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Poultry and Pig Low-input and Organic production systems' Welfare

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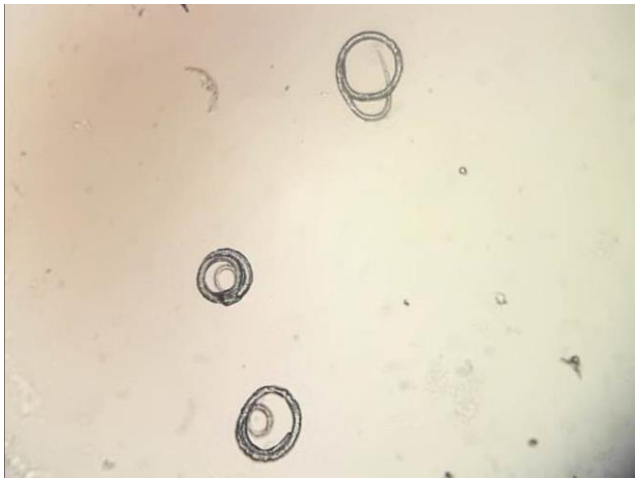
Artificial digestion to detect T. spiralis larvae in pork

Trichinella spiralisis widespread in wild animals and often can be found in domestic pigs. This parasite species is also the most important etiological agent in human trichinosis.
This study aimed to compare the detection capability (for *Trichinella spiralis* larvae) of artificial digestion to an experimental microfluidic device.

Methodology

A total of 10 positive domestic pigs for T. spiralis were tested (5g/animal) in both methods. Artificial digestion is the gold standard method for the direct detection of *Trichinella* larvae in meat samples. The microfluidic method is a new approach regarding the detection of *Trichinella* spp. This method was done by an experimental device from Hungary (Bionics Biomicrofuidics lab, Budapesta).

The detection of *Trichinella* spp.larvae



Trichinella spp. larvae from artificial digetion

Out of the 10 positive samples, only two animals were negative in the microfluidic method, but they were positive (2, 21 larvae) in artificial digestion. Samples with high (500, 100, 75, 68) and medium (58, 20) number of larvae in artificial digestion, had a medium (200, 19, 40, 51) and small (4, 1) larvae count in the microfluidic method.

The PPILOW project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement N°816172.

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Conclusion

In two cases, the number of larvae found in the microfluidic method was higher (35, 18) than in artificial digestion (32, 12).

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