



Listeria monocytogenes

Laboratorio Nazionale di Riferimento

Aggiornamenti dal Workshop annuale del Laboratorio Europeo di Riferimento

Francesco Pomilio, Marina Torresi


Giornata di studio su "Il Laboratorio Nazionale di Riferimento per la *Listeria monocytogenes*". Teramo 14 dicembre 2017

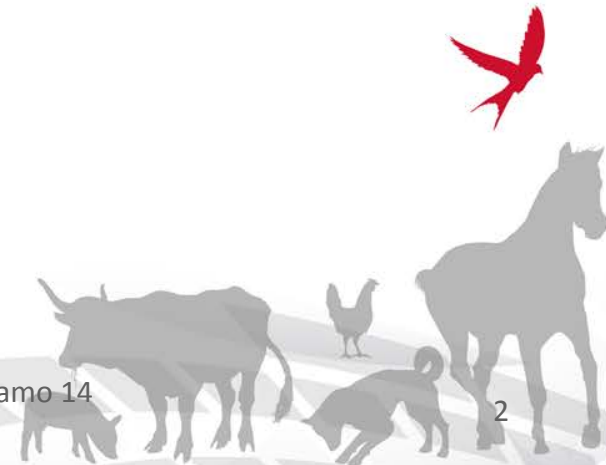




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DG Santé

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- a) Nuovo regolamento sui controlli ufficiali
 - b) Temperature per i challenge test
 - c) Nuova guidance per esternalizzare i PT
 - d) Pooling di campioni



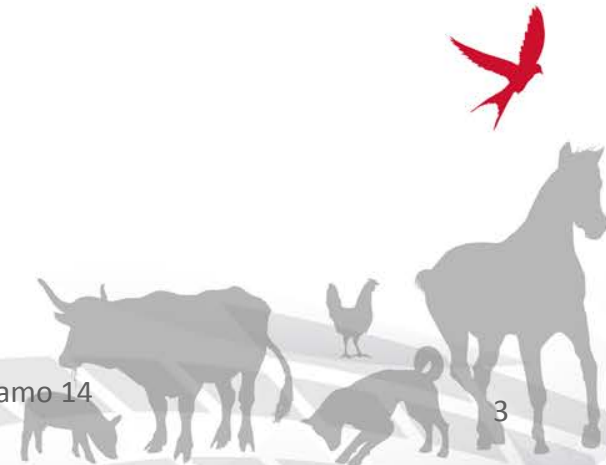



Presentazione EURL Campylobacter

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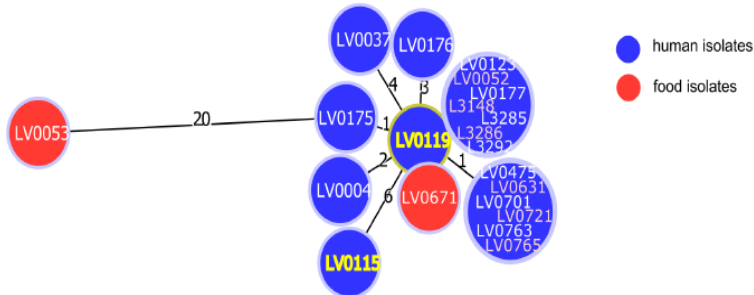
Giornata di studio su "Il LNR per *Listeria monocytogenes*" Teramo 14
dicembre 2017



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- a) Report Zoonosi: **il numero di casi di listeriosi è rimasto stabile nel 2015 ma è aumentato se consideriamo l'intervallo 2008-2015**
 - b) EFSA activities for molecular typing data collection for food and animal isolates

cgMLST – MST: Czech Republic outbreak strains CC8, ST8, PFGE 798/810, CT 3239

Focolaio



Sequences inserted as reference sequences for the EPIS ECDC

Strains were comparable on 1515 common genes from 1701

Vehicle of the infection

- Retrospective typing of LM food isolates stored and deep frozen in the NRL for listeria in SVÚ Jihlava were characterized by PFGE.
- Identical isolates as the epidemic clone has been detected in sliced turkey meat product from the producer in Frýdek Místek region.
- Samples of meat products and from the plant environment were taken, isolated strains of *L. monocytogenes* were of two different pulsotypes.



Reported cases of listeriosis in 2012-2016 LM – pulsotype 810/798, CC8, ST8



Outbreak in the Moravian-Silesian Region

- In 2016 an increased number of listeriosis has been reported from the Moravian-Silesian Region (12).
- Illness rate reached 0,9 cases per 100,000 population (0,35 per CR).
- Molecular methods confirmed the occurrence of identical clone in 9 patients.
- Outbreak clone characteristics: **serotype 1/2a, pulsotype 810/798, CC8, ST8, CT 3239**
- 2 cases in newborns, 2 patients died.
- Retrospective study show high prevalence of this clone in Frýdek Místek region.

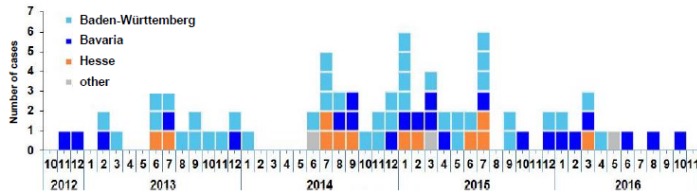


Listeria monocytogenes

Outbreak facts

- 78 cases
- Baden-Württemberg (BW) (40), Bavaria (BY) (23), Hesse (HE) (12), other (3)
- 8 patients died, 4 confirmed due to listeriosis
- Nov 2012 – Oct 2016

Epicurve [Source: Robert Koch Institute, data status 11/01/2017]



FOOD MATCH 2016



„Original Bavarian Wammerl“ (pork belly)

- Regular official sample at retail 18/03/2016 in Bavaria
- Cooked, packaged, not chilled
- **Lm pos. 1.9×10^5 CFU/g**
- Manufactured and distributed in Southern Germany
- Recall from consumers, product withdrawn

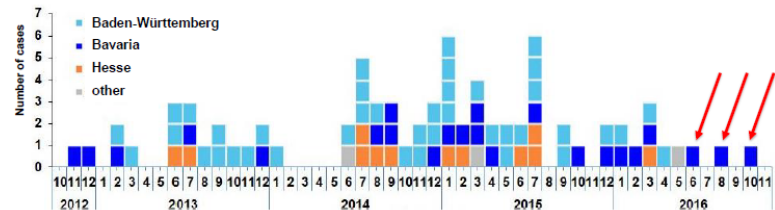
→ **MATCH: PFGE 13a/54, CT1248**

Nov 2015

- Epidemiological investigations pointed to pork meat products distributed in supermarkets at supra-regional level in Southern Germany.
- Food authorities in BW, BY and HE intensified official control sampling of pork meat products and sent Lm isolates for molecular typing to BfR.

Epidemiological Evidence?

- Intensive reporting by media → no case-control study
- Explorative interviews in 2016:
 - April: patient consumed "Wammerl" before illness
 - May: patient consumed pork belly from affected supermarket
 - June: patient consumed „Wammerl“ and other products of affected company
 - August: patient consumed most probably other products of affected company after best before date (almost spoiled)



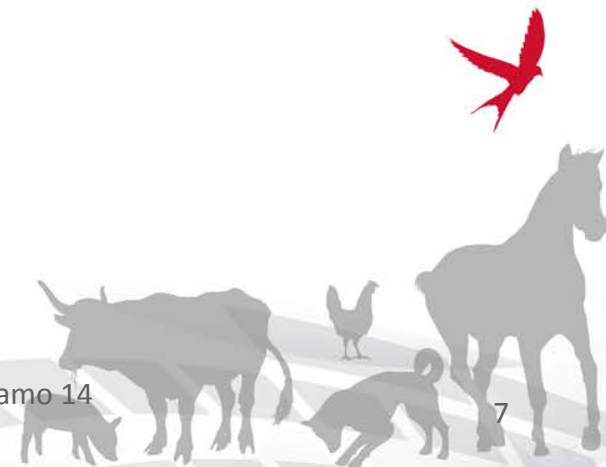



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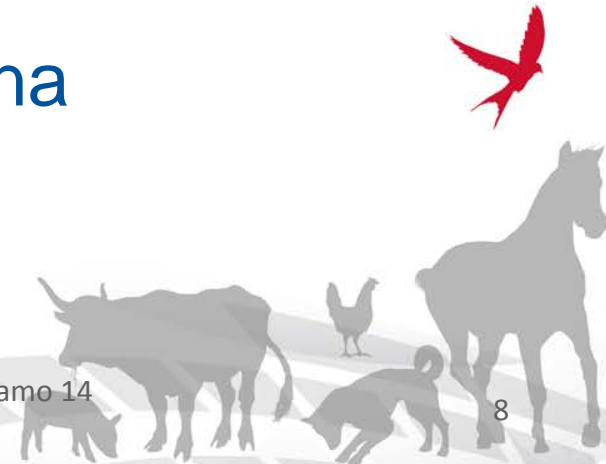
Italia

Vi risparmio la presentazione

Giornata di studio su "Il LNR per *Listeria monocytogenes*" Teramo 14
dicembre 2017



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- a) PT risultati ricerca numerazione tipizzazione molecolare
 - b) Metodi alternativi la nuova validazione
 - c) Database europeo
 - d) Progetto wgs
 - e) Efsa questionario su WGS
 - f) Typing and persistence carne suina




Presumed persistent strains (PP)


- At least three strains with indistinguishable PFGE profiles
- At least observed over one year
- From the production environment or finished products

Strains not exposed to food processing environment (NEP)

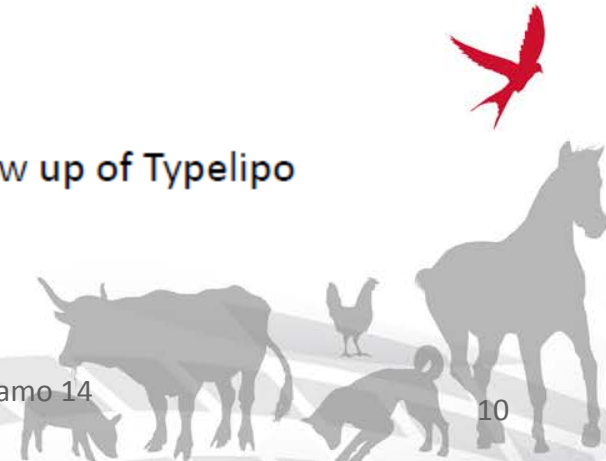
- Strains isolated from farm & natural environment
- Strains isolated from animal pathology or asymptomatic carriage




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- **Genetic diversity analysis completed**
CC121, CC9 were associated to the food production
CC1, CC5 and CC8 were found in the three compartments
CC37, CC224, CC59, CC6 and CC77 were associated to pigs at farm

 Publication in progress

- **Strain selection completed**
69 PP strains versus 67 NEP strains
- **Dead line for genome sequencing is February**
136 strains to be sequenced -> 90 are already sequenced
- **Genetic analysis February – August 2017**
- **Application to 2017 – 2018 Grant: “Adlipo” project follow up of Typelipo**





EURL *Lm* Guidance Document to evaluate the competence of laboratories implementing challenge tests and durability studies related to *Lm* in RTE foods

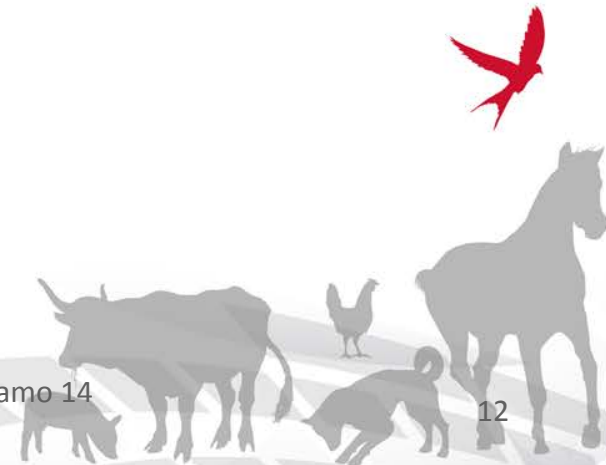
Hélène BERGIS, Unit SEL



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**ON-GOING INFORMATION on the
CEN/ ISO Draft International Standard (DIS) 20976 -1
Microbiology of the food chain**

Guidelines for conducting challenge tests for food and feed products





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Grazie a voi di essere qui e grazie ai colleghi del mio reparto e ai colleghi degli altri reparti che mi supportano e mi «sopportano».

Anna Ruolo