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MSc in Tropical Animal Health

Comparison of known infected fresh and frozen meat samples for the recovery of *Trichinella* larvae using the magnetic stirrer digestion method

Summary

The artificial digestion method is the routine method for diagnosis of trichinellosis in Belgium. The National Reference Laboratory for Trichinellosis (NRLT) organizes annual ring tests by using proficiency samples to assess the performance of this method in all field laboratories in Belgium. The first part of this work describes the incomplete artificial digestion method for collecting encapsulated *T. spiralis* larvae to prepare proficiency samples.

The method proved to be accurate and allowed to prepare samples with exact numbers of larvae. A total of 52 proficiency meat samples were prepared; half of the samples were kept at 4°C until testing, while the other half were stored at -20°C before testing to kill the larvae.

The second part of this work describes using the artificial digestion method to compare the recovery of *T. spiralis* larvae from the fresh meat and frozen meat samples. The recovery of larvae from fresh meat samples was higher than frozen meat samples and there were larger variations in recovery of larvae from frozen meat compared to fresh meat samples. It was concluded that frozen meat samples cannot be used for a ring test. The fresh meat samples can be used to organize annual ring trials in Belgium by using the artificial digestion method with magnetic stirrer.

Keywords: Trichinella spiralis, artificial digestion method, incomplete digestion method, ring test, freezing.

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