

INFORMATION DOCUMENT

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NSW DEPARTMENT OF
PRIMARY INDUSTRIES

BIOSECURITY, COMPLIANCE & MINE SAFETY
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Title:	LABORATORY TESTING FOR FOOTROT		
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GELATIN GEL TEST

Laboratory tests have been an integral part of successful eradication programs in other diseases. In these cases they have been mainly used to detect infection in individual animals, rather than the presence of infection in a flock or herd.

As from 1991 the national Animal Health Committee resolved that the Gelatin Gel test may be used in the laboratory to assist in the investigation of footrot. Isolates identified as stable on the Gelatin Gel test tend to be associated with virulent footrot.

The NSW Footrot Steering Committee (March 1995) endorsed the use of an optional Gelatin Gel test to assist the field veterinarian in the investigation of footrot. It must be remembered that the laboratory test involves the examination of material taken from a small proportion of sheep in the flock. It also involves the examination of a limited number of colonies that are grown on culture from the affected feet. Laboratory results should be interpreted in the light of a thorough clinical investigation of the flock, the full flock history and the past and current environmental conditions.

Much discussion has centred on the validity of accepting a laboratory test such as the Gelatin Gel test as a definitive test to differentiate between benign and virulent footrot, as is the case in Western Australia. However it is accepted that the Gelatin Gel test, like many other laboratory tests, does not have 100% sensitivity or specificity. Despite this, experience gathered over many years confirms that the test is a useful tool to assist in the investigation of footrot cases.

intA TEST

In 2006 a new PCR-based test became available to assist with the investigation of difficult cases which involve Gelatin Gel stable isolates but present as clinically benign footrot. The test was developed by Dr Brian Cheetham at the University of New England and involves the detection of a gene known as *intA* which appears to be closely associated with virulent footrot.

A description of the DNA *intA* test has been published in *Veterinary Microbiology* Vol 116, pgs 166-174, August 2006. The paper reports that there was a high correlation between the presence of the *intA* gene and the ability of the strain to cause virulent footrot (as assessed by current diagnostic criteria). An *intA* negative test result was strongly associated with benign footrot, irrespective of stable isolates being identified on the Gelatin Gel test. The paper reports that 91% of farms with gel stable *intA* negative isolates were diagnosed by field staff as benign footrot.

The DNA *intA* test is available at Regional Veterinary Laboratory Orange, as a supplementary test to assist with the investigation of footrot, particularly where stable isolates are identified on the Gelatin Gel test but the clinical presentation is in keeping with benign footrot.

intA testing will only be available where a full field investigation has been undertaken and all epidemiological information reported on the Footrot Specimen Advice (a minimum of 100 sheep

examined at random, footscores reported, environmental score provided and clinical information included). The performance of the test will continue to be evaluated based on the test outcome and the epidemiological information provided.

Investigations involving gel stable / *intA* negative isolates may be classified as benign footrot providing field investigations show:

- no evidence of progression of the disease, and
- a regression of existing lesions without treatment, and
- a very low persistence of underrunning lesions.

APPROVED

BRUCE M CHRISTIE
DIRECTOR
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