (see page 23).

Once approval is granted, it remains in force unless the veterinarian requests removal from the list, or there is evidence that the veterinarian is not fulfilling the requirements of the Guidelines.

DPI maintains a list of accredited veterinarians on its website (see page 23).

Avoiding potential conflict of interest

An approved veterinarian may not act as the supervising veterinarian or endorse an application for accreditation for a flock which is wholly or partly owned or managed by the veterinarian or a family member.

In this situation, they must avoid the risk of a perceived conflict of interest by engaging the services of another approved veterinarian.

Cancellation of approved veterinarian status

If it comes to the attention of the MAP Administrator or State Coordinator that an approved veterinarian is not fulfilling their obligations under these Guidelines, the MAP Administrator or State Coordinator must investigate and provide a report outlining the evidence on which any recommendation is based to the NSW Chief Veterinary Officer (CVO).

The CVO writes to the approved veterinarian detailing the reasons for the investigation and giving them the opportunity to show cause as to why their approval to participate in the NSW Ovine Brucellosis Accreditation Scheme should not be revoked. The veterinarian must respond in writing within 28 days of the date of the letter.

If the approved veterinarian provides a written response which satisfies the CVO that their actions or omissions were reasonable in the circumstances or that the matter was beyond their control, no further action will be taken other than advising the veterinarian of this outcome.

If the approved veterinarian does not provide a written response which satisfies the CVO or does not respond in time (and has not requested and been granted a reasonable extension), the CVO:

- revokes the veterinarian's approval, or
- revokes the veterinarian's approval and refers the details of the matter to the Veterinary Practitioners Board as a complaint under section 38 of the *Veterinary Practice Act 2003* for any further action that the Board determines, or
- suspends the veterinarian's approval, refers the matter to the Veterinary Practitioners Board and revokes the veterinarian's MAP approval if the Board makes a finding of unsatisfactory professional conduct or professional misconduct.

If an approved veterinarian's approval is revoked:

- the CVO notifies the veterinarian in writing that their approval has been revoked;
- the CVO notifies the MAP Administrator that the veterinarian's approval has been revoked;
- the MAP Administrator removes the veterinarian from the list of approved veterinarians on the DPI website.

The status of all flocks under the supervision of that veterinarian is reviewed by the State Coordinator. The State Coordinator writes to each flock owner and advises them:

- that the approval of their current veterinarian has been revoked (but not the reasons why);
- that they will need to engage the services of a different approved veterinarian in future;
- any impact that this may have on their current accreditation status.

Administration

The NSW Ovine Brucellosis Accreditation Scheme is administered by the Department of Primary Industries in accordance with approved administrative procedures which are available on the [DPI website](#) (see page 23).

Further Information

Websites

DPI website

The DPI website is the source of current information relating to the accreditation scheme. Please check here for the current forms before doing a flock assessment.

www.dpi.nsw.gov.au/animals-and-livestock/sheep/health/ovine-brucellosis/ovine-brucellosis-scheme

Listings of approved veterinarians and currently accredited flocks can also be accessed here. These lists are updated monthly. If you believe there is an error or omission in any listing, or if you do not wish your flock or veterinarian details to be included in the web listing, please contact the MAP Administrator.

National Sheep Health Statement

www.farmbiosecurity.com.au/toolkit/declarations-and-statements/

Contacts

MAP Administrator

NSW Department of Primary Industries

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TAREE NSW 2430

Phone: 02 6552 3000

Email: bfs.admin@dpi.nsw.gov.au

MAP State Coordinator

NSW Department of Primary Industries

Phone: 1800 680 244

Email: animal.biosecurity@dpi.nsw.gov.au

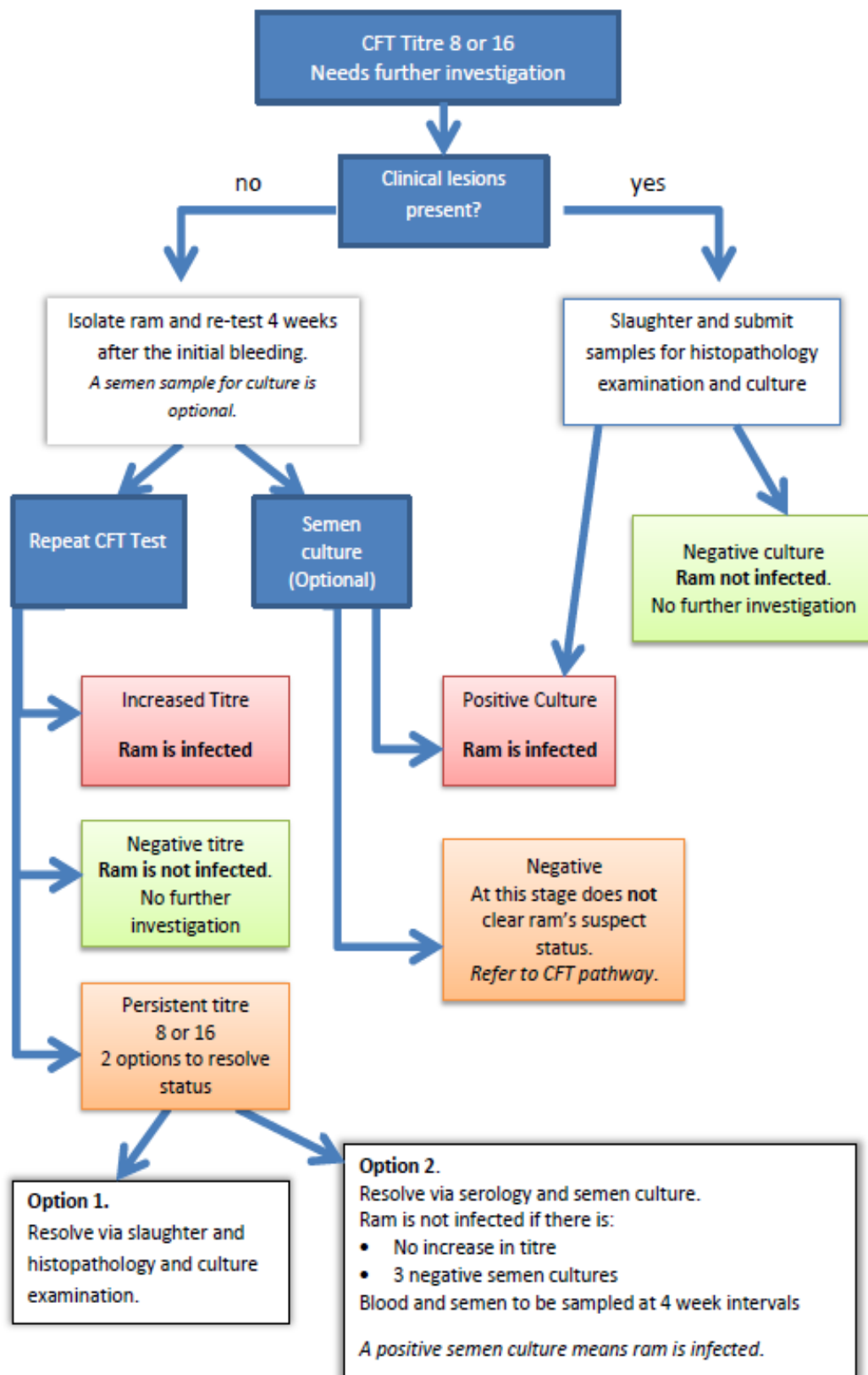
Appendix 1: Ram testing sample size calculator

See accreditation protocols to check when use of a sample of rams applies.

Sample size is calculated to provide 99% confidence of detecting disease present in a flock at a prevalence of 2%.

Total Number of Rams	Number to Test
1-83	All
84-90	83
91-100	90
101-120	100
121-140	113
141-160	122
161-180	129
181-200	136
201-250	150
251-300	160
301-350	168
351-400	174
401-450	179
451-500	183
501-600	190
601-700	195
701-800	199
801-900	202
901-1000	204
1001-1200	208
1201-1400	211
1401-1600	213
1601-2000	216
2001-3000	220
3001-5000	223

Appendix 2: Investigation of inconclusive reactors



Appendix 3: Summary of Testing Requirements

Initial

The approved veterinarian may recommend initial accreditation for a flock when the following conditions have been met. The first *B. ovis* CFT must not be undertaken until at least 60 days after full biosecurity measures are in place, particularly secure fencing.

- All **ram lambs between 4 and 10 months** of age on the property must have been manually palpated, and any with lesions have been individually identified, isolated, blood sampled and tested negative to the *B. ovis* CFT twice 60 to 120 days apart.
- All **rams over 10 months** of age on the property including stud sires and teasers must be permanently individually identified and have a manual testicular palpation examination.
 - Any rams with testicular lesions from this group must be isolated, blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart.
- All **stud sires and teasers intended for use on the property** must be blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart.
- In addition to any rams detected with lesions on palpation and stud sires and teasers, a **statistically significant sample of all rams over 10 months** of age must also be blood sampled and tested negative to *B. ovis* CFT twice 60 to 120 days apart. See [Appendix 1: Sample Testing](#) for statistical sampling table.

Annual

All rams from the property must be accounted for, including those sold and deceased.

- **All rams over 10 months** of age on the property must be permanently individually identified and have a testicular palpation examination.
 - Any rams over 10 months with palpable testicular lesions must be isolated on detection, blood sampled and test negative on *B. ovis* CFT.
- All **stud sires and teasers intended for use on the property** must be blood sampled and test negative on *B. ovis* CFT.
- In addition to any rams detected with lesions on palpation and stud sires and teasers, a **statistically significant sample of sale rams over 22 months old** must be blood sampled and test negative on *B. ovis* CFT. See [Appendix 1: Sample Testing](#)

Biennial and Triennial

All rams from the property must be accounted for including those sold and deceased.

- **All rams over 10 months** of age on the property must be permanently individually identified and have a testicular palpation examination.
 - Any rams over 10 months with palpable testicular lesions must be isolated on detection, blood sampled and test negative on *B. ovis* CFT.
- All **stud sires and teasers intended for use on the property** must be blood sampled and test negative on *B. ovis* CFT

Blood testing a sample of sale rams is no longer required. It is strongly recommended that all sale rams be manually palpated prior to sale.