



Control options for bovine Johne's disease in beef herds

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Ian Holmes, Echuca

Control of bovine Johne's disease (BJD) in beef herds can be achieved with an understanding of the disease and appropriate management strategies.

Normal BJD control methods applied in dairy herds are not an option in beef herds where suckle-rearing is the normal calf-rearing practice.

Recently purchased infected animal

If an infected animal has been recently introduced into the herd there is a possibility that the main herd is not as yet infected. Options in this scenario include:

- Cull all adult animals from the same source as soon as possible.
- Cull all calves that may have been exposed to manure from the source herd. These calves are not likely to shed BJD bacteria until they are 2 years old. They should be sold for slaughter prior to this age.
- Restrict access of calves to any land contaminated with manure from the cattle from the source herd, for at least 12 months.

Infected cattle bred on the property

If the infected animal was bred on the farm, it must be assumed that BJD is established in the herd.

Consider your enterprise and make a realistic assessment of how BJD will affect your business. Things to consider include:

- Is the sale of breeding stock important to your business?
- Are you, or do you wish to become, a stud breeder?
- Do you plan to sell the herd or property in the near future?
- Are interstate or international sales of store stock important to your business?
- Do you sell all stock for slaughter?

A blood test of the herd will help determine the level of BJD in the herd and gain other information that will assist with the development of the most appropriate control options for your circumstances.



Figure 1. An initial blood test can assist determine the level of infection in the herd.

Options can include:

- **Control only.** A control program will be designed in consultation with the Department of Primary Industries (DPI) animal health staff. Recommendations will be made about culling high risk cattle and calf management to reduce exposure to BJD bacteria. This may be the most practical option for a commercial beef farm with local markets, and where losses from BJD are low. BJD is unlikely to be eradicated using this approach.
- **Test and cull while breeding your own replacements on-farm.** An annual test for BJD with the culling of positive cows plus their progeny and dams, can eventually lead to eradication of BJD from the herd under some circumstances. Progress should be reviewed after 5-6 years to determine if BJD is still spreading to replacement calves. A herd will achieve a 'Tested to CattleMAP Standard' status after three clear blood tests over a period of at least four years. Herds may then be eligible to participate in CattleMAP (the national BJD Market Assurance Program).

- **Progressive depopulation.** All cattle bred on the property can be sold prior to reaching two years of age, with replacement breeders (from Non-Assessed or higher status herds) all purchased when over the age of twelve months. The original breeding cattle are gradually culled from the herd. Culling should concentrate on high risk groups (eg: family lines, mobs exposed to infected animals and other animals from the suspect farm). If high risk groups cannot be identified, the oldest and poorest should be culled first. If 20% of the infected adult herd are culled each year, and replaced by young adult cows, the entire original herd will be culled within 5 years.
- **Total depopulation.** Sell the entire herd for slaughter, followed by re-population at least twelve months later. Interim grazing of low risk animals during this twelve months may be possible under defined circumstances. Care should be taken so that BJD is not re-introduced with the replacement cattle.

Enterprises suitable for infected land during depopulation.

There are a number of options for using land during a period of depopulation. These will depend mainly on what is appropriate for the land, facilities and labour availability, and interests of the farmer. Some suggestions include:

- Buy in or agist store cattle and slaughter them before two years of age.
- Run sheep, horses or other non-susceptible species.
- Cropping, hay, horticulture or trees.

Agistment or purchase of low risk breeding stock over the age of twelve months, may be approved in some situations.

How to preserve valuable genes from an Infected stud herd

- **Embryo Transfer (ET)**
 - a) Flush elite cows and freeze the embryos for implantation into uninfected recipients introduced onto the land twelve months after destocking, or

- b) transfer the embryos fresh into uninfected recipients on clean land.

In some circumstances a program may be developed under which uninfected recipients over the age of 12 months may be purchased immediately and brought onto the farm, providing they do not calve on the land within 12 months of destocking. Recipients may be bought, leased or "borrowed".

- **Semen collection.** Elite bulls can have unlicensed semen collected and frozen. (For advice on the conditions required to place a bull from a BJD infected herd onto a licensed semen collection centre, contact the centre directly).
- **Test and cull** until the herd achieves Tested to MAP Standard or better status (see above).

pH & lime

BJD bacteria require iron for growth and metabolism. A neutral to high pH in the soil makes iron less available. There are reports of a high incidence of BJD in calcium deficient acid environments, and a low incidence in alkaline environments. Increasing the environmental pH by applying lime may be beneficial but evidence of this is currently lacking. Liming calf and calving paddocks may be considered as part of a BJD Control Program.

Further information

Further information about control options for Johne's disease in beef herds can be obtained from Animal Health staff at your nearest DPI office or on the DPI external web: <http://www.dpi.vic.gov.au/farming/bjd>.

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