TESTING FOR JD IN DAIRY CATTLE

Checking your dairy herd for Johne's disease (JD) requires multiple approaches to ensure that your herd is as protected as it can be, or that JD is controlled as quickly as possible.

This can be done using two general techniques in combination: visual and laboratory testing.

VISUAL EXAMINATION

Identification of JD visually is not possible as the signs of the disease are similar to the signs of many other conditions. Instead, the visual examination of cattle is used to identify high-risk individuals for further priority testing to confirm the presence or absence of JD shedding or antibodies.

Individuals that should be isolated for sample collection may exhibit symptoms including a reduction in milk production, weight loss and abnormal diarrhoea that may indicate the presence of JD. Any animals exhibiting these signs where the cause is unknown should be examined by a vet or have samples taken for laboratory testing to diagnose the cause.

Visual examination can also be conducted on recently deceased individuals. Post-mortem examination of deceased animals may identify signs relating to a thickening of the intestinal wall if death was caused by JD. Samples of the small intestine and surrounding lymph nodes should be collected in both sterile containers and fixed in a 10% formalin solution.

LABORATORY TESTING

When deciding to test your herd for the first time, it is recommended that samples are collected from all cattle two years of age and older. When testing is conducted on farm regularly, the age of cattle at sampling can be extended to four years of age and older, including any new introduced cattle of two years or older.

Laboratory testing is most commonly done utilising faecal samples, but can also be done using blood, milk and tissue samples.

Blood or milk samples can be sent for testing to detect antibodies to the bacteria causing JD. This is tested by enzyme-linked immunosorbent assay (ELISA). This is a more affordable test capable of producing quicker results, but sensitivity is low and positive JD samples can be missed. Occasional false positives also do occur. It is recommended that if the ELISA test identifies antibodies, secondary testing with faecal culture or polymerase chain reaction (PCR) to confirm infected individuals is conducted.

Herd environmental culture (HEC) testing can be used as a check test for dairy cattle when collected and submitted by a veterinarian or an inspector (generally done every two years). This is conducted by collecting a pooled faecal sample from (most often) a concrete pre-milking holding yard that was well cleaned prior to bringing the cows in for milking. At the completion of milking, manure in the yard is scraped using an X or a W pattern across the holding yard into a single pile to gain a representative sample. This is then well mixed and two 250ml samples are collected in sterile containers, placed in an esky and sent quickly for laboratory testing. Laboratory results can take several months to become available and are more expensive than blood tests.

Samples of individual or pooled faecal samples can also be sent for testing by PCR. PCR testing is quicker than the HEC test but it will not be able to be run on HEC samples.