



TRUEFOOD

Traditional United Europe Food

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Instrument: Integrated Project

Thematic Priority: Food Quality and Safety (# 5)

D6.1.3.2

Technical support to meat industry

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Revision: final

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



Report on a the technical support to meat industry

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Summary

The scope of this project is to reduce and/or to inhibit the development of pathogens in dry fermented sausages, the goal being to select active LAB strains with an antimicrobial action in order to biopreserve meat and consequently products.

In the WP2A.4 entitled 'Biopreservation of pork carcasses muscles by lactic acid bacteria (LAB)', two *Lactobacillus sakei* strains (IM8 and DM3) originating from ADIV's collection were selected for their bioprotective effect against *Listeria monocytogenes* both in fresh pork meat and in dry fermented sausages.

As these cultures may lead to industrial applications, a demonstration and tasting session took place on the 5th May 2009 at ADIV's pilot plant in the presence of 6 interested French agro-food industry manufacturers (*cf. D6.1.3.1*).

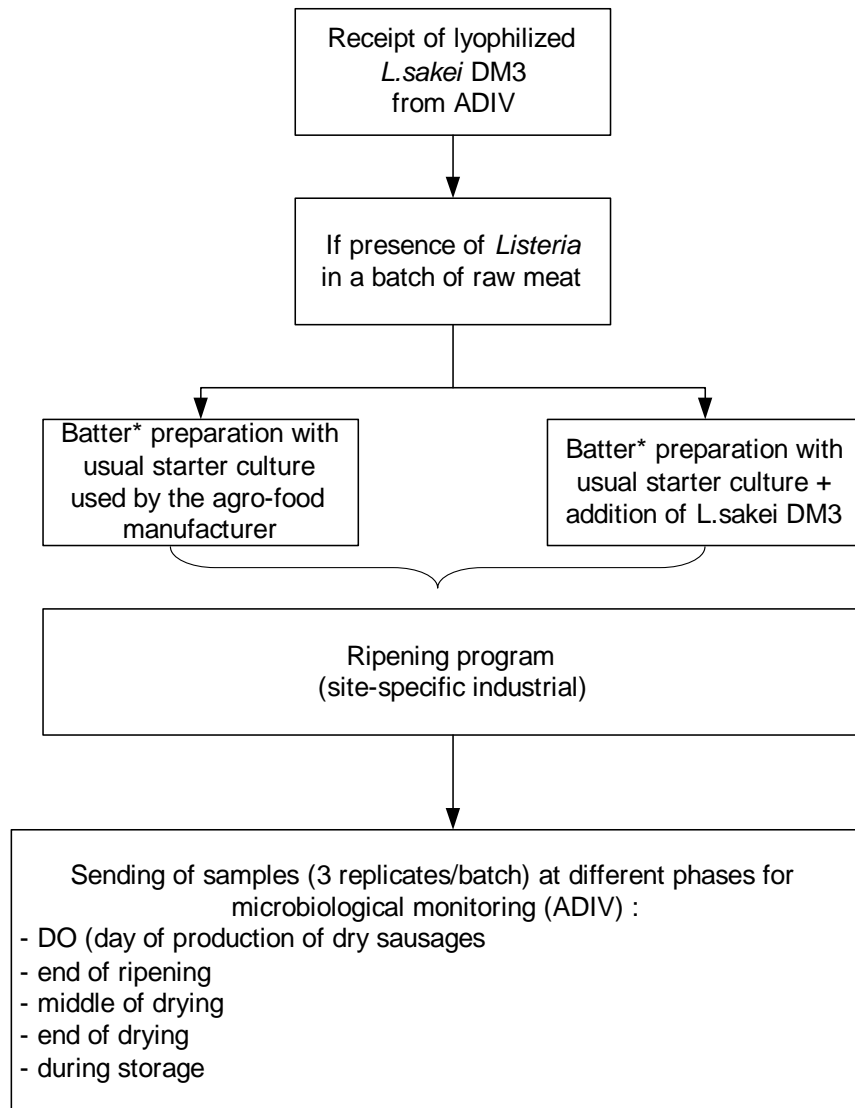
This report presents the results obtained after testing the *L.sakei* DM3 on an industrial scale.

I. Objectives

The aim of this trial carried out on an industrial site was to validate the antagonistic effect of *L.sakei* DM3 against *Listeria monocytogenes* naturally present in raw meat, destined to produce industrial dry fermented sausages.

II. Methodology

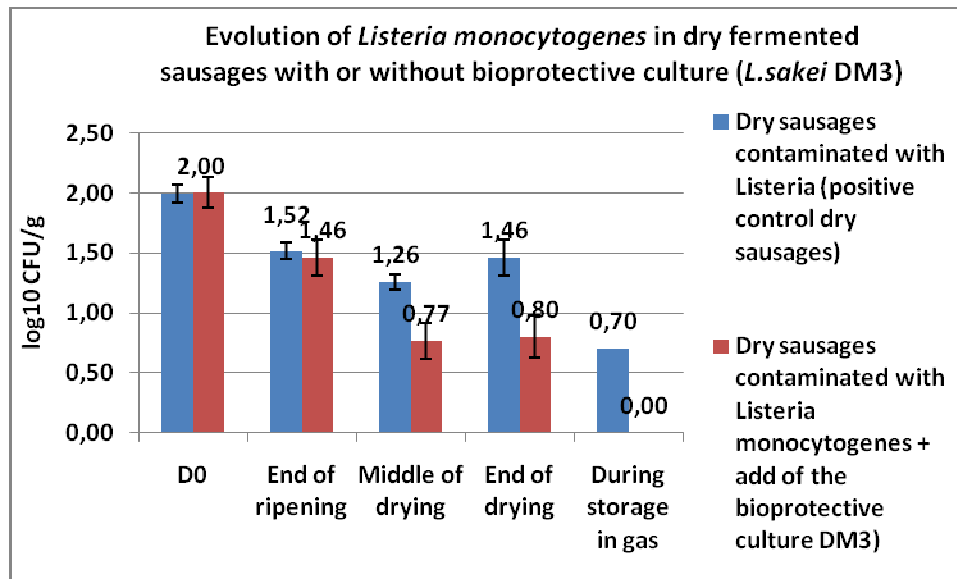
The scheme followed by the agro-food manufacturer is detailed hereafter:



* batter : Minced mixture prepared to produce dry fermented sausages:
lean meat + fatty meat + ingredients + additives

During the ageing period, microbiological analyses were carried out on the products on different days: D0 (initial day), D6 (end of fermentation), D20 (middle of drying), D30 (end of drying) and during storage. At each stage, *L. monocytogenes* and LAB strains were counted on 3 samples per batch (with or without *L.sakei* DM3).

III. Results and Discussion



This industrial trial shows that the raw meat was naturally contaminated by *Listeria monocytogenes* at 2 log₁₀ CFU/g. The anti-*Listeria* effect in product with bioprotective culture DM3 was considered as significant since middle of drying. The *Listeria* concentration difference with the control batch was higher than 0.5 log₁₀ CFU/g. During storage in gas, we noted a total absence of *Listeria* in bioprotective dry sausages while the control gave a contamination equal to 0.7 log₁₀ CFU/g.

Two other industrial trials were also conducted but the raw meat was not enough contaminated in *Listeria monocytogenes* to give relevant conclusions.

IV. Conclusions

The trial carried out on an industrial site permitted to validate the anti-*Listeria* activity of the *Lactobacillus* strain DM3. Concerning industrial applications, ADIV was approached by a starter cultures provider who would be interested to produce this bioprotective culture.