

NATIONAL JOHNE'S MANAGEMENT PLAN

1. This plan sets out the approach being taken by the dairy industry of Great Britain to control and reduce the incidence of Johne's disease in the dairy herd through the Action Johne's Initiative. The plan was developed by the Action Group on Johne's.
2. The Action Group on Johne's is the stakeholder forum for dairy industry organisations concerned with tackling Johne's disease. In addition to milk purchasers listed in annex 1 the currently active members of the Action Group includes:

AHDB	NFUS
APHA	NMR
BCVA	Park Vet Group
CIS	RAFT Solutions
FUW	Red Tractor
MyHealthyHerd	SAC
NFU	West Ridge Vet Practice

BACKGROUND

The Disease

3. Johne's disease is a chronic, progressive intestinal disease caused by infection with *Mycobacterium avium* subspecies *paratuberculosis* (MAP).
4. Animals are usually infected as calves with approximately 80% of infections occurring within the first month of life. The calf may be infected while in the womb, by drinking infected colostrum and milk, or by ingesting faeces, with the latter being by far the most important. MAP may last for a year in slurry or on pastures. An infected cow can shed billions of MAP bacteria into the environment for years prior to showing any clinical signs of the disease. Generally only 1-5% of infected cows in a herd will show clinical signs of the disease. The rest of the infected animals will appear healthy, highlighting the need for testing. Infection is almost always introduced to a herd by purchasing infected replacement breeding stock including bulls.

Prevalence

5. Over 80% of herds that have undertaken surveillance for Johne's disease have evidence of infection. The level of disease within individual herds varies. The majority of herds have fewer than 5% high risk cows but it is not unusual to identify herds with greater than 20% of high risk cows.

Disease Impacts

Economic

6. Johne's disease causes a severe economic impact on a dairy herd if the disease is allowed to spread within the herd. Johne's disease will cause a reduced yield in affected animals, greater associations with other diseases, such as mastitis and cell count, and increased risk of premature culling. If the prevalence of Johne's rises further consequential losses occur as additional emergency cull rates lead to retention of cows with poorer economic performance and fertility potential.
7. A study of 385 UK Dairy Herds by James Hanks of the University of Reading (2013) showed that Johne's test positive cows were 2x more likely to have a cell count > 200,000 cells/ml and were 2x more likely to have milk yields 25% below their adjusted herd average. Johne's disease costs can rise to excess of 1-2p/ litre with higher disease incidences and these costs remain for a number of years until the disease is brought under control.

Animal Welfare

8. Johne's disease poses a major obstruction to achieving higher standards of animal welfare. Infected herds pose a risk to other herds through the sale of stock and herd dispersals.

Endemic Disease Control

9. Tackling Johne's contributes to encouraging permanent behavioural change on farm in the management of endemic diseases through better biosecurity and improved hygiene and disease control practices. In particular tackling Johne's helps to reinforce the industry's efforts on BVD and TB. The principles for controlling Johne's are identical to that required by BVD Free of:
 - **Assessing** the level of biosecurity and disease risk on farm
 - **Defining** the disease status of the herd
 - **Action** plan for control on farm
 - **Monitoring** progress

International Experience

10. Significant efforts are being made around the world in most major milk producing countries to tackle Johne's and international experience has shown that if a rigorous control program is instituted and applied robustly Johne's disease can be brought under control.
11. If the UK dairy industry is to remain internationally competitive and able to demonstrate to customers in export markets that it is taking a responsible industry approach then it needs to proactively tackle the disease.

Antimicrobial Resistance

12. The industry must contribute to efforts to reduce antimicrobial resistance. Because of its association with other disease conditions (lameness and mastitis), Johne's is a contributor to antibiotic use on farms. Reducing Johne's will assist in efforts to reduce antibiotic use on farms and address AMR.

Sustainability

13. Farmers need to maintain production efficiency and technical performance to remain viable in a competitive environment. Those that have already established effective Johne's management plans and demonstrated their success now consider Johne's management as a normal and necessary part of sustainable farming practice.

THE ACTION JOHNE'S INITIATIVE

14. The Action Johne's Initiative has been running for some time.

15. Phase I of the Action Johne's Initiative, which ran from 1st April 2015 to 31st December 2017, primarily focused on education and engagement.

16. Phase I required:

- Farmers to determine their risk and status
- Put in place in consultation with their vet one of the six strategies developed by the Action Group on Johne's

Participation in Phase I

17. Milk purchasers accounting for nearly 78% of UK milk production became members of the plan in phase I. Members committing to the plan agreed to commit their supplying dairy farmers to deliver the requirements of the plan.

18. Approximately 50% of GB dairy herds engaged in some form of surveillance. NML reported that it undertook some level of Johne's testing for 3,500 dairy farms, ranging from ad hoc 30 cow screens through to full whole herd quarterly screening. It is estimated that a further 1,500 to 2,000 farms tested for Johne's through other laboratories.

19. Additionally Phase I also involved:

- ***Employment of a Delivery Team***

RAFT Solutions was appointed to lead in the delivery this role. Half of the cost of the Delivery Team was funded by the scheme members. This was matched by a

contribution from AHDB Dairy. The Delivery Team primarily focused on recruiting members and in the creation and dissemination of information to the industry.

- ***Training for the veterinary profession***

This was provided by the BCVA through the development of a web-based training package. To date over 1,000 vets have completed the training programme. These numbers are expected to increase further.

- ***The development of a technical manual***

This was completed and disseminated to vets that had undertaken the BCVA training course.

PHASE II OF THE ACTION JOHNE'S INITIATIVE

20. The initiative is now implementing phase II.

21. The overall objective of Phase II of the Action Johne's Initiative remains the management and reduction of Johne's in the dairy herd of Great Britain.

22. The most significant change compared to phase I is that farmers are now required to obtain **annually** a signed declaration by a BCVA Johne's Certified Veterinary Advisor that they are meeting the requirements of the scheme.

Signed Declarations

23. There are two different annual declarations available for vets to sign:

- a. One for farmers new to the scheme.
- b. The second for farmers who have participated in the scheme for more than one year.

24. Farmers are required to keep the declaration available on farm and provide a copy of the signed declaration to their milk purchaser.

Declaration for Farmers New to the Scheme (Initial Declaration)

25. For farmers joining the initiative the declaration confirms that the farmer has:

- a. undertaken to assess their risks and herd status within the last 12 months and,
- b. agree to adopt the written Johne's management plan put in place in agreement with their BCVA Accredited Johne's Veterinary Advisor.

26. A copy of this declaration is set out in annex 3 below.

27. Farmers joining the scheme have to obtain this signed declaration by the 31st October in the year in which they join.

Declaration for Farmers Already Participating in the Scheme (Reassessment Declaration)

28. For farmers who are in their second or subsequent years of participation, the annual declaration states that the farm had:

- a. re-assessed their risk and status within the last 12 months and reviewed their Johne's management plan with their BCVA Accredited Johne's Veterinary Advisor; and
- b. that the necessary management protocols, equipment, husbandry and resources are being implemented to adhere to this plan

29. The objective of this annual declaration is to confirm that the plan has been re-assessed with the BCVA Accredited Johne's Veterinary Advisor and that the farmer is implementing the correct protocols to adhere to the plan.

30. A copy of this declaration is set out in the annex 4 below.

31. This declaration has to be obtained on an annual basis by 31st October each year.

Obligations on Vets

32. Only vets that have undergone the BCVA training programme and its associated refresher training courses are permitted to sign declarations.

33. In providing the declaration vets make every endeavour to ensure that the consultation with the farmer takes place at the same time as the annual review of the farmer's herd health plan to ensure all other relevant disease control factors are taken into consideration and to minimise costs.

34. Membership of CHeCS is recognised as providing equivalence to the requirements of phase II.

35. In respect of the use of risk assessment tools it is at the judgement of vets which tool is the most appropriate to use for an individual farm.

Obligations on Purchasers

36. Whether a new or existing member of the NJMP, the obligation on purchasers is to:

- a. Ensure all their supplying farmers comply with the requirements of the scheme. This is now a mandatory requirement of Red Tractor.

- b. Provide the Delivery Team annually with information on the number of farmers obtaining veterinary declarations using a standard purchaser questionnaire developed by Action Group on Johne's.
- c. To provide information and encouragement for farmers to actively engage in Johne's Management through appropriate dialogue, engagement and support activities.

37. The level of compliance achieved by purchasers will be indicated on the scheme website.

Rationale

38. In developing this framework the Action Group on Johne's sought to:

- Ensure that only properly trained vets are permitted to provide the signed declaration
- Create and maintain a regular dialogue between vets and farmers
- Include external verification in the implementation of the scheme
- Provide commercial incentives for all parties to engage, through:
 - Purchaser commitment to requiring the involvement of their supplying farmers
 - Leaving the provision of veterinary advice to farmers on a commercial basis
 - Requiring vets to be trained before being able to verify farmer compliance
 - Demonstrating to farmers the commercial benefits of tackling the disease

Role of the Delivery Team in Phase II

39. A Delivery Team led by RAFT Solutions is employed to ensure harmonised messaging to the industry on:

- The benefits of tackling the disease
- The six strategies developed by the NJMP and how they can be implemented

40. The functions of the Delivery Team is to:

- Maintain a list of milk purchasers that are members of the NJMP
- Compile information on an annual basis from members of the NJMP on activity at the farm level
- Maintain and update the scheme website as the central information resource for the industry
- Prepare and circulate a quarterly newsletter to NJMP members
- Present updates to the Action Group
- Place case studies in the mainstream agricultural press on a regular basis

- Use social media to further maintain the profile of the scheme
- Attend shows and events - presentations and conferences
- Maintain and update the Action Johnes website
- Retain and record a database of trained vets and vet practices

41. The Delivery Team is funded by contributions provided by purchaser members of the National Johnes Management Plan along with a contribution from AHDB.

42. The individual leading the Delivery Team is Harriet Scott (phone 01765 645893 or email harriet.scott@raftsolutions.co.uk.)

Governance of the Plan

43. The overall approach to governance remains inclusiveness, co-operation and voluntary action.

Management

44. The NJMP is overseen by the Action Group on Johnes (AGJ). Secretariat support for the AGJ is provided by Dairy UK.

45. The AGJ is open to;

- Members of the NJMP
- Trade bodies drawn from the dairy industry supply chain, defined as:
 - Dairy farmers
 - Dairy processors
 - Related farm supply industries (Vets, Testing Laboratories, etc)

46. The AGJ endeavours to maintain the engagement of all relevant stakeholders in the development, implementation and evolution of the plan.

47. Between meetings of the AGJ the scheme is overseen by the Johnes Management Group which consists of the Chair of the AGJ, the Chair of the Technical Group, NML, AHDB and Dairy UK.

Technical Advisory Group

48. The provision of technical advice to the Action Group on Johnes is undertaken by the Technical Advisory Group consisting of:

Pete Orpin (Chair)	Vet
Derek Armstrong	AHDB
Dick Sibley	Vet
Elizabeth Berry	Vet
George Gunn	SRUC

Jonathan Statham	RAFT Solutions
Jules Dare	Vet
Keith Cutler	Vet
Natalie Jewell	APHA
Karen Bond	NML
Steven Van Winden	Vet

Membership of the Plan

49. Membership of the plan is open to organisations that agree to commit dairy farmers to delivering the requirements of the plan. Relevant organisations can be:

- Dairy co-ops
- Dairy processors
- Supply Groups
- Producer Organisations
- Or any other farmer based organisation that can collectively represent dairy farmers

50. Organisations becoming members of the plan commit to:

- Contributing resources for the implementation of the plan, particularly a financial contribution to the employment of the Delivery Team
- Provide their associated dairy farmers with an appropriate level of information and support
- Regularly check returned declarations and raise any errors/incomplete information to their associated dairy farmers or the Action Group on Johne's Management Team
- Provide declaration data and any other data requested to the Action Group on Johne's Management Team in the spreadsheet format requested – any other format of data will no longer be accepted

Joining the National Johne's Management Plan

51. Purchaser membership of the scheme is based on a litreage fee which is set annually. For 2020 membership costs £93.50per 100 million litres of milk purchased.

52. To be publicly listed on the scheme website as active participants in the scheme new purchasers will now have to ensure that 90% of their supplying farmers have obtained the signed veterinary declaration required by the scheme. Until milk purchasers meet this obligation then their membership of the scheme is provisional.

53. To become a member of the scheme please contact Harriet Scott at <harriet.scott@raftsolutions.co.uk>

Annex 1: Active Participants

AJ & RG Barber Ltd (Maryland Farm)
Arla Foods
Belton Farm Ltd
BV Dairy
Cotteswold Dairy Ltd
Crediton Dairy Ltd
Cropwell Bishop Creamery
Dairy Crest
First Milk
Glanbia Cheese Ltd
Graham's the Family Dairy Ltd
Isle of Man Creamery
Lactalis
J & E Dickinson (Longley Farms)
Muller Milk and Ingredients
OMSCo Ltd
Parkham Farms Ltd
Quickes Traditional Ltd
Wensleydale Dairy Products Ltd
Wyke Farms

Annex 2: Six Control Strategies

- ***Biosecurity Protect and Monitor***

This option is suitable for herds which have completed appropriate screening tests and have no evidence of disease. A robust biosecurity protocol must be established to minimise the risk of bringing the disease in, this must address buying practice, slurry and grazing management. Surveillance testing is required to monitor the herd status and detect incursions of disease. The level of surveillance required will depend on farmer aspiration and the risk of introducing Johne's disease into the herd. For example a farm which buys in multiple animals would require a higher level of surveillance than a truly closed herd. Also a herd wishing to pursue accreditation through the Cattle Health Certification Standards (CHeCS) (which may attract a premium when selling stock) would need to undertake whole herd testing as per the scheme requirements. It must be remembered that with minimal surveillance testing it may be possible to miss the arrival of the disease and allow it to gain a foothold within the herd before it is identified, especially if the herd has management strategies which would facilitate spread.

- ***Improved Farm Management***

This option relies on breaking the cycle of disease transmission from cow to calf through management changes implemented across all cows in the herd. These changes will concentrate on calving, colostrum and milk management. No individual cow testing is undertaken and so all cows must be treated as if they are infected and a risk. The important thing to bear in mind with this strategy is that these changes **MUST** be implemented across **EVERY** cow in the herd.

This option is best suited to smaller herds with low risk and low prevalence which are able to commit labour resource to the system. Without excellent compliance this strategy will not work, and as there is no testing, there is no way of monitoring the disease. A level of herd surveillance testing should be considered, at least to establish a starting point and then periodically to be able to assess the effectiveness of the control programme.

- ***Improved Farm Management and Strategic Testing***

This option uses strategic individual cow testing to identify those cows most at risk of spreading Johne's disease and implementing management changes to break the cycle of transmission for these cows only. This allows the management changes to be targeted at those cows which pose the highest risk whilst allowing normal management of the remainder

of the herd. Testing is carried out to identify high risk cows at a time appropriate to reduce the risk of transmission through management changes.

There are three options which are described in more detail below. It should be noted that the more frequent the testing, the more sensitive the results.

- **Improved Farm Management Test and Cull**

An addition to the Improved farm management & strategic testing option with immediate culling of test positives rather than retaining and managing them. This option would be suitable for low prevalence herds wanting to quickly remove infected animals. This option would not be suitable for high prevalence herds as it may be uneconomic to pursue and alternative strategies may be more suitable in the first instance.

- **Breed to Terminal Sire**

No replacement animals are bred, all cows are served to a terminal beef sire and all offspring are fattened for slaughter. Replacements are sourced from herds with lower levels of Johne's disease. In effect they become a 'flying herd'. This strategy may be suitable for herds with a high risk and high prevalence with no wish to breed their own replacements or the ability/resource to manage the risks through improved farm management. This is not a way to remove Johne's disease and its effects from a farm.

Cows will still develop Johne's disease and will need to be removed from the herd, hopefully this number will reduce over time as they are replaced with uninfected bought in cows. It must also be remembered that on a farm with very high levels of Johne's disease transmission between adult animals is possible. It may still be prudent to undertake testing to help identify cows for removal. ALL calves produced in this system MUST be slaughtered for beef and NOT enter the suckler herd as breeding animals.

- **Firebreak Vaccination**

A vaccination is available for Johne's disease, however its efficacy is limited. In the dairy herd calves will frequently become infected within the first 24 hours of life meaning that they are already infected by the time they are vaccinated. The vaccine does not prevent infection, nor will it prevent an infected cow from shedding the bacteria and infecting others. It does extend the period before an infected cow shows clinical signs thus giving that cow a longer productive period before she succumbs to Johne's disease. Vaccination may be an option for high risk, high prevalence herds as a firebreak to 'buy some time' until another strategy can be adopted. Vaccination should not be undertaken without a clear exit strategy and a good understanding of the implications of vaccination. Once a herd is vaccinated it becomes very difficult to determine whether an animal is infected as the tests cannot differentiate between antibodies from vaccination and infection. This complicates the management of the disease. Vaccination must be undertaken under the advice and supervision of your vet.

- **Improved Farm Management and Strategic Testing: Three Options**

Risk based (quarterly testing)

Suitable for herds of moderate to high prevalence who are not able to dedicate the resources or have the facilities required for IFM on all cows calving. Frequent testing allows the creation of a low risk group (green cows, typically 90% of the herd) which are managed normally and a high risk group (red and amber cows) of cows which are separated at drying off into a dedicated segregation area to prevent contamination of green cows and green cow areas. Test results are also used to inform breeding and culling decisions.

This programme is especially suited to herds which undertake milk recording as the Johnes' testing can be carried out on the milk recording samples.

The overall cost of the program may be offset by savings on labour and higher cull prices for cows identified early in the infection cycle.

Single test (Pre Dry off)

This is a less rigorous testing programme, with just a single test performed before drying off. This result is used to segregate test positive cows at drying off into a dedicated area away from the low risk cows.

The single test will not be as sensitive as repeated testing and as such not all infectious animals may be identified allowing some to enter the calving area and spread the disease.

This option may be suitable for block calving herds with low prevalence which can test all of the animals in one session pre dry off. It is more challenging to ensure timely testing in a year round calving herd with cows going dry every month. Adequate resources are needed to ensure cows are sampled at the appropriate time.

Double test (Pre Dry off and Pre Breeding)

This increased testing provides greater sensitivity than the single test and also provides a test result pre breeding to allow breeding decisions to be made.

This option may be suitable for block calving herds with low to medium prevalence.

Steps required to complete the Johne's Declaration

To satisfy the requirements of the National Johne's Management Plan (NJMP), there are three steps that should be completed on-farm with a BCVA Accredited Johne's Veterinary Advisor (BAJVA):

1. Know your Johne's disease risks

Farmers and their BAJVA need to know their risk status for Johne's disease to enable development of a robust plan to keep the disease out or, manage the infection if present. An effective assessment of the risks of entry and spread in a herd should be carried out by a BAJVA as part of a farm visit, as it is important to get a good feel for what happens on the farm on a day to day basis in terms of biosecurity (to prevent disease entry) and biocontainment (to prevent disease spread).

2. Know your Johne's disease status

Farmers and their BAJVA also need to know whether there is evidence of Johne's disease on farm or not. Testing to establish herd status involves actively seeking out disease if it is there to give as much confidence as possible in assigning the herd status.

There are several testing options available to establish herd status; they are shown in order of reliability from low to high:

- **Cull cow screening:** cull cows with issues such as high cell count, low yields, lameness and poor fertility are most likely to have Johne's disease. The next time that a cull batch is identified on the farm, take blood and/or milk samples on a routine visit for ELISA testing.
- **Targeted 30 cow screen:** identify 30 cows most likely to have Johne's disease (high cell counts, low yields, and poor doers). Blood or milk can be used – herds that are milk recording can be tested automatically, using their milk records to select the 30 target cows. The 30 cow screen shows a 95% chance of correctly categorising the herd as infected or non-infected.
- **Whole herd screen:** when a 30 cow screen is not enough, this is useful for confirmation if the herd is known to have Johne's disease and also for identification of infected cows within the herd.

Selecting the most appropriate test to establish herd status is based on the BAJVAs clinical judgement.

3. Create a written Johne's disease management plan

There are six control strategies within the NJMP, one of the six strategies will suit every farm. The farmer and BAJVA should select the most appropriate strategy for the farm, taking into consideration farmer aspiration and the reality on farm. The control strategies are:

1. Biosecurity Protect and Monitor
2. Improved Farm Management
3. Improved Farm Management and Strategic Testing
4. Improved Farm Management Test and Cull
5. Breed to Terminal Sire
6. Firebreak Vaccination

Within the chosen strategy there will then be a list of tasks which will need to be undertaken to make that strategy work, these should be included by the BAJVA in a written Johne's disease management plan specific for the farm.

1. Risk assessment to know your Johne's disease risks



2. Testing to establish your Johne's disease status



3. Create a written Johne's disease management plan

IMPORTANT NOTES

- Additional information on the control strategies and the NJMP is available on the **Action Johne's website** and **within the BAJVA Technical Manual**.
- A **BCVA Accredited Johne's Veterinary Advisor (BAJVA)** is a veterinary surgeon who has re-validated their BAJVA status or completed the online BCVA training modules since 13th August 2019. **BAJVA numbers** can be found on the Action Johne's website.
- **ALL THREE** steps must be completed and understood by the farmer and BAJVA, **within the 12 months prior** to the date of signature on the declaration.
- These steps should be reviewed and completed **annually**.
- Bulk milk testing is **NOT acceptable** under the NJMP and is not enough to establish farm status.
- Only **ONE control strategy** should be used at any time, but the most appropriate strategy may change over time.
- **The declaration is a certificate endorsed by the Veterinary Defence Society (VDS)**, by signing the document as a veterinary surgeon you are confirming that you are a BAJVA and have complied with the requirements of the NJMP.

Annex IV Annual Review Declaration

National Johne's Management Plan Veterinary Certificate Annual Johne's Disease RE-ASSESSMENT Declaration 2020

This declaration should be completed with support from a BCVA Accredited Johne's Veterinary Adviser.

Herd Status: Please indicate which testing method has been used to <u>re-assess</u> herd status (in the last 12 months)			
<input type="checkbox"/> Cull cow screen		<input type="checkbox"/> Whole herd screen	
<input type="checkbox"/> Targeted 30 cow screen		<input type="checkbox"/> Other (please specify) _____	
<i>Please note: Bulk milk testing is NOT acceptable under the NJMP</i>			
Control Strategy: Please indicate which strategy <u>you have agreed to adopt</u> within your written Johne's disease management plan			
<input type="checkbox"/> Biosecurity protect and monitor		<input type="checkbox"/> Improved farm management test and cull	
<input type="checkbox"/> Improved farm management		<input type="checkbox"/> Breed to terminal sire	
<input type="checkbox"/> Improved farm management and strategic testing		<input type="checkbox"/> Firebreak vaccination	
<i>Please note: Only ONE strategy should be selected</i>			
Veterinary Declaration: I, <u>as a certified BCVA Accredited Johne's Veterinary Advisor</u> , can confirm that this farm has undertaken a further assessment of Johne's risk and status in the last 12 months, and that with the herd owner, we have reviewed and agreed upon the written Johne's management plan. In my opinion the plan complies with the objectives of the National Johne's Management Plan. To find your BAJVA registration number visit: www.actionjohnesuk.org/bajva/			
Signed			
Print name		Date	
Vet practice name		BAJVA number	
Vet practice address and postcode			
Farmer Declaration: I can confirm that an assessment of Johne's disease risk and status has been undertaken on this farm in the last 12 months in conjunction with a BCVA Accredited Johne's Veterinary Advisor and that the necessary management protocols, equipment, husbandry and resources are being implemented to adhere to the chosen control strategy during the previous assessment, and I undertake to adopt the written Johne's disease management plan			
Signed			
Print name		Date	
Farm name		Supplier number (if applicable)	
Farm address and postcode			

A signed declaration should be obtained annually in conjunction with a BAJVA, and a copy must be shared with your milk purchaser by 31st October each year (or the date otherwise stated by your milk purchaser).

Please ensure a copy is also retained on farm with your herd health management plan.

Steps required to complete the Johne's Declaration

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1. Know your Johne's disease risks

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2. Know your Johne's disease status

Farmers and their BAJVA also need to know whether there is evidence of Johne's disease on farm or not. Testing to establish herd status involves actively seeking out disease if it is there to give as much confidence as possible in assigning the herd status.

There are several testing options available to establish herd status; they are shown in order of reliability from low to high:

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6. Firebreak Vaccination

Within the chosen strategy there will then be a list of tasks which will need to be undertaken to make that strategy work, these should be included by the BAJVA in a written Johne's disease management plan specific for the farm.

1. Risk assessment to know your Johne's disease risks



2. Testing to establish your Johne's disease status



3. Create a written Johne's disease management plan

IMPORTANT NOTES

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