Escola Superior de Biotecnologia da Universidade Católica
"Escola com Passado – Profissões com Futuro"

BioMicroWorld 2009
2-4 December
Lisbon, Portugal

Differences between clinical and food isolates of *Listeria monocytogenes* in biofilm formation

Barbosa, J., Silva, J., Magalhães, R., Santos, I., Almeida, G. and Teixeira, P.
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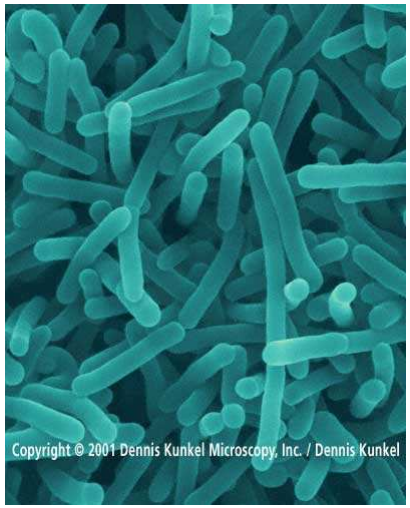


Bacillus
Gram positive
Oxidase -
Catalase +

"Listeriosis"

Genus *Listeria*:

L. monocytogenes

L. innocua

L. seeligeri

L. welshimeri

L. ivanovii

L. grayi

L. murrayi

Listeriosis

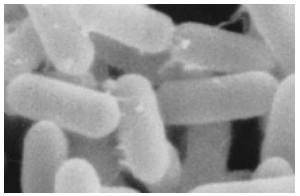
Is it a problem?

- Low incidence
- High severity (mortality rate > 30%)
- Dose of infection is still unknown

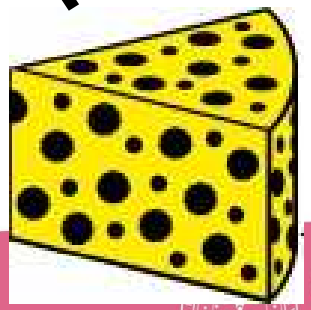
Risk groups for listeriosis:

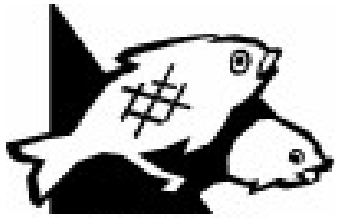
Pregnant women
Newborns
Persons with weakened immune systems
Persons with cancer, diabetes, or kidney disease
Persons with AIDS
The elderly

Healthy adults and children occasionally get infected with *Listeria*, but they rarely become seriously ill.



Epidemiology of *L. monocytogenes*





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BMC Infectious Diseases

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Research article

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Listeriosis in Portugal: an existing but under reported infection

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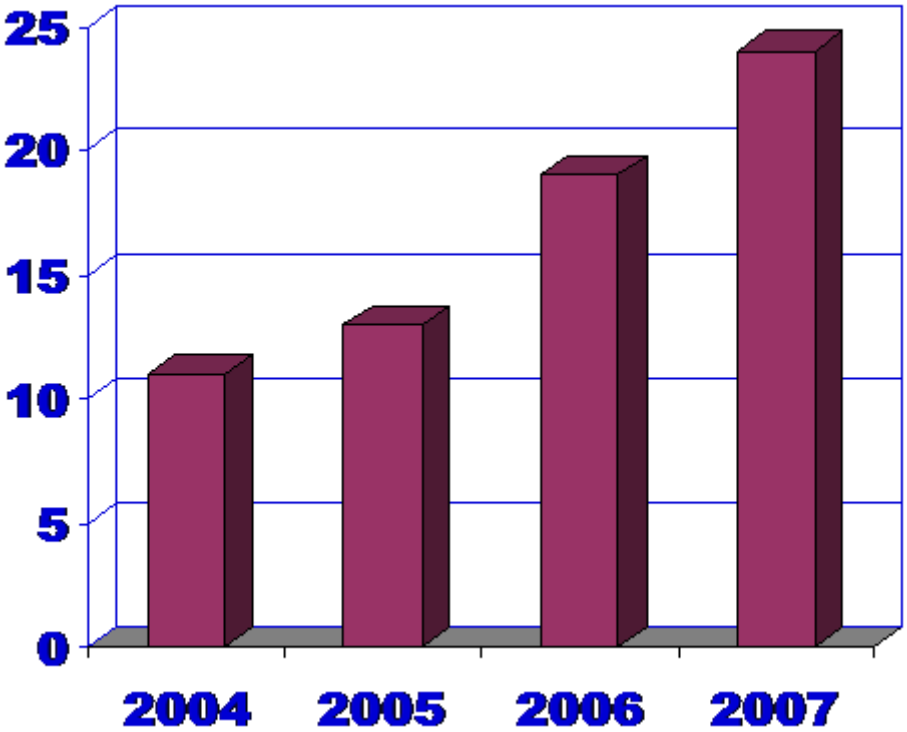

Lethality > 40% for the 24 cases that it was know the progress of the infection

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Meat Science 73 (2006) 570–575

MEAT SCIENCE

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Chemical and microbiological characterization of *alheira*: A typical Portuguese fermented sausage with particular reference to factors relating to food safety

Vânia Ferreira, Joana Barbosa, Sandra Vendeiro, Ana Mota, Fátima Silva, Maria João Monteiro, Tim Hogg, Paul Gibbs, Paula Teixeira *

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Food Control 16 (2005) 121–124

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ce of *Listeria* spp. in domestic refrigerators in Portugal

[a], Mafalda Regalo [a], Cristina Mena [a], Gonçalo Almeida [a], Luísa Carneiro [a], Paula Teixeira [a,*], Tim Hogg [a], Paul A. Gibbs [a,b]

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FOOD MICROBIOLOGY

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Incidence of *Listeria monocytogenes* in different food products commercialized in Portugal

Cristina Mena[a], Gonçalo Almeida[a], Luísa Carneiro[a], Paula Teixeira[a,*], Tim Hogg[a], Paul A. Gibbs[a,b]

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Listeria monocytogenes in foods: contributing data for risk assessment (PTDC/AGR-ALI/64662/2006)

Task 1: General characterization of *L. monocytogenes* strains isolated from different sources

(…)

Capacity to form biofilms
(Cerca *et al.*, 2004)

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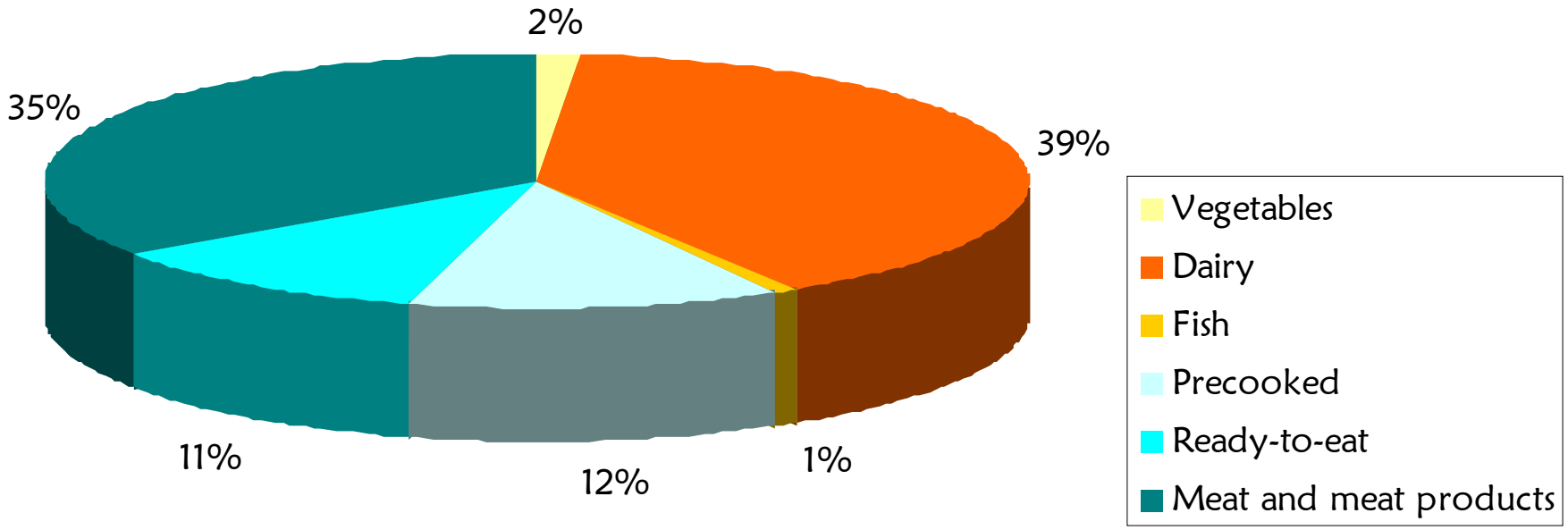
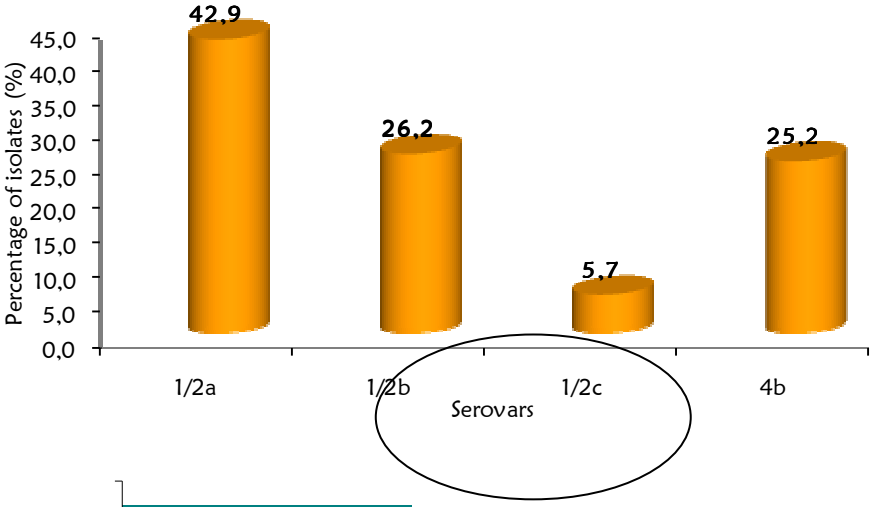
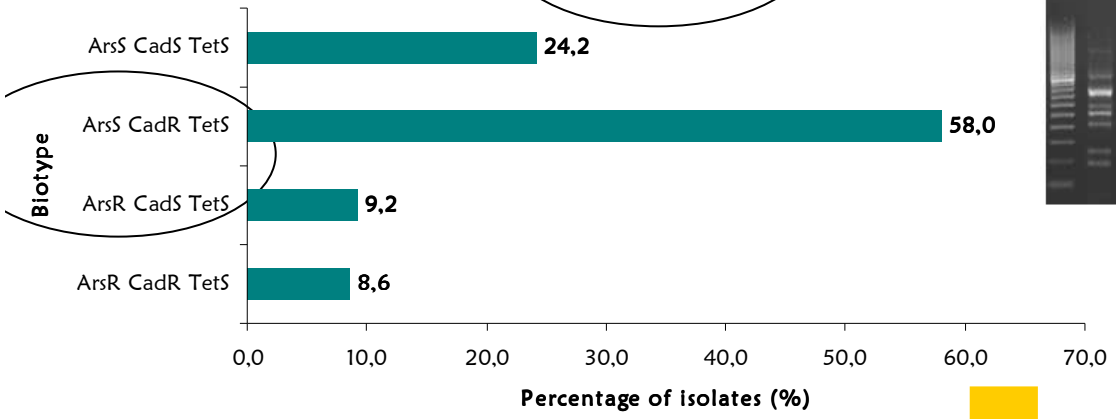
Diversity

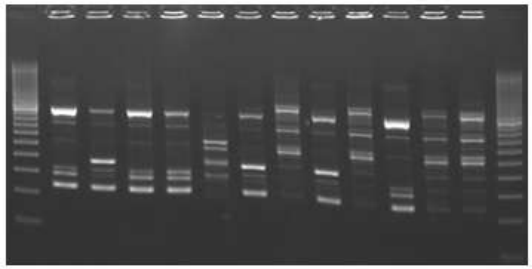


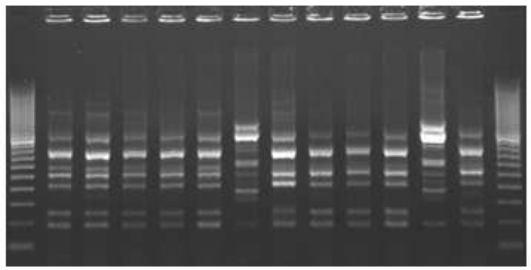
Diversity of products containing *L. monocytogenes* (n=1975)

Typing the isolates of *L. monocytogenes* (n=1975)





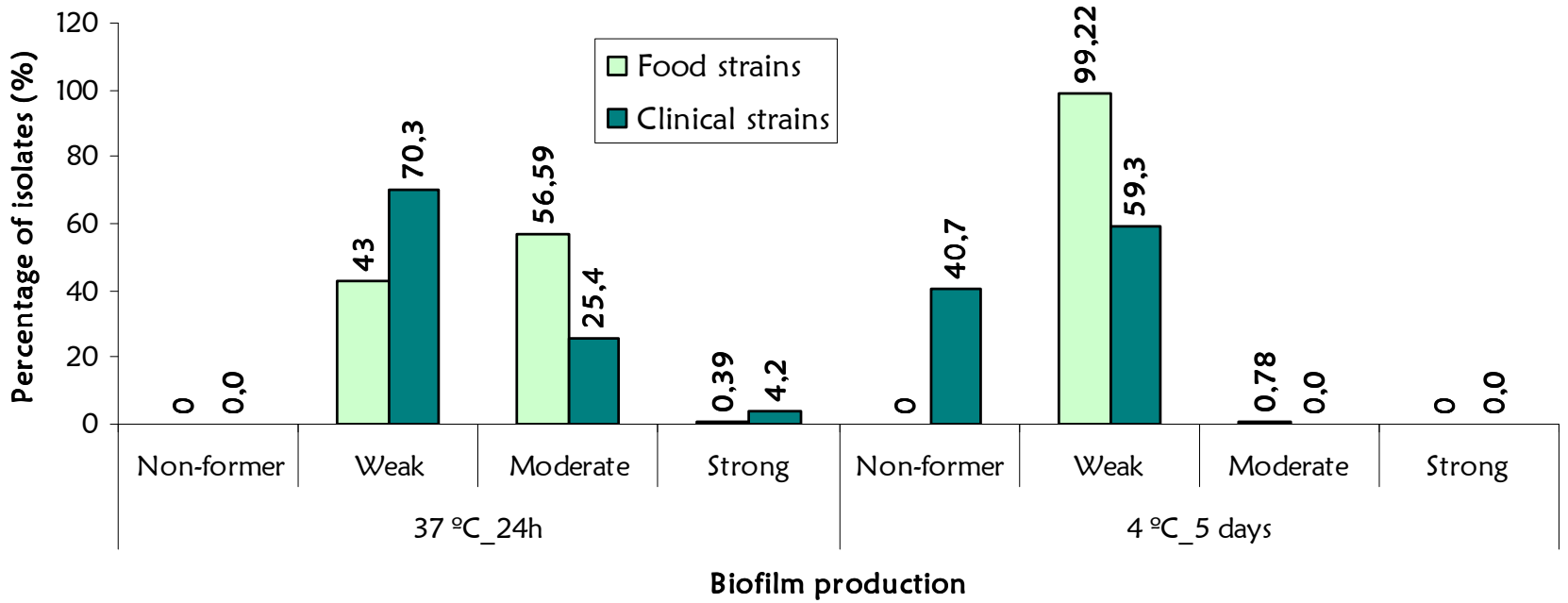




UBC155
(14 profiles)

OPM01
(16 profiles)

258 isolates



Percentage of food (n=258) and clinical isolates (n=118) for biofilm formation test

Conclusions

- In general, food strains have more capicity to form biofilms;
- At 37ºC, 4.2% of the clinical strains of *L. monocytogenes* were classified as strong biofilm producers against 0.39% of the food isolates;
- The biofilm production was temperature, strain and time dependent

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International Symposium on Problems of Listeriosis

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