Qualità e sicurezza dei prodotti tipici: il ruolo della Microbiologia Agraria

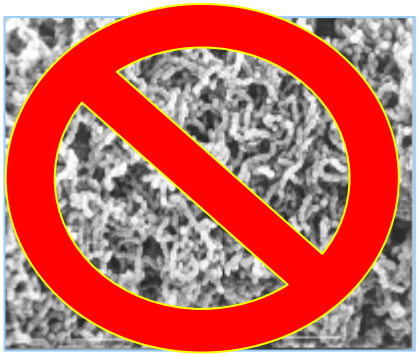
SIMTREA

Francesca Clementi,
Università Politecnica delle Marche

f.clementi@univpm.it

VI Convegno AISSA
Imola (BO), 26-28 Novembre 2008

Microrganismi negli alimenti



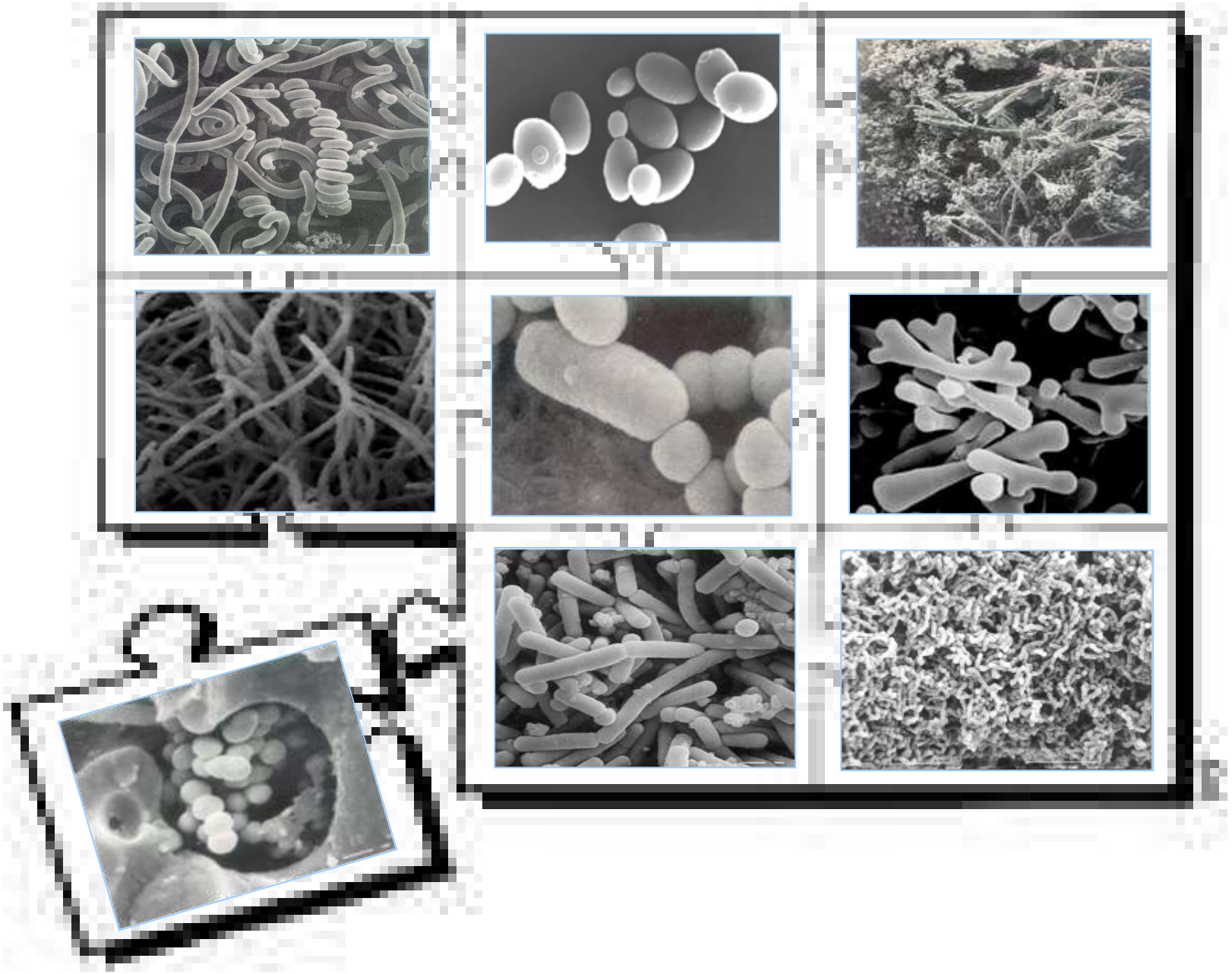
patogeni e alterativi

operosi

Prodotti a denominazione DOP, IGP e STG	
Aceti (diversi dagli aceti di vino)	2
Carni	2
Preparazione di carni	30
Altri prodotti di origine animale (uova, miele, prodotti lattiero caseari ad eccezione del burro)	2
Formaggi	34
Oli di oliva	38
Oli essenziali	1
Ortofrutticoli e cereali	57
Pesci, molluschi e crostacei freschi	2
Prodotti di panetteria	4
Altri prodotti (spezie,ecc)	2
TOTALE	**174**

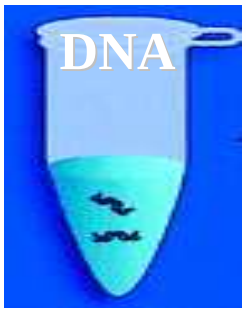
Prodotti Agroalimentari Tradizionali Italiani	
Bevande analcoliche, distillati e liquori	149
Carni fresche e loro preparazioni	733
Condimenti	34
Formaggi	456
Grassi (burro, margarina, oli)	47
Paste fresche e prodotti di panetteria, pasticceria, biscotteria e confetteria	1311
Preparazioni di pesci, molluschi e crostacei e tecniche particolari di allevamento degli stessi	138
Prodotti della gastronomia	142
Prodotti di origine animale (miele, prodotti lattiero caseari di vario tipo escluso il burro)	149
Prodotti vegetali allo stato naturale o trasformati	1237
TOTALE	**4396**

.....un coktail microbico



Le strategie più frequenti

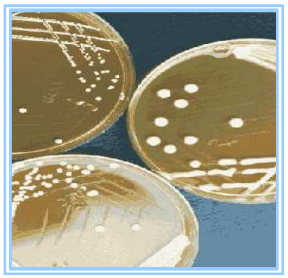
Studio degli isolati



Analisi della popolazione




Identificazione degli isolati



Estrazione DNA

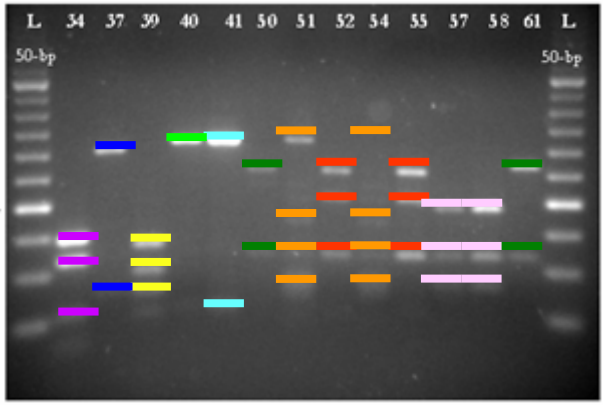
-ARDRA -RFLP

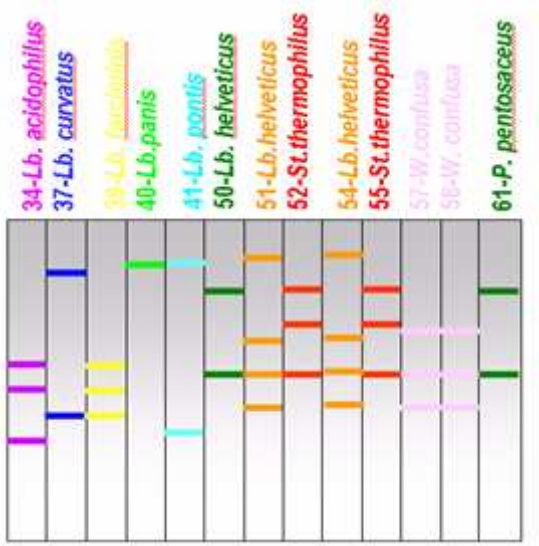
PCR

-RAPD -TGGE

sequenziamento di opportuni marcatori molecolari

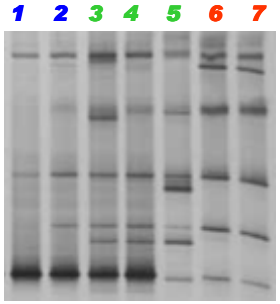
Identificazione





Biotipizzazione

Genotipica



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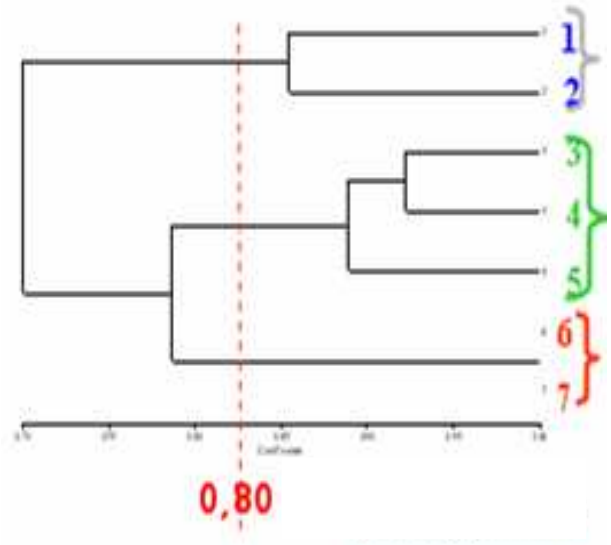
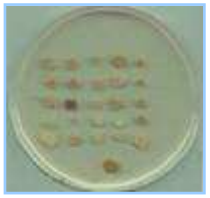
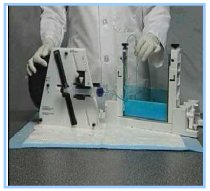
6	0	1	0	1	1
7	1	0	0	1	0

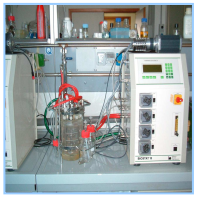
Analisi Cluster



Fenotipica







Selezione di starter autoctoni




Analisi di popolazione

Estrazione DNA da matrice

batteri lieviti muffe

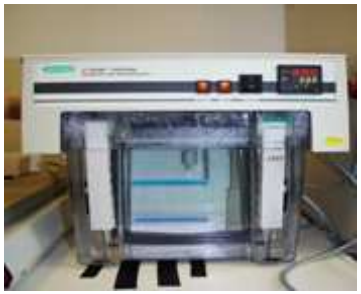
Estrazione DNA dal pool di colonie

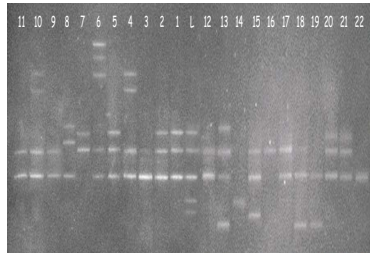
batteri lieviti muffe


Amplificazione del DNA via PCR

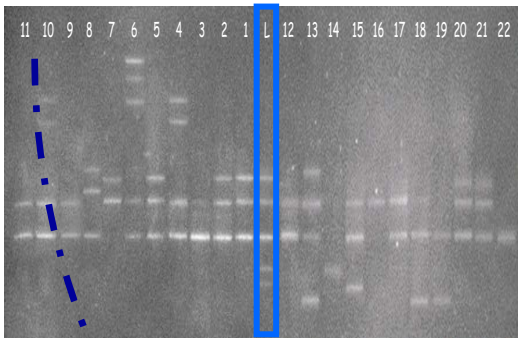
- regione V1 del gene per il 16S rRNA
- porzione (260 bp) del gene per il 25-28S rRNA

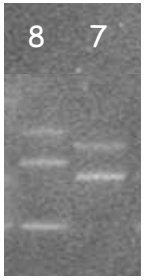
DGGE





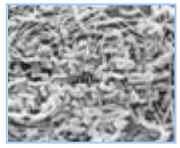
Identificazione





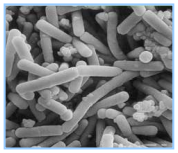
Confronto con il ladder

Lactobacillus curvatus

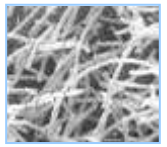


Lactobacillus plantarum

7



?



Lactobacillus sakei

Pediococcus acidilactici

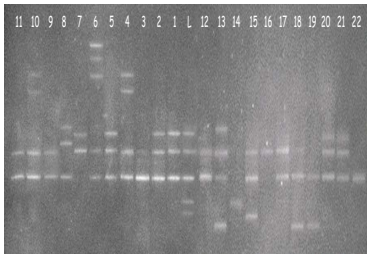
8

Excisione della banda, eluizione e purificazione del DNA

sequenziamento

Identificazione

Analisi Cluster



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2	0	1	0	1	0
3	1	0	1	0	1
4	0	0	0	1	0
5	1	0	0	1	0
6	0	1	0	1	1
7	1	0	0	1	0

Correlazione con l'origine e con i parametri tecnologici, igienici, sensoriali, nutrizionali

Il contributo della SIMTREA AA

UNIVERSITA' DEGLI STUDI DI TORINO

ELSEVIER

Food Microbiology 25 (2008) 392–399

FOOD MICROBIOLOGY

www.elsevier.com/locate/fm

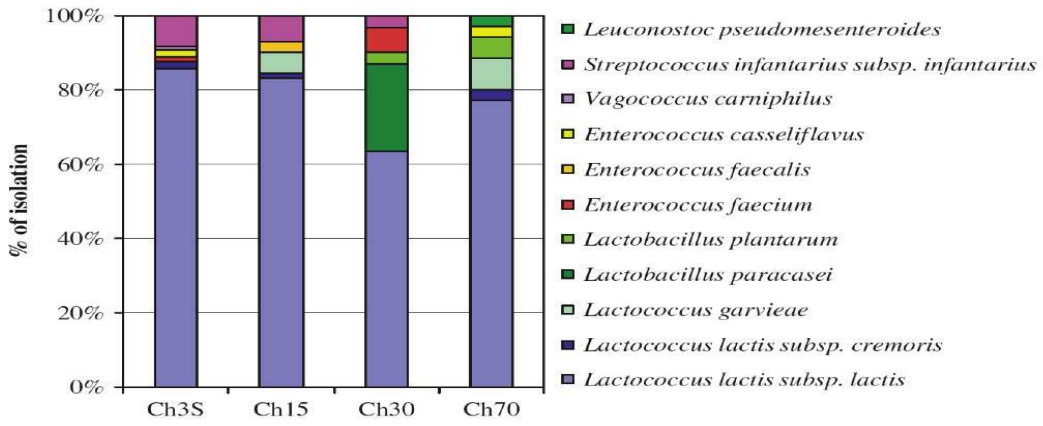
Microbiological characterization of artisanal Raschera PDO cheese: Analysis of its indigenous lactic acid bacteria

Paola Dolci*, Valentina Alessandria, Giuseppe Zeppa, Kalliopi Rantsiou, Luca Cocolin

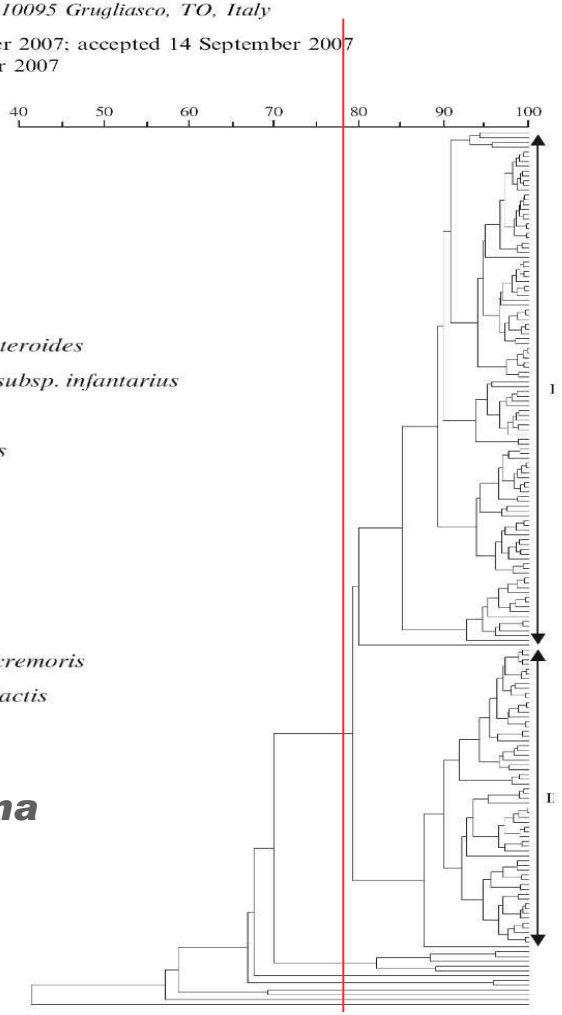
Dipartimento di Valorizzazione e Protezione delle Risorse agroforestali, Settore di Microbiologia e Industrie agrarie, Università degli Studi di Torino, via L. da Vinci 44, 10095 Grugliasco, TO, Italy

Received 21 June 2007; received in revised form 6 September 2007; accepted 14 September 2007
Available online 25 September 2007

Identificazione degli isolati



predomina Lactococcus lactis, con estrema omogeneità intraspecifica (2 cluster)



RAPD-PCR

Available online at www.sciencedirect.com
ScienceDirect
International Journal of Food Microbiology 122 (2008) 302–311
INTERNATIONAL JOURNAL OF Food Microbiology
www.elsevier.com/locate/ijfoodmicro

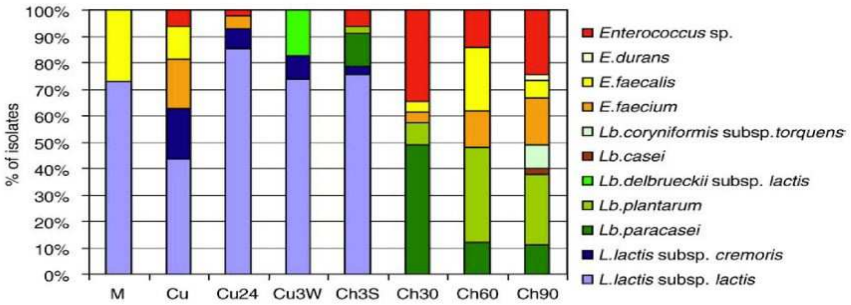
Microbial dynamics of Castelmagno PDO, a traditional Italian cheese, with a focus on lactic acid bacteria ecology

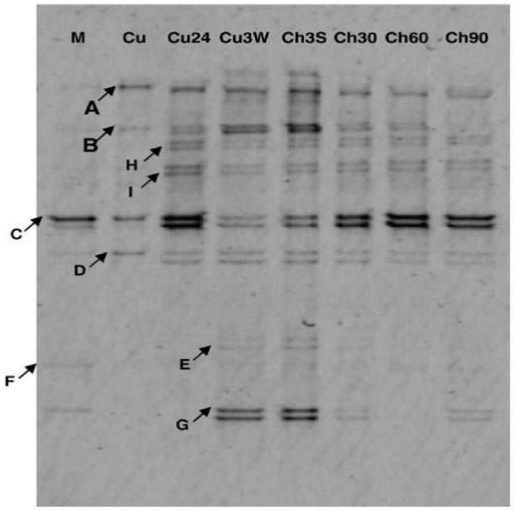
Paola Dolci *, Valentina Alessandria, Kalliopi Rantsiou, Luca Rolle, Giuseppe Zeppa, Luca Cocolin

Dipartimento di Valorizzazione e Protezione delle Risorse agroforestali, Settore di Microbiologia e Industrie agrarie, Università degli Studi di Torino, Grugliasco (TO), Italy

Received 17 September 2007; received in revised form 29 November 2007; accepted 18 December 2007

profili DGGE





Band	Closest sequence relative	% Identity	GenBank accession no.
A	*Lactobacillus plantarum*	100%	EF185922
B	*Streptococcus agalactiae*	100%	DQ232516
C	*Lactococcus lactis* subsp. *lactis*	100%	EF114309
D	*L. lactis* subsp. *cremoris*	100%	CP000428
E	*Lactobacillus* sp.	97%	AB262680
F	*Macrococcus caseolyticus*	98%	EF032686
G	*Lactobacillus kefiranofaciens*	98%	AJ575262

Successione lattococchi → lattobacilli

Journal of Applied Microbiology (in press)

Maturing dynamics of surface microflora in Fontina PDO cheese studied by culture-dependent and –independent methods

P. Dolci[1], A. Barmaz[2], S. Zenato[2], R. Pramotton[2], V. Alessandria[1], L. Cocolin[1], K. Rantsiou[1] and R. Ambrosoli[1]

[1] University of Turin, DIVAPRA, Grugliasco, Italy

[2] Institut Agricole Regional, Aosta, Italy

Caseificazione

Stagionatura in due magazzini

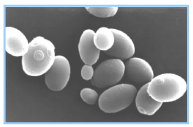
Ollomont

Pré-Saint-Didier

Campionamenti microbiologici e analisi DGGE delle croste

batteri

lieviti



Specie coinvolte nella maturazione delle croste

Banda	Identificazione	% Identit	Numero di accesso a banca dati Gene Bank
A	*Lactococcus lactis* subsp. *lactis*	99%	EF114309
B	*Streptococcus thermophilus*	99%	DQ001071
C	*Methylobacterium mesophilicum*	99%	AM691115
D	*Arthrobacter nicotianae*	99%	EF197989
E	*Brevibacterium casei*	100%	AM711595
F	*Corynebacterium glutamicum*	100%	AP009044
G	*Brevibacterium sp.*	99%	AM711595
H	*Candida sake*	99%	AY536216
I	*Debaryomyces hansenii*	98%	DQ513292
L	*Geotrichum silvicola*	99%	AB281297
M	*Torulaspora delbrueckii*	98%	EF063125
N	*Trichothecium domesticum*	98%	AY230194
O	*Fusarium solani*	97%	DQ236355

UNIVERSITA' DEGLI STUDI DI UDINE

ELSEVIER

FEMS Microbiology Letters 229 (2003) 133–140

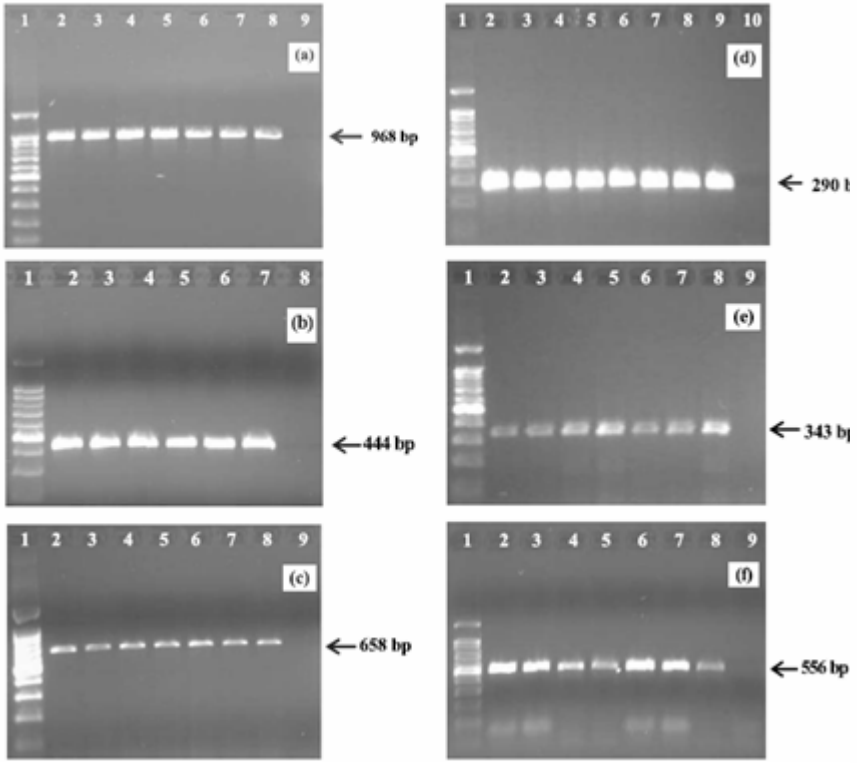
FEMS MICROBIOLOGY Letters

www.fems-microbiology.org

Microbiological characterization of artisanal Montasio cheese: analysis of its indigenous lactic acid bacteria

Marilena Marino *, Michela Maifreni, Gabriella Rondinini

Dipartimento di Scienze degli Alimenti, Università degli Studi di Udine, 33100 Udine, Italy



Species-specific PCR

	Natural milk culture		Raw milk		30-Day-old cheese		60-Day-old cheese	
	n	(%)	*n*	(%)	*n*	(%)	*n*	(%)
L. lactis subsp. *cremoris*[a]	16	6.3	10	5.3	7	3.9	8	2.9
L. lactis subsp. *lactis*[a]	14	5.5	9	4.8	8	4.4	16	5.8
L. plantarum[b]	1	0.4	1	0.5	2	1.1	2	0.7
L. raffinolactis[b]	0	0.0	1	0.5	1	0.6	0	0.0
E. durans[a]	16	6.3	17	9.0	1	0.6	1	0.4
E. faecalis[a]	14	5.5	8	4.2	6	3.3	21	7.6
E. faecium[a]	13	5.1	6	3.2	5	2.8	9	3.3
E. gallinarum[a]	6	2.4	4	2.1	0	0.0	4	1.4
E. uberis[a]	8	3.1	5	2.6	3	1.7	0	0.0
Enterococcus spp.[a]	7	2.8	6	3.2	4	2.2	0	0.0
S. thermophilus[a]	64	25.2	21	11.1	64	35.6	123	44.6
Lact. agilis[b]	1	0.4	2	1.1	0	0.0	0	0.0
Lact. acidophilus[a]	1	0.4	2	1.1	1	0.6	0	0.0
Lact. bifermentans[b]	3	1.2	1	0.5	2	1.1	2	0.7
Lact. brevis[b]	14	5.5	9	4.8	0	0.0	0	0.0
Lact. casei[a]	48	18.9	63	33.3	30	16.7	27	9.8
Lact. fermentum[b]	0	0.0	0	0.0	4	2.2	3	1.1
Lact. helveticus[a]	6	2.4	1	0.5	8	4.4	4	1.4
Lact. kefiri[b]	3	1.2	5	2.6	2	1.1	0	0.0
Lact. paracasei[a]	2	0.8	5	2.6	14	7.8	35	12.7
Lact. plantarum[a]	2	0.8	7	3.7	6	3.3	11	4.0
Lact. rhamnosus[a]	8	3.1	4	2.1	11	6.1	9	3.3
Unidentified rods	7	2.8	2	1.1	1	0.6	1	0.4
Total	254		189		180		276	

[a] PCR identification.
[b] Biochemical identification.

Identificazione su base genotipica e biochimica

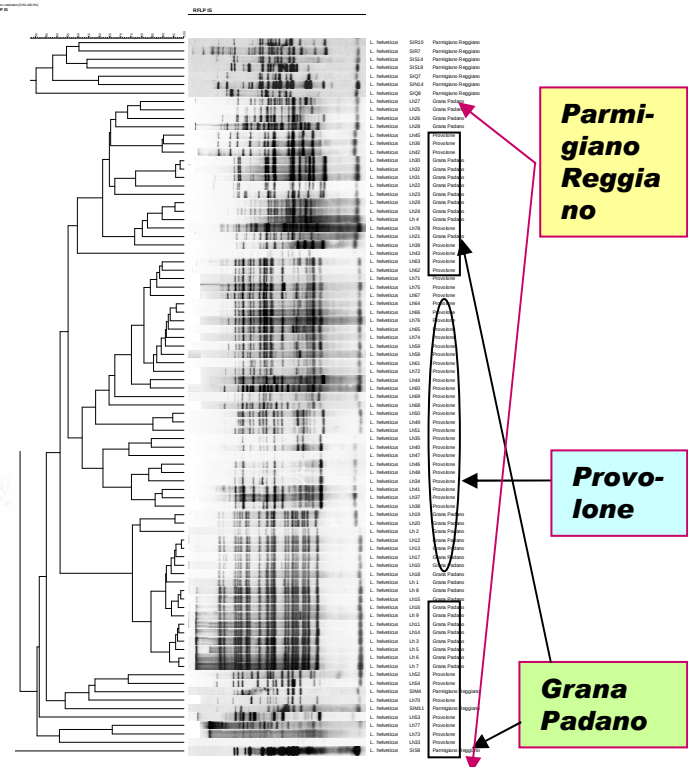
UNIVERSITA' DEGLI STUDI DI PARMA

Journal of Applied Microbiology 2003, 95, 463–470 doi:10.1046/j.1365-2672.2003.01997.x

Biodiversity in *Lactobacillus helveticus* strains present in natural whey starter used for Parmigiano Reggiano cheese

M. Gatti[1], C. Lazzi[1], L. Rossetti[1], G. Mucchetti[1] and E. Neviani[2]

[1]Istituto Sperimentale Lattiero-Caseario, Lodi, Italy, and [2]Dipartimento di Genetica Antropologia Evoluzione, Università degli Studi di Parma, Parma, Italy

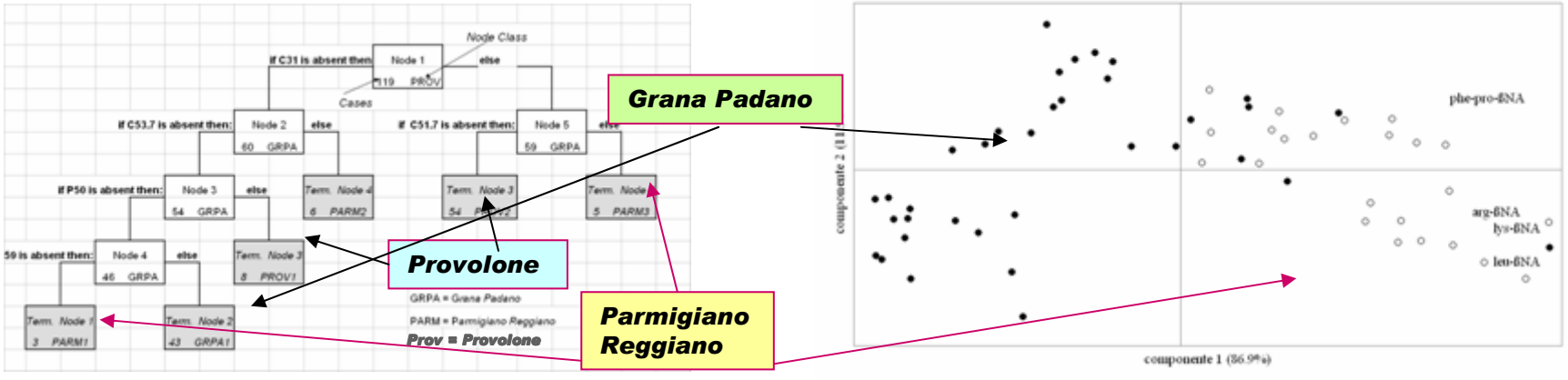


Applied and Environmental Microbiology, Jan. 2004, p. 182–190 Vol. 70, No. 1
0099-2240/04/$08.00+0 DOI: 10.1128/AEM.70.1.182–190.2004

Biodiversity among *Lactobacillus helveticus* Strains Isolated from Different Natural Whey Starter Cultures as Revealed by Classification Trees

Monica Gatti,[1] Carlo Trivisano,[2] Enrico Fabrizi,[2] Erasmo Neviani,[3] and Fausto Gardini[4]*

Istituto Sperimentale Lattiero Caseario, 26900 Lodi,[1] Dipartimento di Scienze Statistiche, Università degli Studi di Bologna, 40126 Bologna,[2] Dipartimento di Protezione e Valorizzazione Agroalimentare, Università degli Studi di Bologna, 40127 Bologna,[4] and Dipartimento di Genetica Antropologia Evoluzione, Università degli Studi di Parma, 43100 Parma,[3] Italy



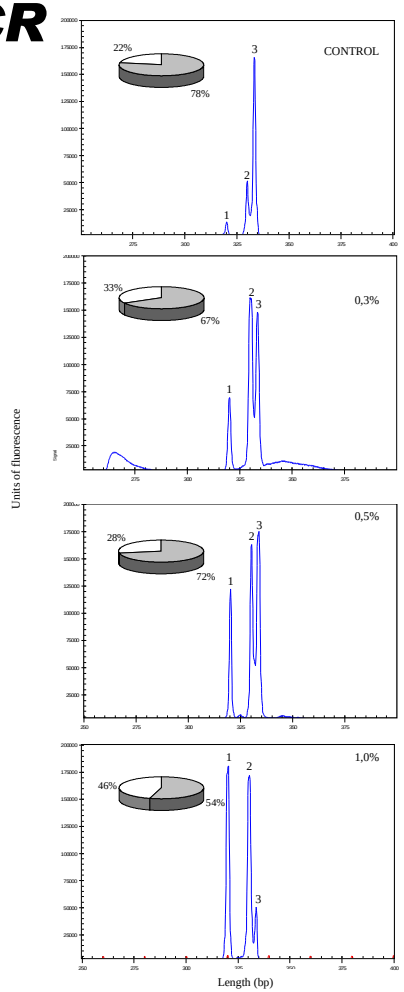
Biodiversità metabolica

Scienza e Tecnica Lattiero Casearia 2003 , 24 (2).

Presence of peptidasic activities in Grana Padano and Parmigiano-Reggiano ripened cheeses and in thermophilic lactobacilli isolated from the natural whey starter used for their production

Fornasari, M. E.; Gatti, M.; Mucchetti, G.; Lazzi, C.; Gardini, F.; Neviani, E.

Length Heterogeneity RT-PCR



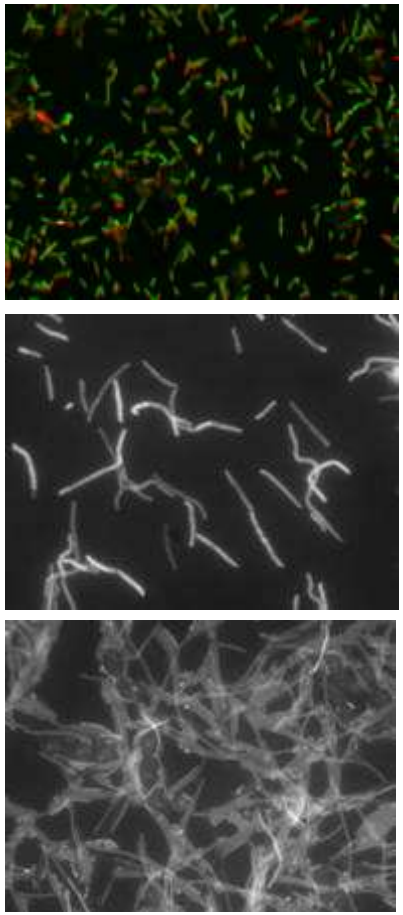
J. Dairy Sci. 2008. 91:883-891. doi:10.3168/jds.2007-0296

Whey Starter for Grana Padano Cheese: Effect of Technological Parameters on Viability and Composition of the Microbial Community

M. Santarelli*, M. Gatti*,1, C. Lazzi*, V. Bernini*, G. A. Zapparoli† and E. Neviani*

* Department of Genetics, Biology of Microorganisms, Anthropology, Evolution, University of Parma, 43100 Parma, Italy
† Ente Regionale per i Servizi all'Agricoltura e alle Foreste, Sezione di Mantova, 46010 Mantova Italy

Live/Dead BacLight kit



Letters in Applied Microbiology ISSN 0266-8254

ORIGINAL ARTICLE

Fluorescence microscopy for studying the viability of micro-organisms in natural whey starters

M. Gatti, V. Bernini, C. Lazzi and E. Neviani

Department of Genetic Anthropology Evolution, University of Parma, Parma, Italy

Journal of Applied Microbiology ISSN 1364-5072

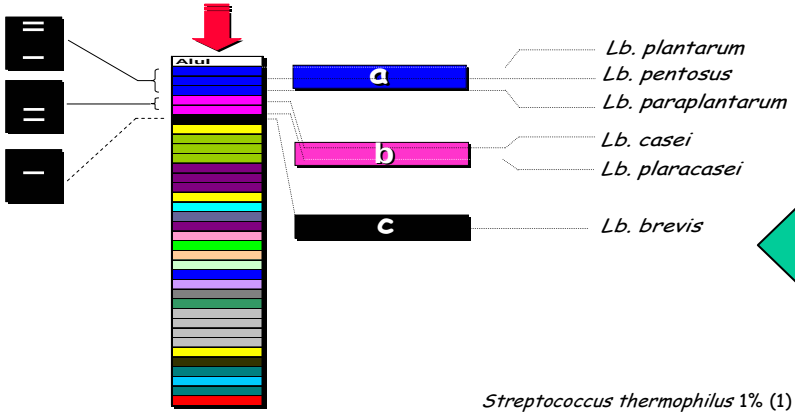
UNIVERSITA' POLITECNICA DELLE MARCHE

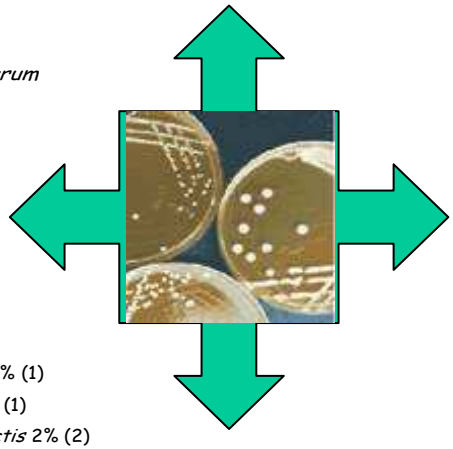
ORIGINAL ARTICLE

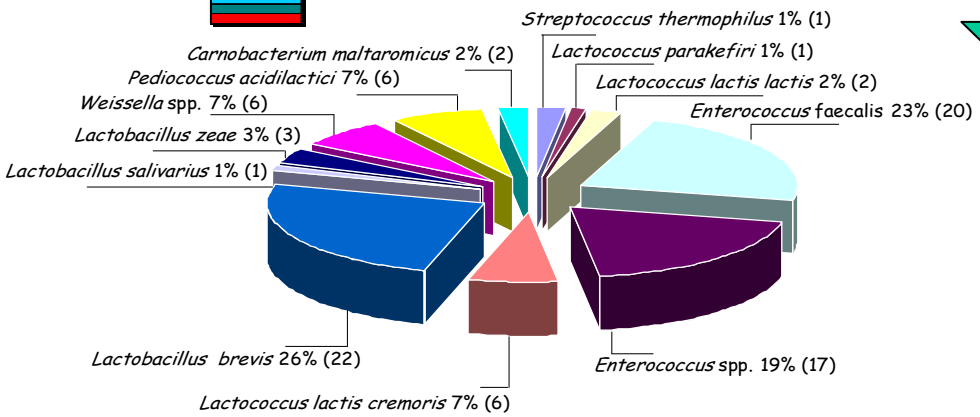
Phenotypic, genotypic and technological characterization of predominant lactic acid bacteria in Pecorino cheese from central Italy

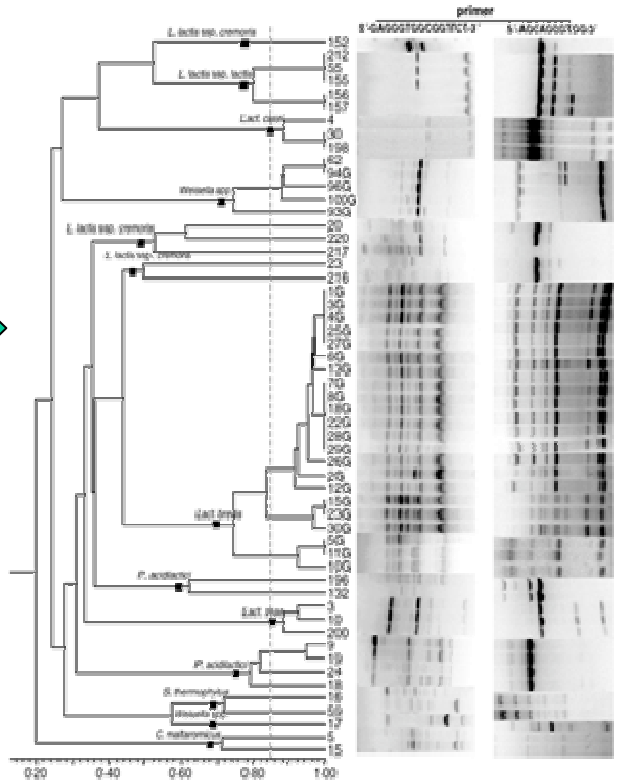
L. Aquilanti, G. Silvestri, E. Zannini, A. Osimani, S. Santarelli and F. Clementi

Department of Food Science, Polytechnic University of Marche, Via Brecce Bianche (Monte Dago), Ancona, Italy









Letters in Applied Microbiology ISSN 0266-8254

ORIGINAL ARTICLE

Resident lactic acid bacteria in raw milk Canestrato Pugliese cheese

L. Aquilanti, L. Dell'Aquila, E. Zannini, A. Zocchetti and F. Clementi

Dipartimento di Scienze degli Alimenti, Università Politecnica delle Marche, Ancona, Italy

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Available online at www.sciencedirect.com
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LWT 40 (2007) 1148–1155

LWT
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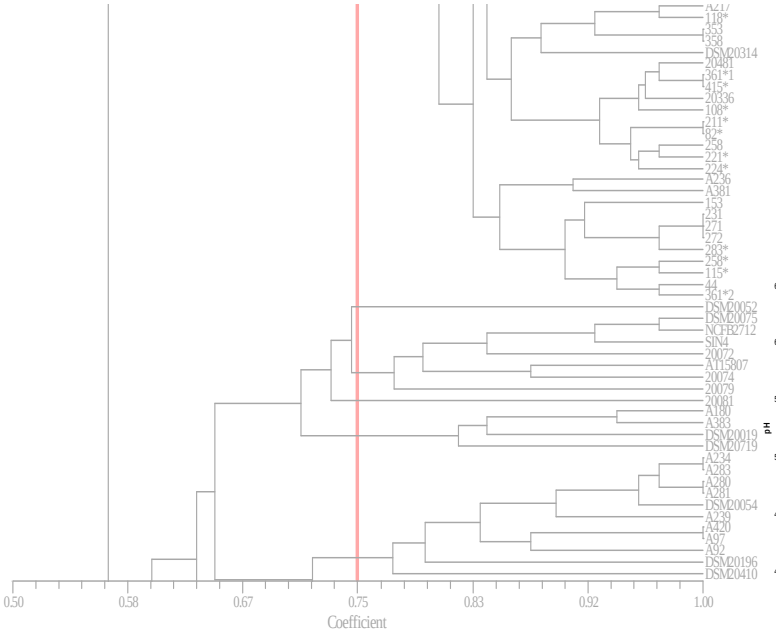
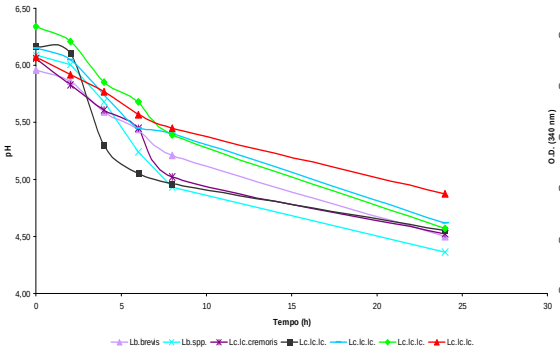
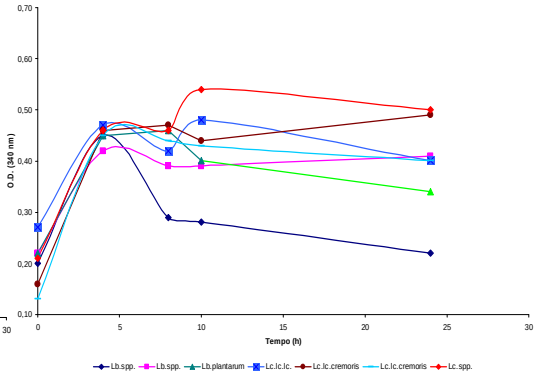
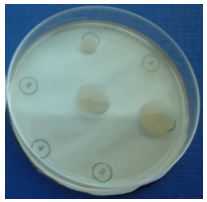


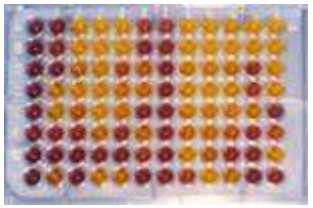
Polyphasic characterization of indigenous lactobacilli and lactococci from PDO Canestrato Pugliese cheese

Lucia Aquilanti*, Emanuele Zannini, Annalisa Zocchetti, Andrea Osimani, Francesca Clementi









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International Dairy Journal 18 (2008) 403–413

INTERNATIONAL
DAIRY
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www.elsevier.com/locate/idairyj

Lactic acid bacteria occurring during manufacture and ripening of Provolone del Monaco cheese: Detection by different analytical approaches

Maria Aponte*, Vincenzina Fusco, Rosamaria Andolfi, Salvatore Coppola

TRIPLICE APPROCCIO

Conteggio e isolamento

Estrazione DNA da matrice

Estrazione DNA da bulk di colonie

Analisi DGGE

Sequenziamento

Journal of Applied Microbiology 1998, 85, 25–36

Random amplified polymorphic DNA and amplified ribosomal DNA spacer polymorphism: powerful methods to differentiate *Streptococcus thermophilus* strains

G. Moschetti, G. Blaiotta, M. Aponte, P. Catzeddu[1], F. Villani, P. Deiana[1] and S. Coppola

System. Appl. Microbiol. 25, 520–527 (2002)
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http://www.urbanfischer.de/journals/sam

SYSTEMATIC AND APPLIED MICROBIOLOGY

16S–23S rDNA Intergenic Spacer Region Polymorphism of *Lactococcus garvieae, Lactococcus raffinolactis* and *Lactococcus lactis* as Revealed by PCR and Nucleotide Sequence Analysis

Giuseppe Blaiotta, Olimpia Pepe, Gianluigi Mauriello, Francesco Villani, Rosamaria Andolfi, and Giancarlo Moschetti

APPLIED AND ENVIRONMENTAL MICROBIOLOGY, Jan. 2008, p. 208–215 Vol. 74, No. 1
0099-2240/08/$08.00+0 doi:10.1128/AEM.01711-07

Lactobacillus Strain Diversity Based on Partial *hsp60* Gene Sequences and Design of PCR-Restriction Fragment Length Polymorphism Assays for Species Identification and Differentiation▽†

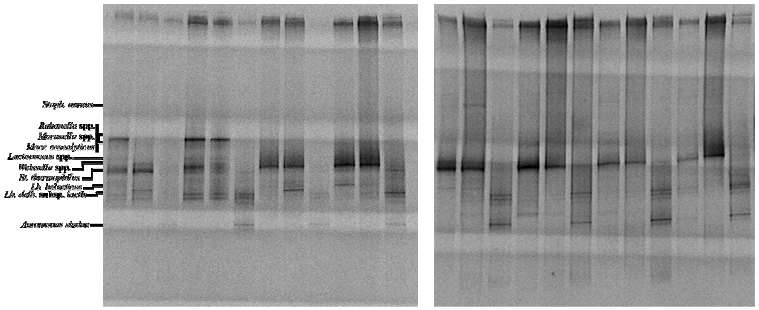
Giuseppe Blaiotta,[1]* Vincenzina Fusco,[1] Danilo Ercolini,[2] Maria Aponte,[1] Olimpia Pepe,[1] and Francesco Villani[1]

IDENTIFICAZIONE DI 308 ISOLATI (287 BATTERI LATTICI)

Taxon
St. thermophilus
St. macedonicus
St. bovis
St. parauberis
Ent. durans
Ent. faecalis
Ent. faecium
Lc. garvie
Lc. lactis

Taxon
Pc. acidilactici
Lb. fermentum
Lb. helveticus
Lb. paracasei
Lb. plantarum
Lb. rhamnosus

DNA ESTRATTO DA MATRICE

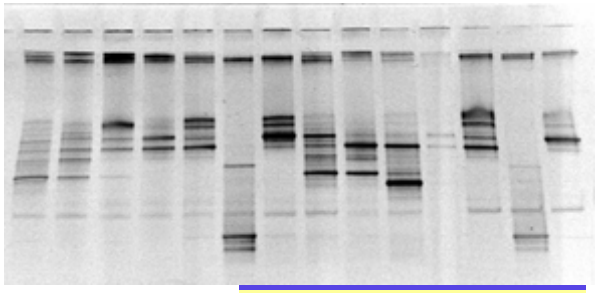


Taxon
Mor. osloensis
Macr. caseolyticus
Lactococcus spp.
Weissella spp.
St. thermophilus
Lb. helveticus
Lb. delbrueckii lactis
Staph. haem/aureus
Rahanella spp.
Mor. osloensis
Macr. caseolyticus
Lactococcus spp.
Weissella spp.
St. thermophilus
Lb. helveticus
Lb. delbrueckii lactis
Aeromonas simiae

PCR-DGGE:
REGIONI V3 e V6-V8
16S rDNA

DNA sequencing

DNA ESTRATTO DA BULK DI COLONIE



Lc. lactis lactis
St. thermophilus
St. macedonicus
Lb. delb. lactis
Lc. lactis lactis
St. thermophilus
St. macedonicus
Ent. faecalis
Enterococcus spp.
Pd. acidilactici
Lb. rham./paracasei
Lb. helveticus
Lb. delb. bulgaricus
Lb. delb. delbrueckii
Lb. fermentum
St. macedonicus
Lb. rham./paracasei
Lb. delb. bulgaricus
Lb. delb. indicus
Lb. delb. lactis
Lb. fermentum
Lb. rham./paracasei
Leuc. mesen. lactis
Lb. fermentum

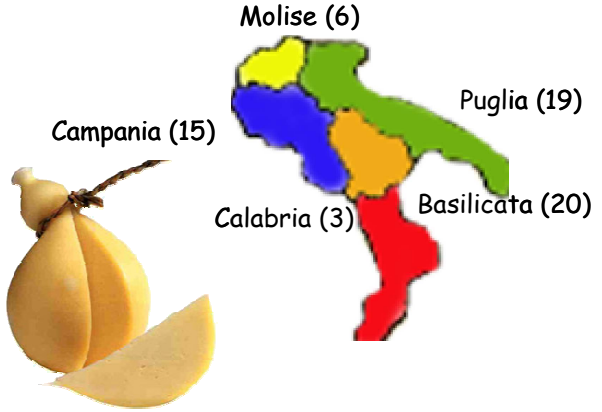
Contents lists available at ScienceDirect

International Journal of Food Microbiology

journal homepage: www.elsevier.com/locate/ijfoodmicro

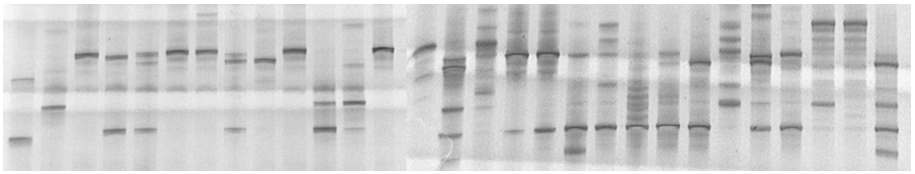
Microbial diversity in Natural Whey Cultures used for the production of Caciocavallo Silano PDO cheese

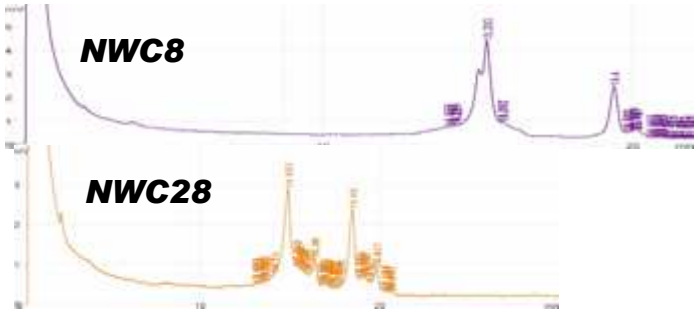
Danilo Ercolini [a,*], Giulia Frisso [b,e], Gianluigi Mauriello [c], Francesco Salvatore [d,e], Salvatore Coppola [c]



63 Sieroinnesti

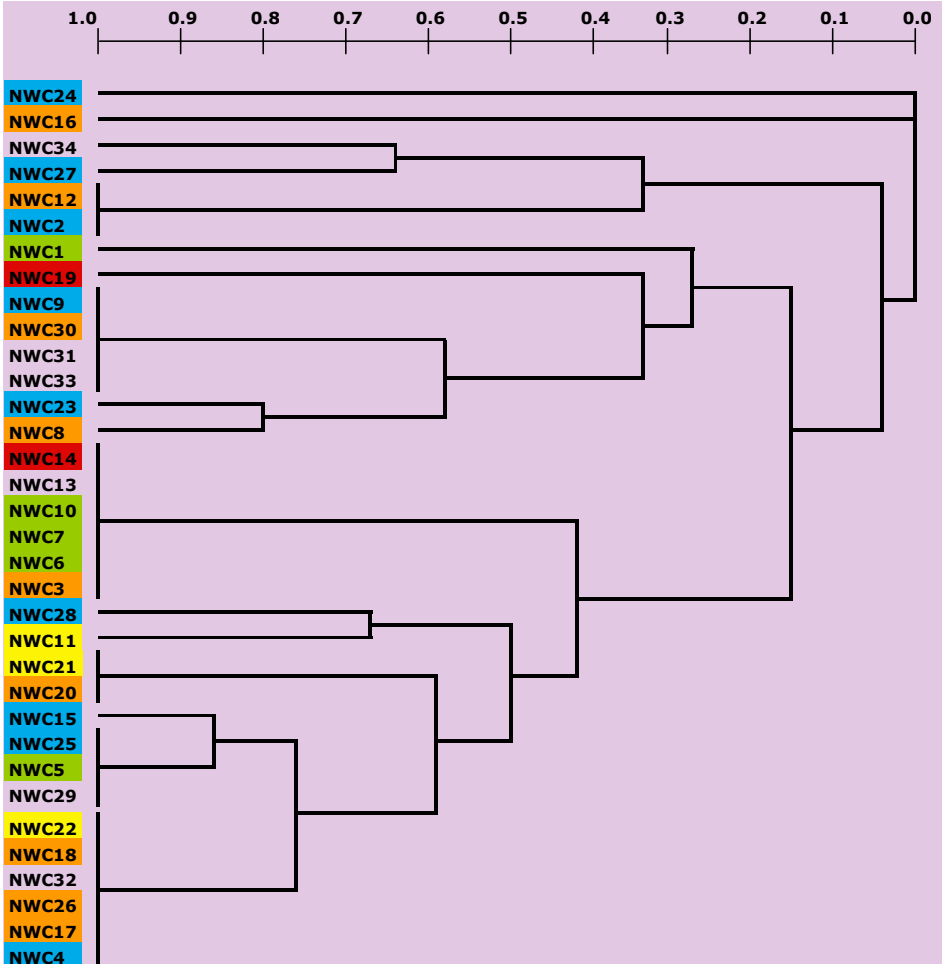
Biodiversità di specie (D-HPLC e DGGE)





NCW = Natural Whey Cultures

Biodiversità intraspecifica (RAPD)

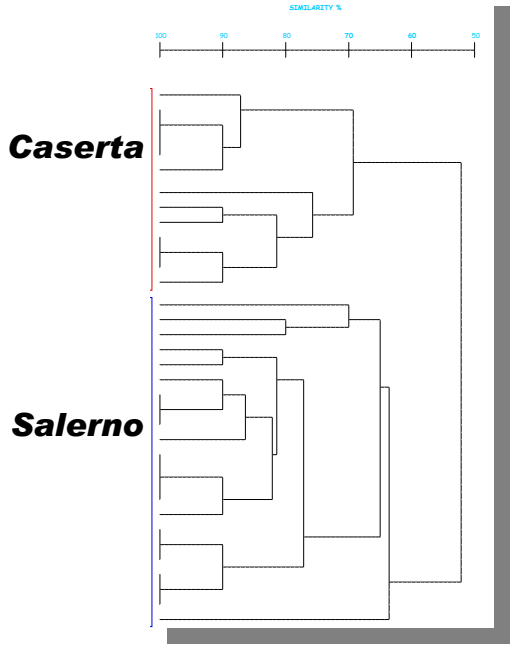


Sieroinnesti per Mozzarella di Bufala Campana DOP

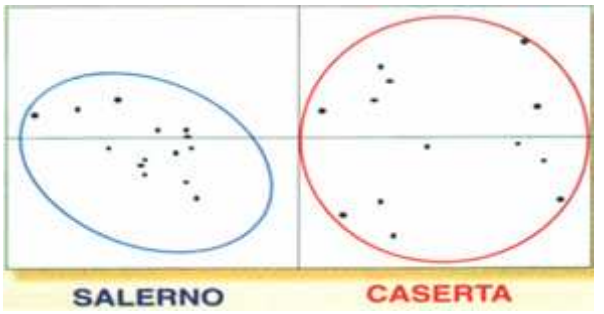
J. Dairy Sci. 86:486–497

Relationships Between Flavoring Capabilities, Bacterial Composition, and Geographical Origin of Natural Whey Cultures Used for Traditional Water-Buffalo Mozzarella Cheese Manufacture

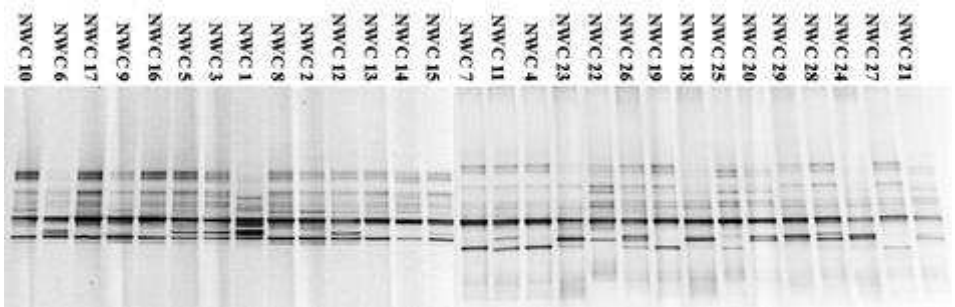
G. Mauriello, L. Moio, A. Genovese, and D. Ercolini
Dipartimento di Scienza degli Alimenti,
Università degli Studi di Napoli "Federico II"
80055 Portici,
Naples, Italy



Produzione di Mozzarella su piccola scala e valutazione aromi della cagliata tramite GC-MS



Analisi DGGE



Mozzarella di Bufala Campana DOP

Caciocavallo Silano DOP

Profili microbiologici ed aromatici dei sieroinnesti utili per risalire all'origine geografica del prodotto

La stessa procedura non risulta utile per definire l'origine geografica nel caso del C. Silano DOP

Fingerprints

Fingerprints

...area di produzione limitata

...buon rispetto della tradizione

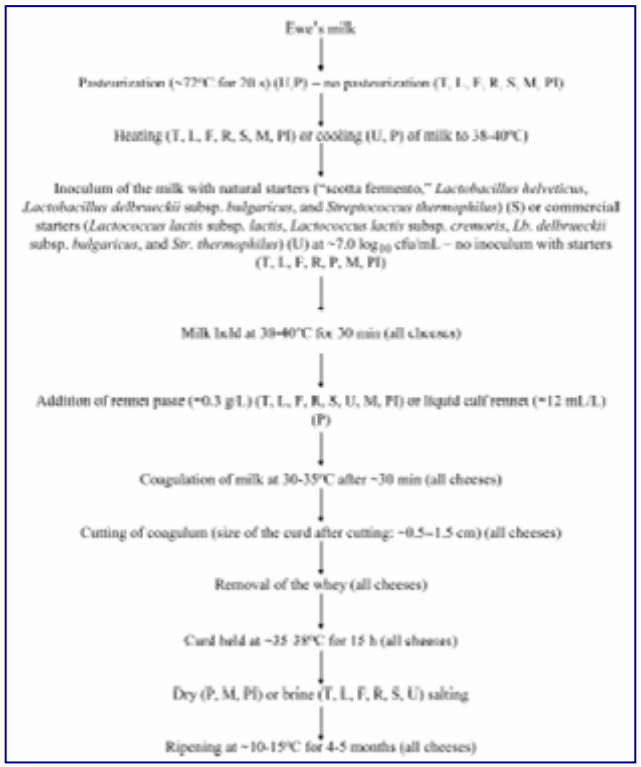
...ampia area di produzione

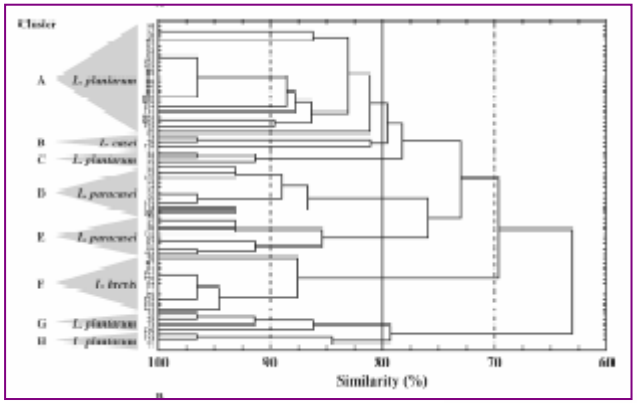
...processo produttivo maggiormente industrializzato

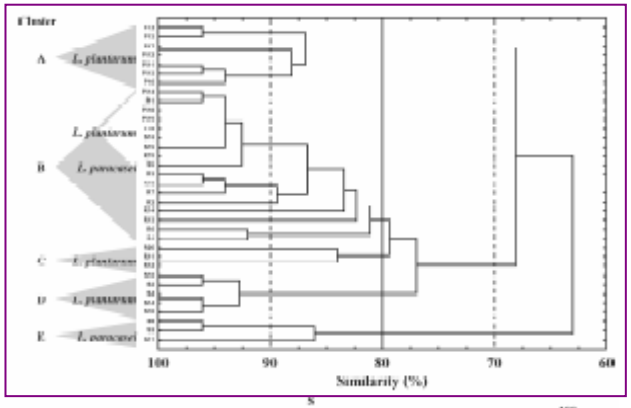
J. Dairy Sci. 89:4126–4143

Comparison of the Compositional, Microbiological, Biochemical, and Volatile Profile Characteristics of Nine Italian Ewes' Milk Cheeses

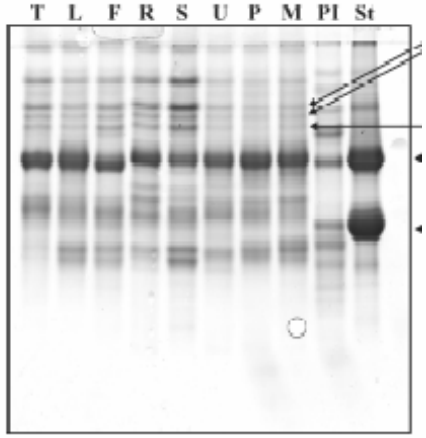
R. Coda,* E. Brechany,† M. De Angelis,*[1] S. De Candia,* R. Di Cagno,* and M. Gobbetti*
*Dipartimento di Protezione delle Piante e Microbiologia Applicata, Università degli Studi di Bari, Bari 70126, Italy
†Hannah Research Institute, Ayr, KA6 5HL Scotland



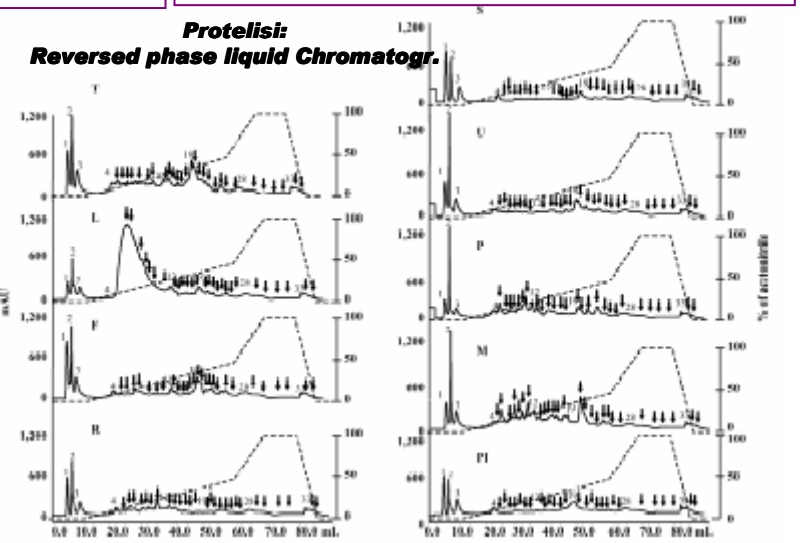




RAPD-PCR degli isolati



Protelisi: Reversed phase liquid Chromatogr.



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J. Dairy Sci. 90:2689–2704
doi:10.3168/jds.2006-654

Characterization of Italian Cheeses Ripened Under Nonconventional Conditions

R. Di Cagno,* S. Buchin,† S. de Candia,* M. De Angelis,* P. F. Fox,‡ and M. Gobbetti*¶
*Dipartimento di Protezione delle Piante e Microbiologia Applicata, Università degli Studi di Bari, Italy
†Unité de Recherches en Technologie et Analyses Laitières, Institut National de la Recherche Agronomique, Poligny, France
‡Department of Food and Nutritional Sciences, University College Cork, Cork, Ireland

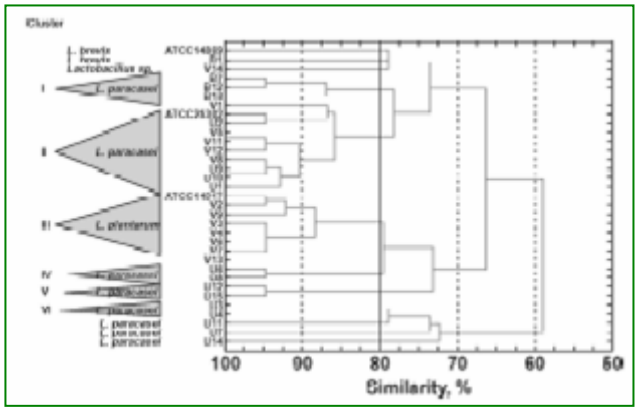
Foglie di noce | **Spezie** | **Fieno** | **Vinacce**

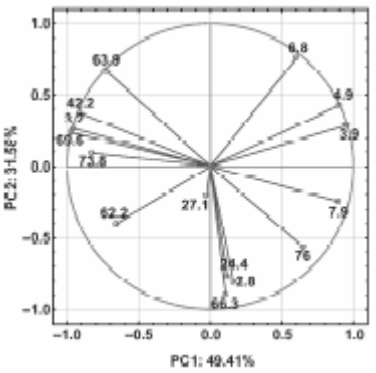


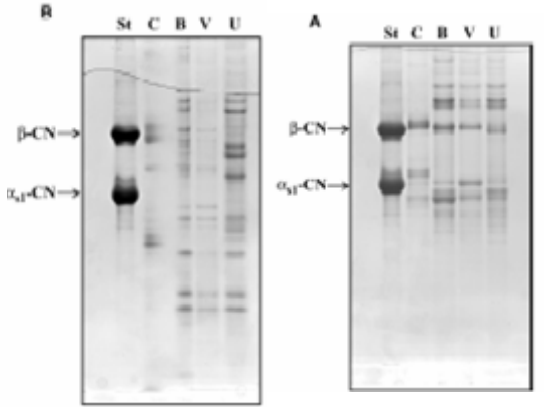




"Casciotta di Urbino" | **"Barricato San Martino"** | **"Vento d'Estate"** | **"Ubriaco di Raboso"**







Dipartimento di Protezione delle Piante e Microbiologia Applicata

International Journal of Food Microbiology 125 (2008) 123–132

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International Journal of Food Microbiology

journal homepage: www.elsevier.com/locate/ijfoodmicro

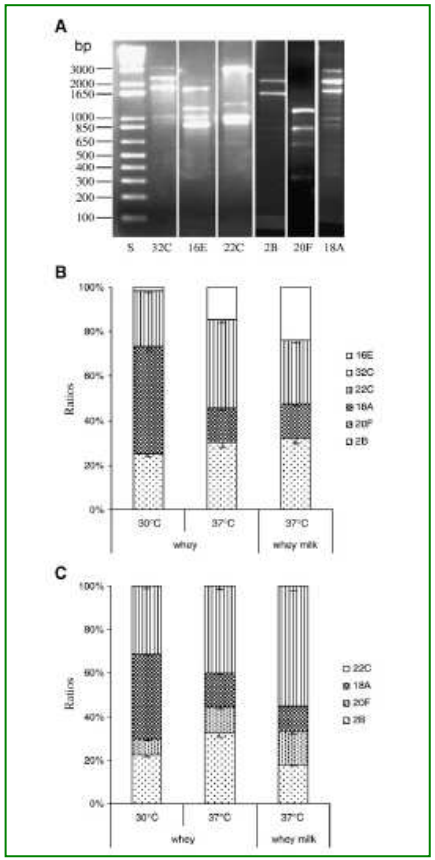
Selection and use of autochthonous multiple strain cultures for the manufacture of high-moisture traditional Mozzarella cheese

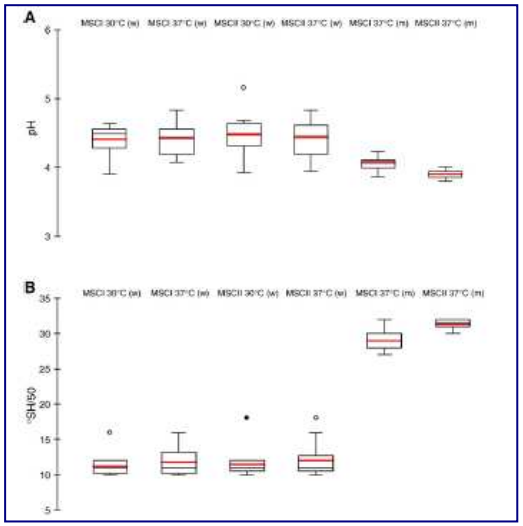
Maria De Angelis [a,*], Silvia de Candia [a], Maria Piera Calasso [a], Michele Faccia [b], Timothy P. Guinee [c], Maria C. Simonetti [d], Marco Gobbetti [a]

pH e acidità titolabile

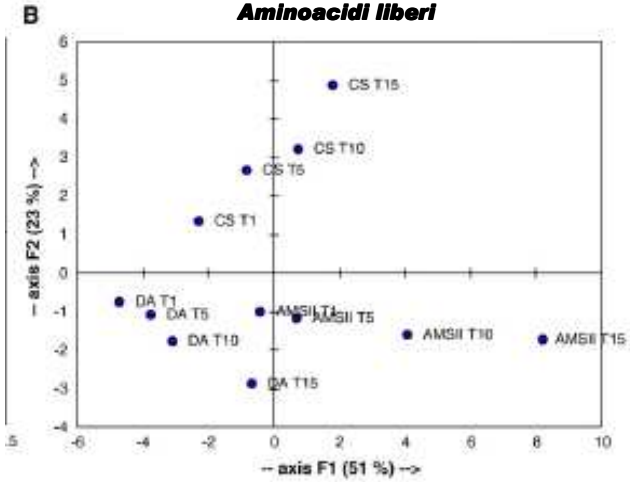
RAPD-PCR degli isolati

Associazioni microbiche

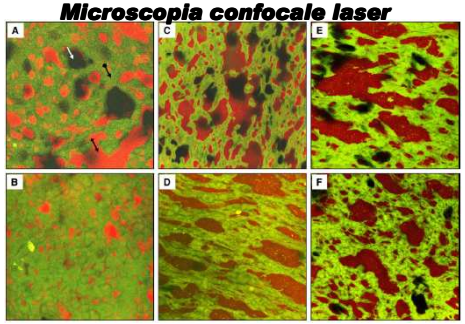




Aminoacidi liberi

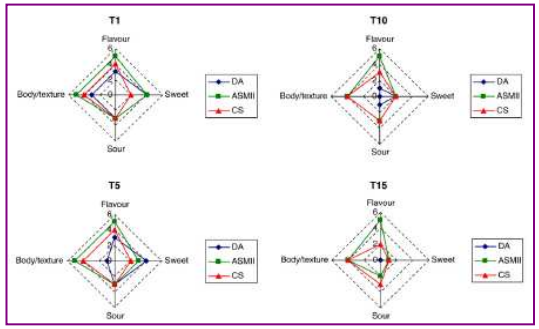


Microscopia confocale laser



grasso

proteina



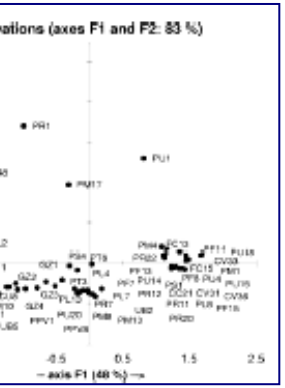
APPLIED AND ENVIRONMENTAL MICROBIOLOGY, Nov. 2007, p. 7283–7290 Vol. 73, No. 22
0099-2240/07/$08.00+0 doi:10.1128/AEM.01064-07

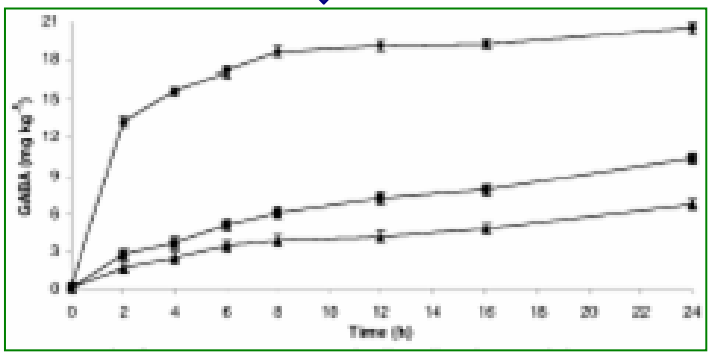
Synthesis of γ-Aminobutyric Acid by Lactic Acid Bacteria Isolated from a Variety of Italian Cheeses▽

S. Siragusa, M. De Angelis,* R. Di Cagno, C. G. Rizzello, R. Coda, and M. Gobbetti

TABLE 1. Species of lactic acid bacteria producing GABA identified in 22 Italian cheese varieties

Cheese	Species
Parmigiano Reggiano	*L. plantarum* PMR1
Barricato San Martino	*L. mesenteroides* BSM10
Vezzo d'Ettore	*W. cibaria* VE30
Ubriaco di Raboso	*L. paracasei* UR2, *L. brevis* UR5
Cacioricotto	*L. plantarum* CCV1 and CCV2, *L. casei* CCV3
Gorgonzola	*S. thermophilus* GZ1, GZ2, GZ3, and GZ4
Crescenza	*S. thermophilus* CR51
Mozzarella	*S. thermophilus* MZZ1
Canestrato Pugliese	*L. plantarum* CNP1
Casciotta di Urbino	*L. lactis* CU8
Pecorino Piacentino	*L. plantarum* PPV1 and PPV8, *L. pseudomesenteroides* PPV6
Pecorino Marzolgiano	*L. plantarum* PM8 and PM13, *L. paracasei* PM1 and PM4, *L. brevis* PM17
Pecorino Umbro	*L. lactis* PU3; *L. paracasei* PU4, PU10, PU15, and PU20; *Lactobacillus* sp. strain PU14
Pecorino del Reatino	*L. delbrueckii* subsp. *bulgaricus* PR1 and PR7; *L. plantarum* PR11, PR12, and PR29; *L. pseudomesenteroides* PR22
Pecorino Sardo	*L. paracasei* PS1 and PS31, *L. plantarum* PS15, *L. mesenteroides* PS4
Pecorino di Filitto	*L. paracasei* PF6, PF8, and PF12; *L. plantarum* PF14; *Lactobacillus* sp. strain PF7; *E. durans* PF15
Pecorino del Tarantino	*L. plantarum* PT5, *L. paracasei* PT4, *L. brevis* PT6
Pecorino Leccese	*L. paracasei* PL2, PL4, and PL13; *L. plantarum* PL7 and PL8
Caprino di Valsorana	*L. rhamnosus* CV25 and CV56, *L. casei* CV91
Caprino di Cavaliere	*L. casei* CC21
Fior di Capra	*L. casei* FC13 and FC15
Caprinik	*L. plantarum* C48





PRIN 2006-2008

Colture starter probiotiche e protettive per prodotti lattiero caseari

WP1 (UO 2 e UO 4)
❖ **Selezione di batteri lattici**

WP2 (UO 3)
❖ **Valutazione dei peptidi bioattivi prodotti da ceppi selezionati di Lb. helveticus**

WP3 (UO 2)
❖ **Verifica dello status QPS dei batteri lattici selezionati**

UO 1 Uni-Politecnica Marche (F.Clementi)

UO 2 Uni-Sassari (P. Delana)
UO 4 Uni- Molise (E. Sorrentino)

UO 3 Uni-Cattolica (G. Scolari)

UO 5 Uni-Bari (F. Caponio)

WP4 (UO 1)
❖ **Caratterizzazione molecolare dei batteri lattici selezionati**

WP5 (UO 2)
❖ **Formulazione di associazioni di ceppi di batteri lattici**

WP7 (UO 5)
❖ **Monitoraggio delle produzioni sperimentali con metodi di chimica strumentale**

WP6 (UO 2 e UO 4)
Produzione sperimentale di formaggi funzionali

WP8 (UO 1)
❖ **Monitoraggio delle produzioni sperimentali con metodi di biologia molecolare**

Il contributo della SIMTREA AA

APPLIED AND ENVIRONMENTAL MICROBIOLOGY, Apr. 2005, p. 1977–1986 Vol. 71, No. 4
0099-2240/05/$08.00+0 doi:10.1128/AEM.71.4.1977–1986.2005

Culture-Dependent and -Independent Methods To Investigate the Microbial Ecology of Italian Fermented Sausages

Kalliopi Rantsiou,[1] Rosalinda Urso,[1] Lucilla Iacumin,[1] Carlo Cantoni,[2] Patrizia Cattaneo,[2] Giuseppe Comi,[1] and Luca Cocolin[1]*

Dipartimento di Scienze degli Alimenti, Università degli studi di Udine, Udine,[1] and Dipartimento di Scienze e Tecnologie Veterinarie per la Sicurezza degli Alimenti, Università degli studi di Milano, Milan,[2] Italy

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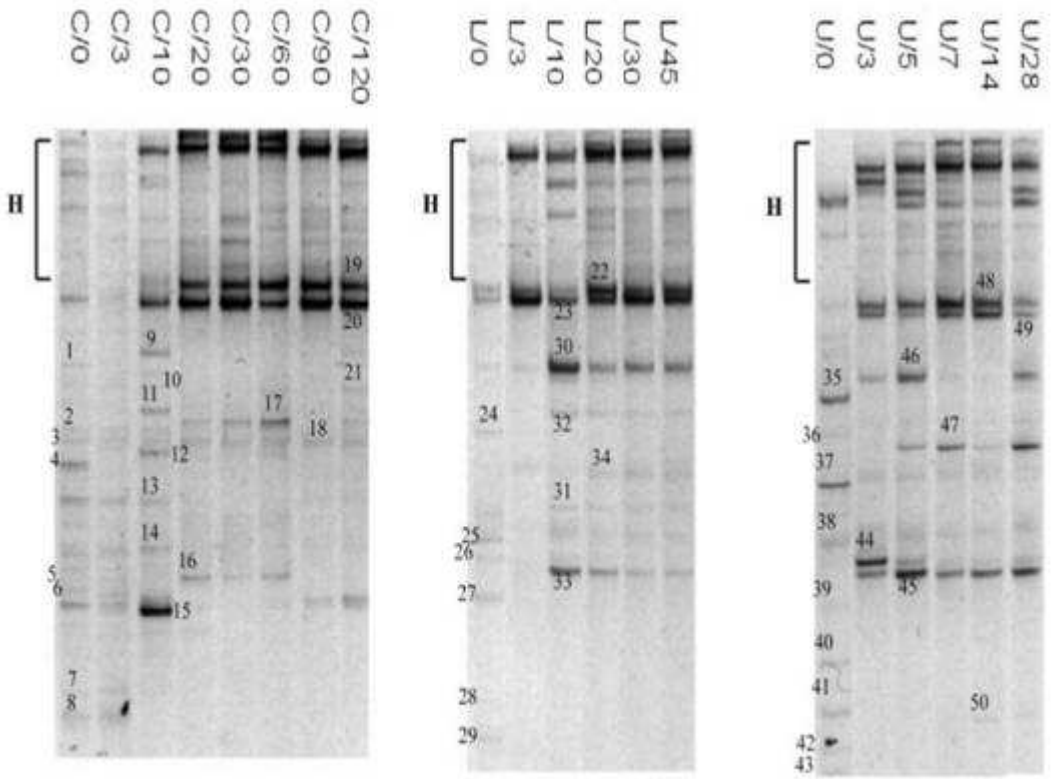

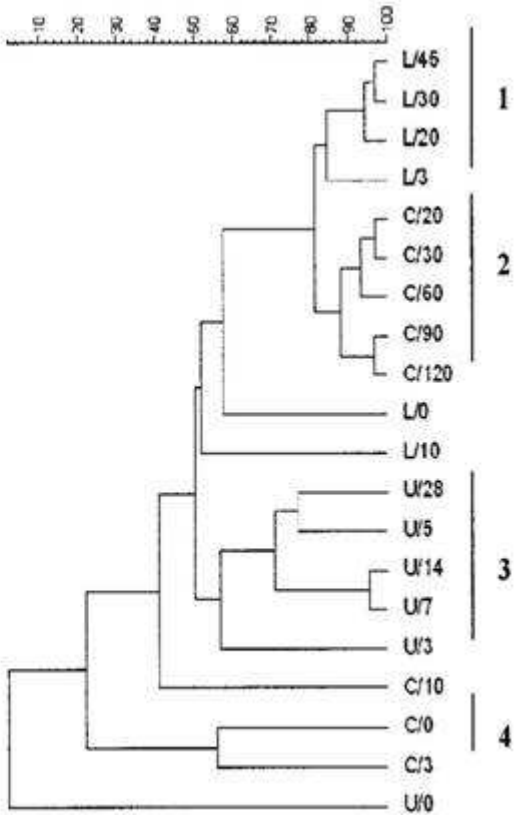

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Meat Science 77 (2007) 413–423

MEAT SCIENCE
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Investigation of the microbial ecology of Ciauscolo, a traditional Italian salami, by culture-dependent techniques and PCR-DGGE

Gloria Silvestri [a], Sara Santarelli [a,*], Lucia Aquilanti [a], Alessandra Beccaceci [a], Andrea Osimani [a], Franco Tonucci [b], Francesca Clementi [a]

[a] Dipartimento di Scienze degli Alimenti, Università Politecnica delle Marche, via Brecce Bianche, 60131 Ancona, Italy
[b] Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche, via G. Salvemini, 06126 Perugia, Italy

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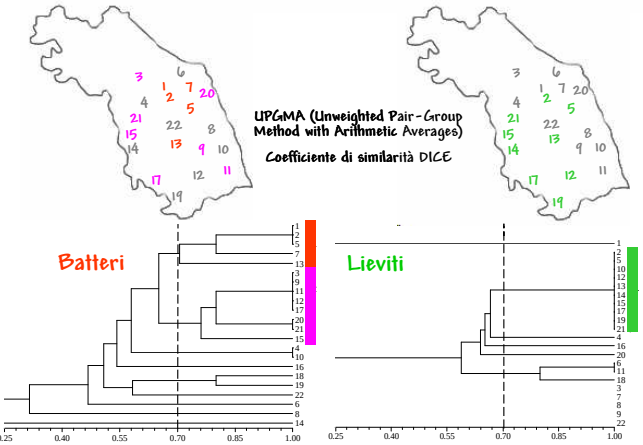

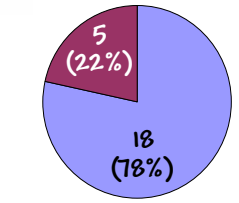

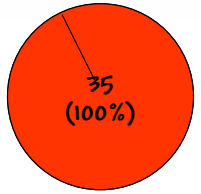

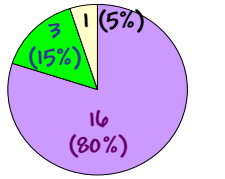

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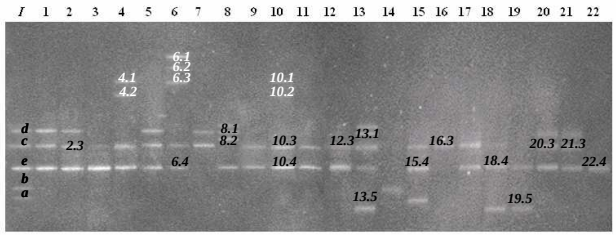

The microbial ecology of a typical Italian salami during its natural fermentation

Lucia Aquilanti [a,*], Sara Santarelli [a], Gloria Silvestri [a], Andrea Osimani [a], Annalisa Petruzzelli [b], Francesca Clementi [a]

[a] Department of Food Science, Polytechnic University of Marche, via Brecce Bianche, 60131 Ancona, Italy
[b] Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche, via G. Salvemini, 1, 06126 Perugia, Italy

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SYSTEMATIC AND APPLIED MICROBIOLOGY

Combining Denaturing Gradient Gel Electrophoresis of 16S rDNA V3 Region and 16S–23S rDNA Spacer Region Polymorphism Analyses for the Identification of Staphylococci from Italian Fermented Sausages

Giuseppe Blaiotta, Carmelina Pennacchia, Danilo Ercolini, Giancarlo Moschetti, and Francesco Villani

Dipartimento di Scienza degli Alimenti, Sezione di Microbiologia Agraria, Alimentare, Ambientale e di Igiene, Stazione di Microbiologia Industriale, Università degli Studi di Napoli "Federico II", Portici, Italy

Soppressata di Ricigliano

Soppressata di Gioi

Soppressata Lucana

Salsiccia Calabrese

Origine	n° isolati analizzati	Biotipi (RAPD-PCR)	*M. caseolyticus*	*S. haemolyticus*	*S. epidermidis*	*S. saprophyticus*	*S. vitulus*	*S. xylosus*	*S. pasteuri*	*S. succinus*	*S. warneri*	*S. equorum*
[a]Soppressata Ricigliano-1999	31	5		[d]1 (1)		23 (1)		1 (1)		4 (1)	2 (1)	
[b]Soppressata Ricigliano -2000	48	12			1(1)	1 (1)	4 (2)	22 (1)	3 (1)	8 (1)		9 (5)
[a]Soppressata Gioi -1999	35	17			3 (2)			2 (2)			1 (1)	29 (12)
[b]Soppressata Gioi-2000	38	5	1 (1)			14 (2)		8 (1)	1 (1)	14 (1)		
[a]Soppressata Lucana	15	11	1 (1)			1 (1)		7 (4)	1 (1)	2 (2)		3 (2)
[c]Salsiccia Lucana	19	14				2 (2)	4 (1)	5 (4)	1(1)	1 (1)	1(1)	5 (4)
[b]Salsiccia Calabrese	49	7			2 (1)	12 (1)					10 (2)	25 (3)
Totale isolati	235	71	2	1	6	53	8	45	6	29	14	71
%	100		0,85	0,43	2,55	22,55	3,40	19,15	2,55	12,34	5,96	30,21

Journal of Applied Microbiology 2004, **97**, 271–284 doi:10.1111/j.1365-2672.2004.02298.x

Diversity and dynamics of communities of coagulase-negative staphylococci in traditional fermented sausages

G. Blaiotta[1], C. Pennacchia[1], F. Villani[1], A. Ricciardi[2], R. Tofalo[2] and E. Parente[2]

[1]*Dipartimento di Scienze degli Alimenti, Università degli Studi di Napoli 'Federico II', Portici (NA), and* [2]*Dipartimento di Biologia, Difesa e Biotecnologie Agro-Forestali, Università degli Studi della Basilicata, Potenza, Italy*

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http://www.elsevier.de/syapm

SYSTEMATIC AND APPLIED MICROBIOLOGY

Rapid and Reliable Identification of *Staphylococcus equorum* by a Species-Specific PCR Assay Targeting the *sod*A Gene

Giuseppe Blaiotta[1], Danilo Ercolini[1], Gianluigi Mauriello[1], Giovanni Salzano[2], and Francesco Villani[1]

[1] Dipartimento di Scienza degli Alimenti, Sezione di Microbiologia Agraria, Alimentare, Ambientale e di Igiene, Stazione di Microbiologia Industriale, Università degli Studi di Napoli "Federico II", Portici, Italy
[2] Dipartimento di Biologia, Difesa e Biotecnologie Agro-Forestali, Università degli Studi della Basilicata, Campus di Macchia Romana, Potenza, Italy

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Meat Science 67 (2004) 149–158

MEAT SCIENCE

www.elsevier.com/locate/meatsci

Isolation and technological properties of coagulase negative staphylococci from fermented sausages of Southern Italy

G. Mauriello, A. Casaburi, G. Blaiotta, F. Villani *

Dipartimento di Scienza degli Alimenti, Università degli Studi di Napoli "Federico II" 80055 Portici, Naples, Italy

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APPLIED AND ENVIRONMENTAL MICROBIOLOGY, Sept. 2007, p. 5453–5463 Vol. 73, No. 17
0099-2240/07/$08.00+0 doi:10.1128/AEM.01072-07

Microbial Ecology of the Soppressata of Vallo di Diano, a Traditional Dry Fermented Sausage from Southern Italy, and In Vitro and In Situ Selection of Autochthonous Starter Cultures▽

Francesco Villani,[1]* Annalisa Casaburi,[1] Carmela Pennacchia,[1] Luisa Filosa,[1] Federica Russo,[1] and Danilo Ercolini[2]

Department of Food Science, School of Agriculture[1] and School of Biotechnological Sciences,[2] University of Naples Federico II, Via Università 100, 80055 Portici, Italy

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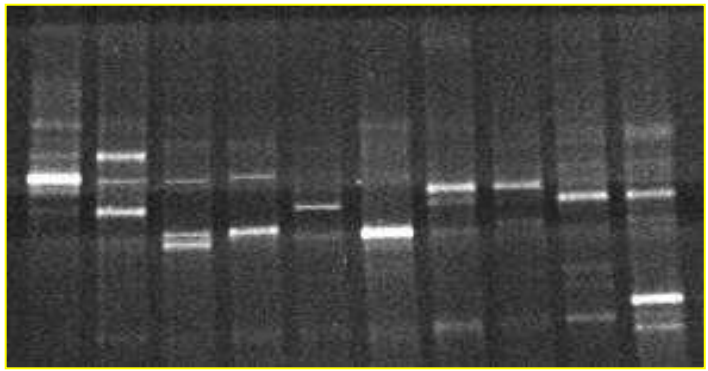
Studio dell'ecologia microbica

Selezione di batteri per lo sviluppo di colture starter autoctone



PCR-DGGE
DNA da soppressata

TABLE 2. Sequence information for the DGGE bands obtained by analyzing the V3 region of the 16S rRNA gene of DNA extracted directly from soppressata samples

Band[a]	Closest relative	Accession no.	% Identity
A1	*Staphylococcus xylosus/saprophyticus*	AY688109/AM237352	100
B1	*Lactobacillus sakei/curvatus/graminis*	AF429524/AY375292/AJ621551	100
B2	*Staphylococcus* spp.[b]	AY748916	99
B3	*Staphylococcus equorum*	AY126195	99
C1	*Enterococcus faecalis*	AY850358	99
C2	*Staphylococcus succinus*	AY748916	98
C3	*Staphylococcus* spp.	AY748916	99
C4	*Enterococcus* spp.	AY865651	98
D1	*Staphylococcus succinus*	AY748916	97
D2	*Staphylococcus* spp.	AY748916	99
E1	*Carnobacterium* spp.	AY543037	100
E2	*Lactobacillus curvatus*	DQ336384	98
F1	*Carnobacterium* spp.	AF425608	100
G1	*Lactobacillus plantarum*	AB125924	100
H1	*Lactobacillus plantarum*	AB125924	100
H2	*Staphylococcus* spp.	DQ530545	100
I1	*Tetragenococcus halophilus*	AB041349	97
I2	*Lactobacillus sakei/curvatus/graminis*	AF429524/AB260947/AM113778	100
L1	*Enterococcus* spp.	AJ968602	100
L2	*Lactobacillus sakei/curvatus/graminis*	AF429524/AB260947/AM113778	100

[a] The letters and the numbers correspond to the bands shown in Fig. 1.
[b] The species name is not indicated for cases in which the number of closest relatives was >3.

TABLE 3. Sequence information for the DGGE bands obtained by analyzing the V3 region of the 16S rRNA gene of the microbial bulk cells collected from MSA

Band[a]	Closest relative	Accession no.	% Identity
A1	*Staphylococcus xylosus*	AY126246	100
B1	*Staphylococcus xylosus*	AY126253	99
B2	*Staphylococcus equorum*	AY126195	99
C1	*Staphylococcus succinus*	AY748916	99
C2	*Staphylococcus xylosus*	AY126253	99
E1	*Staphylococcus succinus*	AY748916	100
E2	*Staphylococcus equorum*	DQ232735	100
G1	*Staphylococcus succinus*	AY748916.1	100
G2	*Staphylococcus pulvereri/lentus/vitulinus*	AY126218/AY395014/AY688104	100
H1	*Staphylococcus* spp.[b]	AY647290	100
H2	*Staphylococcus succinus*	AY748916	100
H3	*Staphylococcus* spp.	AY161046	99
H4	*Staphylococcus* spp.	AY647290	99
H5	*Staphylococcus equorum*	AY126195	100
I1	*Bacillus* spp.	AY941803	100
I2	*Bacillus pumilus*	AY462210	97
I3	*Staphylococcus xylosus*	AY126246	100
I4	*Staphylococcus equorum*	DQ232735	99
L1	*Bacillus subtilis*	AB210949	99
L2	*Bacillus* spp.	AY941803	100
L3	*Staphylococcus* spp.	DQ376925	98
L4	*Staphylococcus succinus*	AY748916	100
L5	*Staphylococcus xylosus*	AY126246	100
L6	*Staphylococcus equorum*	DQ232735	98

[a] The letters and the numbers correspond to the bands shown in Fig. 2.
[b] The species name is not indicated for cases in which the number of closest relatives was >3.

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Meat Science 79 (2008) 234–235
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Comparison of the compositional, microbiological, biochemical and volatile profile characteristics of three Italian PDO fermented sausages

Raffaella Di Cagno [a], Clemencia Chaves Lòpez [b], Rosanna Tofalo [b], Giovanna Gallo [a], Maria De Angelis [a,*], Antonello Paparella [b], Walter P. Hammes [c], Marco Gobbetti [a]

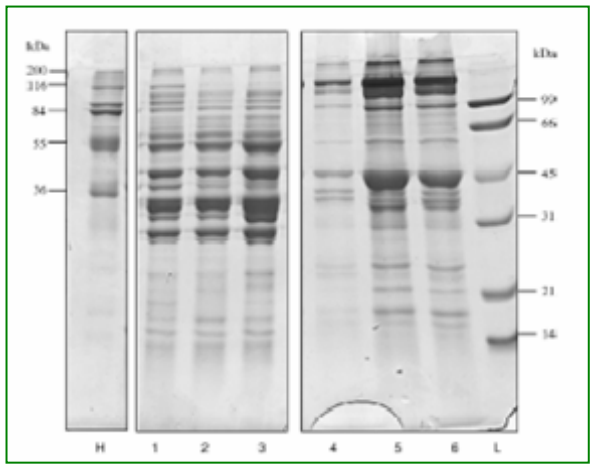
Brianza

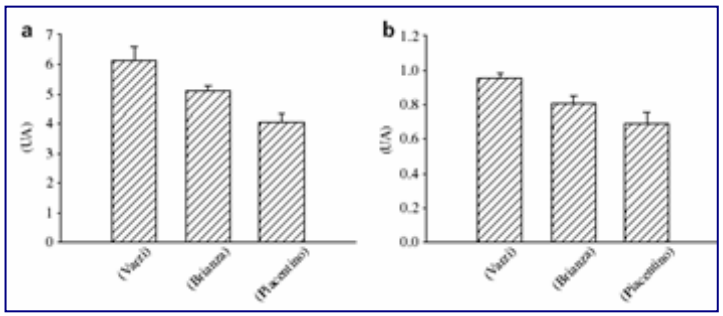
Varzi

Piacentino

Cell numbers (Log cfu/g) of the principal microbial groups in the three Italian PDO sausages

	Varzi	Brianza	Piacentino
Aerobic mesophilic bacteria	8.5 ± 0.12^{a}	7.4 ± 0.091^{b}	8.2 ± 0.06^{a}
Total enterobacteria	ND	ND	ND
Mesophilic lactobacilli	8.6 ± 0.007^{a}	8.6 ± 0.36^{a}	8.3 ± 0.18^{a}
Enterococci	5.2 ± 0.17^{c}	7.3 ± 0.28^{a}	6.2 ± 0.32^{b}
Brochotrix thermosphacta	4.9 ± 0.76^{a}	3.4 ± 0.34^{b}	ND
Micrococci	7.7 ± 0.78^{a}	6.8 ± 0.26^{b}	7.5 ± 0.38^{a}
Coagulase-negative staphylococci	6.5 ± 0.10^{a}	5.4 ± 0.30^{b}	6.7 ± 0.10^{a}
Yeasts	6.9 ± 0.27^{b}	7.7 ± 0.10^{a}	$7.2 \pm 0.66^{a,b}$
Moulds	7.2 ± 1.29^{b}	6.2 ± 0.65^{c}	8.9 ± 0.20^{a}





Dipartimento di Protezione delle Piante e Microbiologia Applicata

Il contributo della SIMTREA AAA

Journal of Applied Microbiology ISSN 1364-5072

ORIGINAL ARTICLE

PCR-DGGE analysis of lactic acid bacteria and yeast dynamics during the production processes of three varieties of Panettone

C. Garofalo, G. Silvestri, L. Aquilanti and F. Clementi

Department of Food Science, Polytechnic University of Marche, Ancona, Italy

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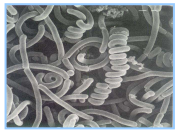
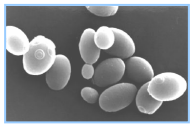
batteri



lieviti



Panettone senza zucchero (con o senza cioccolato)

A

B

Come il Classico:
- noci, saccarosio,
+
maltitolo, malto, lievito di birra, acilsolfame.

- cioccolato

C

IMPASTO FINALE
30°C / 7h

D

Panettone Classico

E

LIEVITO MADRE
maturato a 30°C / 24h

+ Farina e acqua

I RINFRESCO

F

PRIMO IMPASTO BIANCO
30°C / 7h

+ Farina e acqua

II RINFRESCO

G

SECONDO IMPASTO BIANCO
30°C / 4h

+ Farina, acqua, saccarosio, uova, burro

H

PRIMO IMPASTO GIALLO
30°C / 10-12h

+ Farina, noci, cioccolato, uova, burro, saccarosio, uvetta, acqua, mono/digliceridi, sale, vanillina, aromi

I

IMPASTO FINALE
30°C / 7h

Ciambella

L

M

N

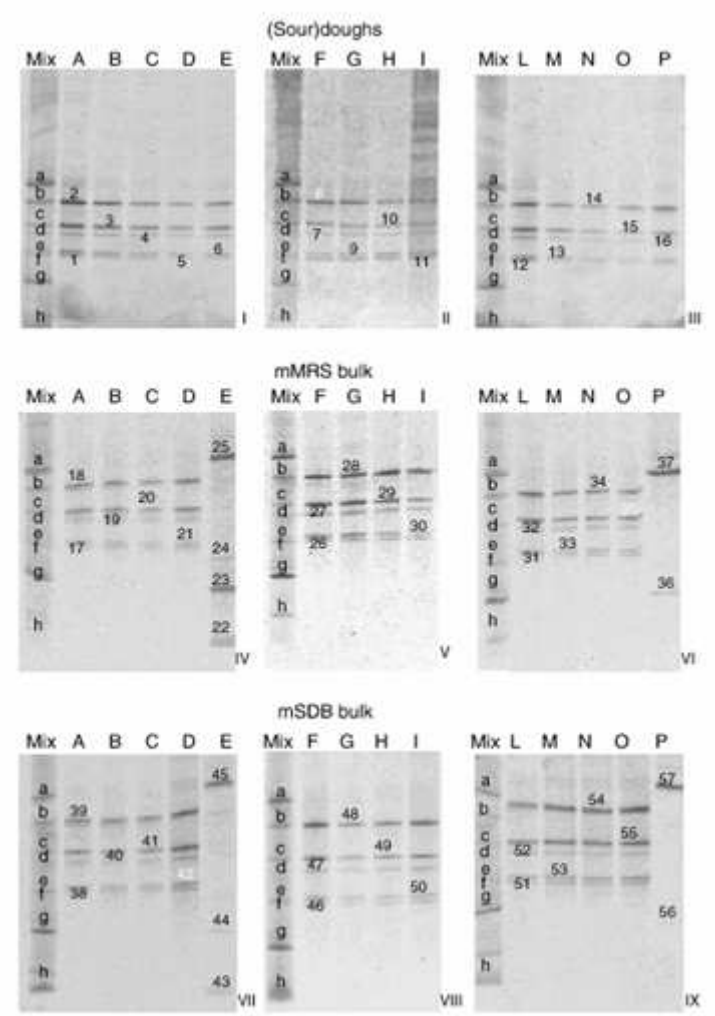
O

Come il Classico:
- noci, cioccolato

P

IMPASTO FINALE
30°C / 7h

14 campioni di impasti maturi



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International Journal of Food Microbiology 114 (2007) 69–82
INTERNATIONAL JOURNAL OF Food Microbiology
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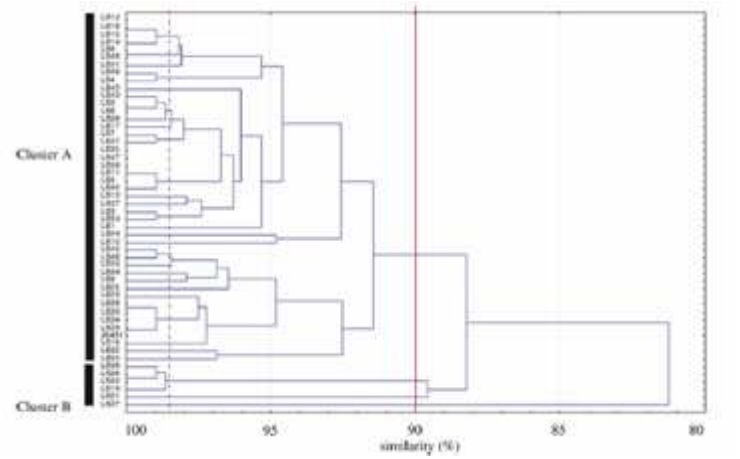
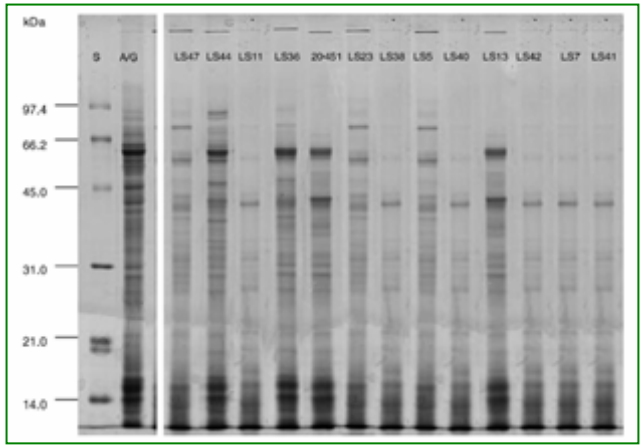
Molecular and functional characterization of *Lactobacillus sanfranciscensis* strains isolated from sourdoughs

M. De Angelis [a,*], R. Di Cagno [a], G. Gallo [a], M. Curci [b], S. Siragusa [a], C. Crecchio [b], E. Parente [c], M. Gobbetti [a]

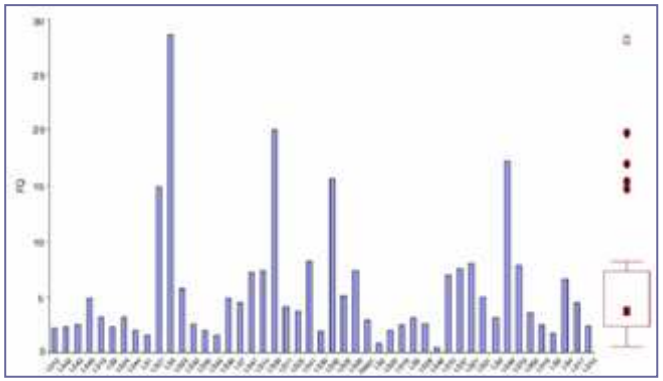
Pattern fermentativi



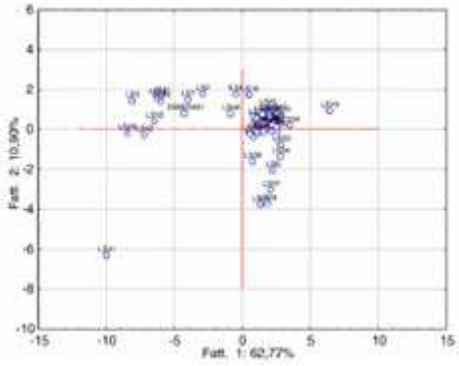
SDS-Page di idrolisati proteici



Quoziente di fermentazione



AA liberi



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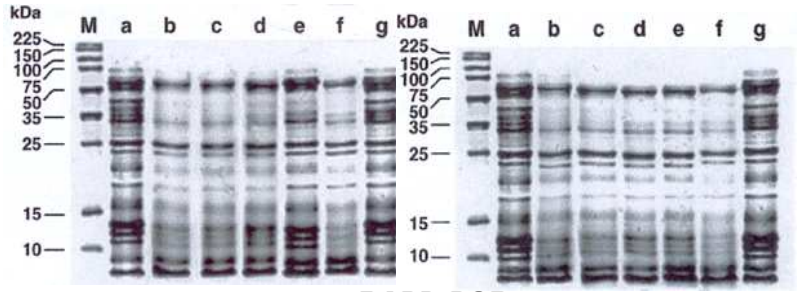
Adv. Food Sci. (CMTL) Vol. 18 No. 5/6, 160 - 162 (1996)

CHARACTERIZATION OF LEAVENED DOUGHS FOR PIZZA IN NAPLES.

S. Coppola, O. Pepe, P. Masi* and M. Sepe*

*Istituto di Microbiologia agraria e Stazione di Microbiologia industriale; *Dipartimento di Scienze degli alimenti, Università degli Studi di Napoli "Federico II", 80055 Portici (Italy)*

Key words: Pizza, dough, bacteria, yeasts, rheology



RAPD-PCR

Identificazione di batteri lattici e lieviti

Lb. sakei	21
Lb. plantarum	11
Lb. paracasei	6
Lb. pentosus	2
Lb. confusus	6
Lb. rhamnosus	1
Lb. sanfranciscensis	1
Lb. viridiscens	1
En. faecium	4
En. faecalis	1
En. raffinosus	2
En. hirae	2
Lc. spp	1
Ln. pseudomesenteroides	3
Ln. gelidum	15
Weis. paramesenteroides	4
Oenococcus oeni	2
Ln. dextranicum	4
Ln. argentinum	2
Ln. carnosum	1
Ln. amelibiosum	3
Saccharomyces cerevisiae	2

Campioni	*pH*	*ATT*	*L(+)-lattato*	*D(-)-lattato*	*Lattato totale*	*Acetato*	*Etanolo*
				g Kg^{-1}			
1	*5,86*	*1,45*	*0,027*	*0,013*	*0,040*	*0,040*	*0,106*
2	*5,92*	*1.50*	*0,019*	*0,001*	*0,019*	*0,019*	*0,137*
3	*4,48*	*3,15*	*0,019*	*0,001*	*0,013*	*0,050*	*0,159*
4	*5,35*	*1,05*	*0,050*	*0,073*	*0,123*	*0,040*	*0,090*
5	*5.72*	*1,40*	*0,020*	*0,031*	*0,051*	*0,040*	*0,144*
6	*4,37*	*2,70*	*0,172*	*0,183*	*0,527*	*0,075*	*0,129*
7	*5,90*	*0,70*	*0,064*	*0,121*	*0,185*	*0,024*	*0,099*
8	*5,89*	*0,75*	*0,033*	*0,051*	*0,084*	*0,017*	*0,103*
9	*5,48*	*1,08*	*0,052*	*0,068*	*0,120*	*0,022*	*0,110*
10	*5,66*	*1,01*	*0,021*	*0,019*	*0,040*	*0,015*	*0,118*

Journal of Applied Microbiology 1998, 85, 891–897

Effect of leavening microflora on pizza dough properties

S. Coppola, O. Pepe and G. Mauriello

Istituto di Microbiologia Agraria e Stazione di Microbiologia Industriale, Università degli Studi di Napoli 'Federico II', Portici, Italy

6608/02/98: received 20 February 1998 and accepted 16 April 1998

Colture starter

Table 1. Fermentation properties of pizza doughs leavened by different starter cultures.

	STARTERS	TIME OF LEAVENING h*	pH†	TTA§ ml NaOH 0.1N/10 g	Lactic acid† g/Kg	Acetic acid† g/Kg	FQ†
1	*Sacch. cerevisiae*	6.5	5.60	0.60	0.27	0.10	1.8
2	*Sacch. cerevisiae* + *Lb. plantarum*	5.8	5.05	1.08	1.09	0.19	3.8
3	*Sacch. cerevisiae* + *Ec. faecium*	6.8	5.60	0.93	1.40	0.16	5.8
4	*Sacch. cerevisiae* + *Lb. sanfranciscensis*	6.3	5.39	0.95	0.63	0.28	1.5
5	*Sacch. cerevisiae* + *Ln. mesenteroides*	6.5	5.12	0.96	0.75	0.57	0.9
6	*Sacch. cerevisiae* + *Lb. plantarum* + *Ec. faecium*	6.5	5.07	1.00	1.73	0.15	7.7
7	*Sacch. cerevisiae* + *Lb. sanfranciscensis* + *Ln. mesenteroides*	6.3	5.06	0.91	0.78	0.36	1.4
8	*Sacch. cerevisiae* + *Lb. plantarum* + *Lb. sanfranciscensis*	5.5	4.88	1.20	1.27	0.24	3.5
9	*Sacch. cerevisiae* + *Lb. plantarum* + *Ln. mesenteroides*	5.3	4.71	1.13	0.96	0.20	3.2
10	*Sacch. cerevisiae* + *Lb. plantarum* + *Lb. sanfranciscensis* + *Ln. mesenteroides*	6.5	4.81	1.50	1.72	0.46	2.5
11	*Sacch. cerevisiae* + *Ec. faecium* + *Lb. sanfranciscensis* + *Ln. mesenteroides*	6.8	4.96	1.76	1.23	0.39	2.1
12	*Sacch. cerevisiae* + *Lb. plantarum* + *Ec. faecium* + *Lb. sanfranciscensis*	6.5	4.91	1.08	1.43	0.18	5.3
13	*Sacch. cerevisiae* + *Lb. plantarum* + *Ec. faecium* + *Ln. mesenteroides*	6.8	4.78	1.26	1.66	0.25	4.4
14	*Sacch. cerevisiae* + *Lb. plantarum* + *Ec. faecium* + *Lb. sanfranciscensis* + *Ln. mesenteroides*	6.3	4.82	1.46	1.56	0.36	2.9
15	**Control**	□	6.24	0.60	0.20	0.01	12.9

Data are means of triplicate analyses. *$P<0.05$ †$P\leq 0.002$ §$P<0.002$.

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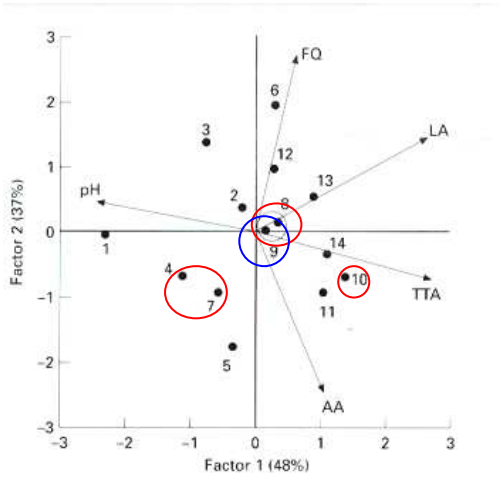
International Journal of Food Microbiology 84 (2003) 319–326

INTERNATIONAL JOURNAL OF Food Microbiology

www.elsevier.com/locate/ijfoodmicro

Effect of proteolytic starter cultures as leavening agents of pizza dough

O. Pepe, F. Villani, D. Oliviero, T. Greco, S. Coppola*



Migliori risultati dell'analisi sensoriale

4 -Lb. sanfranciscensis
7 -Lb. sanfranciscensis + Ln. mesenteroides
8 -Lb. plantarum + Lb. sanfranciscensis
9 -Lb. plantarum + Ln. mesenteroides

UNIVERSITA' DEGLI STUDI DI UDINE

Eur Food Res Technol (2004) 218:469–473
DOI 10.1007/s00217-004-0877-6

ORIGINAL PAPER

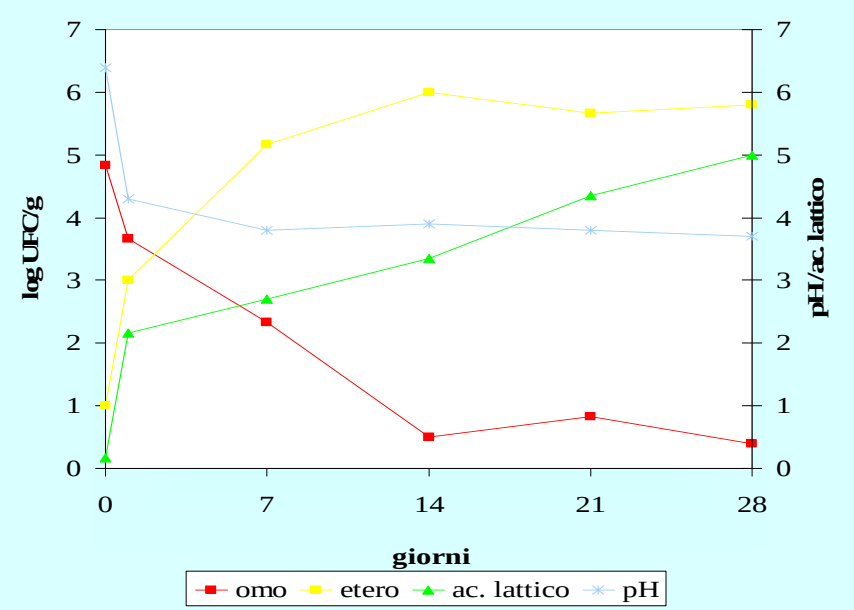
Michela Maifreni · Marilena Marino · Lanfranco Conte

Lactic acid fermentation of *Brassica rapa*: chemical and microbial evaluation of a typical Italian product (*brovada*)

Brovada friulana

dalla fermentazione naturale di rape a contatto con vinacce.

Isolamento e identificazione di 225 colture di batteri lattici e 63 di lieviti



Componente volatile

	Days of fermentation					
	0	1	7	14	21	28
Ethanol	2.85±2.50	22.24±8.00	17.32±8.65	22.57±7.25	29.58±7.44	24.81±5.77
Methanol	nd	5.56±4.55	2.65±1.26	2.08±0.93	2.11±0.84	1.61±1.15
2-Phenylethanol	2.72±1.93	6.15±2.27	5.45±2.13	5.90±1.55	5.39±2.06	6.16±1.64
2-Methylbutanol	14.17±6.69	10.90±3.96	8.04±2.92	7.65±3.70	5.77±1.73	6.90±3.13
3-Methylbutanol	1.16±0.69	0.89±0.29	1.36±0.93	1.35±0.70	0.98±0.39	0.86±0.33
Isoamylacetoacetate	0.64±0.12	1.17±0.56	1.02±0.51	1.52±0.69	2.18±0.83	1.08±0.56
Propylacetate	8.53±9.13	9.23±5.99	9.07±3.27	11.07±2.72	11.93±2.70	17.23±3.57
Phenylethylacetate	nd	0.70±0.17	1.12±0.83	1.33±0.43	0.89±0.20	1.34±0.53
Methylbutanoate	nd	2.46±1.48	2.17±1.09	2.67±0.57	2.64±0.88	2.92±1.27
Methylpentanoate	nd	nd	1.61±0.69	0.86±0.17	0.80±0.04	0.81±0.24
Ethylpropanoate	0.58±0.08	0.59±0.05	0.79±0.33	1.07±0.52	0.66±0.09	1.02±0.33
Phenylethylisothiocyanate	50.65±14.57	30.41±18.05	26.58±11.19	19.58±5.57	13.51±4.05	10.45±4.56
Propenylsulfide	8.45±10.77	7.46±6.98	11.64±5.84	8.78±4.16	7.90±4.93	8.60±7.68
Disulfide	1.67±0.55	1.58±0.77	3.20±2.89	3.05±1.88	1.98±1.14	1.09±0.26
Methylthiopentanonitriles	nd	1.53±1.11	1.80±1.12	1.07±0.48	1.34±0.82	1.51±1.03

Il contributo della SIMTREA AA

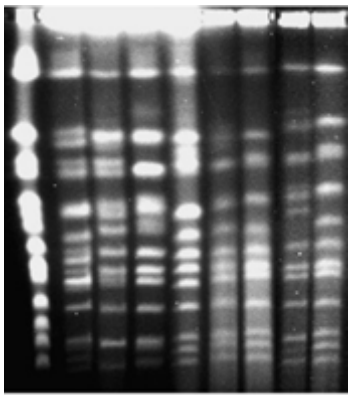
UNIVERSITA' DEGLI STUDI DI FIRENZE

VQ: Numero 5, Giugno 2006

VQ Numero 7, Settembre 2006

SIMONE AUGRUSO, LISA GRANCHI, MASSIMO VINCENZINI

Caratterizzazione intraspecifica, mediante analisi RFLP del mtDNA di Saccharomyces cerevisiae



Ogni fermentazione è caratterizzata da 1-3 ceppi dominanti

I ceppi dominanti di cantine diverse mostrano profili metabolici diversi

I ceppi dominanti sono stati isolati anche nel vigneto di origine

DIPARTIMENTO DI BIOTECNOLOGIE AGRARIE, Sezione di Microbiologia

UNIVERSITA'
DI PISA

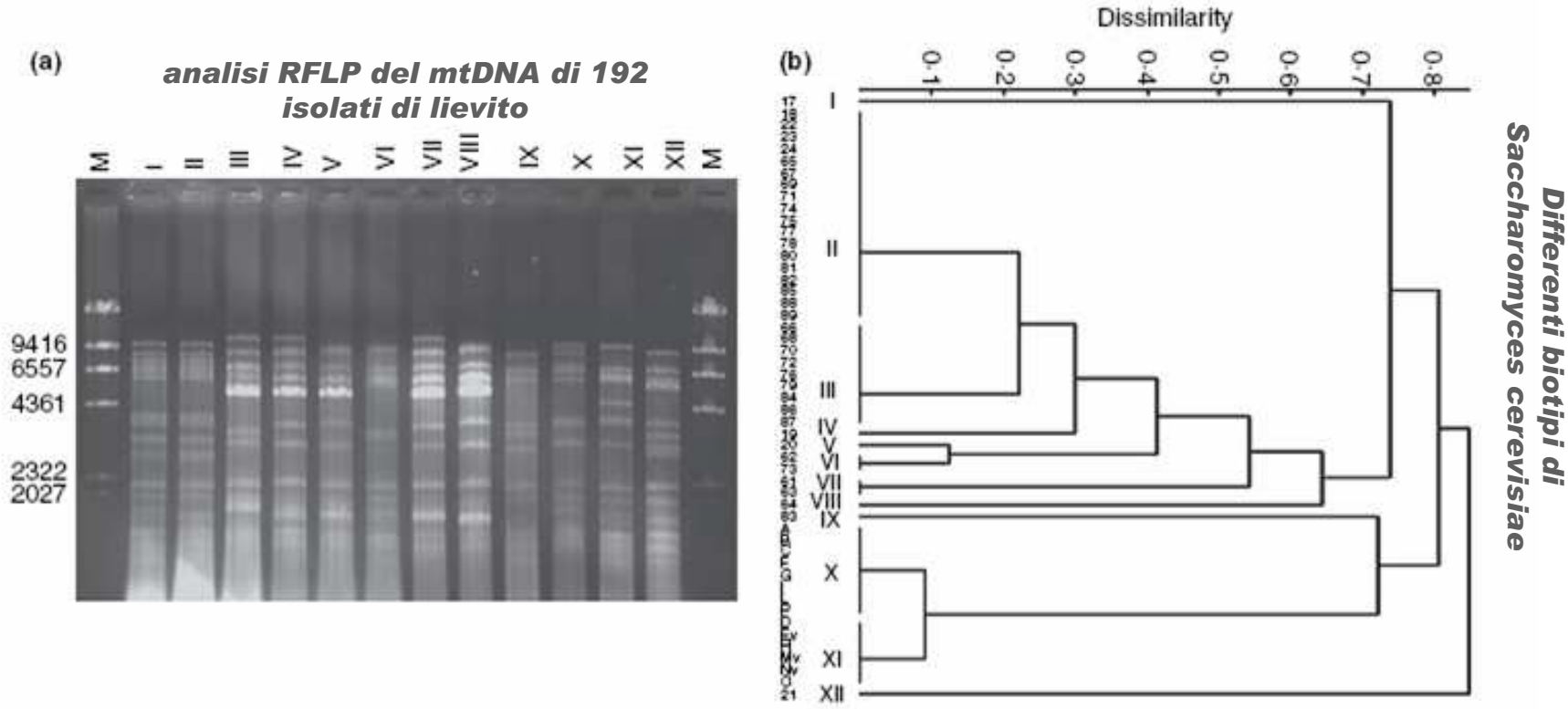
Letters in Applied Microbiology ISSN 0266-8254

ORIGINAL ARTICLE

Genetic and phenotypic diversity of autochthonous *Saccharomyces* spp. strains associated to natural fermentation of 'Malvasia delle Lipari'

M. Agnolucci, S. Scarano, S. Santoro, C. Sassano, A. Toffanin and M. Nuti

analisi RFLP del mtDNA di 192 isolati di lievito



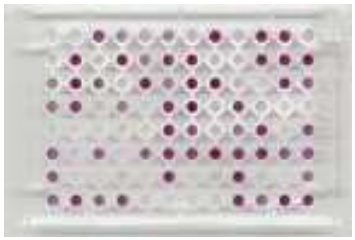
Differenti biotipi di Saccharomyces cerevisiae

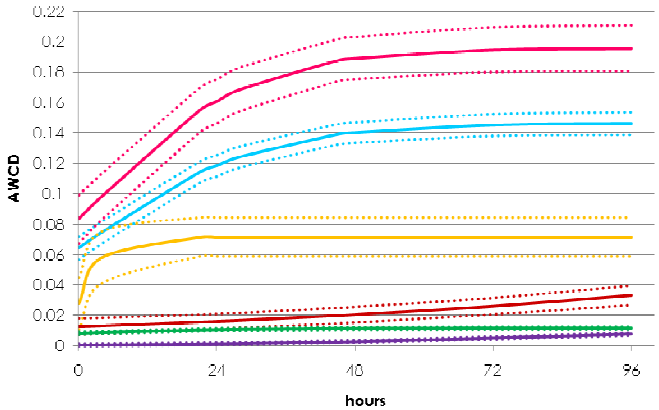
Figure 1 (a) Mitochondrial DNA restriction patterns (I–XII) of strains isolated from 'Malvasia of Lipari' wine. Lane M: *λ*DNA/*Hin*dIII marker size. (b) Dendrogram from UPGMA clustering analysis, based on Jaccard coefficient, of mtDNA *Rsa*I restriction patterns of all 51 isolates.

UNIVERSITA'
DEGLI STUDI
DI TORINO

Use of Biolog for Monitoring and Control of Yeast Activity in Alcoholic Fermentation for Wine-making

DeNittis M., Querol A., Zanoni B., Minati J.L., Ambrosoli R.,





BRL starter
D47 starter
S.cherensiensis
S.cerevisiae T3
S.beticus 11758
S.bayanus 12627

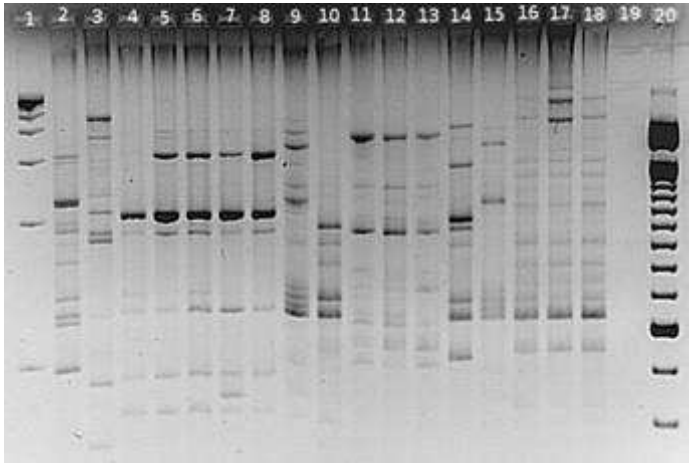
- *Valutazione quantitative delle popolazioni di lievito*
- *Definizione della biodiversità specifica e intraspecifica*
- *Congruenza tra caratterizzazione metabolica-Biolog e caratterizzazione genetica*

UNIVERSITA'
DEGLI STUDI
DI UDINE

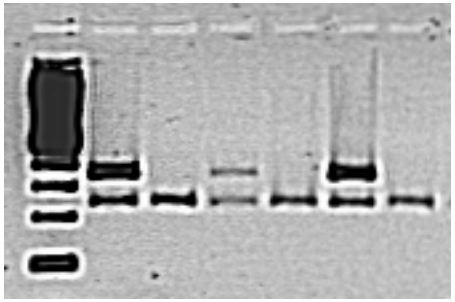
Birre artigianali prodotte in microbirrifici del Nord-Est

Marino, M., Maifreni, M., Rondinini, M.,
Bartolomeoli, I., Sebastianutto, N., Frigo, F.

Identificazione della microflora lattica (RAPD-PCR)



Ricerca di marcatori molecolari (horA) indice di potenziale danno tecnologico

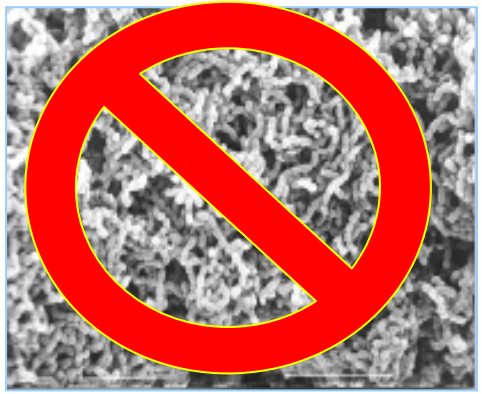


horA

internal control

Selezione di ceppi produttori di batteriocine

Il contributo della SIMTREA AAA



UNIVERSITA' DEGLI STUDI DI TORINO

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International Journal of Food Microbiology 121 (2008) 99–105

INTERNATIONAL JOURNAL OF Food Microbiology

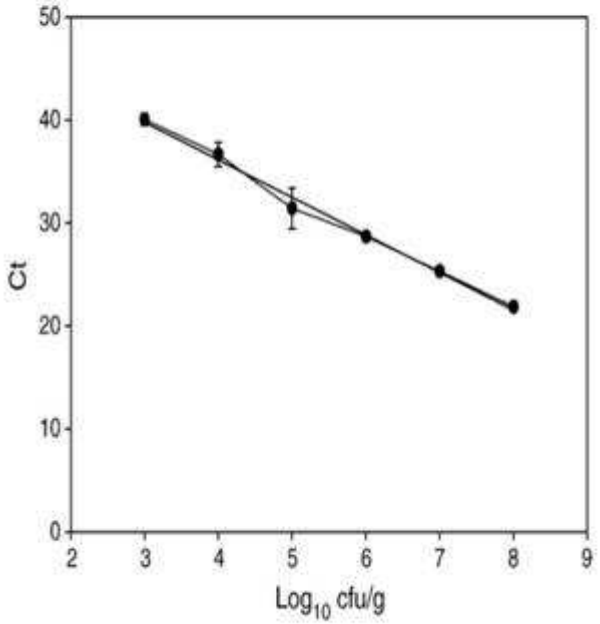
www.elsevier.com/locate/ijfoodmicro

Detection, quantification and vitality of *Listeria monocytogenes* in food as determined by quantitative PCR

Kalliopi Rantsiou [a], Valentina Alessandria [a], Rosalinda Urso [b], Paola Dolci [a], Luca Cocolin [a,*]

[a] *Dipartimento di Valorizzazione e Protezione delle Risorse Agroforestali, Facoltà di Agraria, Università degli studi di Torino, Turin, Italy*
[b] *Dipartimento di Scienze degli Alimenti, Facoltà di Agraria, Università degli studi di Udine, Udine, Italy*

Received 13 July 2007; accepted 5 November 2007



Food samples	No. of samples	qPCR signals [a]			
		T_0		T_{24}	
		+	−	+	−
Fresh meat	20	0	20	1	19
Fresh sausages	2	0	2	0	2
Fermented sausages	2	0	2	0	2
Fresh cheeses	31	4 [b]	27	8	23
Ripened cheeses	11	0	11	0	11
Total	66	4	62	9	57

[a] T_0, without enrichment; T_{24}, after enrichment at 37 °C in BHI broth overnight.
[b] Only for one sample the quantification was possible and it resulted to be 4×10^3 cfu/g.

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO DI SCIENZE E TECNOLOGIE AGROAMBIENTALI

"Control and prevention of emerging and future pathogens at cellular level throughout the food chain"

EU6 FP IP Pathogen Combat no. FOOD-CT-2005-007081 (2005-2010) http://www.pathogencombat.com

Coordinatore Unità operativa UNIBO: Bruno Biavati

⇩

Selezione di microrganismi ad attività probiotica e protettiva per incrementare la qualità e sicurezza negli alimenti

Prodotti Lattiero-caseari



Prodotti carnei



UNIVERSITA'
DEGLI STUDI
DI FOGGIA

BIAMFOOD
Grant Agreement 211441
Controlling biogenic amines in traditional food fermentations in regional Europe

Coordinatore Unità operativa UNIFG: Giuseppe Spano
Università di Foggia, Dipartimento di Scienza degli Alimenti
Foggia (IT)

UNIFG

Vino **Formaggio** **Sidro**

Inizio: 01/02/2008 – durata del progetto: 3 anni

UNIVERSITA' DEGLI STUDI DI UDINE

Journal of Applied Microbiology ISSN 1364-5072

ORIGINAL ARTICLE

Evaluation of amino acid-decarboxylative microbiota throughout the ripening of an Italian PDO cheese produced using different manufacturing practices

M. Marino, M. Maifreni, I. Bartolomeoli and G. Rondinini

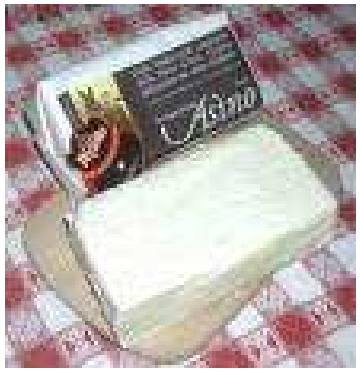
Department of Food Science, University of Udine, Udine, Italy

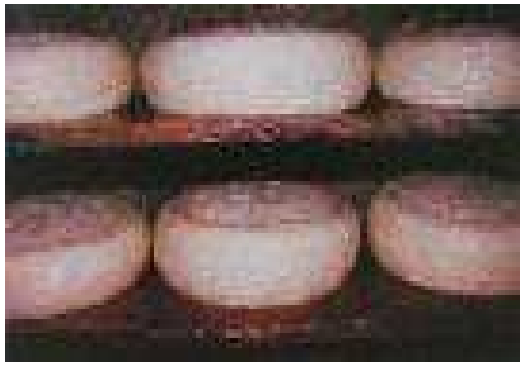
Int. J. Dairy Technol. (in press)

Presence of Biogenic amines in a traditional salted Italian cheese

Innocente, N., Marino, M., Marchesini, G., Biasutti, M.L.

Department of Food Science, University of Udine, Udine, Italy





Journal of Agricultural and Food Chemistry,
doi: 10.1021/jf 802002z

Combined Use of Starter Cultures and Preservatives to Control Production of Biogenic Amines and Improve Sensorial Profile in Low-Acid Salami

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

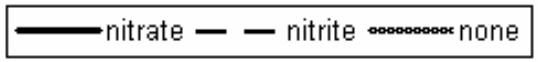
F. Coloretti, C. Chiavari, E. Armaforte, S. Carri, G.B. Castagnetti

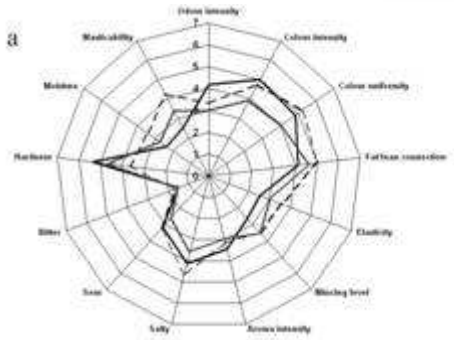
L'uso combinato di nitriti e colture starter selezionate permette l'ottenimento di salami più salubri e con un migliorato profilo sensoriale

Table 3. Concentration of Biogenic Amines (Milligrams per Kilogram) at the End of the Ripening Process (60 Days) as Means ± Standard Deviation[a]

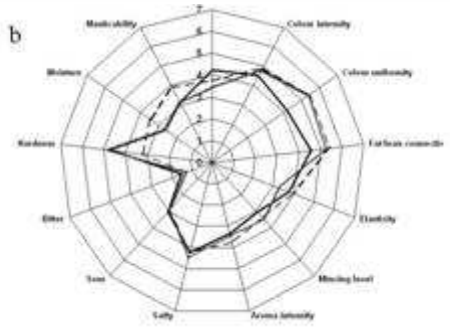
amine	starter culture	preservative: $NaNO_3$ (150 mg/kg)	preservative: $NaNO_3$ (250 mg/kg)	preservative: none
putrescine	*Lactobacillus* + *Kocuria*	11.1^{e1} ± 2.0	193.8^{b3} ± 7.2	116.4^{d2} ± 11.1
	Lactobacillus	177.8^{b} ± 3.8	220.4 ± 39.4	222.5^{a} ± 8.1
	none	216.5^{a} ± 22.3	183.7 ± 14.2	159.4^{b} ± 1.9
cadaverine	*Lactobacillus* + *Kocuria*	44.0^{e1} ± 4.4	67.7^{d2} ± 1.4	59.5^{b12} ± 6.8
	Lactobacillus	10.5^{e1} ± 1.0	55.9^{c3} ± 0.9	42.3^{a2} ± 0.8
	none	16.9^{e1} ± 1.0	80.5^{a2} ± 5.9	80.2^{a2} ± 0.9
tryptamine	*Lactobacillus* + *Kocuria*	2.8^{e1} ± 0.6	14.3^{d2} ± 0.3	17.6^{a2} ± 2.4
	Lactobacillus	7.1^{e1} ± 0.4	26.0^{b2} ± 0.0	28.0^{a2} ± 1.1
	none	12.4^{e1} ± 0.5	32.8^{a2} ± 0.7	34.2^{a2} ± 2.2
spermidine	*Lactobacillus* + *Kocuria*	2.2^{e1} ± 0.5	26.7^{b2} ± 4.8	18.5^{c3} ± 3.7
	Lactobacillus	22.1^{b1} ± 2.0	34.1^{a2} ± 2.2	30.5^{a2} ± 1.2
	none	48.6^{a1} ± 4.7	83.2^{a2} ± 1.3	98.6^{a3} ± 4.1
spermine	*Lactobacillus* + *Kocuria*	41.2 ± 7.4	59.6 ± 11.3	49.8 ± 0.6
	Lactobacillus	51.6 ± 2.5	57.6 ± 0.1	52.8 ± 6.1
	none	50.1 ± 0.0	36.6 ± 6.8	38.2 ± 2.7
histamine	*Lactobacillus* + *Kocuria*	54.6 ± 2.1	60.0^{ab} ± 5.0	64.0 ± 3.7
	Lactobacillus	54.6 ± 7.1	94.4^{b} ± 10.5	60.3 ± 12.4
	none	46.0 ± 0.5	37.4^{a} ± 5.3	61.1 ± 26.9
tyramine	*Lactobacillus* + *Kocuria*	19.0^{e1} ± 4.6	108.0^{a} ± 6.0	43.6^{b} ± 23.2
	Lactobacillus	95.0^{a2} ± 1.9	86.6^{b2} ± 3.6	79.5^{c} ± 1.5
	none	60.9^{b} ± 7.9	85.9 ± 17.1	43.4 ± 5.3
total amine	*Lactobacillus* + *Kocuria*	174.7^{e1} ± 12.5	530.0^{a2} ± 35.9	369.8^{c3} ± 2.1
	Lactobacillus	418.7^{b2} ± 11.2	568.1^{a2} ± 50.4	515.9^{b12} ± 12.0
	none	451.4^{a} ± 25.5	540.2^{b} ± 51.2	515.1^{b} ± 13.6

[a] For each amine, any means followed by different characters show statistical differences ($p < 0.05$) according to the post hoc comparisons (Tukey's HSD) of the ANOVA. Letters compare among the different starter cultures, numbers among preservatives.

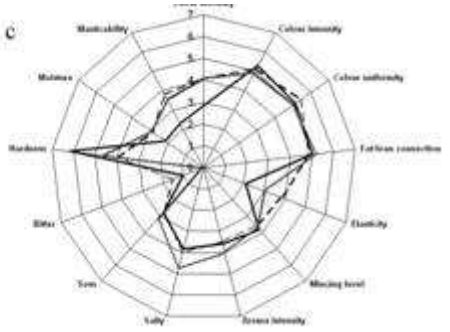




Lactobacillus plantarum VLT73
Kocuria varians MIAL 12



L. plantarum VLT73



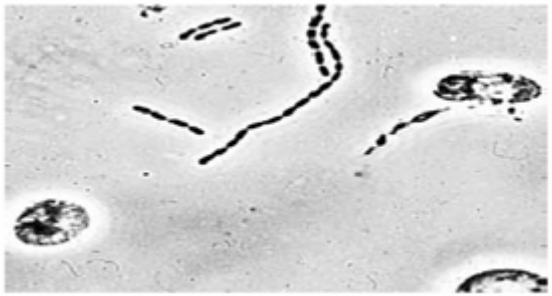
without addition of starter cultures.

UNIVERSITA' DEGLI STUDI DI FIRENZE

Production of biogenic amines by wine microorganisms

L. GRANCHI[1], P. ROMANO[2], S. MANGANI[1], S. GUERRINI[1], M. VINCENZINI[1]

(Bulletin O.I.V., 2005, vol. 78, n° 895-896, pp. 595-609).



Biogenic Amine Production by *Oenococcus oeni*

Simona Guerrini, Silvia Mangani, Lisa Granchi, Massimo Vincenzini

Dipartimento di Biotecnologie Agrarie, Università degli Studi di Firenze, Piazzale delle Cascine, 24-50144 Firenze, Italy

Current Microbiology Vol. 44 (2002), pp. 374–378
DOI: 10.1007/s00284-001-0021-9

Oenococcus oeni, la specie più frequentemente associata alla Fermentazione Malo Lattica, è risultata capace di produrre varie AB (istamina, putrescina, cadaverina) per decarbossilazione degli aminoacidi precursori

Putrescine Accumulation in Wine: Role of *Oenococcus oeni*

Silvia Mangani, Simona Guerrini, Lisa Granchi, Massimo Vincenzini

Dipartimento di Biotecnologie Agrarie, Università degli Studi di Firenze, Piazzale delle Cascine, 24-50144 Florence, Italy

L'attività decarbossilasica, è risultata ceppo-specifica

A.D. MDLXII

UNIVERSITA' DEGLI STUDI DI SASSARI

JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

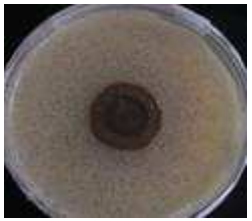
J. Agric. Food Chem. 2007, 55, 2043–2048 2043

In Vitro Interaction between Ochratoxin A and Different Strains of *Saccharomyces cerevisiae* and *Kloeckera apiculata*

A. ANGIONI,*,† P. CABONI,† A. GARAU,† A. FARRIS,‡ D. ORRO,‡ M. BUDRONI,‡ AND P. CABRAS†

Dipartimento di Tossicologia, Università di Cagliari, via Ospedale 72, 09124 Cagliari, Italy, and Dipartimento di Scienze Ambientali, Agrarie e Biotecnologie Agroalimentari, Università di Sassari, viale Italia 39, 07100 Sassari, Italy

Lieviti: diverse specie



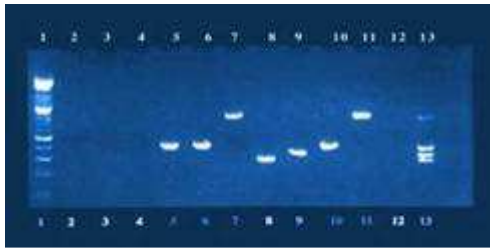
A. carbonarius

In piastra ← ***Prove antagonismo*** → ***Su uva***

Determinazione riduzione OTA (HPLC)

Selezione ceppi antagonisti

Identificazione geni coinvolti



Un ceppo di Saccharomyces cerevisiae è risultato in grado di inibire la trascrizione del gene PKS implicato nella produzione Di OTA in Aspergillus spp.

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A.D. MDLXII
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Kluyveromyces phaffii killer toxin active against wine spoilage yeasts: purification and characterization

Francesca Comitini, Natalia Di Pietro, Laura Zacchi, Ilaria Mannazzu and Maurizio Ciani

Dipartimento di Scienze degli Alimenti, Universi tà Politecnica delle Marche, Via Brecce Bianche, 60131 Ancona, Italy

Correspondence
Maurizio Ciani
m.ciani@univpm.it

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Pichia anomala and *Kluyveromyces wickerhamii* killer toxins as new tools against *Dekkera/Brettanomyces* spoilage yeasts

Francesca Comitini, Jessica Ingeniis De, Laura Pepe, Ilaria Mannazzu, Maurizio Ciani *

Dipartimento di Scienze degli Alimenti, Università Politecnica delle Marche, Via Brecce Bianche, 60131 Ancona, Italy

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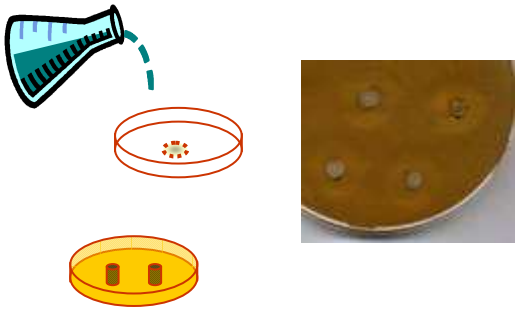

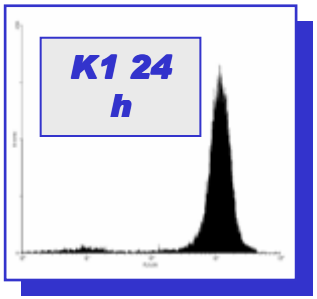

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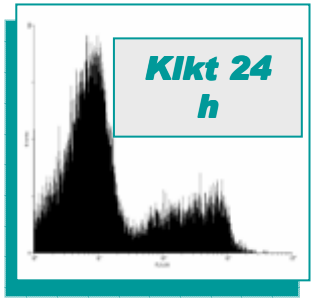

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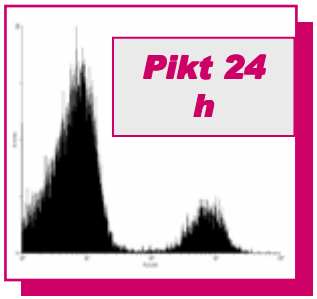

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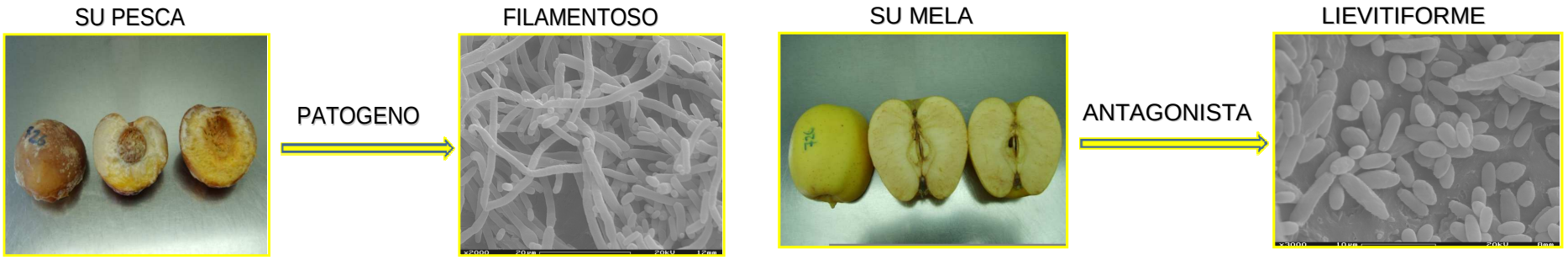
Pikt e Kpkt sono stabili in mosto e vino e potrebbero essere utilizzate come antimicrobici naturali in fase prefermentativa (Kpkt) o nel corso dell'invecchiamento e della conservazione dei vini (Pikt)

RESEARCH ARTICLE

The strange case of a biofilm-forming strain of *Pichia fermentans*, which controls *Monilinia* brown rot on apple but is pathogenic on peach fruit

Sara Giobbe[1], Salvatore Marceddu[2], Barbara Scherm[1], Giacomo Zara[3], Vittorio L. Mazzarello[4], Marilena Budroni[3] & Quirico Migheli[1]

[1]Dipartimento di Protezione delle Piante – Center for Biotechnology Development and Biodiversity Research and Unità di ricerca Istituto Nazionale Biostrutture e Biosistemi, University of Sassari, Via E. De Nicola, Sassari, Italy; [2]Istituto di Scienze delle Produzioni Alimentari (ISPA CNR Sassari), Via dei Mille, Sassari, Italy; [3]Dipartimento di Scienze Ambientali Agrarie e Biotecnologie AgroAlimentari, University of Sassari, Via E. De Nicola, Sassari, Italy; and [4]Dipartimento di Scienze Biomediche, University of Sassari, Viale San Pietro, Sassari, Italy



Dimorfismo Pichia fermentans

Progetto PRIN 2008

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

Antifungal activity of lactobacilli isolated from salami

Fabio Coloretti, Simone Carri, Emanuele Armaforte, Cristiana Chiavari, Luigi Grazia & Carlo Zambonelli

Dipartimento di Scienze degli Alimenti, Università di Bologna, Reggio Emilia, Italy

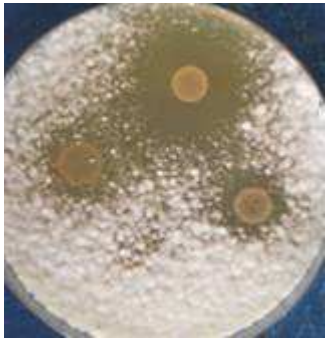


Table 3. Inhibitory activity of selected strains in the late phase after autolysis

	Aspergillus candidus		*Penicillium nalgiovense*	
After	2 days	30 days	2 days	30 days
Lactobacillus plantarum VLT01	+++	+++	+++	+++
Lactobacillus plantarum VLT304	+	++	++	+++
Lactobacillus plantarum VLT73	+	++	+	++
Lactobacillus sakei VLT32	–	++	–	++

The inhibitory capacity was scored as follows: –, no inhibition; +, inhibition halo up to 8 mm from the plating line; ++, halo between 9 and 15 mm; +++, halo larger than 15 mm.

Table 4. Physicochemical characteristics of compounds produced in the early phase by *Lactobacillus plantarum* VLT01

Treatment	Activity (%)
Concentrate 15-fold	100
pH	
3.5	100
4.0	64
4.5	45
5.0	36
6.0	6
7.0	0
Proteolytic enzymes	
Trypsin	98
Protease	98
Proteinase K	99
Heat treatment	
80 °C × 10 min	100
100 °C × 10 min	98
80 °C × 60 min	98
100 °C × 60 min	98

Il contributo della SIMTREA AA

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DIPARTIMENTO DI SCIENZE E TECNOLOGIE AGROAMBIENTALI

Area Microbiologia

QualityLowInputFood

EU FP 6 -supported IP-Contract no. 506358-2003.
http://www.qlif.org (2004-2009)

Applicazione di probiotici e prebiotici per la produzione di carni biologiche

come prevenzione in sostituzione dell'uso sub-terapeutico di antibiotici.

Livestock Science, 2008

A novel strategy to select bifidobacterium strains and prebiotics as natural growth promoters in newly weaned pigs.

M. Modesto, M.R. D'Aimmo, I. Stefanini, P.Trevisi, S. De Filippi, L. Casini, M. Mazzoni, P.Bosi, B.Biavati.

Nutrition (2008) 24: 1023-1029

Effect of fructo-oligosaccharides and different doses of Bifidobacterium animalis in weaning diet on bacterial translocation and TLR' s gene expression.

P. Trevisi, S. De Filippi, L. Minieri, M. Mazzoni, M. Modesto, B. Biavati, P. Bosi.

Uso di inoculi microbici rizosferici per il miglioramento della produttività e della qualità di varietà di mais autoctone del Piemonte (pignoletto giallo)

CRA - RPS Gruppo di Ricerca di Torino
Via Pianezza, 115 – 10151 Torino
Laura Bardi, Eligio Malusà, Fulvia Rosso, Francesca Zoppellari

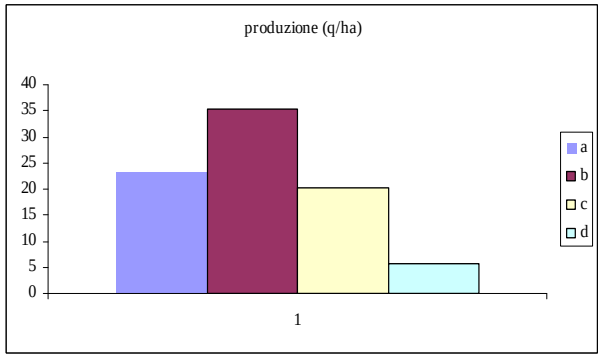
Consorzio microbico

Funghi micorrizici

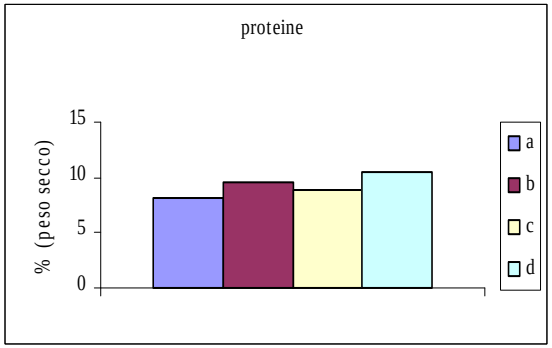
Glomus caledonium GM24
Glomus intraradices GG31
Glomus coronatum GU53

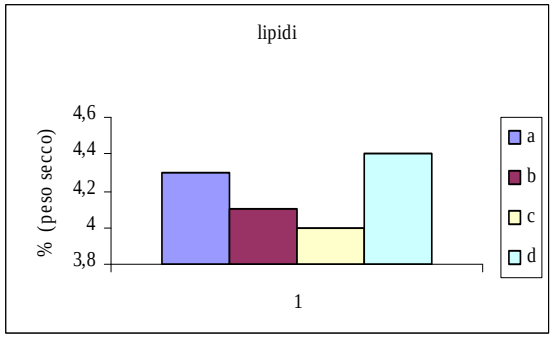
PGPR (Pseudomonas fluorescens PA28, Pseudomonas borealis PA29, Bacillus subtilis BA41)

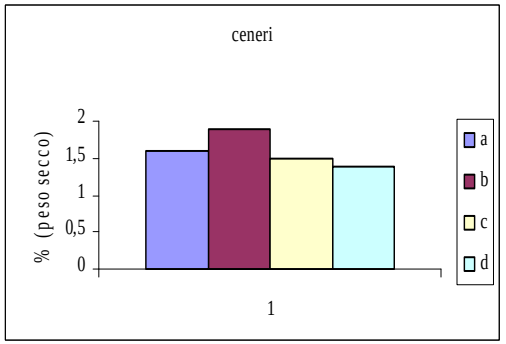
a – 32 UF/ha + inoculo
b – 80 UF/ha + inoculo
c – 80 UF/ha
d – 0 UFha

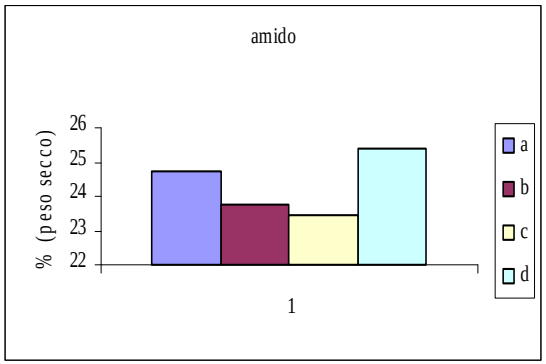


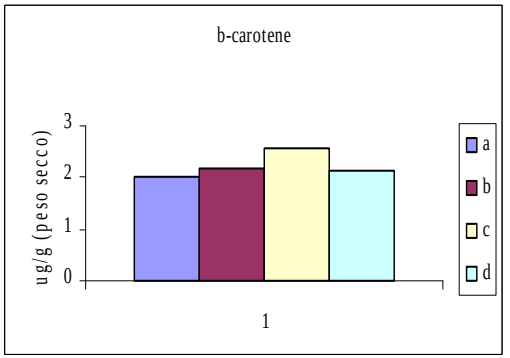
Finanziamento: Regione Piemonte, Direzione Sviluppo dell'Agricoltura









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Grazie per
l'attenzione