

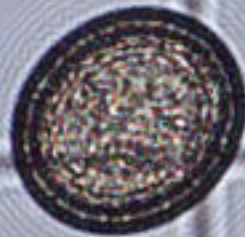


# National Reference Laboratory for echinococcosis

*In 2006, the Nancy Laboratory for Rabies and Wildlife was appointed National Reference Laboratory (NRL) for Echinococcus by the Directorate General for Food. The laboratory had been studying alveolar echinococcosis since the early 1980s.*

*In France, two of the four species of echinococcus (Echinococcus multilocularis and Echinococcus granulosus) are the primary targets. Both tapeworms have a similar life cycle, based both on a prey-predator relationship between a definitive carnivorous host and an intermediate host, and a free phase in the external environment as an oncosphere.*

*Since December 2003, the laboratory has been organising training sessions in the diagnosis of alveolar echinococcosis so as to improve understanding of the parasite and of diagnostic methods. Forty-seven trainees from the departmental veterinary laboratories have already attended the 11 sessions held to date.*



The NRL mandate has accelerated the implementation of the quality system for the diagnosis and the confirmation of diagnosis of *E. multilocularis* and *E. granulosus* at the adult stage of the parasite.

The quality system covers both internal analyses at the laboratory and external requests. It has been operational since January 2009.

## Life cycle of *Echinococcus multilocularis*

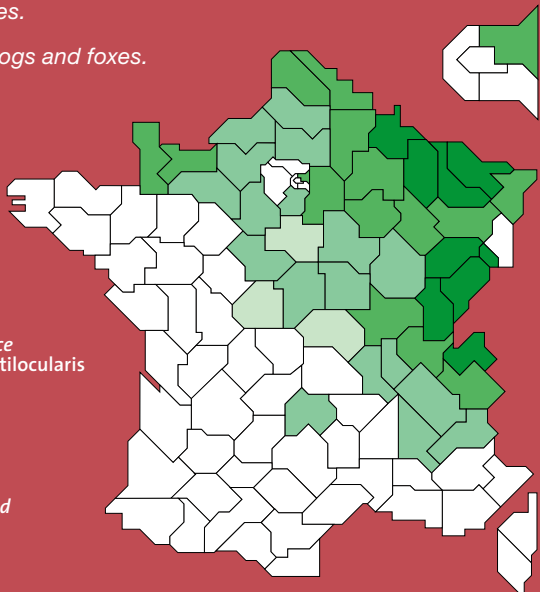


## Annual Echinococcosis diagnosis in figures

- 50 confirmations on worms.
- 150 livers and lungs of cattle, sheep and pigs.
- 200 fox intestines.
- 500 faeces of dogs and foxes.

Apparent prevalence observed for *E. multilocularis*

- Absence
- 0.1% - 10%
- 10.1% - 30%
- > 30%
- Not determined



# Highlights

## *Echinococcus multilocularis*

*Since the early 2000s, the NRL has conducted several surveys in partnership with the Entente rage et zoonoses (ERZ – French Rabies and Zoonoses Alliance) and the University of Franche-Comté to determine the distribution area of E. multilocularis in France.*

*An initial survey based on an analysis of faeces by the ELISA technique has highlighted the presence of the parasite in new départements to the west of the known endemic area.*

*A second was conducted with the assistance of departmental veterinary laboratories (for the analyses) and hunting federations and the Lieutenants de l'ouvèterie, a corps of voluntary hunting inspectors (for sampling).*

*This survey focused on direct observation of the adult stage of E. multilocularis by the analysis of gut contents of foxes sampled throughout the territory of each participating département.*

*These results also show an extension of the known range towards the west as, for the first time, foxes infested with E. multilocularis have been identified as far as the Calvados and Manche départements.*





## *Echinococcus granulosus*

*Over the past 20 years, the number of cases of E. granulosus infestation observed in France has greatly decreased as a result of the health measures undertaken, but the current prevalence of the parasite in France is not known.*

*Studies are being undertaken by the NRL in slaughterhouses in Corsica and southern France to investigate its presence in areas historically assumed to be contaminated.*

*Diagnosis is made by molecular biology, at the same time as screening for protoscolex to determine the fertility of the hydatid cysts analysed.*

*More than twenty positive cases in cattle and sheep in south-east France (genotype G1, G2 and G3) and over a hundred pigs in Corsica (genotype G6-7) have already been diagnosed.*

*Ultimately, this parasite diagnosis and strain genotyping will provide a more complete picture of the endemic situation of E. granulosus in France.*



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