

# **RECOMMENDATIONS**

## **OF THE NSW OJD ADVISORY COMMITTEE FOR FUTURE MANAGEMENT OF OJD IN NSW**

**8<sup>th</sup> September 2003**

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### ***NSW OJD ADVISORY COMMITTEE***

NSW Farmers' Association, NSW Rural Lands Protection Boards, Stock & Station Agents Association, Australian Stud Sheep Breeders Association, Southern Tablelands Stockcare Group, Central Tablelands Stockcare Group, OJD Affected Producers Action Group, Australian Poll Dorset Association, Association of District Veterinarians, NSW Agriculture, (Observers), Australian Animal Health Council Ltd, AusVet Animal Health Services

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As the end of the six year National Ovine Johne's Disease Control and Evaluation Program (NOJDP) draws near, the NSW OJD Advisory Committee has undertaken an intensive consultation process with all sectors of the NSW sheep industry to assist in determining future needs for management of OJD.

This has included a written survey of all sheep producers, regional forums with participation from over 300 industry representatives throughout the State, and a range of independent technical assessments. (see *Appendices 1, 2 and 3*).

Discussions with producer and government representatives from other States have also been considered in light of both facilitating interstate trade and representing NSW interests.

The outcomes of the consultation process are summarised below.

#### **a) THE NSW SHEEP INDUSTRY HAS CLEARLY REJECTED TWO POSSIBLE FUTURE SCENARIOS:**

- Continuation of a discriminatory program which has so far failed to prevent rapid spread of OJD throughout significant areas of southern NSW
- Uncontrolled spread of the disease throughout the entire NSW flock.

#### **b) INTENSE CONSULTATION AT ALL LEVELS OVER THE LAST 6 MONTHS HAS RESULTED IN THE IDENTIFICATION OF A NUMBER OF KEY POINTS REGARDING FUTURE MANAGEMENT OF OJD WITHIN THIS STATE.**

1. National and international trends towards JD management mean that the NSW sheep industry and government may leave themselves significantly exposed if they fail to embrace some form of future disease control program.
2. The aim of any future program should be to slow the spread of the disease pending further technological developments. Strategies to achieve this aim should be tailored to the prevalence of infection within each area and producer needs.
3. NSW government and industry, and in particular a significant number of individual producers and districts, have already invested heavily in OJD management. Any future approach to OJD needs to recognise this investment.

4. Deregulation is likely to accelerate spread of OJD throughout NSW unless both preceded and accompanied by an intensive program emphasising vaccination and risk assessment strategies.

The nature of the disease, in particular its propensity to spread laterally between neighbouring flocks, means that any future approach to OJD management must recognise the impact of individual producers' actions, either beneficial or adverse, on their neighbours and catchments/localities.

5. Past discriminatory regulation has significantly reduced producer support for any future NSW OJD program.

An agreed Industry Vision Statement (see *Appendix 4*) addresses these key points.

**c) IN RESPONSE TO THESE FINDINGS, THE NSW OJD ADVISORY COMMITTEE THEREFORE RECOMMENDS:**

1. **Development of a plan for OJD management that will allow industry to move from a highly regulated environment to a non-regulated control program managed by industry, which is based on informed market and production forces. *The principles of this plan are outlined in Attachment 1 – NSW OJD AC Draft Strategic Plan for Sheep 2004-2007.***
2. **This plan should be staged so that short-term targeted strategies may be implemented while long-term strategies eg producer education, are being progressed.**
3. **Where the plan encompasses a change from one strategy to another, the trigger for such change eg a date, a criteria or a review point, must be clearly identified before the plan is endorsed.**
4. **Responsibility for the progression to a sustainable market/production driven disease control program should be jointly undertaken by all producers. Government should support this industry endeavour.**
5. **It will be necessary for the NSW government, in conjunction with industry, to examine different funding mechanisms to assist industry in its desire to actively manage OJD. The current funding mechanism does not have industry support as it is expensive, inefficient to administer and jeopardises future disease control activities that may involve industry (including education).**
6. **Results of on-going research must be delivered to producers on a timely basis through an effective advisory program.**
7. **The prompt implementation of a communications plan (see *Appendix 6*) that will inform producers sufficiently to enable rapid implementation of the new program model.**

8. **The specific requirements of the goat industry should be developed in parallel in a separate, yet compatible, strategic plan for control of Johnhe's Disease (BJD and OJD) in goats.**

Strategies should take into account the lack of evidence of routine transmission of OJD in such susceptible species.

The Advisory Committee has endorsed the broad principles of the goat industry seven point plan as appended to the joint industry *National framework for the future management of OJD Discussion Paper, May 2003* (see Appendix 5).

9. **A revised industry committee, constituted with a structure and charter to enable it to monitor and assess progress towards the objectives, is necessary.**
10. **Any future OJD program must deliver a balance between trade and disease control, with an associated equitable sharing of costs and risks by the whole of the NSW sheep industry.**
11. **When future animal disease control programs are being considered by government and industry, best practice independent technical and economic assessments must be a prerequisite. These should consider both long and short term outcomes of proposed strategies.**

## APPENDICES

- 1. *NSW Industry consultation paper and survey form*, NSW OJD Advisory Committee, August 2003
- 2. *NSW Industry Survey findings*, NSW OJD Advisory Committee, September 2003
- 3. *The Future of OJD Control in Australia*, Professor Richard Whittington, Sydney University, July 2003
- 4. *Industry Vision Statement*
- 5. *National framework for the future management of OJD Discussion Paper*, May 2003
- 6. *Framework for the Future – Communications*, NSW OJD Advisory Committee, September 2003
- 7. *Briefing note on the proposed national Assurance Based Credit (ABC) scheme*, August 2003
- 8. *Draft national Animal Health Statement incorporating Assurance-Based Credits (ABC) for trading*, August 2003.
- 9. *Criteria for districts proposing to establish OJD Exclusion Areas*, September 2003

# NEW SOUTH WALES OJD DRAFT STRATEGIC PLAN FOR SHEEP 2004-2007

*As developed by the NSW OJD Advisory Committee*

## THREE YEAR OBJECTIVE

### LESS TOTAL INFECTION IN THE NSW FLOCK

*It is important to recognise the opportunity currently available to apply different sets of strategies in different prevalence regions eg reducing the level of infection in infected flocks/areas and slowing spread into uninfected flocks/areas.*

**AND**

### FEWER LIMITATIONS ON NSW PRODUCERS TRADING WITHIN NSW AND INTERSTATE

*Trading limitations can result either from market forces in a deregulated environment, or from short term or long term regulation.*

## RECOMMENDED STATE STRATEGIES

*A range of strategies are required to provide the basis for a state-wide program.*

*The following strategies have been endorsed by NSW industry as appropriate for OJD management within NSW.*

*Note: these strategies should also be recognised nationally to allow comparable trading and disease control standards across jurisdictions.*

- Research activities                      *which will deliver practical recommendations to producers*
- Advisory activities                      *which will deliver soundly-based technical information to producers, to allow progression from a highly regulated control approach to one sustained by informed market and production forces*
- Area prevalence monitoring              *which is able to reflect the progress of disease control activities within the area*

*In NSW prevalence monitoring is recommended on a RLPB divisional basis, with area reassessment being required every two years.*

*Note 1: definition of prevalence areas should not imply zones.*

*Note 2: NSW should reserve the right to assess and review disease monitoring by other jurisdictions on an equivalent sheep/flock number basis.*

➤ Risk-based trading

*using a nationally endorsed system that allocates assurance based trading credits (ABC) for disease control activities/criteria such as flock location, testing history, MAP participation and vaccination status.*

*underpinned by a requirement for vendor declarations/Animal Health Statements for all non-slaughter trading, with provision to exempt all terminal crossbred lambs from disease control requirements (see Appendices 7 and 8)*

➤ A flock assurance scheme

*based on the current SheepMAP (further technical assessment of the use of Abattoir Surveillance within the MAP is to be undertaken)*

➤ Pathways for infected flocks

*which will allow all infected flocks to progressively resume full trading by implementing disease control measures including vaccination. Vaccine pathways need to provide an equivalent risk to other accepted pathways.*

*The objective of any pathway for an infected flock is two-fold – a) access to trade and b) removal of the infected 'label', with its associated stigma and legal implications.*

*Pathways are incorporated within the ABC trading system so should not need to be implemented as a separate strategy.*

➤ Availability of vaccine

*vaccine to be available for use in all areas of NSW*

## ADDITIONAL REGIONAL STRATEGIES

*Further strategies may be selectively applied in different areas to address the specific needs, and best utilise the available resources, of those areas.*

## RECOMMENDATIONS FOR NSW HIGH PREVALENCE AREAS

**Historically, in any area with greater than 3% prevalence of flocks with infection detected in home-bred sheep, the majority of flocks are likely to be at risk of being or eventually becoming infected.**

**Modelling has indicated that in high prevalence areas, in the absence of any disease control activities, the expected long-term prevalence of infected flocks will rise to approximately 80%.**

**The single strategy considered most likely to reverse this trend, and to avoid the cost of concurrently increasing production loss is widespread on-going vaccination of at least 70% of restocker lambs.**

**Other strategies are considered as adjuncts to vaccination.**

### TARGET

70% restocker lambs vaccinated on an annual basis.

### STRATEGIES

**Vaccination:** is the main strategy that should be considered in high prevalence areas. Vaccine is freely available. Different vaccine strategies could be phased in and out as appropriate to help drive vaccine uptake. Any vaccine strategy may be improved by the provision of subsidised vaccine but this cost is not currently supported by industry.

Possible vaccine strategies are:

- Vaccination level 1      Compulsory vaccination of all flocks  
*in the current high prevalence areas this is not strongly endorsed by industry*
- Vaccination level 2      Compulsory vaccination of all flocks detected with, or suspected of, infection  
*relies on effective surveillance*
- Vaccination level 3      Vaccination requirement to access: restocker trade, roads, saleyards, show/field day/exhibition sites  
*largely reliant on trade incentive*
- Vaccination level 4      Vaccination is recommended, but is not compulsory, in any flock, including infected and at-risk flocks and flocks in high prevalence areas  
*requires a well-educated and highly motivated industry to be effective*

In order to achieve the target of 70% restocker lambs vaccinated, **either level 1 or level 3** vaccination strategies would be required as an interim measure (maximum three years) to establish vaccination as a routine management practice within these areas.

Level 1 is not strongly endorsed by industry for the high prevalence areas.

**Research:** which focuses on vaccine but not to the exclusion of other activities to reduce prevalence within flocks. Priority lists would include efficacy of on-going vaccination programs, health impacts of other diseases, survival of bacteria in high prevalence areas, alternate management practices eg grazing, and modelling of disease spread based on sheep numbers rather than flock numbers.

**Advisory:** which targets understanding of the disease, on-going vaccination of restocker lambs, supplementary measures such as test/cull and grazing management which are aimed at reducing both productivity losses and within-flock transmission, and potential trade advantages for pro-activity.

**Area prevalence monitoring:** which is able to monitor significant changes in levels of infection, particularly in high prevalence areas. This means using monitoring to detect reduction in within-flock prevalence as well as reduction in overall number of infected flocks.

**Risk based trading:** using a nationally endorsed system which allocates assurance based trading credits (ABC) for disease control activities/criteria such as flock location, testing history, MAP participation and vaccination status.

It is recommended that high prevalence areas require a minimum rating of one credit for trade into and within these areas in order to drive disease control activities, at least as an interim measure.

**Note:** terminal lambs to be exempt from all requirements

**SheepMAP and MAV:** Voluntary Market Assurance Program to provide audited test and management systems that will complement ABC ratings and provide additional assurance when trading high value animals.

**Pathways for infected flocks:** Pathways are incorporated within the ABC trading system to remove stigma and regain full trading potential.

**Additional strategies:** In a high prevalence region where the majority of flocks are at risk it is no longer considered applicable to use strategies that are based on identification of infected flocks, eg targeted regulation, targeted PDMPs and targeted assistance.

## RECOMMENDATIONS FOR NSW MEDIUM PREVALENCE AREAS

*Historically, areas with a prevalence of less than 3% of flocks detected with home-bred infection, may be in a position to significantly slow the spread of infection by utilising an appropriate mix of disease reduction and spread control strategies.*

*Targeted use of vaccine as an early intervention strategy within the area is critical to avoid the constantly repeated scenario of OJD following a classic endemic curve ie. early seeding of an area followed by rapid escalation from a situation of scattered foci of detected infection to one of widespread endemic disease.*

### TARGET

All infected and at-risk flocks vaccinating, and strategies in other flocks to monitor for, and ideally prevent, introduction of infection.

### STRATEGIES

**Vaccination:** is a critical strategy to slow the spread of infection in medium prevalence areas. Vaccine is freely available. Different vaccine strategies could be phased in and out as appropriate. Any vaccine strategy may be improved by the provision of subsidised vaccine but this cost is not currently supported by industry.

Possible vaccine strategies are:

- Vaccination level 1      Compulsory vaccination of all flocks  
*may not be cost effective or practical in lower prevalence areas*
- Vaccination level 2      Compulsory vaccination of all flocks detected with, or suspected of, infection  
*relies on effective surveillance*
- Vaccination level 3      Vaccination requirement to access: restocker trade, roads, saleyards, show/field day/exhibition sites  
*largely reliant on trade incentive*
- Vaccination level 4      Vaccination is recommended, but is not compulsory, in any flock, including infected and at-risk flocks and flocks in high prevalence areas  
*requires a well-educated and highly motivated industry to be effective*

There is likely to be little initial incentive from production loss to vaccinate flocks in medium prevalence areas, and compulsory vaccination of all flocks may not be cost-effective. It is recommended that initially **level 2** vaccination strategy will assist in achieving the target. Vaccination should also be actively promoted for all restocker animals.

**Research:** which allows better definition of the threshold medium prevalence level, beyond which high prevalence strategies should be implemented.



**Advisory:** which targets understanding of the disease, the importance of monitoring, the use of vaccine for flock protection as well as flock treatment, and potential trade advantages for pro-activity for buyers and sellers.

**Area prevalence monitoring:** is necessary to support a level 2-vaccine strategy. As medium prevalence areas are most likely to demonstrate both variable and fluctuating prevalence levels according to circumstances and uptake of disease control activity, monitoring for prevalence is essential to ensure the correct strategies are being applied.

**Risk based trading:** using a nationally endorsed system which allocates assurance based trading credits (ABC) for disease control activities/criteria such as flock location, testing history, MAP participation and vaccination status.

It is recommended that medium prevalence areas require a minimum rating of one credit for infected or at-risk flocks to trade into and within the area in order to drive disease control activities, at least as an interim measure.

**Note:** terminal lambs to be exempt from all requirements

**SheepMAP and MAV:** Voluntary Market Assurance Program to provide audited test and management systems that will complement ABC ratings and provide additional assurance when trading high value animals.

**Pathways for infected flocks:** Pathways are incorporated within the ABC trading system to remove stigma and regain full trading potential.

**Additional strategies:** which are based on reducing the risk of introduction of infection (eg widespread use of vendor declarations/Animal Health Statements), monitoring for infection (eg flock testing), and identification of infected flocks (eg targeted Property Disease Management Programs, PDMPs) are applicable to medium prevalence areas.

## RECOMMENDATIONS FOR NSW LOW PREVALENCE AREAS

***Historically, areas with little or no detected infection may achieve effective disease control, and a long-term net financial benefit, by containing any known infection and taking steps to minimise movement of infectious animals into the area.***

***Ultimately reliance on market-driven rather than regulatory measures is crucial in maintaining producer support of disease control activities, even in low prevalence areas.***

### TARGET

All infected flocks actively reducing infection levels by using a range of strategies specific to the flock circumstance.

All at-risk flocks monitoring on a regular basis and using preventative strategies including vaccination.

Minimising the introduction of infectious animals.

### STRATEGIES

**Property Disease Management Programs (PDMPs):** are appropriate for all infected and at-risk flocks but need to be tailored to individual flock circumstances.

**Vaccination:** Vaccine is freely available. Possible vaccine strategies are:

- Vaccination level 1      Compulsory vaccination of all flocks  
*may not be cost effective or practical in lower prevalence areas*
- Vaccination level 2      Compulsory vaccination of all flocks detected with, or suspected of, infection  
*relies on effective surveillance*
- Vaccination level 3      Vaccination requirement to access: restocker trade, roads, saleyards, show/field day/exhibition sites  
*largely reliant on trade incentive*
- Vaccination level 4      Vaccination is recommended, but is not compulsory, in any flock, including infected and at-risk flocks and flocks in high prevalence areas  
*requires a well-educated and highly motivated industry to be effective*

Use of vaccination strategies in low prevalence areas should be assessed within required Property Disease Management Programs (PDMPs) for all infected and at-risk flocks to minimise risk of spread ie **level 2**. Vaccination should also be promoted in particular circumstances eg selling stock into higher prevalence areas.

**Research:** which concentrates on the best means to detect any infection before spread to neighbours. There is also an urgent need to better identify a range of strategies to contain and eliminate infection

from a flock, including on-going vaccination programs and determination of bacterial survival in low prevalence areas including rangelands.

**Advisory:** which targets understanding of the disease and measures to reduce the risk of introduction.

**Area prevalence monitoring:** which is able to reinforce area assurance for trading purposes and to detect infected flocks, ideally before local transmission has started. An important component is the removal of disincentives to being identified with infection.

**Risk based trading:** using a nationally endorsed system which allocates assurance based trading credits (ABC) for disease control activities/criteria such as flock location, testing history, MAP participation and vaccination status.

Low prevalence areas may require or recommend a minimum credit rating, no higher than the area credit rating, for trade into and within the area. This may be an interim or on-going measure pending outcomes of current research trials. Any such credit recommendation/requirement would be aimed at filtering out high risk introductions and driving the uptake of disease control measures in infected and at-risk flocks.

**Note:** terminal lambs to be exempt from all requirements

**SheepMAP and MAV:** Voluntary Market Assurance Program to provide audited test and management systems that will complement ABC ratings and provide additional assurance when trading high value animals.

**Infected flock pathways:** which are easily accessible, can be undertaken by any flock regardless of the starting point, and do not rely on the testing 'lottery', are a vital component of any low prevalence strategy which relies heavily on detection of infected or at-risk flocks for disease control.

**Flock monitoring:** is recommended as a component of area prevalence monitoring, to identify flocks that are infected or at-risk. On-going monitoring of at-risk flocks, using abattoir monitoring and on-farm investigation, may remove the need to institute more expensive preventative measures such as long-term vaccination.

**Supporting Regulation:** may be required, at least in the initial stages, in order to effectively filter out high risk movements and ensure compliance with PDMPs in infected and at-risk flocks.

**Financial assistance to affected producers:** would have to be sufficient to both remove the financial disincentive of being detected with infection, and to assist in implementing effective PDMPs.

**Exclusion Areas:** Guidelines are available for areas of **very low prevalence** to consider establishing Exclusion Areas in order to maintain their prevalence level. (see *Appendix 9*).

# Appendix 1

## Future Management of OJD is in Your Hands

A Message from Felicity Henderson, Chairman of the NSW OJD Advisory Committee:

Dear Fellow Producers,

You will be well aware that ovine Johne's disease (OJD) has probably been the most talked about, yet one of the least understood sheep diseases in Australia.

Over the last 5 years a national program has been undertaken to determine how best to manage OJD long-term. This program is due to end on 30th June 2004, and discussions are already underway at a national level to determine a future direction.

It is essential that NSW industry has input into this process and determines its own needs, as ultimately the long term costs and benefits will impact on all of us.

To this end, the OJD Advisory Committee is currently undertaking an intensive process of consultation with all sectors of the NSW sheep industry. The requirements for goats are also being reviewed, but will be considered separately in a mailout to goat producers.

So, please take this opportunity to consider what our industry needs to do to develop a more effective OJD control program for NSW, and ***return the attached questionnaire to the OJD Advisory Committee, Locked Bag 21, Orange, 2800 or Fax: 6391 3208, by Friday 29th August 2003.***

Yours sincerely



Felicity Henderson

### WHAT DO WE KNOW ?

OJD is caused by a bacteria that lives in the gut. Infected sheep can shed huge numbers of live bacteria in their dung. The bacteria can then survive for more than 12 months on pasture or in water. Other sheep get infected when they graze contaminated pasture or drink contaminated water. Even when sheep get infected they don't show symptoms, and can't even be detected by testing, for a long time. Unmanaged, the disease has the potential to cause significant and sudden losses, especially in merino sheep over 2 years of age that were infected as lambs. These facts as well as mixed acceptance of quarantine and zoning make OJD a challenge to control.

One of the most important things we have learnt is that it is not possible to eradicate OJD from the Australian sheep flock in the short term, with our current knowledge, control measures and limited resources.

One of Australia's leading scientists in sheep diseases, Prof Richard Whittington of Sydney University, has summarised the OJD situation and made independent recommendations for future management of the disease. His assessment has been endorsed by Dr Leslie Reddacliff (researcher, Elizabeth Macarthur Agricultural Institute).

Professor Whittington believes that, even with producer support, the spread of OJD cannot be totally prevented but can only be slowed down, and that a major technological breakthrough is required to do more. However, he believes slowing spread of disease is consistent with international trends towards control of Johne's disease in livestock.

Prof Whittington explains that the aim of the current national program was to slow the spread of the disease while doing research to better decide how to deal with the disease long-term.

This research has provided:

- proof that unmanaged OJD can kill more than 10% of adult sheep per year once it is established in a flock
- better testing techniques – notably a pooled faecal culture (dung) test that is internationally recognised, and abattoir surveillance
- an understanding of how long the bacteria can survive and how it spreads
- proof of the difficulty of eradication through destocking
- proof of the value of vaccination to OJD management
- computer modelling to predict spread of the disease within and between flocks, and the effects of vaccination.

We also have a clearer picture of OJD in the national flock, with some areas identified with significant levels of infection, others confirmed as essentially free of infection, and intermediate situations.

**Table: Known levels of infection in different areas, based on National OJD surveillance data at 31st December 2002**

State	Zone	No. of Flocks	Total Infected	Destocked	Current Infected	Apparent Prevalence (% flocks known to be infected)
NSW	Protected	14 563	28	6	22	0.15%
NSW	Control	5 050	201	38	163	3.23%
NSW	Mgmt Area	5 773	867	26	841	14.57%
ACT	Control	85	3	1	2	2.35%
Vic	Protected	20 000	257	206	51	0.26%
Tas	Protected	1 965	11	0	11	0.56%
Tas	Residual	85	27	3	24	28.23%
Sth Aust	Protected	8 150	22	17	5	0.06%
Sth Aust	Control	350	67	46	21	6.00%
W Aust	Free	8 727	2	2	0	0%
Qld	Protected	3 125	0	0	0	0%

### WHAT HAS NSW INDUSTRY SAID TO DATE?

The NSW OJD Advisory Committee has recently completed a state-wide series of producer forums to inform industry of the current situation, and seek guidance on the options for future direction of management of this disease.

There was agreement at all the forums on a number of points:

- No region wants the 'do nothing, just let the disease spread unchecked' option.
- All regions want more research and advisory services.
- All regions want unlimited access to the vaccine.
- All regions want the linking of vaccination and trade.
- All regions want regional monitoring of disease levels.
- All regions want the use of vendor declarations (Animal Health Statements) that have a legal status and provide information about sheep being offered for restocker sale.

To help determine a future OJD program, every producer needs to be consulted, so please consider carefully the following information and questions.

### WHAT COULD HAPPEN WITH OJD OVER TIME ?

– Computer Modelling

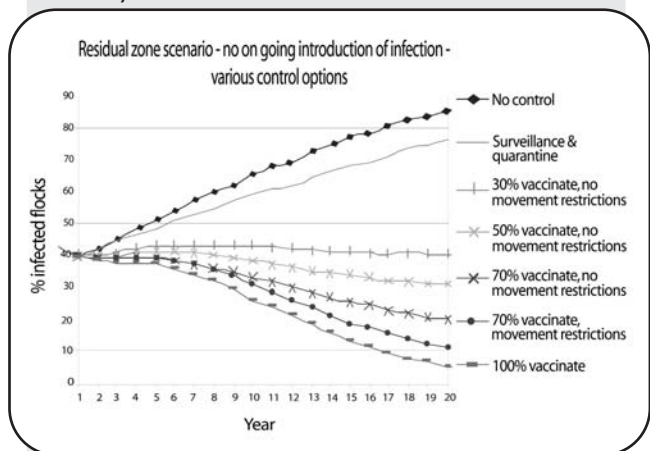
Modelling tells us that the **true** number of infected flocks in any area is likely be significantly greater than the number of detected flocks.

#### In High Prevalence Areas –

Modelling shows us that in districts that already have a significant number of infected flocks the disease will continue to spread unless vaccine is widely used.

Vaccine will **significantly** reduce the level of disease within infected flocks but even if 30% of flocks vaccinate each year, the total number of infected flocks will probably stay about the same.

To achieve any significant reduction in the number of infected flocks in high prevalence areas, at least 70% of flocks need to be vaccinating their restocker lambs annually.



Modelling provided by E Sergeant, Ausvet Services P/L, August 2003

- Movement restrictions mean only allowing sheep that were vaccinated as lambs to be sold as restockers.

#### In Medium Prevalence Areas –

Overall trends are expected to be similar to those above, although the level of vaccination required to reduce the total number of infected flocks may vary.

#### In Low Prevalence Areas –

Surveillance and targeted use of vaccine, in and around infected flocks, should provide good control, but this would be improved if producers/districts undertake measures to prevent introduction of infection.

## WHAT MIGHT A FUTURE PROGRAM LOOK LIKE ?

If we accept that slowing the spread of the disease is a reasonable objective, how should we go about it ?

Ideally we have to do two things:

1. Where there is already a lot of disease, or where new infected flocks are being identified, we need to find a way to get as many producers as possible using vaccine
2. Where there is little or no disease, we need to find ways of minimising its introduction, and if it does get in then we need to have measures to stop it spreading.

Let's look at the things we, as an industry, might be able to do.

## VACCINE - A KEY MANAGEMENT TOOL

The Gudair vaccine was registered for general use in Australia in April 2002. It is a killed vaccine and cannot give the disease to your sheep. However the vaccine can prevent most of your sheep being affected by OJD if they are vaccinated before they come into contact with the OJD bacteria. This means vaccine can reduce both disease and shedding within infected flocks as well as helping protect uninfected flocks.

These are essential strategies to slow disease spread. Widespread use of vaccine could be achieved by:

- Making vaccine available to all producers
- Subsidising the cost of vaccine through a producer paid "vaccine" levy (see section - How Many \$\$\$\$ ?)
- Making vaccination compulsory in areas where the disease is spreading
- Educating all producers in areas of spread to use vaccine, ideally before their flock gets infected
- Rewarding producers that put a vaccination program in place in their flock (eg with a market advantage or movement concessions)

WOULD YOU SUPPORT ANY OF THESE OPTIONS?

## HOW MANY \$\$\$\$ ?

In March 2003, NSW Agriculture estimated that there were approximately 5.1 million lambs in the OJD Management Area and Control Zone that would be suitable as restocker sheep. If all these lambs were eligible for a \$1.00 vaccine subsidy (as called for by some sections of industry), then the cost would be \$5.1 million per annum. It is important to note that the last OJD levy collection raised under \$4.0 million.

In NSW, state industry funds are raised through a voluntary contribution/ compulsory levy. It is a complex way of raising funds, but legal opinion has not found an alternative approach.

Under the national OJD program, attempts were made to raise a national financial assistance package. These attempts were not successful and any future efforts to raise national financial assistance are unlikely to succeed.

## KEEPING DISEASE OUT OF YOUR FLOCK

If you live in an area where there appears to be little if any infection, you probably want to keep the disease out of your area for as long as possible

OR

If you live in an area where there is a reasonable chance your flock could become infected, or is already infected, you will want to at least make sure you keep the disease at a very low level.

The sorts of things you could do to protect your flock and district include:

- Vaccinating your whole flock
- Vaccinating your lambs
- Use grazing and other management techniques as well as vaccine
- Testing your flock to see if you have the disease
- Only buying restockers that were vaccinated as lambs
- Only introducing sheep from low risk areas - and vaccinating them on arrival if you live in a higher risk area
- Only introducing sheep from tested or accredited MAP flocks
- Asking for a vendor declaration for all sheep you introduce

WHICH OF THESE THINGS WOULD YOU CONSIDER DOING TO PROTECT YOUR FLOCK?

## KEEPING DISEASE OUT OF YOUR REGION

Because this disease spreads easily between neighbouring flocks, the actions of your neighbours can significantly affect your own flock.

If you live in a part of NSW where little or no infection has been found, your whole district may elect to become an OJD Exclusion Area ie a self-funded area which voluntarily puts measures, including regulation, in place to minimise the risk of introduction and/or spread of disease. This would help to ensure that everyone in your district is being careful not to introduce disease.

The sorts of measures that might apply in an Exclusion Area include:

- Limiting the types of sheep that can enter the area, using official regulation
- Identifying any infected flocks within the area and applying quarantine restrictions until control measures are in place
- Requiring that any infected flocks within the area either start a vaccination program or undertake to eradicate the disease by some other method (eg destocking their sheep for a prescribed period of time)
- Requiring that any neighbours of infected flocks within the area start a vaccination program
- Providing financial support to any flocks adversely affected by such regulations
- Producers paying on **annual** basis to a local area fund for these measures

WOULD YOU SUPPORT ANY OF THESE MEASURES WITHIN YOUR REGION?

WOULD YOU ACCEPT THESE SORTS OF REQUIREMENTS BEING PLACED ON YOUR OWN FLOCK?

WOULD YOU BE WILLING TO PAY ANNUALLY TO A LOCAL AREA FUND FOR THESE MEASURES?

## WANT MORE INFORMATION?

More detailed information (including the following papers) can be obtained from these contacts below:

- The Future of OJD Control in Australia, Professor Richard Whittington, July 2003.
- Summary of current National OJD Program surveillance data
- Computer Modelling – Dr Evan Sergeant, Ausvet Services

[www.saleyards.info](http://www.saleyards.info)

[www.ssaaonline.com](http://www.ssaaonline.com)

[www.agric.nsw.gov.au](http://www.agric.nsw.gov.au)

[www.nswfarmers.org.au](http://www.nswfarmers.org.au)

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Vice Chairman OJD Advisory Committee,  
Ph 6343 6248

Jane Littlejohn, Executive Officer, NSW OJD  
Advisory Committee – Ph 94517255

Also for general information contact  
- your local Rural Lands Protection Board office.  
- [www.csl.com.au](http://www.csl.com.au)

# Future Management of OJD is in Your Hands

## - Questionnaire -

To have your say, place a tick in the boxes and fax or mail back by Friday 29th August, 2003 to: Locked Bag 21, Orange, 2800, or Fax 6391 3208

1. My Rural Lands Protection Board (RLPB) district is \_\_\_\_\_.
2. Widespread use of OJD vaccine could be achieved in a number of ways. Which of these options do you support (tick one or more boxes)?
  - Making vaccine available to all producers
  - Subsidising the cost of vaccine through a producer paid "vaccine" levy
  - Making vaccination compulsory in areas where the disease is spreading
  - Educating all producers in areas of spread to use vaccine, ideally before their flock gets infected
  - Rewarding producers who put a vaccination program in place in their flock (eg with a market advantage or movement concessions).
3. There are a number of things you could do to protect your flock and district. Which of these would you consider doing (tick one or more boxes)?
  - Vaccinating your whole flock
  - Vaccinating your lambs
  - Use grazing and other management techniques as well as vaccine
  - Testing your flock to see if you have the disease
  - Only buying restockers that were vaccinated as lambs
  - Only introducing sheep from low risk regions - and vaccinating them on arrival, if you live in a higher risk area
  - Only introducing sheep from tested or accredited MAP flocks
  - Asking for a vendor declaration for all sheep you introduce
- 4a. A range of measures might apply in an Exclusion Area\*. Would you support any of these within your region (tick one or more boxes)?
  - Limiting the types of sheep that can enter the area by using official regulation
  - Identifying any infected flocks within the area and applying quarantine restrictions until control measures are in place
  - Requiring that any infected flocks within the area either start a vaccination program or undertake to eradicate the disease by some other method (eg destocking their sheep for a prescribed period of time)
  - Requiring that any neighbours of infected flocks within the area start a vaccination program
  - Providing financial support to any flocks adversely affected by such regulations
- 4b. Would you accept these sorts of requirements being placed on your own flock?
  - Yes
  - No
- 4c. Would you be willing to pay annually to a local area fund for these measures?
  - Yes
  - No

\*If you live in a part of NSW where little or no infection has been found, your whole district may elect to become an OJD Exclusion Area ie a self-funded area which voluntarily puts measures, including regulation, in place to minimise the risk of introduction and/or spread of disease.

Please return by Friday 29th August, 2003 to:  
By Fax - 6391 3208 or  
By Mail - OJD Industry Consultation  
c/- Locked Bag 21, Orange, NSW, 2800



## **Appendix 2**

### **NSW Industry Survey findings NSW OJD Advisory Committee, September 2003**

**Overall results from OJD Survey**

**OJD Survey responses from the Control Zone**

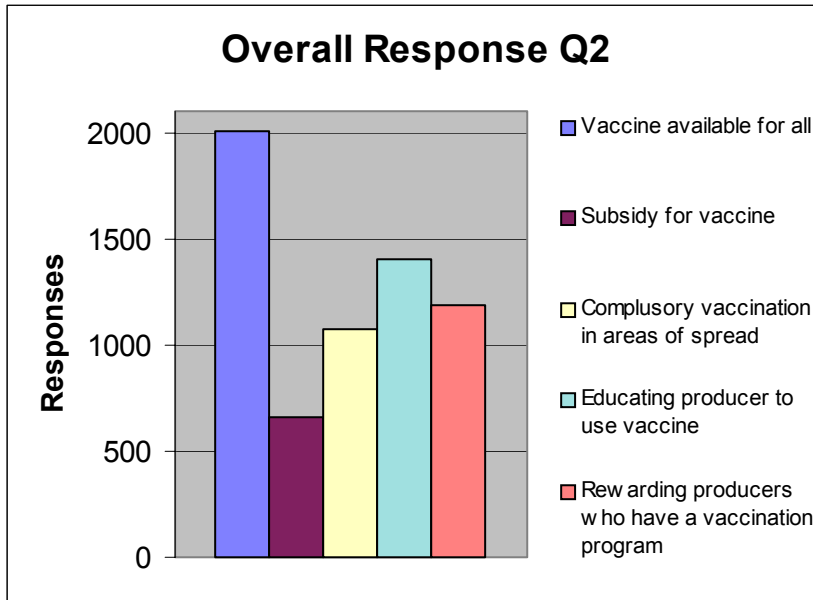
**OJD Survey responses from the Management Area**

**OJD Survey responses from the Protected Zone**

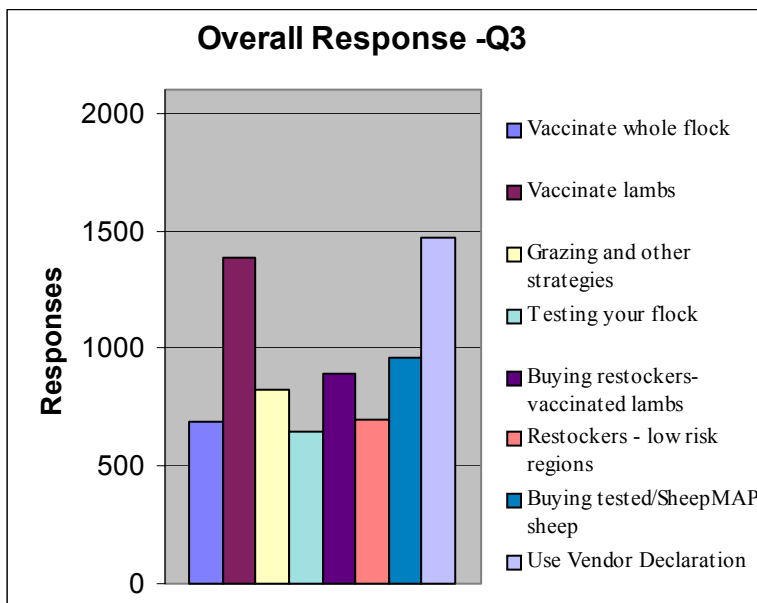
# Overall results from OJD Survey

There were 2481 replies to the survey as of 2/9/03. (78 did not have their RLPB and need to be allocated to a Board based upon their number).

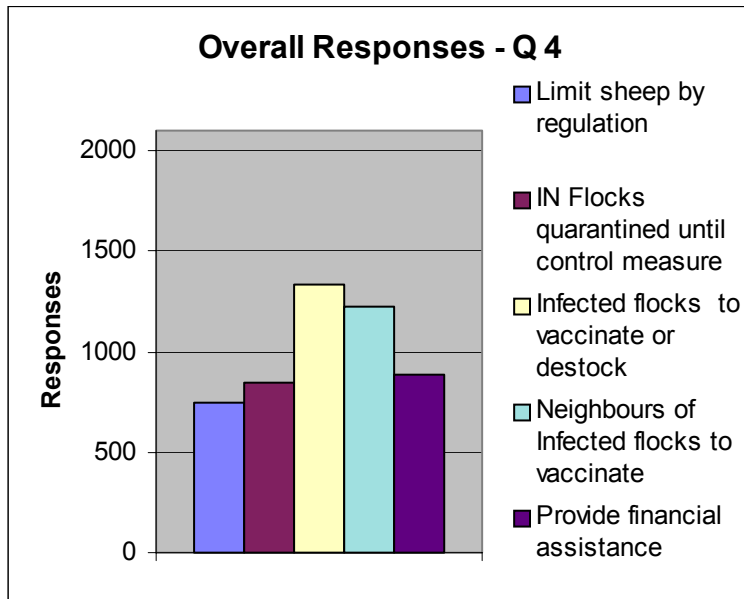
Question 2 sought opinions on how best to achieve widespread vaccine uptake. The following is how producers responded.



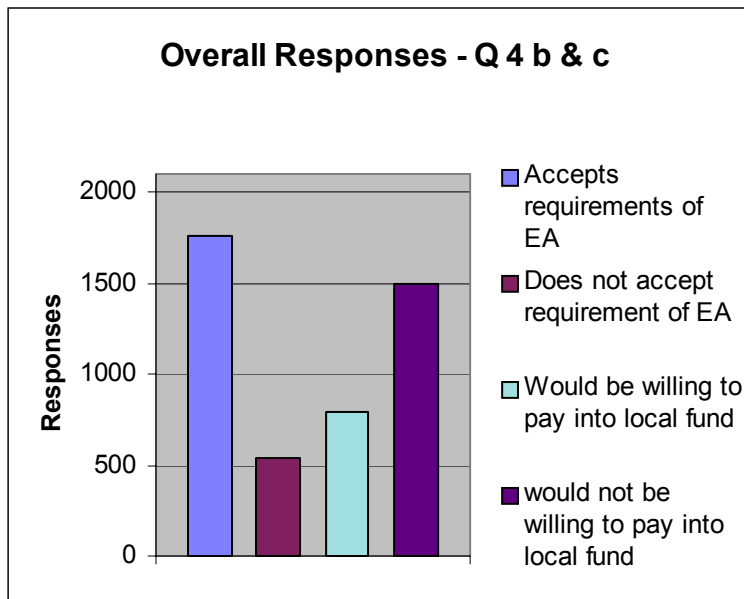
Question 3 sought producer opinions on how they would protect their own flocks and their district.



Question 4 asked about a proposed Exclusion Area and what activities producers would support within that area.



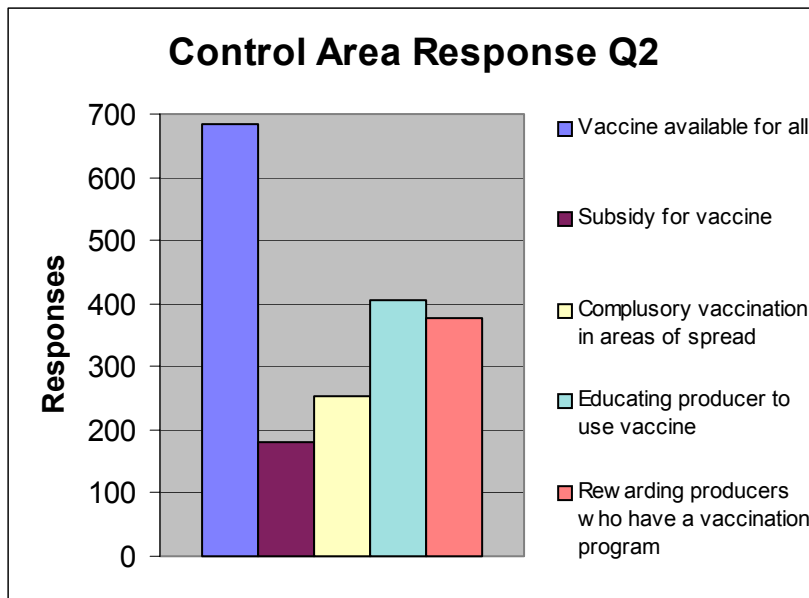
Question 4 b and 4 c focussed on their willingness to either have these measures applied to them, (4b) and contributing to a local fund, 4(c).



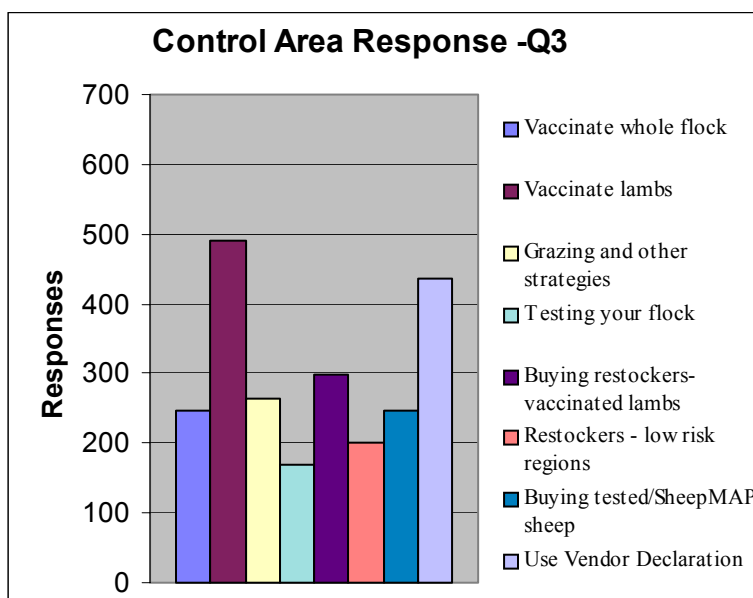
# OJD Survey responses from the Control Zone

There were 711 responses from producers in the Control zone as at 02/09/03.

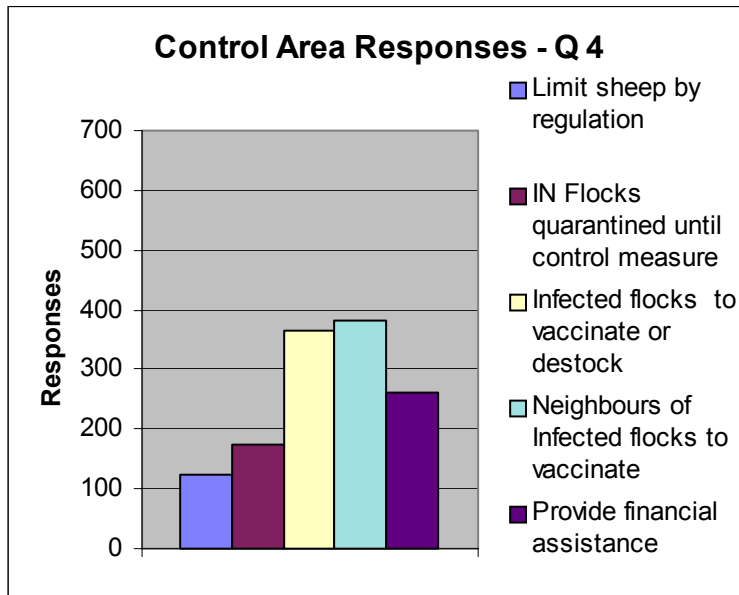
Question 2 sought opinions on how best to achieve widespread vaccine uptake. The following is how producers currently located in the Control Zone Area responded.



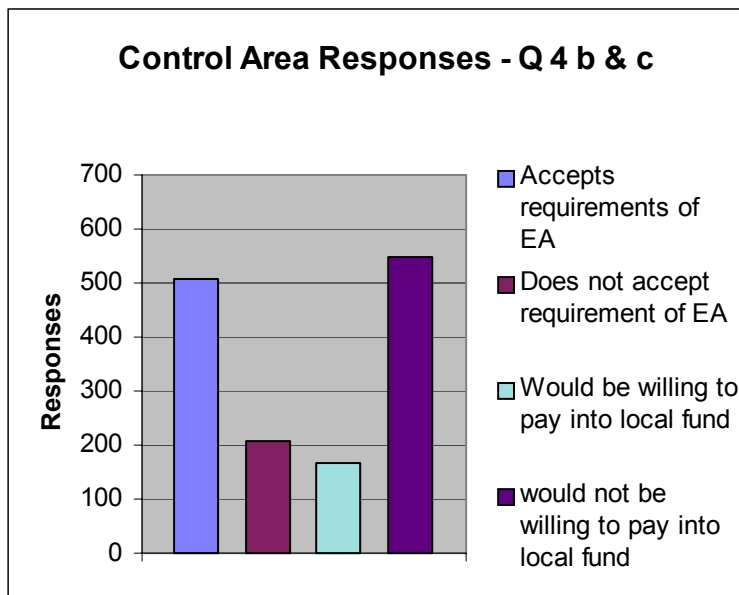
Question 3 sought their opinions on how they would protect their own flocks and their district.



Question 4 asked about a proposed Exclusion Area and what activities producers would support within that area.



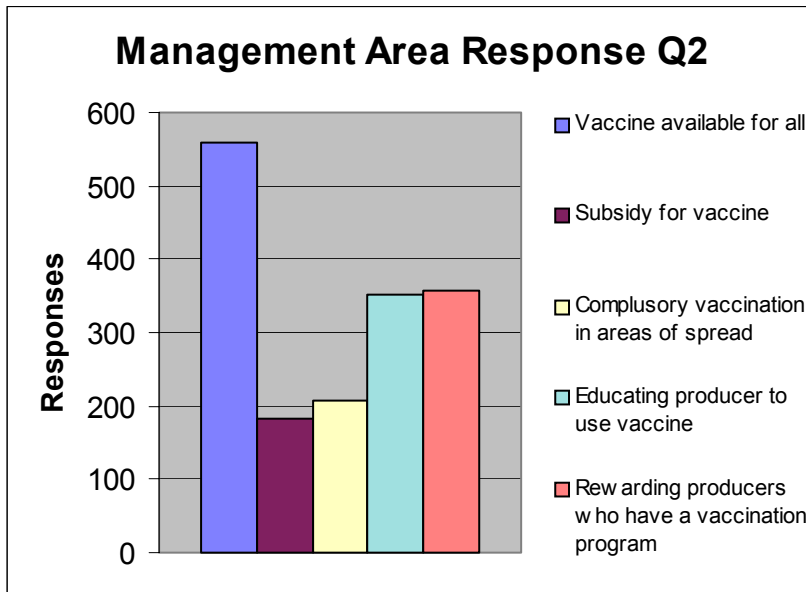
Question 4 b and 4 c focussed on their willingness to either have these measures applied to them, (4b) and contributing to a local fund, 4(c).



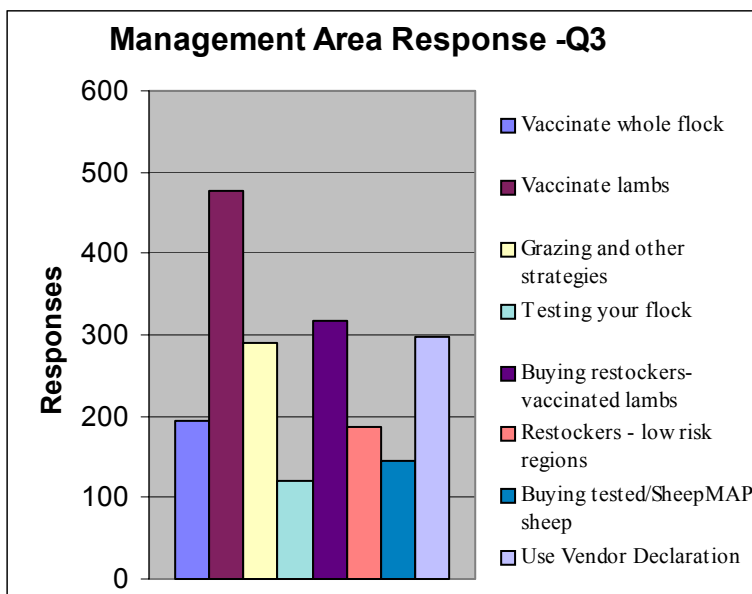
# OJD Survey responses from the Management Area

There were 611 responses from this area as at 02/09/03.

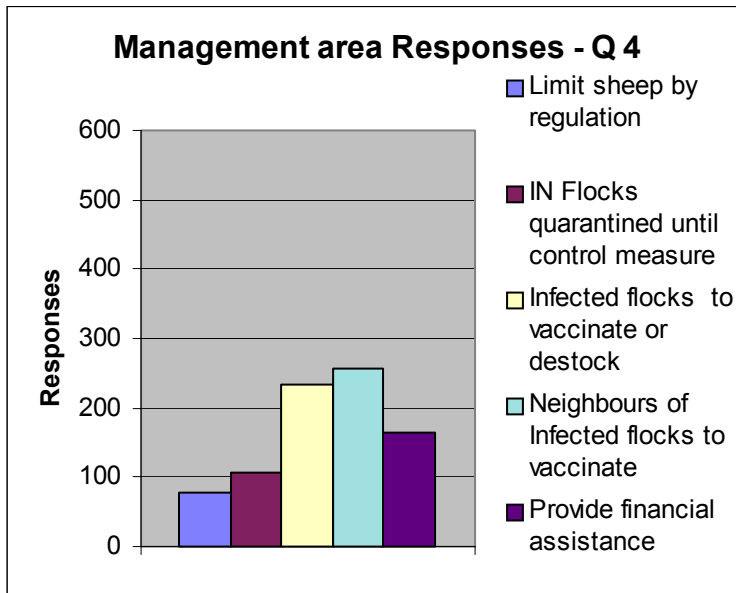
Question 2 sought opinions on how best to achieve widespread vaccine uptake. The following is how producers currently located in the Management Area responded.



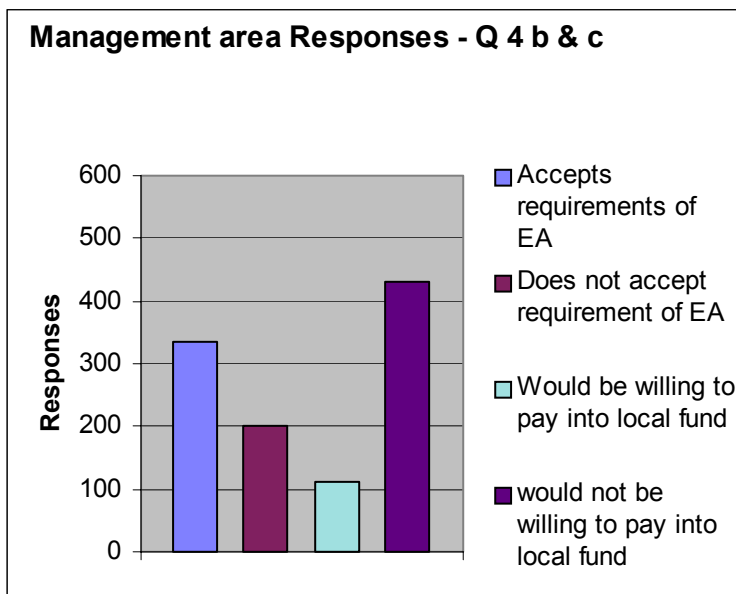
Question 3 sought their opinions on how they would protect their flocks and their district.



Question 4 asked about a proposed Exclusion Area and what activities producers would support within that area.



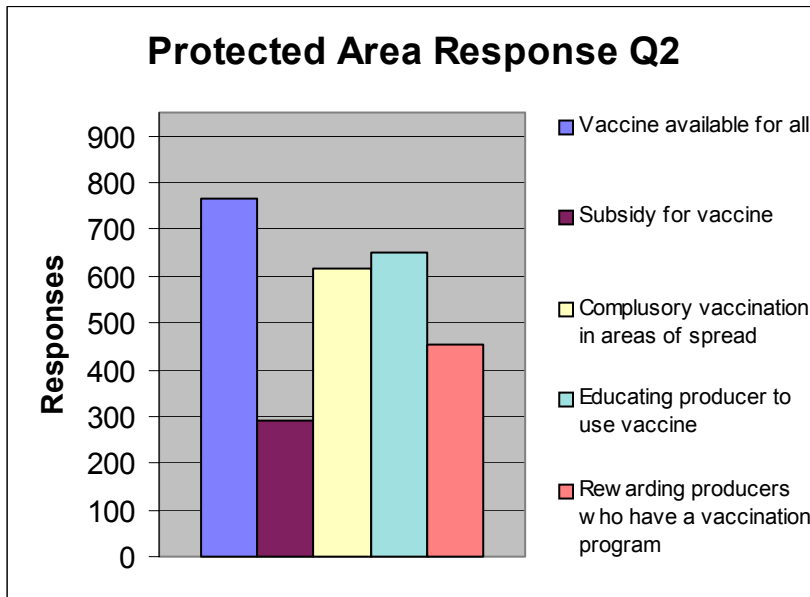
Question 4 b and 4 c focussed on their willingness to either have these measures applied to them, (4b) and contributing to a local fund, 4(c).



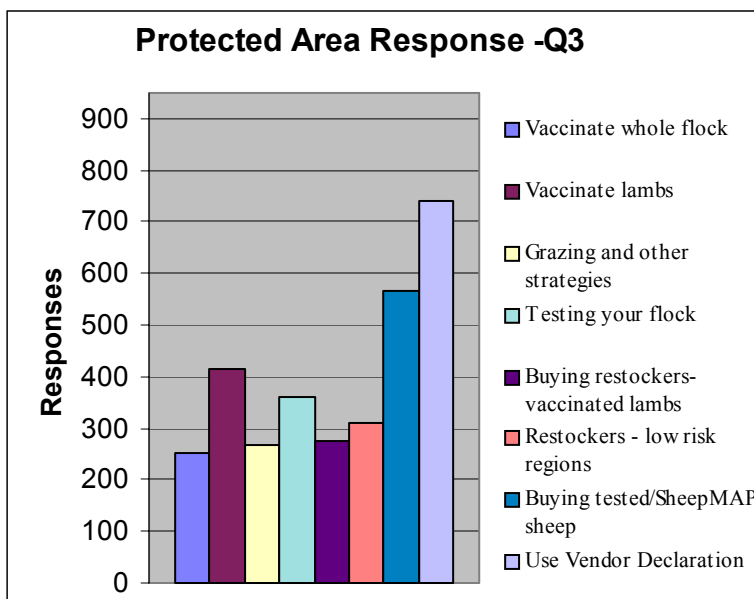
# OJD Survey responses from the Protected Zone

There were 1081 responses from the Protected zone as at 02/09/03.

Question 2 sought opinions on how best to achieve widespread vaccine uptake. The following is how producers currently located in the Protected Zone responded.

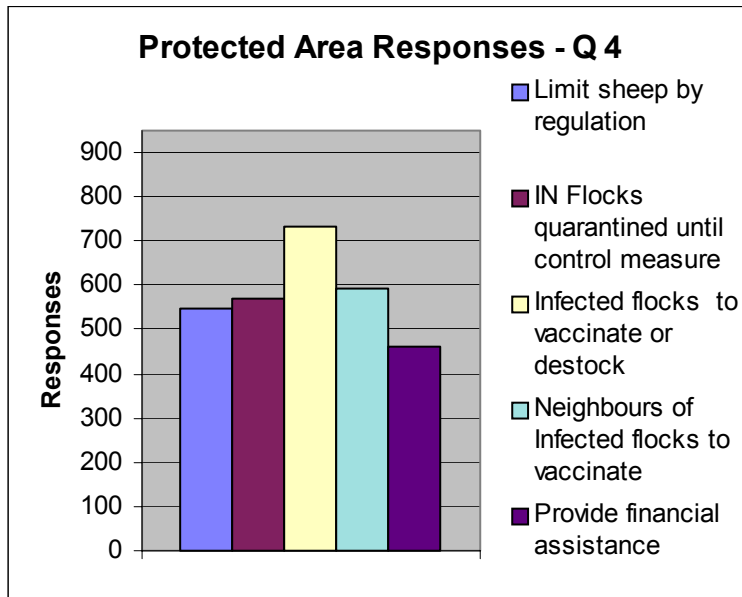


Question 3 sought their opinions on how they would protect their flocks and their district.

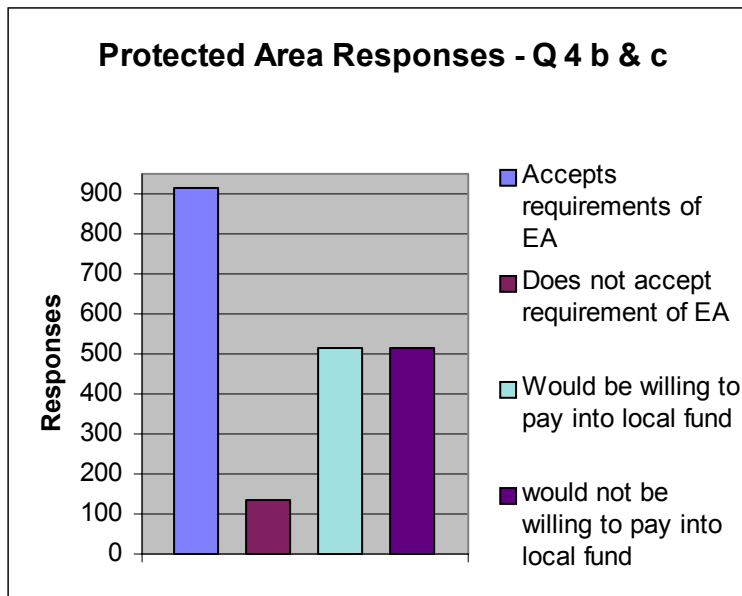




Question 4 asked about a proposed Exclusion Area and what activities producers would support within that area.



Question 4 b and 4 c focussed on their willingness to either have these measures applied to them, (4b) and contributing to a local fund, 4(c).



# Appendix 3

## The Future of OJD Control in Australia

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Prepared for the NSW OJD Advisory Committee

Prof Richard Whittington, University of Sydney, July 2003

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### **Background**

OJD was probably introduced from New Zealand into the Australian sheep flock in the 1950's. It was not detected until 1980. By 2003 over 6000 flocks were confirmed infected or under suspicion. A national program to deal with the perceived impact of OJD was planned from about 1995 and commenced in 1998 (National OJD Control and Evaluation Program - NOJDP). A separate market assurance program (MAP) was established to identify clean flocks. The NOJDP has been in operation for 4 years and although much has been achieved there have been many difficulties.

### **Outcomes of the NOJDP 1998 to 2003**

The aims of the NOJDP were to slow the spread of the disease while conducting research to better define the approach required to deal with it. Disease surveillance, quarantine, zoning and other measures were used to identify infected flocks and reduce spread of infection. Research was conducted in microbiology, epidemiology, eradication methods and vaccine use. The outcomes were:

- Clarification of the extent of OJD in the national flock, with some areas identified with significant levels of infection, other areas confirmed as essentially free of infection, and intermediate situations.
- Increased knowledge through research trials, in particular:
  - Proof that OJD kills >10% of adult sheep when established in a flock
  - Improved tests for flocks – PFC and abattoir surveillance
  - Measurement of environmental survival, which is finite
  - Proof of difficulty of eradication through destocking
  - Identification of the main means of spread
  - Proof of the value of vaccination
  - Computer modelling to predict spread and effects of vaccination

The main problems that arose as a result of (*or were an inherited concern for*) the NOJDP were:

- Erosion of industry/producer support, particularly in endemic areas, associated with the regulatory program which restricted trade, and lack of financial compensation, leading to diminished reputations of government authorities, industry associations and individuals, and establishment of radical farmer groups
- Variable degree of producer and professional compliance with the regulatory aspects of the program in NSW leading to diminished disease control effectiveness
- Polarisation of views between regions and states, such that a series of programs exist in practice rather than a unified national approach.
- Non-uniformity in surveillance effort between regions and states, with consequent anomalies in zoning
- Loss of direction and preoccupation with detail
- Few benchmarks or targets in the original plans, making objective review of the effectiveness of the program very difficult

- An inadequate level of understanding of OJD among producers despite a communications program
- A confused situation where there are currently at least four separate reviews /options papers/discussion documents

*It is widely accepted that the program should not continue in its present form.*

## ***A change in philosophy for OJD control in Australia***

Rather than refinements or modifications to the NOJDP, an alternative plan is required. It would acknowledge that even with producer support the spread of disease can only be slowed and not prevented and that a major technological breakthrough is required to do more. The plan would also place the significance of the disease into perspective and use existing control measures to reduce its spread and impact.

A view has been presented that OJD could seriously impact future trade and as an infectious disease can be controlled like any other infectious disease, using sound epidemiological principles. This is partly true but the slow and insidious nature of OJD creates too many opportunities for the infection to evade detection and so spread, and too few opportunities for tracing infection in time to prevent further spread.

There needs to be acceptance that:

- OJD cannot be eliminated by regulation
- OJD will continue to spread regardless of the approach adopted, using any of the current technologies singly or in combination (tests, vaccine, risk assessment strategies, quarantine). Spread can only be slowed or delayed. A technological breakthrough is needed to alter this situation but will probably take about 20 years to deliver.
- OJD is absent or present at such a low rate in some regions/states that an exclusion policy may be justified if it can be equitably funded and biosecurity protocols properly planned and enforced.
- OJD need not be viewed with the degree of alarm that it is in some circles, for the following reasons:
  - The main international driver for control of JD in farm animals is a perception that there may be a link to human disease. This is unproven and may take 20 years to confirm or refute scientifically.
  - JD is present in most countries. There is no alternative OJD-free high volume supply source of lamb, mutton or live sheep for international markets.
  - Trade barriers based on disease risk would be very hard to substantiate under World Trade Organisation (WTO) Sanitary and Phytosanitary agreements. A country would need to show that it does not have OJD, or that it has an effective control program in place to reduce prevalence or that strains of *M. paratuberculosis* present in Australia were more virulent. Furthermore the trade would have to pose a threat of disease introduction (eg live sheep destined for farms). In fact OJD is widely distributed overseas, strains do not differ greatly between countries and little threat of OJD introduction is posed by meat products or live sheep for human consumption. Australia is one of the few countries with a control program. Trade bans based on

risk to humans are unlikely as JD is widely distributed. As wool is not a source of infection OJD does not impact the wool market. International pressure to control JD in farm animals will probably build, but it will probably be at a rate consistent with the ability of developed countries to develop successful control programs. This is limited by technology overseas as it is here.

- Animal welfare assurance may in future be required for trade to the EU. OJD is one of many diseases that cause morbidity and mortality in sheep and for which control strategies have been devised; there is no specific animal welfare issue associated with OJD that would affect trade.
- On-farm losses due to OJD can be controlled or reduced to acceptable levels through vaccination. This is cost effective for an individual producer when losses reach unacceptable levels (say 5-10% of adult sheep per annum). There is no evidence in Australia that vaccine site lesions lead to downgrading of carcasses.
- If used before losses reach significant levels vaccination will slow spread on-farm and between farms, for industry-wide benefit.
- Other control strategies based on grazing and pasture management will be identified in current epidemiology research trials.
- On purely economic grounds it is difficult to argue for control of OJD beyond the level of control achievable using existing strategies.

Evidence for the above conclusions can be found in numerous industry and scientific publications.

## ***A future national program***

The following points are intended only as a framework for discussion. Options are provided for some of the points. Detail will be required and can be inserted by relevant authorities later if these preliminary ideas are deemed to have any merit.

### **Aims**

The primary aim of a future national program would be to attempt to slow the spread of OJD using policies and programs acceptable to producers while awaiting a technological breakthrough that would permit a comprehensive response in keeping with international best practice. It would be based on revised philosophies related to OJD as outlined above.

### **Delivery**

- A future national program would be simple to understand and implement
- It would have a large educational component
- It would not depend on a complex organisational structure nor require a large investment in human resources to ensure its daily operations or compliance with its rules
- It would be based on simple well-accepted tools, and would not require complex property specific assessment
- It would use existing personnel, tests and market systems
- It would be managed at farm level by producers in conjunction with private veterinarians, government veterinary officers and RLPB staff (in NSW), in the same way that producers

work with these people on other programs related to animal health (eg worm control, footrot)

- It would contain policies related to affected properties/regions, uninfected properties/regions and surveillance
- It would consist of three main programs: education, vaccination and surveillance
- It would consist of a series of state-based programs that reflect the similarities and differences between states and so would provide the flexibility to allow states to pursue outcomes most appropriate for their own industries.

## **Policies**

### **Policies to reduce the impact of OJD on affected farms/regions**

- Replace quarantine zones with information zones; maintain free zone in WA, QLD, if self funded and equitable. An information zone is a zone describing a particular prevalence of OJD and is maintained purely for awareness of disease distribution
- The Market Assurance Program continues
- Vaccine is the key tool for disease control as it has proven efficacy and is accepted by producers
- Use of vaccination to facilitate trade from affected properties

### **Policies to reduce the spread of OJD to uninfected farms/regions**

Voluntary strategies encouraged for uninfected producers/regions to:

- Vaccinate if infection detected
- Maintain biosecurity if uninfected (vaccinate, fences, purchase MAP sheep, use few sources of replacements, purchase locally if low prevalence region)
- Form catchment groups for a consistent regional approach
- De-stigmatise through communication and education
- Regions self fund their exclusion program; discourage (through education) any regional practices that are unlikely to offer the degree of protection hoped for

### **Policies for surveillance**

- Surveillance results would be used only to define information zones, target delivery of education and communications materials, identify properties where vaccine should be applied and enable planning of future disease control options using improved technologies
- The frequency of surveillance would be such that costs are minimised and benefits maximised
- Abattoir surveillance would be the main tool because it tends to find properties with a prevalence of OJD coincident with that where application of vaccine would be economically viable (it is most effective where infection is well established)

## **Structure of the program**

### **Education program**

There is great need to increase the level of awareness in the rural community about OJD, its insidious behaviour, its significance and options for on-farm practices that:

- Reduce the impact of OJD if present
- Help prevent the introduction of OJD if not present
- De-stigmatise the disease and encourage producers to take ownership of the situation on their own properties
- Ensure that producers do not have unrealistic expectations of the program

Education is required in all regions but immediately in those with high prevalence and those with minimal prevalence. Surveillance data would be used to plan delivery of the education and communication program to these areas in particular.

### **Vaccination program**

The options include a program based on either:

- voluntary, (drivers to be identified), or
- compulsory vaccination

Trade from affected properties would be enabled by vaccination (<12 wks). Further options to consider include:

- vaccinated sheep identified by unalterable earmark
- a quality assurance program for vaccination covering administration of vaccine, user-safety, sheep identification, saleyard verification of vaccination status of sheep listed for sale, auditing
- industry funded vaccine subsidies where there is limited economic benefit for a producer to vaccinate, i.e. where industry is the main beneficiary
- abattoir surveillance used as the primary tool to identify properties where vaccine should be applied

### **Surveillance program**

- Passive - abattoir surveillance, on-going in endemic areas to identify infected properties and monitor effectiveness of management on these properties; capable of detecting major changes in prevalence in low prevalence areas (i.e. from low to detectable)
- Active - periodic surveys in low prevalence areas to confirm information zone status
- Positive surveillance results trigger education and vaccine responses

# Appendix 4

## NSW OJD ADVISORY COMMITTEE

### Proposed Vision for the Future Outcome of NSW and National OJD Management

1. Areas\* currently with little or no OJD retain or improve their status.
2. Areas\* with some OJD contain the disease at or below current levels.
3. Areas\* with endemic OJD manage it to reduce both the number of farms infected and the prevalence of OJD on infected farms.

\*Areas defined = individual farms or groups of landholdings or a region

In achieving these outcomes for all flocks (including infected flocks), it is expected that they occur in an environment where:

- There is maximum incentive for disease control and minimum restraint on domestic and world trade.
- It is incumbent on all producers to share the responsibility for sustainable disease control. The low prevalence areas acknowledge their responsibility to provide for their own protection.
- Producers in all areas are entitled to reasonable market access and reasonable protection against the introduction of the disease.
- Producers in all areas have a responsibility to provide for protection from disease spread and minimise the risk of disease spread to others.

### Proposed Guiding Principles of any Future NSW and National Program to be developed with the above Vision

1. Limit the spread of OJD between farms and regions.
2. Minimise the impact of OJD regulation.
3. Minimise the effect of OJD on farm profitability and productivity, animal welfare and trade.
4. Maintain complementary approaches between jurisdictions so that they are mutually recognised.
5. Engage producer support.
6. Encourage responsible management of OJD with enhanced trading opportunities available to farmers as an incentive to undertake disease control. This will include clear pathways for affected flocks to progress within acceptable timeframes.
7. Improved understanding of OJD through continued education, research and development.

(Note: The order in which the above principles are listed is not intended to convey any particular priority)

# **Appendix 5**

## **National Framework for the Future Management of OJD in Australia**

**Discussion Paper**

**May 2003**



# National Framework for the Future Management of OJD in Australia

## Discussion Paper

May 2003

Prepared by representatives from the sheep industry,  
OJD Advisory Committees, State and Commonwealth governments.  
Coordinated by Animal Health Australia.

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# Executive Summary

**The National Ovine Johne's Disease Program (NOJDP) is due to conclude in June 2004.  
The future direction of ovine Johne's disease (OJD) management in Australia now has to be agreed.**

The two broad approaches for dealing with OJD have been considered:

1. Eradication
2. On-going Management.

The NOJDP has demonstrated that national eradication is not feasible in the short term and should not be pursued. However, the NOJDP has provided considerable information on OJD and issues relating to its management. It is considered desirable the disease continue to be managed to achieve a vision developed for the sheep industry in the future in which:

- > Areas currently with little or no OJD will remain unaffected.
- > Areas with some OJD will contain the disease at or below current levels.
- > Areas with endemic OJD will manage it to reduce both the number of farms infected and the prevalence of OJD on infected farms.

Seven principles have been identified which it is considered should guide the development of a national approach to the future management of OJD in Australia in achieving this vision:

1. Control (limit) the spread of OJD between farms and regions.
2. Minimise the impact of OJD regulation on affected producers.
3. Minimise the effect of OJD on animal welfare, farm productivity and trade.
4. Maintain complementary and mutually recognised approaches between jurisdictions to enhance the effectiveness of regional control and minimise its impacts on / across regional trade.
5. Engage producer support.
6. Encourage responsible management of OJD with enhanced trading opportunities available to farmers as an incentive to undertake disease control.
7. Improved understanding of OJD through continued research and development.

While it is considered much of the required activity would be industry or State-based, the national and state sheep industry bodies and governments consider that a national approach is essential and that a national framework for the future management of OJD is required.

Five core elements have been identified as being required in the framework:

1. Research and Development
2. Communications
3. National Coordination
4. Control
5. Surveillance

Three options for Control Strategies are proposed for consideration:

### ***Option 1 - Zone risk-based control program***

Key elements

- > Trading restrictions between zones.
- > Simplification to Free, Protected and Vaccinating Zones.
- > Use of vaccine in higher prevalence areas (Vaccinating Zones).
- > Incentives to enable producer participation.
- > Continued surveillance in Protected and Free zones, with restrictions on infected flocks.

### ***Option 2 – Flock risk-based trading program***

Key elements

- > No broad based trading restrictions based on zones (other than to Free Zones).
- > Unrestricted access to vaccine in all zones (including Free Zones?).
- > A Property Disease Management Plan & vaccination necessary for Infected flocks to trade – vaccinates able to be traded.
- > Vaccination or testing for neighbouring flocks / trace forward flocks to trade Approved Vaccinates or TMS (Tested to MAP Standard) stock.
- > Mandatory vendor declarations on OJD status (OJD Score) with sale of sheep
- > Promotion of risk assessment associated with OJD Score.
- > Regulation of some “high risk” movements.

### ***Option 3 - Staged introduction over 3 years of a flock risk-based trading program***

#### Key elements

- > Zone based movement restrictions to stay in place for next 3 years.
- > Simplification to Free, Protected and Vaccinating Zones.
- > Unrestricted access to vaccine in all Zones (including Free Zones?).
- > Voluntary vendor declarations on OJD status (OJD Score) with sale of sheep and land.
- > Promotion of risk assessment associated with OJD.
- > Incentives to enable producer participation – progressively phased out.

This discussion paper, developed with input from sheep industry and government representatives, sets out the above principles and outlines possible options for the future management of OJD in Australia. It is intended for wide distribution within the sheep industry as part of the consultative process to obtain agreement on the way forward.

It is intended that the representatives from the sheep industry and government who met to develop this discussion paper will meet again in September 2003 to agree on the preferred option and determine the funding arrangements necessary to implement the agreed approach to the management of OJD from July 2004. During this consultative process it is anticipated that sheep industry organisations, OJD advisory committees and agriculture departments will arrange meetings to explain the options and to seek input on the preferred approach.

**All sheep producers are encouraged to contact their industry organisation and to have input into this consultative process.**

# One

## 1. Background

**In 1998, the national and state sheep industry bodies and governments agreed to a nationally funded approach to the management of ovine Johne's disease (OJD). Following a brief Interim Research and Surveillance Program (ISP), the six-year \$40.1 million National OJD Control and Evaluation Program (NOJDP) commenced.**

The objectives of this program were:

- > to provide, by 2003, sufficient information to allow an informed decision on the national management of OJD, and especially on the feasibility and cost-effectiveness of eradication.
- > to control OJD during the research and evaluation period.

The NOJDP has provided considerable new knowledge on many aspects of OJD as well as new tools to use in the control of the disease. The NOJDP is approaching its end and the future national approach to the management of OJD in Australia now has to be agreed.

National and state sheep industry representatives, representatives from state OJD advisory committees and from State and Commonwealth agriculture departments and from Animal Health Australia met in December 2002 to identify broad principles to be considered in the future management of OJD in Australia. These principles were developed further over the following months into this paper which sets out these principles and outlines possible options for the future management of OJD in Australia. It is intended for wide distribution within the sheep industry as part of the consultative process in obtaining agreement on the way forward.

It is intended these same representatives will meet again in September 2003 to agree the preferred option and determine the funding arrangements necessary to implement the agreed approach to the management of OJD from July 2004. During this consultative process it is anticipated that sheep industry organisations, OJD advisory committees and agriculture departments will be arranging meetings to explain the options and to seek input on the preferred approach. All sheep producers are encouraged to contact their industry organisation and to have input into this consultative process.

Other industries, such as the goat industry, are also impacted upon by OJD. This paper considers options for the sheep industry only. A paper putting a position on behalf of the goat industry is at Attachment 1.

Consideration of the most appropriate approach to the management of OJD and BJD in the goat industry will need to be the subject of a separate consultative process.

## 2. Outcomes from the NOJDP

**Key outcomes of the NOJDP that enable a more informed approach to the management of OJD nationally include:**

### *Mapping of distribution / prevalence data nationally*

- > The Surveillance Program has demonstrated that the disease remains unevenly distributed, with areas of higher or medium prevalence (Residual and Control Zones) and areas of low or nil prevalence (Protected and Free Zones). The disease is presently focussed in central and southern NSW, Flinders Island (Tas) and Kangaroo Island (SA). The greater parts of NSW, Victoria, South Australia and Tasmania currently have sporadic isolated disease. No disease is known in Queensland or Western Australia (although surveillance has detected infection in individual introduced animals).

The distribution and estimated prevalence of the disease is given in Table 1. Whilst surveillance data has highlighted the uneven distribution of the disease, the current known prevalence is believed to be lower than the actual prevalence. This is due to a number of reasons, including producer reluctance to have infection confirmed due to the impact on trading options.

Table 1. Estimated prevalence by region at 31 December 2001.

State	Proposed Zone	Estimated prevalence, December 2001	
		Median	95% Interval
NSW	Residual	38.4	34.7 – 43.1
	Control	15.0	12 - 18.5
	Protected	0.8	0.1 - 1.7
Qld	Protected	0.2	< 0.5
SA*	Protected	0.2	0 - 0.4
Tas*	Protected	0.3	0.1 - 0.9
Vic	Protected	1.8	0.1 - 3.5
WA	Free	0.2	< 0.6

\* Does not include Kangaroo Island or Flinders Island data.

Source: Sergeant and Baldock. In press.

### ***Vaccine registration / efficacy data***

- > A reasonably effective vaccine has been registered to assist with control. Trials are continuing on the efficacy of the vaccine, but results are encouraging.

### ***Evaluation of Property Disease Eradication Programs***

- > A major trial on commercial farms has demonstrated a lower success rate than predicted from destocking / restocking in eliminating OJD. While this appears to be due mainly to difficulties in sourcing clean replacements (and the difficulty in identifying clean sources) rather than survival of the organism on the farm, it nevertheless detracts from any programs based on disease elimination by destocking.

### ***Lack of development of a quick early detection test***

- > Pooled Faecal Culture has been shown to be a relatively inexpensive and sensitive test and is now the major screening test used. However, it can still not detect early infections and the period of 3 months or longer to gain negative results is a major limitation to its use. The gamma interferon assay shows promise as a test in sheep, but it is likely to be relatively expensive and may not be robust enough to be applied widely in the sheep industry.

### ***Modelling outcomes***

- > Modelling of the disease has demonstrated that, once prevalence of infection in a region exceeds 1%, control is difficult and, if it exceeds 10%, it is likely to rapidly reach 40-50%. Modelling has also suggested that vaccination, even assuming conservative efficacy estimates, is not only a cost-effective control tool but, if used diligently, may also lead to eradication from a flock in 10-20 years.

### ***Limitations from Industry funding***

- > The NOJDP and several reviews recognised the necessity of financially assisting affected producers. However, the inability of national industry bodies to agree on providing such assistance has been a major constraint to successful control. This must be recognised in designing future national and regional programs. In addition, state industry funds have in general been unable to meet demands placed on them, with all such funding being suspended at some stage during the NOJDP due to shortfalls. The inability of some States to implement effective State-based mechanisms to collect funds is also a major limitation on successful disease control, especially as industry is increasingly expected to fund programs. Any control program must recognise the difficulties in raising sufficient industry funds to adequately support conventional control programs. It is likely to require alternate funding mechanisms to offset the downside risks that producers face to ensure adequate producer involvement and support.

# Three

## 3. Critique of the current approach

**The current approach to OJD control is based on regulatory assessment and classification of area risk (zones) and property risk, with the application of regulatory movement restrictions from higher risk zones and higher risk flocks. The identification of at risk flocks through surveillance activities is a key strategy in this approach.**

While such an approach would appear technically sound, it has become apparent during the NOJDP that this approach will not adequately achieve the desired outcomes of controlling this disease. This is primarily due to the disincentives such an approach creates for sheep producers and the inability of industries and governments to adequately offset the consequences for producers whose flock is found to be infected, either through financial incentives or through strategies that enable detected flocks to resume trading within an appropriate timeframe. This has resulted in a deterioration in the level of producer support in the regions in which OJD is known to occur because the consequences of a positive test far outweighs the gain from a negative test.

A regulatory-based control program is reliant on producer support, particularly in proximity to zone boundaries. In areas where the disease is absent or not known to occur or where trade is not significantly affected, producer support for regulatory control to support that favourable situation remains at a high level.

Modelling suggests that relying on tracing, surveillance and movement restrictions will result in the gradual spread of disease within a region and between regions. This is because existing tests cannot detect infection in flocks soon after infection is introduced. So infection can spread in sold sheep and to neighbouring flocks. Furthermore, the current approach is not encouraging farmers who may suspect infection in their flock to come forward and seek investigation, thus potentially allowing OJD to spread further within the flock and the district.

The protection offered by movement restrictions is however dependent on the estimated prevalence of infection in the zone of origin being correct and the ability of surveillance and tests to detect individual infected flocks. Estimates in December 2001 were that approximately 75% of infected flocks remained undetected despite the NOJDP surveillance initiatives. Part of this failure to detect disease was almost certainly due to the failure to engage enough producers in being part of the surveillance efforts i.e. due to the disincentives associated with the detection of OJD within a flock.

In summary, the net outcome of maintaining the current approach is likely to be an increasing number of infected flocks across all regions, albeit at a slower rate than in an uncontrolled situation, and increasing producer opposition in affected areas.

This has been acknowledged within the identified medium to high prevalence regions (Residual and Control Zones) and the recent change to a Management Area in the Residual Zone has addressed many of the negatives of the current approach. In this ministerial quarantine area, the focus is on action (vaccination) where infection is likely, rather than surveillance, with the removal of all property statuses other than for those with some assurance of their disease status (tested negative or vaccinated).



In the absence of an effective vaccine, there appear to be few practical options to adequately control this disease other than through on-farm management changes and movement restrictions. It is clear that strategies based on surveillance (testing) and movement restrictions in the absence of producer co-operation will result only in monitoring disease spread, rather than prevention and control. Therefore it would be appropriate to rely more heavily on the likely benefits of vaccination even before the completion of vaccine efficacy trials. Interim results from these trials are encouraging; however, if final results indicate that the vaccine is considerably less effective, then it will be necessary to review all aspects of OJD control.

A key issue to be addressed by future control strategies is how to minimise disease spread particularly in low prevalence regions. The current approach is largely aimed at minimising spread of OJD into the lower prevalence Protected (and Free) Areas by movement restrictions across the zone boundary. Pre-occupation with the requirements at the zone boundary and the absence of standards or guidelines for trading within a zone, other than for infected or suspect flocks, convey a false sense of security, given the majority of infected flocks remain undetected. Hence there is a real risk of significant spread within these zones.

Modelling suggests that the key parameters to prevent the spread of disease within the low prevalence zones are:

1. Early detection and control of disease.
2. Preventing introduction.

The first will not be achieved by abattoir surveillance alone. It will require active surveillance strategies and most importantly a commitment and desire by producers to detect the introduction of disease early. Such an attitude by producers will only develop if the disincentives for detecting infection in their flocks are largely or completely removed. It may be possible to achieve such an outcome through financial incentives, although a major lesson of the NOJDP has been that it is unlikely, due to a number of factors, that adequate financial incentives can be delivered. These factors include inability of some States to legislate effectively to raise State based levies because of constitutional restrictions, inability of national industry to agree to provide national funds for financial assistance and the unwillingness of governments to fund financial assistance for what they see as primarily an industry problem.

An alternative approach would be the removal of disincentives and to engage industry more in the control of OJD. Unless industry is willing to detect and control this disease, any strategies will achieve little other than delaying, perhaps only marginally, its final endemic status across eastern Australia. Producers must be educated and prepared to adopt strategies to control the disease (e.g. vaccination, risk-based purchasing) and actively participate in the program. Any regulation should be aimed at promoting producer involvement, not disadvantaging those who participate, and assisting with regional control objectives. There have to be incentives (i.e. trading opportunities, given that financial assistance is unlikely) for proactive measures (such as vaccination) in OJD control.

# Four

## 4. Vision for the outcome of national OJD management

The vision developed for the sheep industry in the future in relation to OJD is one in which:

- > Areas currently with little or no OJD will remain unaffected.
- > Areas with some OJD will contain the disease at or below current levels.
- > Areas with endemic OJD will manage it to reduce both the number of farms infected and the prevalence of OJD on infected farms.

More specifically, a national approach to managing OJD should, by 2020, result in areas currently free of disease (the Free Zone and some areas of the Protected Zone) remaining free; areas where the prevalence is less than 5% of flocks restricting disease to 5% (Control Zones) and areas where the disease is up to 40-50% (Residual Zones) reducing it to below 10%.

In achieving these outcomes, it is also expected that

- > Trade occurs in “normal” fashion with few restraints, including from infected flocks.
- > There is continued access to world and domestic markets.

Seven principles were identified which it is considered should guide the development a national approach to the control of OJD in Australia:

1. Control (limit) the spread of OJD between farms and regions.
2. Minimise the impact of OJD regulation on affected producers.
3. Minimise the effect of OJD on animal welfare, farm productivity and trade.
4. Maintain complementary and mutually recognised approaches between jurisdictions to enhance the effectiveness of regional control and minimise its impacts on / across regional trade.
5. Engage producer support.
6. Encourage responsible management of OJD with enhanced trading opportunities available to farmers as an incentive to undertake disease control. This will include clear pathways for affected flocks to progress within acceptable timeframes.
7. Improved understanding of OJD through continued research and development.

[Note: The order in which the above principles are listed is not intended to convey any particular priority.]

# Five

## 5. Strategies for Future Management of OJD

**The two broad approaches for dealing with OJD are:**

1. Eradication.
2. On-going Management.

The outcomes of the NOJDP demonstrate that national eradication is not achievable in the short to medium term. Eradication from Australia is not a viable option at present because:

- > The number of flocks estimated to be infected currently is high (2,500 – 4,000);
- > Currently available tests do not permit early detection of infection in individual sheep;
- > The PDEPs (Property Disease Eradication Plans) monitored under Trial 1.1 highlighted a range of issues with the 2 summer destocking option and results have been below industry's expectations;
- > There is no mechanism to secure sufficient national or state industry funds to adequately assist affected producers;
- > There is not widespread industry or community support for such an option; and
- > It is not possible to identify sufficient sheep suitable for restocking that are free of OJD and other diseases.

This does not prevent any jurisdiction pursuing eradication within part or all of a State or Territory. While sustained, comprehensive long-term vaccination may provide a cost-effective approach to eradication, evidence on the effectiveness of vaccine to achieve eradication needs to be gathered before such a course of action is considered.

### **On-going management**

A number of strategic models exist for the on-going management of OJD. Three models have primarily been considered:

- > Deregulation – this allows for the unconditional trading of sheep regardless of flock OJD status. Any control of the disease would result from producers taking actions within their own flocks to either manage infection or minimise the risk of introduction through purchasing strategies.
- > Regional (zone) based trading restrictions, restrictions on infected or suspect flocks and management of disease on infected flocks – the existing approach. Successful control relies on the early identification of infected flocks, the adequate identification of high-risk regions and the implementation of effective on-farm management in infected flocks.
- > Flock risk-based trading and on-farm management – control relies on the adoption by producers, particularly those in low-risk areas, of appropriate trading policies and the adoption of on-farm control in infected and at-risk flocks.

The degree of regulation within the latter two models may vary, depending on the level of regulation used to ensure adoption of the model. Additional models, such as compulsory or voluntary vaccination for all flocks, or testing of all flocks, were considered but have not been further pursued following assessments that they would not be appropriate. Elements from these and other models have been considered within the three models above.

These three strategic models for disease management were considered in light of the vision and principles identified in Section 4.

Deregulation was not considered an appropriate option. Modelling work suggests that unconditional trading poses the greatest risk of disease spread to current free or low risk areas, and several jurisdictions will not support such an approach. Not only would deregulation result in a fragmented approach between States with the establishment of interstate barriers, but it would also signal a lower priority for the management of OJD than is consistent with the vision and objectives. This lower priority status would also impact adversely on future R&D efforts. Deregulation is therefore not an appropriate strategy for the national approach to the management of OJD.

The remaining two strategic models are presented below as options for consideration. In addition, a third option enabling a transitional approach from the current program to a flock risk-based approach is presented. In all models the use of vaccination in higher risk areas is a key strategy to controlling the disease in these areas.

# Six

## 6. Options for Control Strategies

The three options proposed for Control Strategies are:

1. Zone risk-based control program.
2. Flock risk-based trading program.
3. Staged introduction over 3 years of a flock risk-based trading program.

### ***Option 1. Zone Risk-based Control Program***

Key elements:

- > Trading restrictions between zones.
- > Simplification to Free, Protected and Vaccinating Zones.
- > Use of vaccine in higher prevalence areas (Vaccinating Zones).
- > Incentives to encourage producer participation.
- > Use of negative abattoir surveillance information to facilitate trade between zones.
- > Continued surveillance in Protected and Free Zones, with restrictions on infected flocks.

This option involves a continuation, with some modification, of the existing approach to controlling OJD. Zones will primarily assist control between regions. Vaccination will primarily be used to control spread within the higher prevalence zones, and movement restrictions and surveillance used to control spread within lower risk areas.

This option relies on a continuing substantial investment of funds by governments, or on industry funding, of regulatory control activities. The high regulatory impact on affected producers will continue, with non-assessed flocks disengaged from the program but enjoying all the benefits delivered from the program.

## ***Option 2. Flock Risk-based Trading Program***

This model relies more heavily on industry adoption of appropriate trading practices, based on risk assessment, with some regulatory support.

Key elements:

- > Trading based on market driven vendor declarations on OJD status (OJD Score) with sale of sheep.
- > No broad-based trading restrictions between zones (other than to Free Zones).
- > Unrestricted access to vaccine in all zones (other than Free Zones).
- > Some requirements for infected flocks to trade.
- > Promotion of risk assessment associated with OJD Score.

It should be noted this option is not a move to de-regulation. Rather, regulation will be limited to requiring producers to trade with a vendor declaration and protecting the status of Free Zones. Regulation would be also directed at underpinning compulsory PDMPs for infected flocks. Some very high risk movements would be restricted by regulation.

### ***Market-driven vendor declarations on OJD status (OJD Score) with sale of sheep***

It is proposed that a simple OJD Score, based on a risk-assessment that is currently being developed, be required for each consignment of sale sheep that are traded (other than to slaughter) and for land being sold. The Score would either be on a scale of 0-5 or 0-10. This will allow producers to adequately identify the risk posed by sheep they are considering purchasing. Such a system is critical if producers are to adopt any strategy that removes movement restrictions associated with zones.

### ***No broad-based trading restrictions between zones (other than to Free Zones)***

Trading restrictions between zones are most important for low prevalence zones where introduction of disease rather than spread within the zone is the major contributor to disease spread. Given WA is a Free Zone and has a very high standard of border protection, it is appropriate that trading restrictions remain for sheep entering WA. However, for the Protected, Control and Residual Zones, it is proposed that there be no trading restrictions based on zone of origin. Within these zones, under the current application of movement restrictions, the restrictions are essentially voluntary, as there is little or no "policing" and the regulations, which rely on producer co-operation. Movement restrictions into the Protected Zones have created trading restrictions that are considered to be inequitable by many whose trade has been affected. While producers can test to trade, the current risks associated with testing positive and longer term costs of repeated testing mean producers either forego trade advantages or breach movement restrictions. The extent of illegal movements of sheep across zone boundaries is not known, although it is likely to have increased with the recent introduction of Protected Zones.

Ways of addressing this inequity are to provide financial incentives to those required to test, or to remove the testing requirements. The latter is recommended under this option.

In recognition of the continued importance of managing the risk associated with introductions into low prevalence areas, it is proposed that regulatory movement restrictions be replaced by an education program within both Protected and Control Zones about the risks of introducing disease and by mandatory vendor declaration of an OJD Score based on objective risk-assessment criteria that are currently being developed. (The OJD Score will be based on regional prevalence, property test status, vaccination, previous trading within the flock and status of neighbours). This would provide purchasers with adequate knowledge to assess the risk that the flock of origin may be infected with OJD. Education and mandatory vendor declaration should provide the most equitable means of minimising the risk of introduction of disease into low prevalence areas. Some very high risk movement would be restricted by regulation.

### ***Unrestricted access to vaccine in all Zones (other than Free Zones)***

Vaccine is considered the major tool to assist with control of OJD. It should be available to all producers, and its availability complemented by adequate education about its use and the fact that it does not prevent infection, shedding or clinical disease. Provided this education is appropriate for the region, there is no reason why vaccine could not be used in Free Zones in flocks that introduce sheep from infected regions, although any such use should be restricted to these flocks within that zone.

### ***Some requirements for infected flocks to trade***

Any restrictions placed on infected flocks will lead to some reluctance by producers to identify infected flocks, which in turn will decrease the effectiveness of the control strategy. Equally, the movement of shedding infected animals will increase spread.

In an effort to balance these forces, it is proposed that, where infected flocks are identified, approved vaccinates (vaccinated lambs or vaccinated adults where challenge has been considered not to have occurred) will be able to be sold. This will enable flocks identified as infected to adopt strategies that will allow them to trade within several years to all markets (except the Free Zone). It would be expected that, under this scenario, producers in higher risk areas may choose to vaccinate flocks before they are infected or diagnosed as infected. In this case there may be little interruption to trading. However, some very high risk movements would be restricted by regulation.

While Infected flocks with Approved Vaccinates would have full access to markets, their OJD Score would reflect their higher risk. This would therefore enable producers in low risk areas or with a risk averse approach to avoid purchasing such animals. It should therefore be recognised that there will still be a disincentive to detecting OJD in a flock, and it may be appropriate to include some financial incentive for non-assessed flocks to test.

An alternative would be to allow trading from infected flocks irrespective of vaccination status, and rely solely on the OJD Score to warn producers and thereby reduce spread. This alternative is unlikely to provide much better access to markets by infected flocks, but will not assist with disease control and would require more financial assistance to drive vaccination.

Similarly, given the identified risk with neighbouring flocks, it is proposed that flocks neighbouring infected flocks or flocks which have purchased sheep from infected flocks be notified, and required to either test negative or vaccinate to trade.

Again, an alternate approach would be to not require any notifications but allow trading from these flocks. This is unlikely to assist with control and will not enable the greater risk to be reflected in the OJD Score.

### ***Promotion of risk assessments associated with OJD Score***

Promotion and education of the OJD Score will also be important. Producers will be educated about the risks associated with OJD and encouraged to source sheep that are of similar or lower risk than their current status. This will be important in low prevalence areas in particular. Some very high risk movements would need to be restricted by regulation.

### ***Pros and Cons with flock risk-based Control Program***

The proposal is not one of de-regulation, but rather the transfer of much of the responsibility for controlling OJD from regulatory authorities to flock owners who have a vested interest in retaining their disease-free status, with strategic use of regulation to support an industry-based program. It moves the emphasis from producers in those areas where the disease is currently prevalent to all producers. To be successful it will require greater industry ownership than the existing regulatory approach. The current program relies on those who are affected abiding by the trade restrictions. The proposed changes put much more responsibility onto those who want to be protected to implement risk management. The farm boundary replaces the zone boundary as the place to control movements.

It will potentially place the Protected Zones, in particular, at greater risk, but will enable producers in those zones to determine the type of sheep they introduce (in terms of OJD risk). This is likely to be at least as successful, and potentially more successful, than unpoliced zone boundaries.

It will, however, mean some producers in the Protected Zones in particular being placed at greater risk than they might be under current interzone movement restrictions if their neighbours accept risks that are greater than those they are prepared to accept.



Producers whose enterprises require access to markets may choose to vaccinate their flocks to avoid market access restrictions.

There is little doubt that the above proposal will lead to greater use of vaccine and, it could be argued, overuse. However, given the difficulty in controlling this disease through testing and movement restrictions, strategic and diligent use of vaccine is likely to be the best method of controlling the disease. It will be important that adequate resources are put into education programs to promote the adequate but not excessive use of vaccine, thereby minimising the cost of OJD to the industry.

It should be noted that this option does not propose to abolish zones, but rather to remove regulatory movement restrictions between zones (other than to Free Zones). Vendor declarations will be based on an OJD Score which will be determined from the zone status and the individual property status. Zone status is thus an important component of the OJD Score. Zone status is a measure of regional prevalence and is dependant on continued broad surveillance for its assessment.

### ***Option 3. Staged Introduction over 3 years of a Flock Risk-based Trading Program***

An alternative approach to Option 2 would be a staged transition from the current emphasis on zones to flock risk-based trading over, for example, 3 years.

Key elements:

- > Zoning to stay in place for next 3 years.
- > Simplification to Free, Protected and Vaccinating Zones.
- > Unrestricted access to vaccine in all Zones (other than Free zones).
- > Enhanced trading opportunities for Assessed Low Risk Sheep.
- > Voluntary vendor declarations on OJD status (OJD Score) with sale of sheep.
- > Promotion of risk assessment associated with OJD Score.
- > Incentives to enable producer participation – progressively phased out.

This staged approach would provide potentially greater protection for the low risk areas by maintaining movement restrictions for a limited period. This period would enable higher risk flocks and flocks in higher risk areas to implement vaccination and other appropriate management practices so that when movement restrictions are removed the risks such flocks present would be substantially lowered. Assistance could be offered on a short-term basis during this “changeover” period, thereby enabling funding organisations to commit a limited but appropriate level of funds. Such a staged approach would also allow industry to fully understand the risk-based assessment (OJD Score) before needing to adopt it as the sole means for trading.

A staged approach would also enable some jurisdictions / regions time to progress to Free Zone status. This may be the aim of some areas if flock risk-based trading is implemented.

While a staged approach is attractive in allowing a more orderly progression to a flock risk-based trading strategy, it may not be appropriate if the continued application of regulative movements across zones continues to result in failure to gain widespread producer support. If short-term assistance cannot be adequately and appropriately provided and if industry is comfortable to proceed to flock risk-based trading, then delaying its implementation may not be appropriate.

## 7. Proposed National Framework for the Future Management of OJD

Since 1996, a national approach to the control of OJD has been consistently supported both by industry bodies and by governments. Unless States are prepared to work cooperatively, it is unlikely that either a State-based control program or an industry-based control program will succeed.

Producers need to feel fairly treated, and must be part of a common goal to see the real benefits of any program. If State programs differ markedly in their approach, scepticism and producer frustration will result. This does not preclude States adopting appropriate strategies for their producers, but it does require an understanding of any impacts on producers in other States.

A national approach may require national industry bodies as well as Commonwealth, State and State industry organisations to contribute financially to any programs, in addition to existing research commitments. However, consideration of the contribution to be made by various parties to the costs of any program costs should be deferred until after agreement has been reached on the approach.

Therefore, while it is acknowledged that much of the required activity would be industry or State-based, a national approach is considered essential and a **national framework for the future management of OJD is proposed.**

The framework has five core elements:

1. Research and Development.
2. Communications.
3. National Coordination.
4. Control.
5. Surveillance.

### ***Research and Development***

Research and development would continue to be funded through Meat and Livestock Australia (MLA) and Australian Wool Innovation (AWI) to ensure industry and matching Commonwealth funds are applied to the project. Research priorities would be set by the research bodies in collaboration with industry and government groups to ensure projects are consistent with the outcomes required by the national approach.

## ***Communications***

There would be both:

- > a national Communication element, to ensure adequate exchange of information between States and to promote research findings, provide common advisory material and communicate the national objectives within Australia and overseas.
- > a State-based element, aimed at promoting greater producer commitment.

## ***Coordination***

Animal Health Australia would coordinate the national approach to ensure national objectives are agreed and assist industry develop and implement control strategies in consultation with the States. Animal Health Australia would monitor performance and annually review the national objectives with industry and the States in consultation with a national coordinating committee.

## ***Control Strategies***

Regional programs harmonised with national Standard Definitions and Rules, developed in conjunction with state-industry groups, would be implemented by the States, either as zone or flock risk-based trading (see Section “7. Options for Control Strategies”).

## ***Surveillance***

Surveillance would continue to be undertaken by State authorities to agreed national standards, to support the control objectives and monitor progress. The degree and type of surveillance would depend upon the control option chosen.

# Appendix 1

## **GOATS & JOHNE'S DISEASE - a draft framework for future management of Johne's disease for consideration by the goat industry.**

### ***Introduction***

The goat industry has developed this Discussion Paper as a concept that would give some real meaning by way of Biosecurity/Quality Assurance and would seek to separate from the National OJD Program and the National BJD Program and implement a policy which will cater for goat-specific issues more effectively. The policy is based on biosecurity awareness, and proposes no zones, compulsory animal health statements for all non-slaughter trades; owners encouraged to vaccinate "at-risk" herds, especially those in the Management Area; further assurance via an annual voluntary check test of 50 head; and widespread producer education.

### ***Background***

Since the commencement of the National programs, goats have been required to fit both the National BJD Program and the National OJD Program. This has led to considerable difficulties with all the essential elements of either program.



### **Data:**

- > Prevalence data provided by state and national authorities is unreliable (as regards number of identified IN herds) and incomplete (as to whether the strain is OJD or BJD, the breed of goat, etc) which makes sound policy decisions difficult.
- > Current national figures show 25 IN goat herds (NSW = 12; Vic = 7; Tas = 6).

A request by NSWFA Goat Committee (a year ago) for individual states to check back and identify strain and goat breed for each of their identified infected herds produced no responses from Victoria, Tasmania, and South Australia. (Tasmania has since updated that as all IN Goat herds are Dairy goats in a dairying area with a high incidence of BJD and are thus assumed to be BJD).

### **Zoning:**

- > Goats have been subject to both sets of zones, with the "lowest of either zone" rule applying. Since 2000, this has meant that the effective zone equated to OJD zones, despite the fact that there are currently 5 OJD-infected goat herds nationally. Most infected herds have been typed as BJD-infected, although this is also at a very low prevalence level.
- > Zones have been imposed on the basis of the known prevalence in a region's sheep or cattle population, not with reference to the incidence in goats.
- > The greatest concern currently is that this has led to purchases being made on the basis of wrong information, which in some cases has given purchasers a false sense of security as to the health status of a given herd.
- > Currently more goat herds infected in PZ than combined CZ/RZ.

### **Testing protocols:**

- > Blood tests are the only nationally approved diagnostic test; PFC has not been able to be validated to date because there have been no live OJD-infected goats. However, industry has requested that PFC is approved pending a review, and validation work was recently commenced in NSW.
- > Serology test costs approx \$9 per head (subsidised in some States).
- > Approx 15% of all goat herds in Central Tablelands RLPB (OJD Management area) have been tested and nil infected with JD.

### ***Market assurance:***

The GoatMAP requires all susceptible species on a property running goats to be tested in order for a goat herd to gain MN1 or better. This is an expensive proposition which has precluded large, multi-species grazing enterprises from participating in the market assurance program. It has also undoubtedly prevented market assured sheep and/or cattle enterprises from adding goats to their enterprise mix.

### ***Vaccination:***

- > Gudair vaccine is registered for use in goats and is labelled with the claim that it 'aids in controlling OJD in goats' but not with the claim 'aids in the reduction of faecal shedding of the Mptb organism'.
- > Goats therefore are not "Approved Vaccinates" and as such are unable to base a market access program based on its use. (Such as MAV in Sheep.)
- > Goat producers on the whole however are unsure of how Gudair might be used to protect their herds against both strains, and there appears to be considerable market resistance for vaccinated animals at this stage.
- > At this stage only 1 producer is using vaccine.

### ***Policy proposal***

Considering the market access requirements of other affected states, the likely future directions of both the BJD and OJD programs, and imminent post-drought restocking we propose that the most sensible solution for goats is to be subject to the "limited regulation" policy described below:

1. All zones within and between SA, Vic, NSW and Queensland waived (with the exception of Queensland's extra requirement applying to dairy goats).
2. "At risk" goat properties (running with OJD-infected sheep or neighbouring sheep properties in the Management Area) encouraged to vaccinate.
3. Immediate producer education program aimed at identifying (i.e. ranking) relative risk.
4. Compulsory Animal Health Statements for all goat transactions, nationally.
5. Buyer-demanded "check test 50" (by ELISA or PFC), promoted by the goat industry, as a basis for all non-slaughter trades.
6. "Check test 50" to either be by annual ELISA or PFC, at the owner's discretion.
7. Current GoatMAP accredited herds able to indefinitely maintain status by an annual 50 head check test.

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# Appendix 6

## NSW OJD Communications Plan for Sheep

### Objective:

To assist the NSW sheep industry to progress from regulated OJD control to producer-owned disease control which is successfully driven by informed market & production forces.

### Timeframe:

For the next 3 years, delivery of an annual targeted OJD communications plan is required. Following this, OJD information should be incorporated within a more holistic or general flock-health approach.

### Underlying Principle:

The underlying principle for the development of specific messages within this plan is that producers only pay attention to OJD information when it is seen as being directly relevant to their own business. Therefore, this plan must recognize regional and enterprise differences.

This has been strongly reinforced by feedback during recent industry consultation (including regional forums and mail-out questionnaire to producers).

For example, producers in low prevalence regions generally have limited knowledge of the disease, its management or most importantly, the measures that should be considered to ensure they keep the disease out of their flocks in the future. This is because the source of information for these producers has been limited to media, and their perception is that:

- the information presented has a particular bias so it may not be factually correct
- they have been protected by regulatory zoning so it has not be necessary to seek further information

### Resourcing:

Funding and in-kind support should be provided by both industry and government, as identified in the agreed annual communications plan.

### Strategies:

1. Inform and encourage producers in low prevalence areas to implement protection measures.
2. Inform and encourage producers in medium and high prevalence areas to implement disease management measures.
3. Stimulate awareness of those producers and others in industry not presently involved with OJD.
4. Encourage those producers and others in industry with knowledge to pass it on.

## Activites:

### Organisation:

### Role:

1. NSW Ag Extension Team
  - prepare annual communication plan & quarterly reviews, set benchmarks to assess success of strategies
  - develop generic & targeted resource material (brochures, posters, newsletters etc)
  - oversee training of RLPB staff in delivery of advisory material
  - oversee field day activities
  - assist groups of RLPBs to produce regional communications as needs are identified
  
2. RLPBs (Animal Health Staff)
  - primary delivery at local (individual Boards) & regional level (groups of Boards) to:
    - producers*
    - agents*
    - rural suppliers*
    - transporters*
    - livestock contractors*
    - private vets*
  
3. Agents (livestock & wool)
  - supply generic material through SSAA & other networks to:
    - individual agents &*
    - their clients*
  
4. NSWFA
  - Breed Societies
  - Other Producer Groups
  - Aust Vet Assn (AVA)
  - Saleyard Operators
  - disseminate information relevant to member base
  
5. R&D organizations/MLA
  - communicate findings from research trials & recommendations for field application
  
6. Future industry liaison committee
  - review annual plan and quarterly updates
  - facilitate ongoing commitment & feedback from industry organizations

***Year 1 Messages:*** (see Attachment 1)

1. **Make an educated purchase choice** (immediate)
2. **Provide an assured product** (immediate)
3. **Understand the new rules and how they apply to you** (as soon as new program is finalized)

***Year 1 Resource Material:***

1. Independent OJD specific Website- to deliver resource material that can then be used/ printed for distribution by industry organisations  
- direct source of information for individual producers

features:

*generic badging with list of contact organizations*

*links to other relevant websites*

*regular updating*

*includes producer stories & producer contacts, articles on field application of latest research (vaccine, grazing management etc)*

2. CD ROMS - to deliver a range of standard resource material for use by RLPBs etc
3. Updated OJD Video - resource material for field days target medium/low prevalence areas, highlight producer stories
4. Generic Poster (1) + Brochure - suitable for use by agents etc
5. Extended Poster Series (set of 6) - suitable for use by RLPBs/NSW Ag for field days etc (50 sets)
6. Field Days - promote vaccine use, field application of R&D updates, promote low risk trading strategies especially in low prevalence areas

***Attachment 1:***

***Notes from August 2003 meeting of NSW Ag's OJD Extension Team & reviewed by OJD AC.***

The communications strategy should be based on a cascading order of questions based on what has been asked in the past and what will be asked in the future in different regions of the State. It should be designed to impact on producer behaviour through self-interest. It must, therefore, recognize regional and enterprise differences.

**1. How do I protect myself?**

• ***What do I need to ask when buying?***

What information can I get on assurance in stock being bought?

Is vaccination a sign of disease or a sign of prudent management (as per 5 in 1)?

What questions can I ask about the property/district that stock are coming from?

What questions can I ask if they were born on a different property to the one I am buying from?

Can I trust Animal Health declarations?

• ***What risks do I need to look for on my own property?***

What can I look at in my grazing and feeding practices?

What can I look at in terms of culling, age of sheep kept, management of different mobs?

• ***What risks do I need to be aware of from my locality?***

What can I look at in terms of fencing and strays?

What can I look at in terms of water movement?

How does my neighbour's trading policy affect me and how does mine affect my neighbour?

• ***What do I do to protect my own stock?***

What should I consider in terms of using vaccine as insurance?

What vaccination program do I need if infection is found or suspected in my flock?

**2. How do I improve trade?**

• ***What information will give buyers confidence in my stock?***

What information can I use about vaccine programs?

What significance can a buyer take from that?

What evidence can I use from any testing/monitoring of my flock?

How significant is that evidence?

What evidence can I use about prevalence in my area?

How significant is that?

• ***What management strategies can I use to improve assurance in my stock?***

How might I use a vaccine program to improve assurance?

How do I promote that vaccine program?

How long need that program run?  
How can I work with neighbours to improve the reputation of my area?  
How does my own buying affect assurance in my stock?

- ***What timeframe am I looking at to cement in the assurance in my stock?***

How significant is prevalence in my flock and are in setting how long I need to be vaccinating?

How important is prevalence in defining how long before my own stock are no longer a risk (1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> generation vaccinates)?

### **3. Who can give me the information I need?**

- ***Where do I get information on presence or absence of OJD in my stock?***

How useful is Abattoir Monitoring?

Should I consider using Pooled Faecal Culture tests or Direct PCR tests (when registered) to know my own situation?

When I select sheep to be tested do I want to find OJD or pretend?

How might I ensure I find OJD if I do want to know?

What affect will vaccine have on my ability to find out if my stock have OJD?

- ***Where can I get hold of knowledge gained by experience of OJD to improve my management?***

How do I get onto producers who have experience with OJD to learn from them?

How might the RLPB help me?

How might the Dept of Ag help me?

- ***How do I find out what is happening within my area with OJD?***

What information can the RLPB give me on prevalence of OJD in my area?

Should I discuss this with my neighbours?

# Appendix 7

## ABC Briefing Note

*The national Animal Health Committee has endorsed in principle an Assurance Based Credit (ABC) trading scheme for ovine Johne's disease (OJD), to underpin risk-based trading of sheep in eastern Australia.*

*The scheme was developed by Animal Health Committee's technical advisors and is based on Evan Sergeant's AWI numerical risk scoring system, which sets the technical standard for assessing OJD risk.*

*The ABC scheme modifies Sergeant's original 15 classifications of risk to scores of 0-5 and reverses the order so that credits are allocated and then accrued for activities which increase assurance and reduce risk.*

*Variable numbers of credits are allocated and accrued on the basis of:*

- ✓ *no evidence of infection in the flock,*
- ✓ *location in a low risk area,*
- ✓ *abattoir and on-farm testing history,*
- ✓ *MAP participation,*
- ✓ *vaccination status of the flock,*
- ✓ *vaccination status of the sale sheep.*

*To ensure a simple scheme that can be easily understood and applied by producers the credits have been capped at 5.*

### **Impact on Producers with infected or suspect flocks**

The provision of opportunities for producers with affected flocks to accumulate credits, particularly by vaccination, enables these producers to access an increasing range of markets.

The scheme is designed so that the progressive application of a range of OJD management strategies will enable any suspect/infected flock to have access to all participating regions in eastern Australia.

### **Use of the ABC Scheme**

The scheme concentrates on engaging large numbers of producers in the higher risk category to undertake activities that will improve disease control in their own flocks and also reduce the risk that sheep from their flocks pose to buyers' flocks.

The ABC scheme as proposed could be introduced on a voluntary basis once the market is fully educated to its use.

Currently most eastern states are considering using the scheme as the basis for a trading scheme involving some regulated movements, either long-term or as an interim measure while market education is being addressed.

For example, restrictions could be placed on restocker sales from flocks with a rating of 0 ie high risk flocks which are not implementing any disease control measures. Similarly, restrictions could be placed on movements into and within low prevalence regions by requiring a minimum credit rating for such movements (other than to slaughter).

The expectation is that producers would determine the rating of any sheep being sold using a standard form. This information could be provided either on the signed Part B, section 7 of the current National Vendor Declaration or on a separate Animal Health Statement.

This scheme gives pathways for all vendors to enhance their disease control and assurance, thereby improving their standing in the market when selling sheep.

However, for this system to be successfully implemented and to assist in reducing the rate of the spread of OJD, it is imperative that it is also promoted as the basis for buying sheep. Buyers will need to be educated to understand not only the credits but also the elements that contribute to credit allocation, and to take steps to manage risk appropriately for both their personal circumstances and their neighbourhood/locality.

**TABLE 1 - OJD ASSURANCE BASED CREDIT (ABC) POINTS**

OJD ASSURANCE ACTIVITY OR CRITERIA <i>Select one line from each category if applicable then add for total credit rating</i>		CREDITS
<b>CATEGORY A: Flock of origin - location and description</b>		
The flock is located in	a low prevalence area and is not suspected or known to be infected	3
	a medium prevalence area and is not suspected or known to be infected	1
	a high prevalence area	0
	any area and is suspected or known to be infected	0
<b>CATEGORY B: Flock of origin description - --vaccination</b>		
The flock is	a second generation vaccinate flock	3
	an approved vaccinate flock	2
<b>CATEGORY C: Flock of origin description - - testing</b>		
The flock is	in the MAP and has had 3 Sample Tests (*See Note)	4
	in the MAP and has had 2 Sample Tests *	3
	in the MAP and has had 1 Sample Test *	2
	not in the MAP but has had a negative 350 PFC test within the last 12 months	2
	not in the MAP but is eligible for Abattoir 700 status	2
	not in the MAP but is eligible for Abattoir 200 status	1
	a tested low prevalence flock	1
<b>CATEGORY D: Sheep to be traded - vaccination</b>		
The sheep are	approved vaccinates	1
<b>CATEGORY E: Sheep to be traded – risk assessment</b>		
The sheep are	sourced from an infected flock but are certified low-risk by a MAP approved veterinarian	1

**\* NOTE ABOUT MAP FLOCKS**

*The number of Sample Tests applies to the actual number of negative Sample Tests that contributed to attaining the current flock status. For most flocks this will be one for MN1, two for MN2 and three for MN3.*

However, a MN2 flock that has taken a status upgrade for being located in a Protected Zone would have had only 1 Sample Test. Similarly an MN3 flock would only have had 2 Sample Tests. Credits for being in a low prevalence area are now gained under Category A above.

*If the flock has re-entered the MAP having previously had its status lapse or removed, only Sample Tests directly contributing to its current status will be eligible for credits.*



## DEFINITIONS

**Eligible for Abattoir 700 status** - 700 sheep over 2 years of age have been submitted to an abattoir with at least 500 being examined and found negative for OJD in the past 24 months.

**Eligible for Abattoir 200 status** - 200 sheep over 2 years of age have been submitted to an abattoir with at least 150 being examined and found negative for OJD in the past 12 months.

**Sample Test** – test of a sample of a flock, in accordance with SheepMAP guidelines, which is undertaken within the flock's current MAP program.

**Approved Vaccinates** - sheep vaccinated by 16 weeks of age or sheep vaccinated after 16 weeks of age where, in the opinion of a MAP approved veterinarian, vaccination occurred prior to exposure.

**Approved Vaccinate Flock** – a flock comprising entirely approved vaccinates.

**Second generation vaccinate flock** – a flock comprising entirely approved vaccinates which were born into a flock of approved vaccinates.

**Tested Low Prevalence Flock** – an infected flock which has a history supporting low prevalence, an approved PDMP in place, and a flock profile demonstrating a detection rate of  $\leq 1$  of 10 pools by PFC within the previous 2 years.

**Certified low-risk sheep** – sheep which are sourced from an infected flock and which are certified as low-risk by an approved veterinarian on the basis of:

- risk assessment, and
- an approved PDMP which includes profiling and strategic culling being implemented in the flock.

## **Appendix 8**

### **Draft National Animal Health Statement incorporating Assurance-Based Credits (ABC) for trading**

**September 2003**

# Ovine Johne's Disease (OJD) Animal Health Statement – Draft 1 Sept 03

## PROPERTY OF ORIGIN

Property of origin name and address: .....

.....

.....

District/RLPB: ..... PIC: ..... State .....

Owner of Stock: .....

## HISTORY OF CONSIGNMENT SHEEP

Year/s born (drop): ..... Breed: .....

These stock were born on the property:  Yes  No



If no, date when sheep were introduced: ...../...../.....

Source property name and address: .....

.....

District/RLPB: ..... PIC: ..... State .....

## DESCRIPTION OF CONSIGNMENT SHEEP

No of stock	Age	Sex	Ear Marks	Ear Tag Details (colour, numbers)
			R  L	
			R  L	

## DECLARATION

As the vendor and/or person responsible for the husbandry of the sheep in this consignment I declare that the information in this declaration is true and correct, and that I hold supporting documentation where applicable.

Signature: ..... Date: ...../...../.....

Name (Print) .....

Contact phone number/s: .....

**NOTE: PERSONS MAKING FALSE STATEMENTS MAY BE LIABLE UNDER FAIR TRADING AND STOCK DISEASES LEGISLATION.**

## TABLE 1 – OJD ASSURANCE BASED CREDIT (ABC) POINTS

Select one line from each category if applicable then add for total credit rating

### CATEGORY A: Property/Flock Location and Description

The property/flock of origin is located in:

	Possible Credits	Credits for this consignment
a very low prevalence area and is not suspected or known to be infected	5	
a low prevalence area and is not suspected or known to be infected	3	
a medium prevalence area and is not suspected or known to be infected	1	
a high prevalence area	0	
any area and is suspected or known to be infected	0	

### CATEGORY B: Flock Vaccination

The flock of origin is:

a second generation vaccinate flock	3	
an approved vaccinate flock	2	

### CATEGORY C: Flock Testing

The flock of origin is:

in the MAP and has had 3 Sample Tests*	4	
in the MAP and has had 2 Sample Tests*	3	
in the MAP and has had 1 Sample Test*	2	
not in the MAP but has had a negative 350 PFC test within the last 12 months	2	
not in the MAP but is eligible for Abattoir 700 status	2	
not in the MAP but is eligible for Abattoir 200 status	1	
a tested low prevalence flock	1	

### CATEGORY D: Consignment Sheep – Vaccination

The sheep in this consignment are:

approved vaccinates	1	
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### CATEGORY E: Consignment Sheep – Risk Assessment

The sheep in this consignment are:

sourced from an infected flock but are certified low-risk by a MAP approved veterinarian	1	
--	---	--

**TOTAL CREDIT RATING FOR THIS CONSIGNMENT OF SHEEP**

\*See notes on reverse of this form.

# Ovine Johne's Disease (OJD) Animal Health Statement Explanatory Notes – Draft 1 Sept 03

## DEFINITIONS

**Eligible for Abattoir 700 status** – 700 sheep over 2 years of age have been submitted to an abattoir with at least 500 being examined and found negative for OJD in the past 24 months

**Eligible for Abattoir 200 status** – 200 sheep over 2 years of age have been submitted to an abattoir with at least 150 being examined and found negative for OJD in the past 12 months

**Sample Test** – test of a sample of a flock, in accordance with SheepMAP guidelines, which is undertaken within the flock's current MAP program

**Approved Vaccinates** – sheep vaccinated by 16 weeks of age or sheep vaccinated after 16 weeks of age where, in the opinion of a MAP approved veterinarian, vaccination occurred prior to exposure.

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**Tested Low Prevalence Flock** – an infected flock which has a history supporting low prevalence, an approved PDMP in place, and a flock profile demonstrating a detection rate of  $\leq 1$  of 10 pools by PFC within the previous 2 years.

**Certified low-risk sheep** – sheep which are sourced from an infected flock and which are certified as low-risk by an approved veterinarian on the basis of:

- risk assessment, and
- an approved PDMP which includes profiling and strategic culling being implemented in the flock.

## MAP FLOCKS

The number of Sample Tests applies to the actual number of negative Sample Tests that contributed to attaining the current flock status. For most flocks this will be one for MN1, two for MN2 and three for MN3.

However, a MN2 flock that has taken a status upgrade for being located in a Protected Zone would have had only 1 Sample Test. Similarly an MN3 flock would only have had 2 Sample Tests. Credits for being in a low prevalence area are now gained under Category A above.

If the flock has re-entered the MAP having previously had its status lapse or removed, only Sample Tests directly contributing to its current status will be eligible for credits.

## FLOCKS WITH INTRODUCTIONS

Where sheep have been introduced to a flock, the flock credit rating (Categories A, B, C) will be equivalent to the lowest rating of the sheep comprising the flock. The only exception is where terminal lambs have been introduced to a flock, in which case the flock credit rating remains unchanged.

# Appendix 9

## Guidelines for the Establishment of Exclusion Areas to Control OJD for Very Low Prevalence Areas

### OBJECTIVE

The objective of such an Exclusion Area is to maintain the apparent very low prevalence of OJD by using strategies that are consistent with the management of OJD, both in NSW and nationally.

### STAKEHOLDERS

The benefits of this objective accrue to Exclusion Area producers and their trading partners.

### GUIDELINES FOR ELIGIBILITY

#### 1. Area Prevalence

Current information from abattoir monitoring and/or any other appropriate surveillance data must be used to determine if the level of disease is beyond the control of the strategies in this approach at the time of application.

The Advisory Committee cannot recommend a single cut-off prevalence level for areas considering implementation of an Exclusion Area (ie a maximum % of flocks with infection present in homebred &/or introduced sheep) as areas will have varying flock numbers, sizes and production systems. It will be necessary for the apparent prevalence to be assessed on epidemiological grounds. As a guide, maximum apparent flock prevalence may vary from 0.1% to 0.5%.

#### 2. Strategies

For accountability, the strategies and on-ground activities supporting these strategies must be clearly defined and documented.

Strategies will take into account:

- Management of disease where it currently exists
- Management of new infections
- Pathways to improve status of infected properties within the area
- Trade into, within and out of the area
- Financial assistance where policy significantly curtails trade
- Surveillance levels necessary to understand disease prevalence (ongoing)

#### 3. Resourcing

To ensure accountability and transparency, adequate resources to implement the defined strategies must be clearly identified and documented.

#### 4. Legislative Framework

The area must ensure that any required legislation is either in place or is able to be enacted.

## **5. Independent Assessment**

Independent expert assessment of technical and economic strategies (as described in 2 & 3 above) must occur.

This assessment must address:

- the soundness of the strategies and
- their relevance to achieving the objective

## **6. Consultation**

For accountability and transparency, a comprehensive consultation process with all stakeholder groups within the area must be undertaken, in accordance with the following:

- Consultation is broad enough and widely enough publicised to ensure that all stakeholders in the area have the opportunity to participate.
- Consultation will present knowledge of the disease and the disease risks to all stakeholders.
- Consultation will clearly outline the proposal, its implications and the costs to stakeholders affected by the proposal.
- Consultation will determine that there is widespread support for the proposal within the area.
- There is a commitment to on-going consultation during the life of the program.

## **7. Program Review**

To allow all producers in the Exclusion Area to measure progress, milestones and performance indicators must be set and monitored.

In addition, an annual review of the program must analyse progress. This report must be submitted to Exclusion Area producers and the joint industry/government committee which should oversee any future NSW OJD control program.

The annual report and analysis must detail:

- Disease levels within the area and assessment against guidelines for Exclusion Area eligibility.
- Implementation and uptake of strategies and the results they deliver.
- Budgetary review of the current and projected periods, to ensure resourcing levels are adequate.
- Implementation of consultation and the results it delivers
- Assessment for current and continued alignment with State and National OJD management objectives.
- A recommendation on the continuation or modification of the strategies or objective.