



CATÓLICA PORTO
BIOTECNOLOGIA

*First confirmed human outbreak of
listeriosis in Portugal*

G. Almeida, R. Magalhães, I. Santos, V. Ferreira, J. Silva, M. M. Mendes, P. Nabais, M. G. Mariano Fernandes, M. I. Mâncio, M. M. Sousa, P. Teixeira



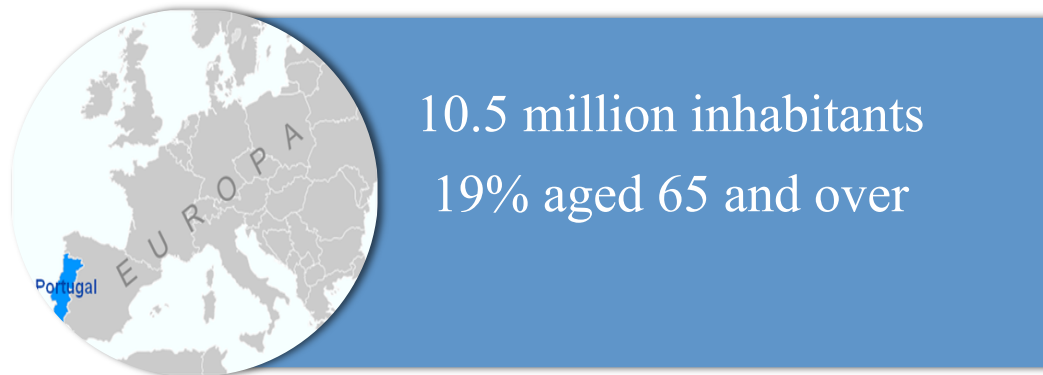
CBOF

Centro de Biotecnologia
e Química Fina

Listeria monocytogenes & listeriosis...

Listeria monocytogenes is recognized as a major, opportunistic, foodborne pathogen in humans. The condition which this species causes, listeriosis, occurs worldwide both sporadically and epidemically, and has a case–fatality rate between 20 and 30%.

Listeriosis is not a reportable disease in Portugal!



Listeria monocytogenes & listeriosis in Portugal

In 2003 a collaborative study with the main hospitals in Portugal and CBQF was established aiming to "collect data on listeriosis"

BMC Infectious Diseases



Research article

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Listeriosis in Portugal: an existing but under reported infection

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The incidence of listeriosis was at least 1.4 cases per million inhabitants for the year 2003

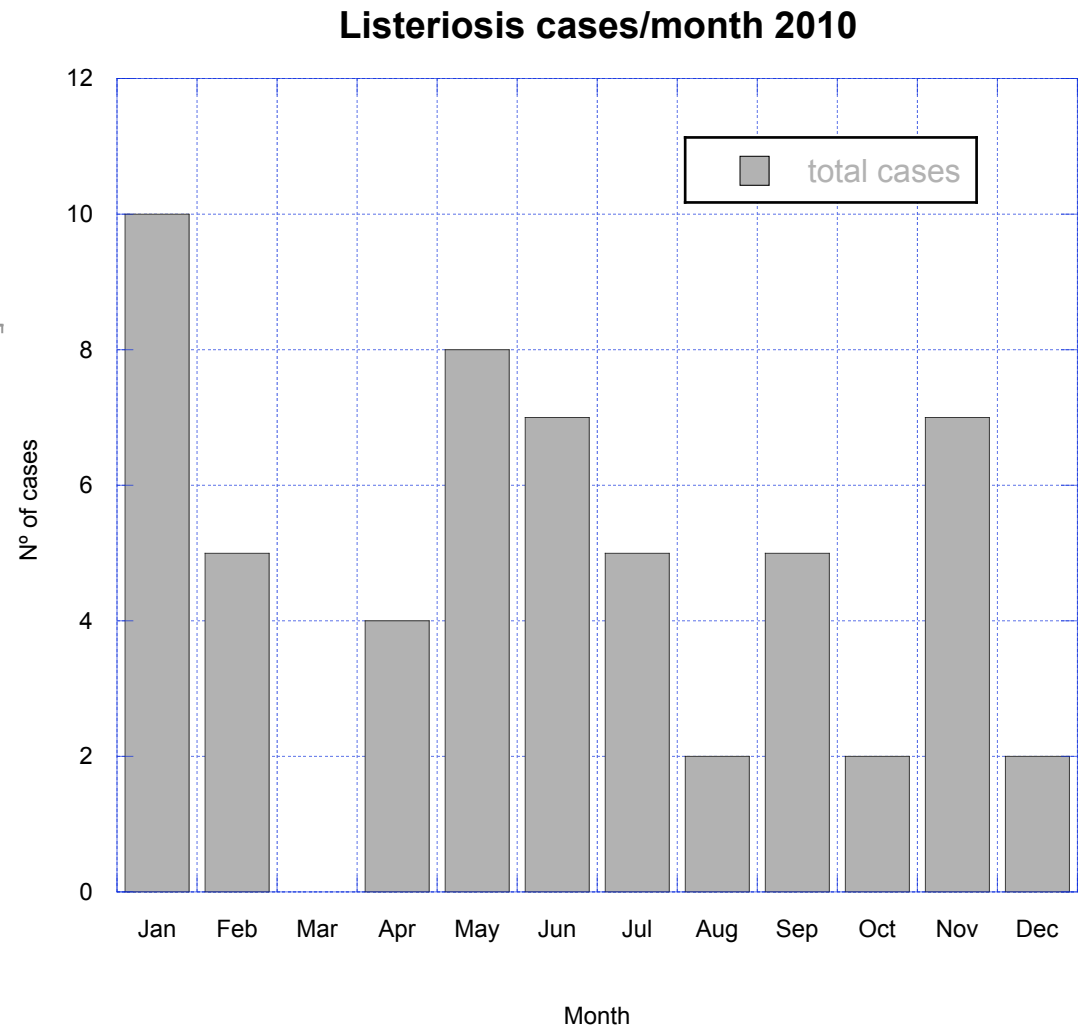
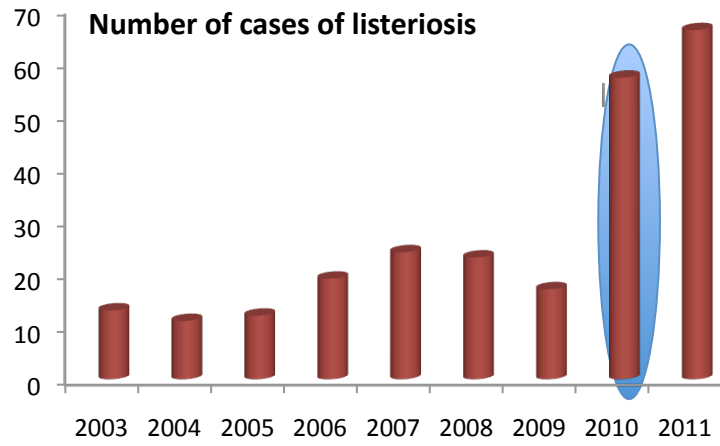
Eur J Clin Microbiol Infect Dis (2010) 29:1219–1227
DOI 10.1007/s10096-010-0988-x

ARTICLE

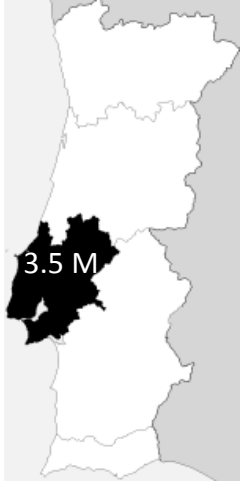
Distribution and characterization of *Listeria monocytogenes* clinical isolates in Portugal, 1994–2007

G. Almeida • A. Morvan • R. Magalhães • I. Santos •
T. Hogg • A. Leclercq • P. Teixeira • Research Team

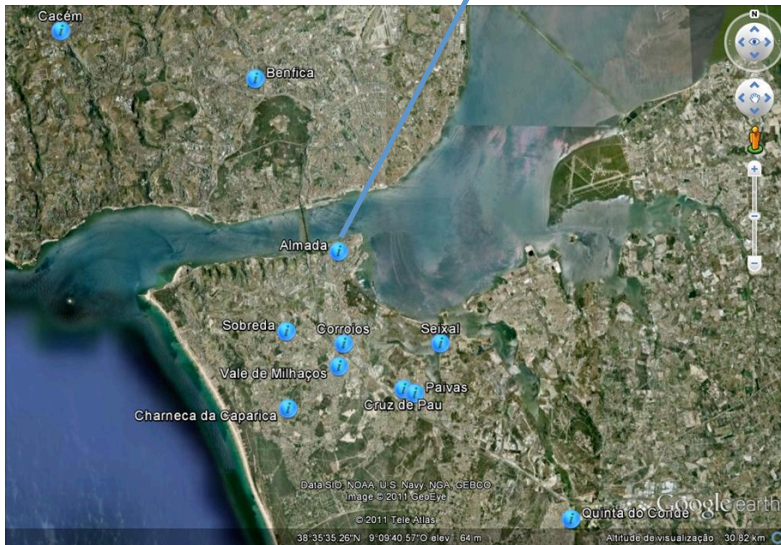
The incidence of listeriosis was at least 2.3 cases per million inhabitants for the year 2007



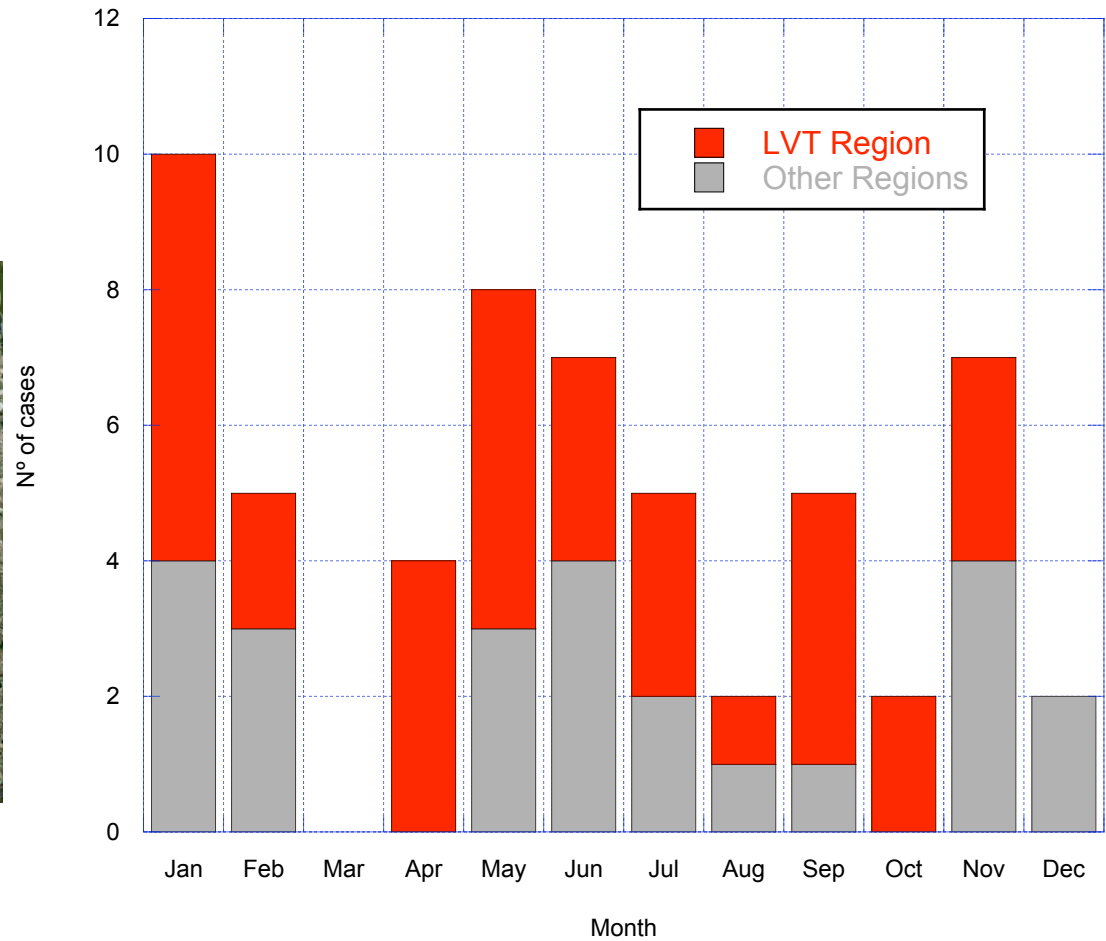
34 cases in "Lisboa e Vale do Tejo"



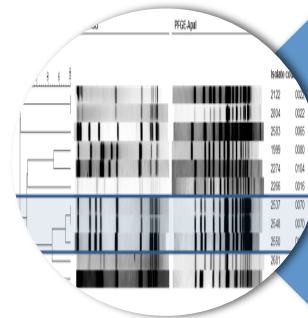
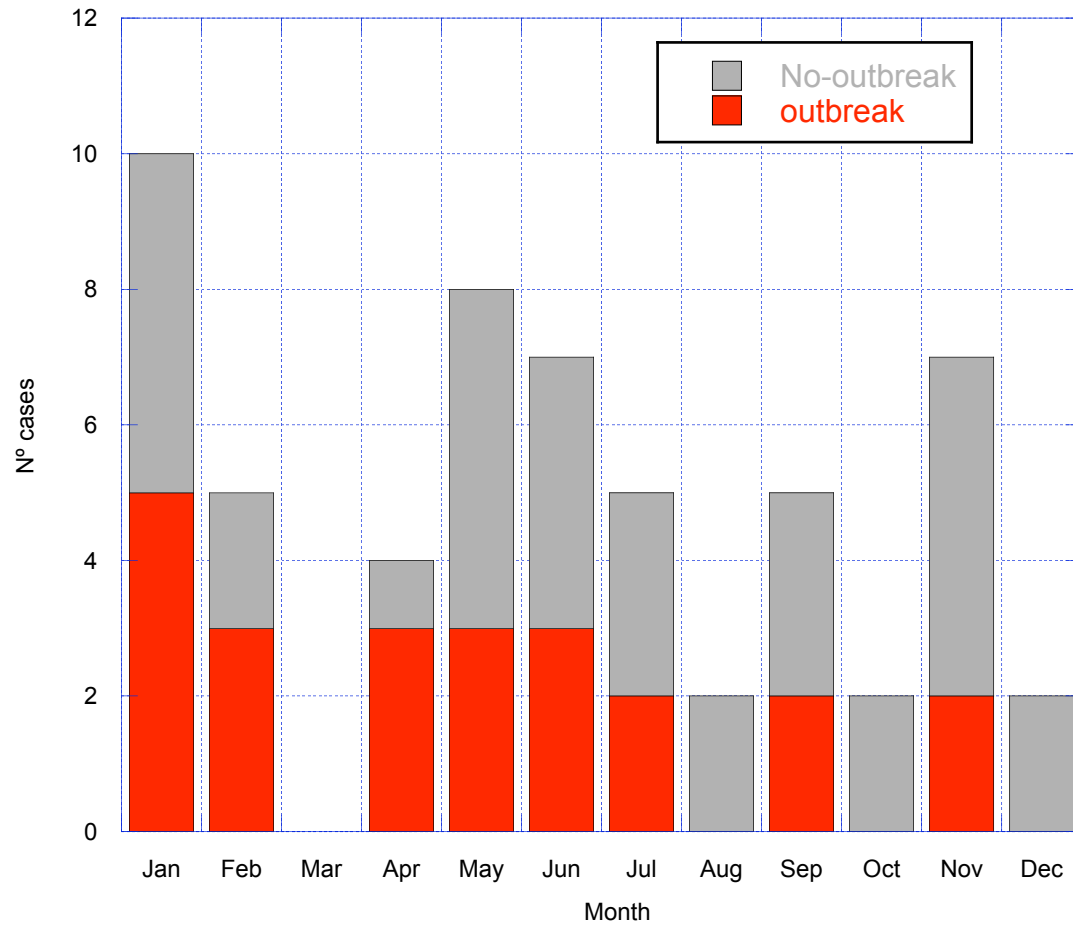
21 cases
16 Jan-Mar !!!



Listeriosis cases/month 2010



Listeriosis cases/month 2010



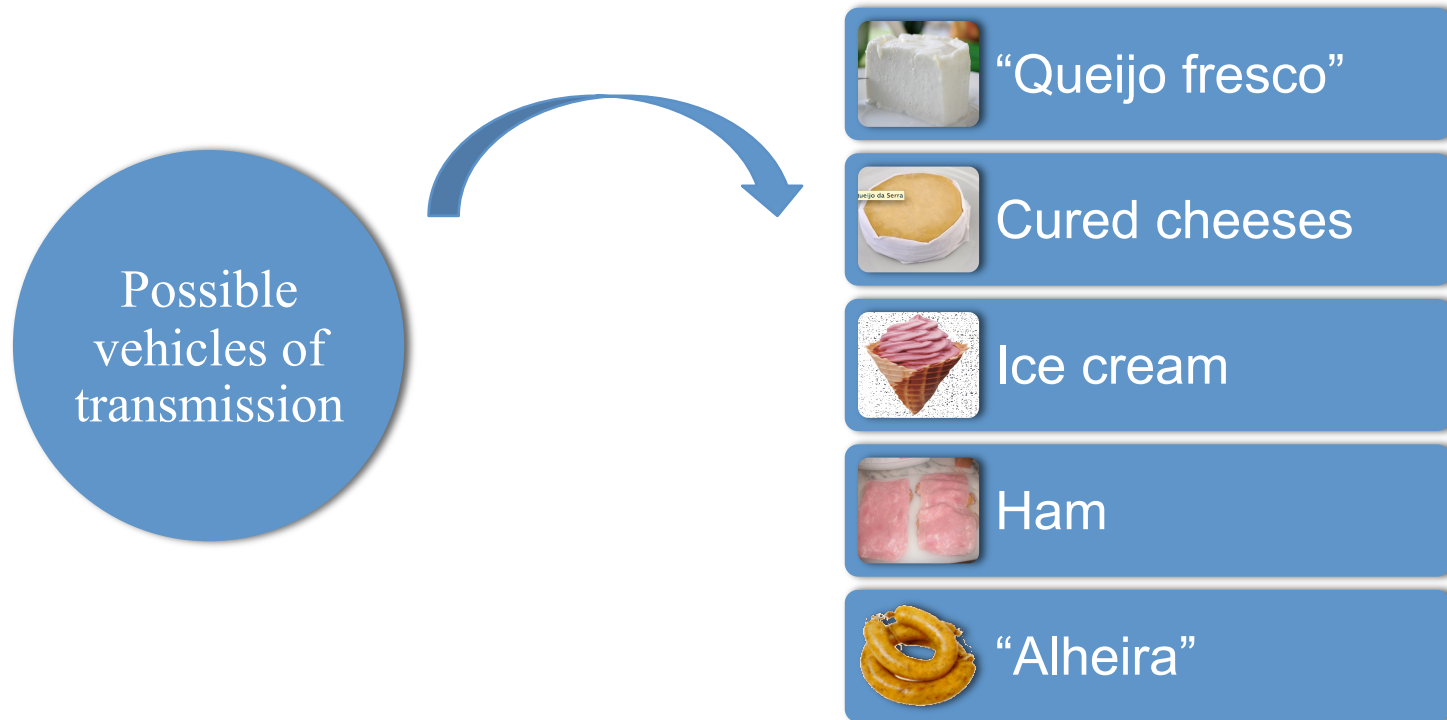
21 isolates
shared the same
pulsotype
8 Jan-Mar !!!

July...

Health Directorate (DGS) was informed and Hospitals were notified to communicate cases of listeriosis and to send isolates to CBQF for PFGE typing

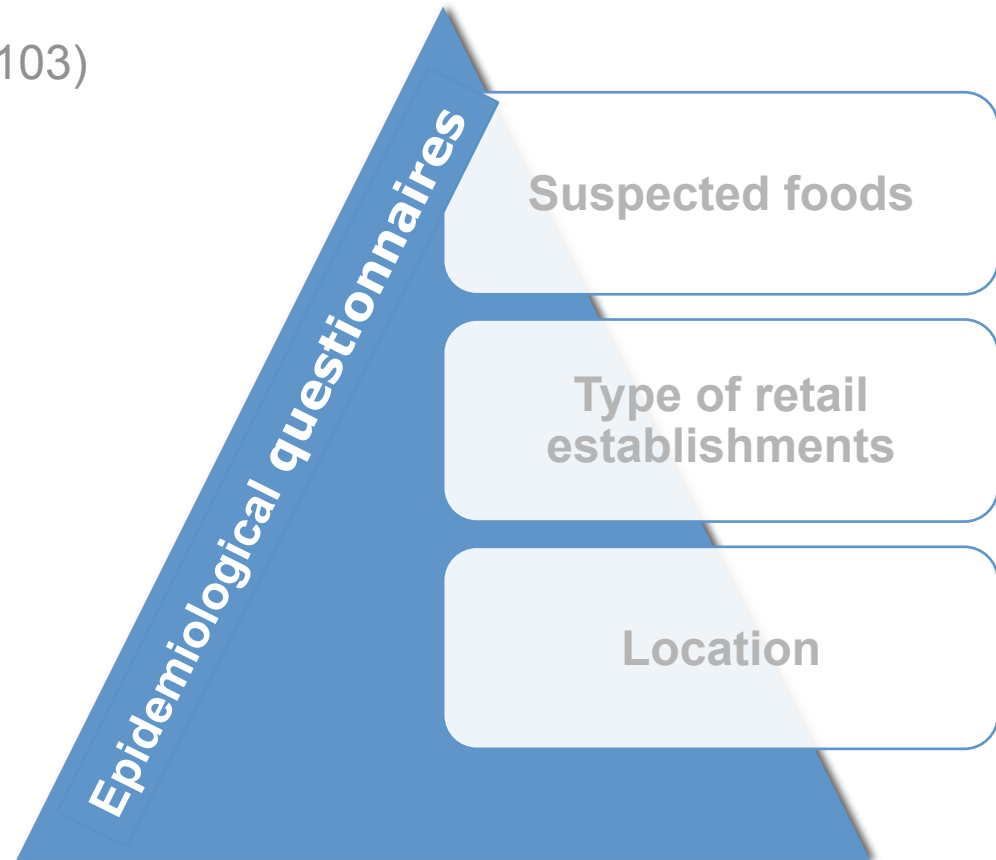
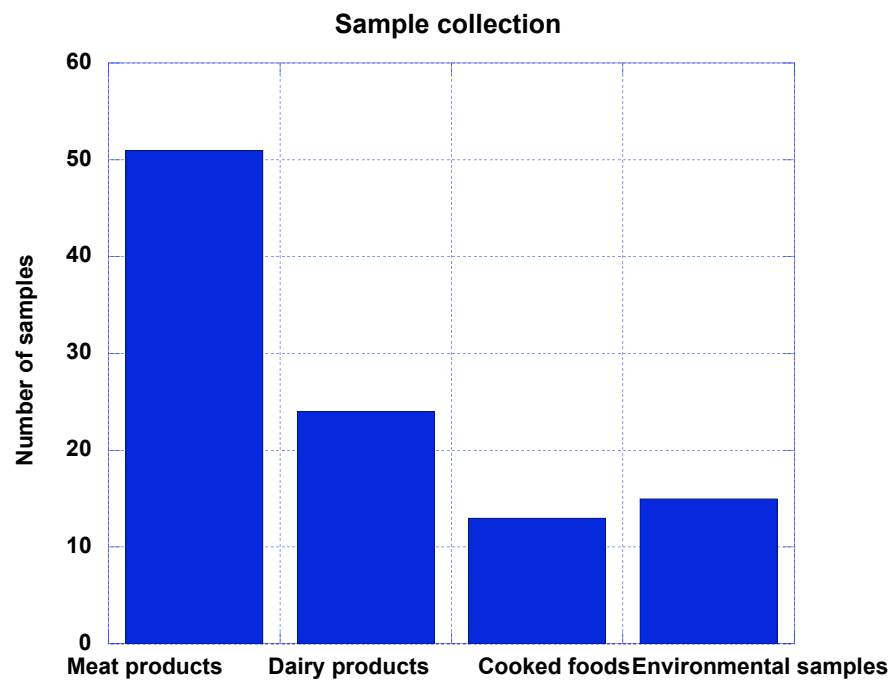
August ...

Lisbon health authorities (ARS-LVT) began the outbreak investigation...
Epidemiological questionnaires were administered...



11-15th October...

First product sampling by ASAE (N=103)





✘ > 1000 ufc/g

★ + 25 g

⚙ + swab sample



Produced in Mafra

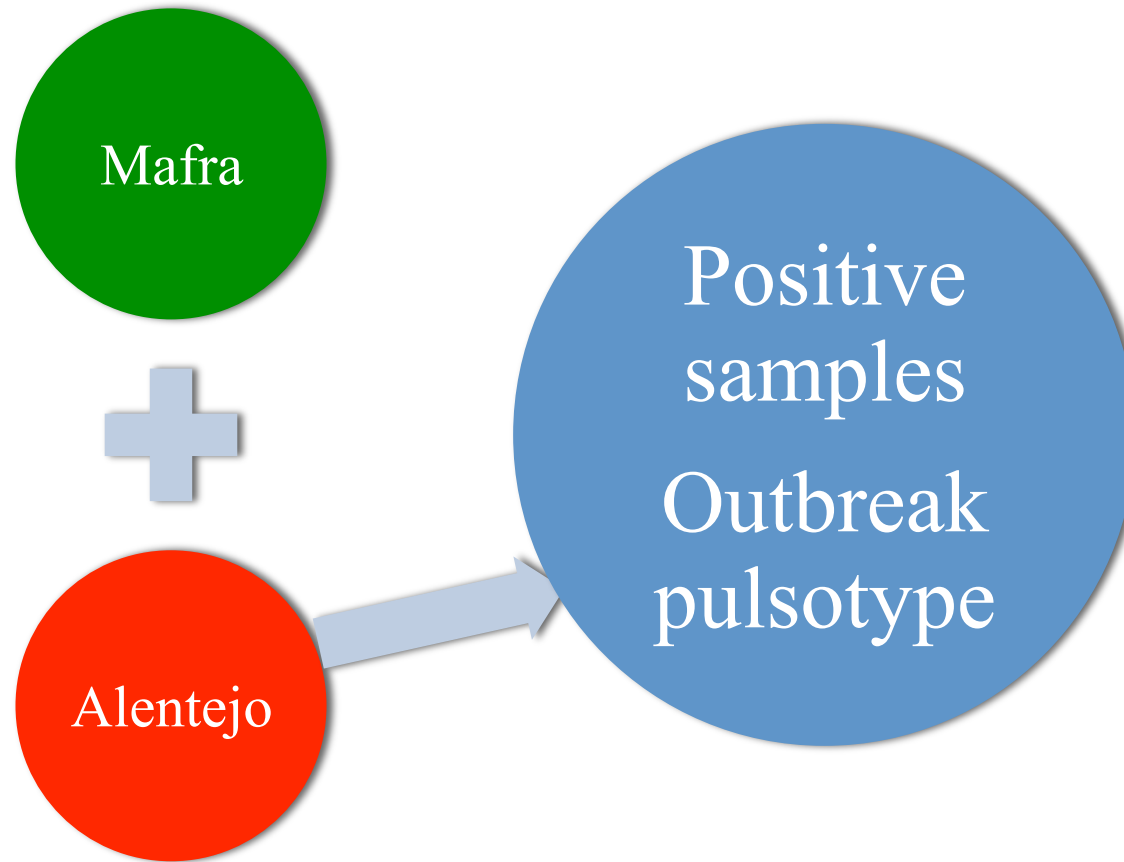
Produced in Alentejo

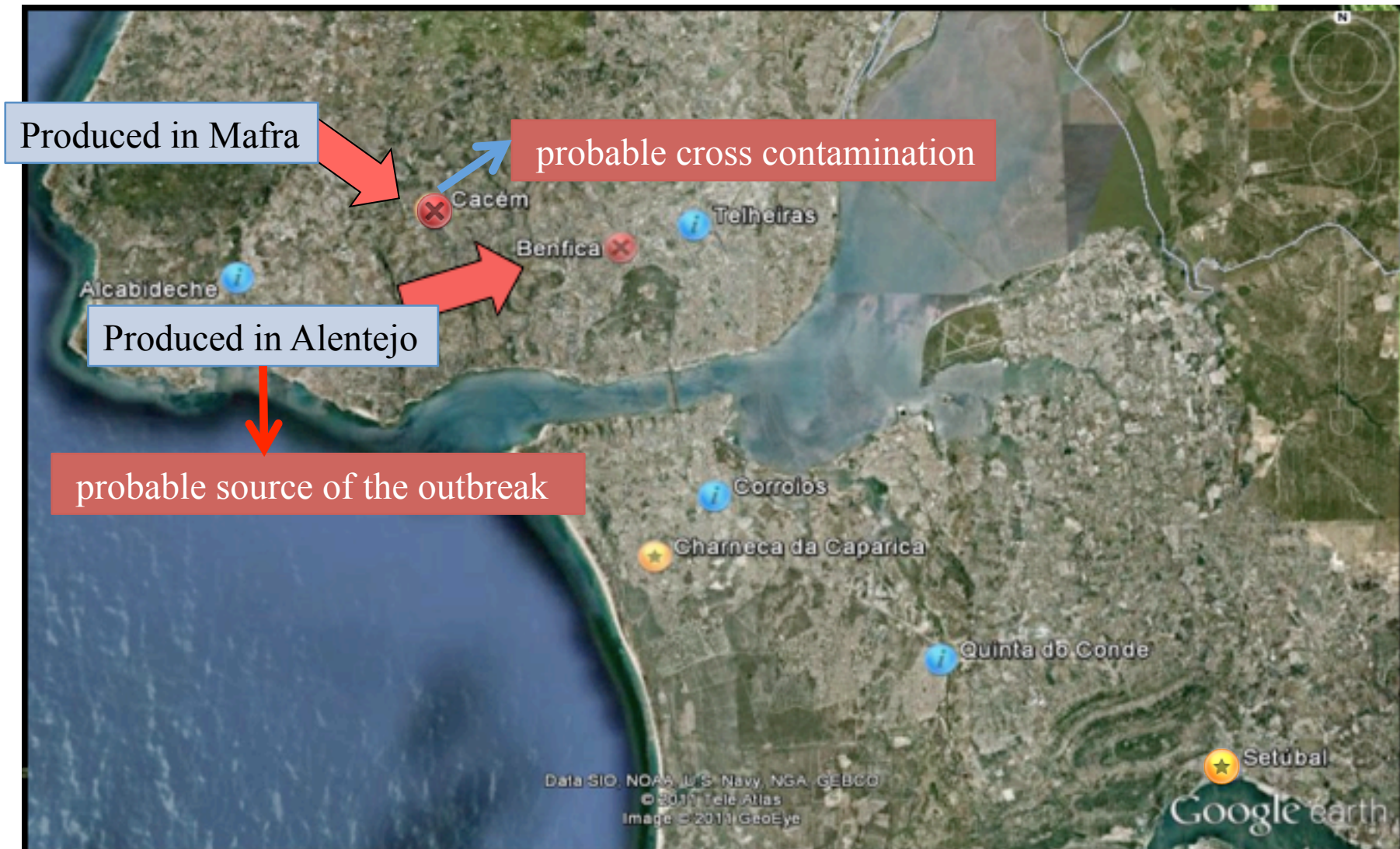
⊗ Same pulsotype as clinical isolates

★ Different pulsotypes

Second product sampling by ASAE (Nov 2010 – Mar 2011):

Product collection, in the two cheese factories, before being delivered to the market...





⊗ Same pulsotype as clinical isolates

★ Different pulsotypes

Product recall/ More samples analyzed (March 2011)

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graph TD; A[Product recall/ More samples analyzed (March 2011)] --> B[Cheeses made with cow and goat milk tested positive (outbreak pulsotype)]; B --> C[Voluntary suspension of production/Disinfection/Sampling]; C --> D[No positive samples/Product delivered to the market]; D --> E[Monthly sample collection in the factory (ASAE)];
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Cheeses made with cow and goat milk tested positive (outbreak pulsotype)

Voluntary suspension of production/Disinfection/Sampling

No positive samples/Product delivered to the market

Monthly sample collection in the factory (ASAE)

In summary...

*83 cases of listeriosis occurred between January 2010 and March 2011

*40 in Lisboa e Vale do Tejo

*22 isolates shared the same pulsotype

•13 deaths

*Cheeses produced by a factory located in Alentejo were identified as the probable source of this outbreak

*The “outbreak pulsotype” was not isolated from foods/environment/patients after March 2011

*CBQF still receives isolates for PFGE typing – a non-official Surveillance of *Listeria monocytogenes* infection in Portugal was established

Thank you for your attention!

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