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Centro Nacional
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SPANISH FOOD SAFETY AND NUTRITION AGENCY NATIONAL CENTRE FOR FOOD



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ISTITUTO SUPERIORE DI SANITÀ – ROMA



Outbreak of human Trichinellosis in Spain, 2019

Abstract:

An outbreak of trichinellosis was detected during February 2019 in Retuerta del Bullaque, small village of Ciudad Real province (Castilla La Mancha, autonomous region of Spain). Eighteen people were infested by *Trichinella spiralis*, which was present in homemade cured ham, chorizo and salami produced from a non veterinary controlled domestic pork slaughter. Food samples were morphologic and molecularly tested in our laboratory. The infested food was withdrawn by the competent authorities

Outbreak of human Trichinellosis in Spain, 2019

Epidemiological criteria: consumption of food contaminated with the parasite

Clinical criteria: at least one of these clinical symptoms: diarrhea, fever, myalgia or periorbital edema and at least one of these serological data: eosinophilia, CPK, LDH or transaminases rise

According to this criteria, the 18 affected people were positive to *Trichinella* spp., 3 of them required hospital treatment and their serum analysis was *Trichinella* Ig G positive by IFI



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Outbreak of human Trichinellosis in Spain, 2019





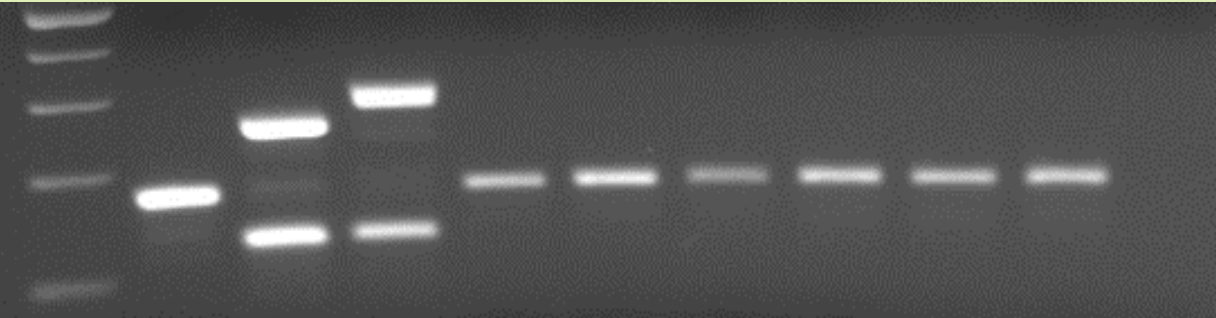
Outbreak of human Trichinellosis in Spain, 2019



Parasitic load

- Cured ham: 91,5 L/g
- Chorizo: 160 L/g
- Salami: 281 L/g

Magnetic stirred method



MULTIPLEX – PCR

Trichinella spiralis

Outbreak of human Trichinellosis in Spain, 2019

Conclusion: this was the higher *Trichinella* outbreak in the last seven years in Spain but not the worst because in 2011 a person died due to a *Trichinella* outbreak

Domestic pork slaughter is allowed in Spain, but a permission and a sanitary inspection from the local municipalities are **mandatory**. Pork stunning before slaughtering and animal welfare requirements are also **mandatory** according to the EC Regulation



Human Trichinellosis in Spain in the last five years

YEAR	OUTBREAKS	HUMAN CASES
2013	2	29
2014	1	4
2015	2	12
2016	2	14
2017	3	8



Wild boars positive to *Trichinella* spp. , hunted in Spain by autonomous regions - 2018



TOTAL 387
Wild boars: 382
Pork: 5

NRLP activities for *Trichinella* and *Anisakis* in Spain, 2018

- Training course to spike samples with *Trichinella* spp.
- Confirmation and molecular characterization of *Trichinella positive samples*
- Reference material shipment to the OCLs
- Organization of the ninth PT on *Trichinella* spp. detection
- Organization of the fourth PT on *Anisakis* spp. detection



Confirmation and molecular typing of *Trichinella* samples by Multiplex-PCR

- Results :
 - Total: 75 samples
 - Wild boar: 73 samples
 - Pork: 2 samples
 - *T. spiralis* : 46 samples
 - *T. britovi* : 13 samples
 - Negative samples: 16 samples

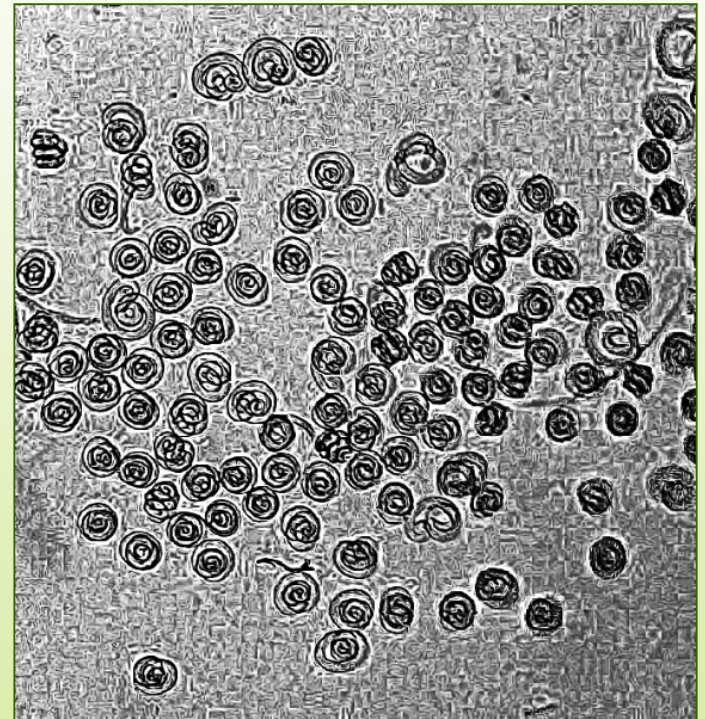


Photo: Rosario Calderón



Ninth PT on *Trichinella* spp. detection (Spain)

- **Participants:** 31 Laboratories (Official Control Laboratories)
- **Test material:** Pork meat samples 100 g

Each batch contained 3 samples:

- One sample negative
- One sample spiked with 4 larvae
- One sample spiked with 8 larvae



- **Methods:** All participants used the reference method

Ninth PT for *Trichinella* spp. (Spain)

- Expression of results:

- *presence / absence*
- *% recovery (informative only)*

- Results:

- 30 labs reported correct results (presence/absence)
- 1 lab reported one false negative result

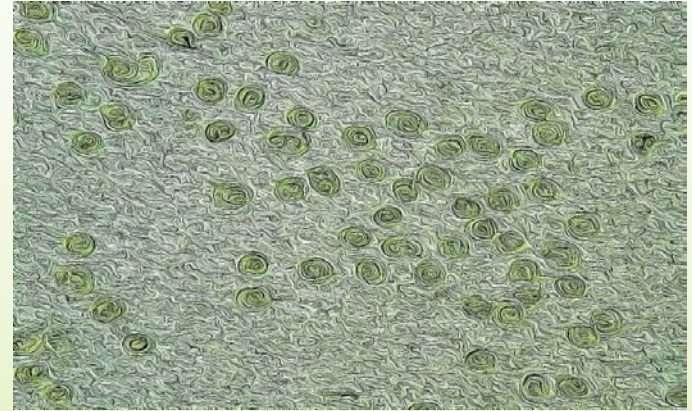


Photo : Rosario Calderón

Fourth PT on *Anisakis* spp. detection

- **Participants:** 12 Laboratories (Official Control Laboratories)
- **Test material :** Fish samples 100 g

Each batch contained 3 samples:

- **One sample spiked with 4 larvae**
- **One sample spiked with 4 larvae**
- **One negative sample**



- **Methods:** All participants used the magnetic stirred method
- **Results:** 11 labs reported correct qualitative results
1 lab reported a false positive result