

Abattoir Trace-back - Cattle Granulomas

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In 1992 Australia put in place the National Granuloma Submission Program (NGSP) to monitor the tuberculosis freedom of our cattle herds. The purpose of the NGSP is to collect all granulomas, so that any remaining tuberculosis (TB) is detected as early as possible to minimise disease spread. It is not possible for meat inspectors to distinguish between TB and other granulomas visually, so any granulomas found in cattle or buffalo processed through Australian abattoirs are examined at State/Territory veterinary laboratories.

WHAT ARE GRANULOMAS AND WHAT DO THEY LOOK LIKE?

Generally speaking, granulomas are firm lesions or lumps that are sometimes found in lymph nodes and viscera as part of routine meat inspection procedures. The lesion will appear as fibrous tissue that, when opened, may have a pus filled core. The colour and consistency of the core will vary according to its cause.

Lumpy jaw seen in stock can be due to granulomas or other reasons (e.g. cancer).



WHAT CAN YOU SEE?

In most cases the live animal will not show any signs. Granulomas in lymph nodes deep within the body or in viscera obviously will not be able to be seen in live animals.

Sometimes the granuloma may show as a lumpy jaw which, if big enough to be visible, may appear as a slight swelling or a lump under the skin along the jaw-line or throat region. Stock with large, broken lumps or weeping wounds should not be trucked, as this becomes an animal welfare issue. Cattle with lumpy jaw cannot be sent for live export. Although lumpy jaw is more likely to be found in the head/throat region of older stock, all ages of stock are susceptible.

WHY ARE THEY THERE?

Granulomas are formed as a result of the animal's immune system reacting to the presence of foreign matter such as grass seeds or splinters, parasites, fungi or bacteria. The body's immune system reacts to wall off and fight the foreign matter and the swelling and the pus filled core are the results of that battle.

WHAT DISEASES ARE PROBABLE?

There are several causes of granulomas and some of the most common in the NT are discussed below.

Actinobacillosis: commonly known as wooden tongue. Slow developing, tumour-like swellings appear, usually in the tongue. They may restrict tongue mobility, can involve the lymph nodes in the area and vary in size from egg to basketball. The core will contain creamy pus. The disease is common but sporadic in Australia, and occurs worldwide. It is caused by bacteria called *Actinobacillus lignieresii*. The entry point is via cuts and wounds of the mouth, for example the eruption of permanent teeth or dry, spiky feed.

Actinomycosis: commonly known as lumpy jaw, it is predominantly seen as a swelling to the bone of the upper or lower jaw. The bone becomes enlarged with a honeycomb effect. The area fills with pus and, given time, will break out with a thick discharge. This disease is also common but sporadic, occurs worldwide and is caused by the bacterium *Actinomyces bovis*. The same simple entry point applies as for 'wooden tongue'.

Cattle from properties with a current outbreak of actinomycosis are not eligible for live export to some countries.

Tuberculosis: the main reason for having the National Granuloma Submission Program in place is the need for ongoing vigilance for tuberculosis. This disease is caused by the bacterium *Mycobacterium bovis*. Under Australian conditions the main way that these bacteria enter the body is to be breathed in or taken in with foodstuffs.

Other causes for lesions collected at abattoirs as part of the NGSP include cancer, other bacteria or fungi and grass seed abscesses. Old hydatid cysts are also a reason in animals imported from other states.

Granulomas collected at abattoirs in the Northern Territory are sent to Berrimah Veterinary Laboratories for histological (microscopic) examination and for culture (growth of the organism, so it can be identified). Examination of granulomas collected from abattoirs has been an important means of identifying TB in the last stages of the Brucellosis and Tuberculosis Eradication Campaign (BTEC¹). However, the majority of granulomas are due to other causes, some of which have been discussed above.

If you would like further information, or if your cattle have lumpy jaw, then contact the DPIFM Veterinary Officer or Stock Inspector in your region for advice.

Please visit us at our website:

www.nt.gov.au/dpifm

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¹ Previously the Tuberculosis Freedom Assurance Program (TFAP)