

Short CV, Dr. Teresa Zotta

Date of birth: Tricarico (MT, Italy), 11/11/1976
Current position: Researcher at ISA-CNR (Avellino, Italy)
Phone: +39 0825 299531, Fax: +39 0825 78158
E-mail: teresa.zotta@isa.cnr.it

Education and training

11/95-03/02: Degree in Food Science and Technology, Faculty of Agriculture, University of Basilicata. Title of degree thesis: "Phenotypic, biochemical and technological characterization of strains isolated from Caciocavallo Silano", supervisor Prof. Eugenio Parente.

04/02-07/02: post-graduate collaboration on the identification and characterization of enterococci strains isolated from Matsoni cheese, supervisor Prof. Eugenio Parente, Faculty of Agriculture, University of Basilicata.

07/02-12/02: Master for "Managers and researchers of agri-food businesses", Sinter & Net Research Center, Potenza, Italy.

01/03-03/06: PhD in Food Biotechnology, Faculty of Agriculture, University of Basilicata. Title of PhD thesis: "Technological properties and stress response of lactic acid bacteria isolated from Cornetto di Matera sourdoughs", supervisor Prof. Eugenio Parente. Within the PhD project she spent periods of study at the Department of Food Science, Food Technology and Nutrition, University College of Cork, IRL (03/04-07/04, supervisor Prof. Paul McSweeney) and at the Lehrstuhl für Technische Mikrobiologie, Technische Universität München, D (05/05-07/05, supervisor Prof. Rudi Vogel), and she participated at the following courses: "Biochemistry, biotechnological applications and bio-potential of minor protein components of milk", "Dynamic modelling of biological systems", "Multivariate statistics", "Microbiology and technology of sourdoughs".

03/06-09/06: she collaborated to the study of stress response in *Streptococcus thermophilus*, within the MIUR Project PRIN-2005 "Stress response in *Streptococcus thermophilus*: genetic, physiological, ecological and technological aspects", principal investigator Prof. E. Parente, having two research contracts at the Faculty of Agriculture, University of Basilicata.

10/06-10/07: Post-Doc grant focused on "Production of acid urease from lactic acid bacteria", supervisor Dr. Annamaria Ricciardi, Faculty of Agriculture, University of Basilicata, within the MIUR Project PRIN-2005 "Stress response in *Streptococcus thermophilus*: genetic, physiological, ecological and technological aspects", principal investigator Prof. E. Parente.

02/08-02/09: Post-Doc grant focused on "Development of new starter culture systems for fresh and frozen pizza", supervisor Prof. E. Parente, Faculty of Agriculture, University of Basilicata.

10/08: She was awarded a prize for her PhD thesis by Basilicata region (Southern Italy).

02/09-03/09: she participated at the "Course on safety for workers" under the Decree-Law 81/2008, at the University of Basilicata.

02/10-02/11: Post-Doc grant focused on "Analysis and exploitation of stress response diversity in *Lactobacillus plantarum*", supervisor Prof. E. Parente, within the MIUR Project PRIN-2008 "Genetic, physiology, and ecology of stress resistance in *Lactobacillus plantarum*, a multifunctional starter for the production of fermented foods and nutraceuticals", Faculty of Agriculture, University of Basilicata.

01/12-10/12: Temporary researcher at the University of Basilicata.

11/12-present: Researcher at ISA-CNR (Avellino, Italy).

2012-2015: Principal Investigator of the MIUR Project FIRB-2010 "Genetic and physiological basis of aerobic metabolism in *Lactobacillus rhamnosus* e *Lactobacillus paracasei*: basic and applied aspects".

Research interest

She has working relationships with national and international research groups, covering the following research areas:

1. Food microbiology: taxonomic, physiological and technological characterization of microflora isolated from fermented (dairy, baked, meat vegetable) products; microbiology of fresh produce. Use of PCR-based techniques for taxonomic and genetic polymorphism studies.
2. Stress response of lactic acid bacteria: use of fluorescence microscopy to assess the cell damage (membrane integrity and metabolic activity), SDS-PAGE and 2D-E techniques to assess the changes in protein profile (expression of protein involved in general and specific stress response mechanisms), and Real Time-PCR to evaluate the changes in gene expression.
3. Metabolism of lactic acid bacteria: study of regulation and activation of metabolic pathways in lactic acid bacteria through 2D-E, RT-PCR, NMR spectroscopy and chromatographic techniques. Investigation of pathways for organic acid and amino acid biosynthesis.
4. Predictive microbiology: optimization of fermentation processes (batch, fed-batch and continuous propagations of cell cultures in bioreactors) and use of predictive mathematical models to describe the effect of environmental factors on the microbial growth.
5. Application of multivariate statistical methods to identify and characterize microbial communities and to analyse the relationship between stress response patterns and changes in genotypic and proteomic profiles.

She is a member of the Società Italiana di Microbiologia Agraria, Alimentare ed Ambientale (SIMTREA) and referee for several international journals on food microbiology and food biotechnology.

Teaching activity

From 2005-2010 she was contract Professor in the courses of Applied Microbiology (Degree in Agricultural Technology) and Laboratory of Microbiology (Degree in Food Technology), at the Faculty of Agriculture, University of Basilicata.

From 2008-present she is contract Professor in the course of Forestry and Environmental Microbiology (Degree in Forestry and Environmental Sciences) at the Faculty of Agriculture/School of Agricultural, Forestry, Food and Environmental Sciences (SAFE), University of Basilicata.

She is active in co-tutoring of undergraduate and graduate studies in Food Sciences and Technologies, of a PhD thesis in Agriculture, Forestry and Food Sciences and Technologies, XXVIII cycle, and supervisor of a Post-Doc grant, at the University of Basilicata.

Scientific production

She is co-author of 80 publications, including posters and oral communications at national and international scientific meetings (44) and papers on national (3) and peer-refereed international journals (33).

List of papers published on refereed international journals

- Piraino P, Zotta T, Ricciardi A, Parente E (2005) Discrimination of commercial Caciocavallo cheese on the basis of the diversity of lactic microflora and primary proteolysis. *International Dairy Journal*, 15, 1138-1149.
- Zotta T, Piraino P, Ricciardi A, McSweeney PLH, Parente E (2006) Proteolysis in model sourdough fermentation. *Journal of Agricultural and Food Chemistry*, 54, 2567-2574.
- Piraino P, Ricciardi A, Salzano G, Zotta T, Parente E (2006) Use of unsupervised and supervised artificial neural networks for the identification of lactic acid bacteria on the basis of SDS-PAGE patterns of whole-cell proteins. *Journal of Microbiological Methods*, 66, 336-346.
- Zotta T, Ricciardi A, Parente E (2007) Enzymatic activities of lactic acid bacteria isolated from Cornetto di Matera sourdoughs. *International Journal of Food Microbiology*, 115, 165-172.
- Zotta T, Ricciardi A, Rossano R, Parente E (2008) Urease production by *Streptococcus thermophilus*. *Food Microbiology*, 25, 113-119.

- Piraino P, Zotta T, Ricciardi A, McSweeney PLH, Parente E (2008) Acid production, proteolysis, autolytic and inhibitory properties of lactic acid bacteria isolated from pasta filata cheeses: a multivariate screening study. *International Dairy Journal*, 18, 81-92.
- Zotta T, Piraino P, Parente E, Salzano G, Ricciardi A (2008) Characterization of lactic acid bacteria isolated from sourdoughs for Cornetto, a traditional bread produced in Basilicata (Southern Italy). *World Journal of Microbiology and Biotechnology*, 24, 1785-1795.
- Zotta T, Ricciardi A, Ciocia F, Rossano R, Parente E (2008) Diversity of stress responses in dairy thermophilic streptococci. *International Journal of Food Microbiology*, 124, 34-42.
- Bonomo MG, Ricciardi A, Zotta T, Parente E, Salzano G (2008) Molecular and technological characterization of lactic acid bacteria isolated from traditional fermented sausages produced of Basilicata region. *Meat Science*, 80, 1238-1248.
- Zotta T, Asterinou K, Rossano R, Ricciardi A, Varcamonti M, Parente E (2009) Effect of inactivation of stress response regulators on the growth and survival of *Streptococcus thermophilus* Sfi39. *International Journal of Food Microbiology*, 129, 211-220.
- Zotta T, Parente E, Ricciardi A (2009) Viability staining and detection of metabolic activity of sourdough lactic acid bacteria under stress conditions. *World Journal of Microbiology and Biotechnology*, 25, 1119-1124.
- Ricciardi A, Parente E, Zotta T (2009) Modelling the growth of *Weissella cibaria* as a function of fermentation conditions. *Journal of Applied Microbiology*, 107, 1528-1535.
- Bonomo MG, Ricciardi A, Zotta T, Sico MA, Salzano G (2009) Technological and safety characterization of coagulase-negative staphylococci from traditionally fermented sausages of Basilicata region (Southern Italy). *Meat Science*, 83, 15-23.
- Mishra S, Bhargava P, Rai R, Mishra Y, Zotta T, Parente E (2010) Protein finger printing may serve as a complementary tool for the phylogenetic classification of heterocystous cyanobacteria (*Nostoc*, *Anabaena*, *Cylindrospermum*, *Aulosira* and *Tolypothrix*). *The Internet Journal of Microbiology*, ISSN:1937-8289, 7 (2), on line.
- Parente E, Ciocia C, Ricciardi A, Zotta T, Felis GE, Torriani S (2010) Diversity of stress tolerance in *Lactobacillus plantarum*, *Lactobacillus pentosus*, *Lactobacillus paraplantarum*: a multivariate screening study. *International Journal of Food Microbiology*, 144, 270-279.
- Zotta T, Parente E, Piraino P, Varcamonti M, Ricciardi A (2011) SDS-PAGE pattern of whole cell proteins of *Streptococcus thermophilus*: impact of strain, growth phase and adaptation and relationship with stress response. *World Journal of Microbiology and Biotechnology*, 27, 2529-2537.
- Zotta T, Guidone A, Tremonte P, Parente E, Ricciardi A (2012) A comparison of fluorescent stains for the assessment of viability and metabolic activity of lactic acid bacteria. *World Journal of Microbiology and Biotechnology*, 28, 919-927.
- Zotta T, Ricciardi A, Guidone A, Sacco M, Muscariello L, Mazzeo MF, Cacace G, Parente E (2012) Inactivation of *ccpA* and aeration affect growth, metabolite production and stress tolerance in *Lactobacillus plantarum* WCFS1. *International Journal of Food Microbiology*, 155, 51-59.
- Ricciardi A, Parente E, Guidone A, Ianniello R, Zotta T, Sayem SM Abu, Varcamonti M (2012) Genotypic diversity of stress response in *Lactobacillus plantarum*, *Lactobacillus paraplantarum* and *Lactobacillus pentosus*. *International Journal of Food Microbiology*, 157, 278-285.
- Mazzeo MF, Cacace G, Peluso A, Zotta T, Muscariello L, Vastano V, Parente E, Siciliano RA (2012) Effect of inactivation of *ccpA* and aerobic growth in *Lactobacillus plantarum*: a proteomic perspective. *Journal of Proteomics*, 75, 4050-4061.
- Guidone A, Iannello RG, Ricciardi A, Zotta T, Parente E (2013) Aerobic metabolism and oxidative stress tolerance in the *Lactobacillus plantarum* group. *World Journal of Microbiology and Biotechnology*, 29, 1713-1722.
- Zotta T, Guidone A, Ianniello RG, Parente E, Ricciardi A (2013) Temperature and respiration affect the growth and stress resistance of *Lactobacillus plantarum* C17. *Journal of Applied Microbiology*, 115, 848-858.
- Guidone A, Zotta T, Ross RP, Stanton C, Rea MC, Parente E, Ricciardi A (2014) Functional properties of *Lactobacillus plantarum*: a multivariate screening study. *LTW-Food Science and Technology*, 56, 69-76.

- Zotta T, Ianniello RG, Guidone A, Parente E, Ricciardi A (2014) Selection of mutants tolerant of oxidative stress from respiratory cultures of *Lactobacillus plantarum* C17. *Journal of Applied Microbiology*, 116, 632-643.
- Ricciardi A, Ianniello RG, Tramutola A, Parente E, Zotta T (2014) Rapid detection assay for oxygen consumption in the *Lactobacillus casei* group. *Annals of Microbiology*, 64, 1861-1864.
- Guidone A, Parente E, Zotta T, Guinane CM, Rea MC, Stanton C, Ross RP, Ricciardi A (2014) Polymorphisms in stress response genes in *Lactobacillus plantarum*: implications for classification and heat stress response. *Annals of Microbiology*, DOI 10.1007/s13213-014-0862-7.
- Zotta T, Ricciardi A, Ianniello RG, Parente E, Reale A, Rossi F, Iacumin L, Comi G, Coppola R (2014) Assessment of aerobic and respiratory growth in the *Lactobacillus casei* group. *PLoS One*, 9, e99189.
- Ianniello RG, Ricciardi A, Parente E, Tramutola A, Reale R, Zotta T (2014) Aeration and supplementation with heme and menaquinone affect survival to stresses and antioxidant capability of *Lactobacillus casei* strains. *LTW-Food Science and Technology*, 60, 817-824.
- Reale A, Di Renzo T, Rossi F, Zotta T, Iacumin L, Preziuso M, Parente E, Sorrentino E, Coppola R (2014) Heterogeneity of responses to stress factors encountered in the gastrointestinal tract (GIT) and in food processing in the *Lactobacillus casei* group. *LTW-Food Science and Technology*, DOI: 10.1016/j.lwt.2014.10.022.
- Ricciardi A, Castiglione Morelli MA, Ianniello RG, Parente E, Zotta T (2014) Metabolic profiling and stress response of anaerobic and respiratory cultures of *Lactobacillus plantarum* C17 grown in a chemically defined medium. *Annals of Microbiology*, DOI: 10.1007/s13213-014-1003-z.
- Reale A, Rossi F, Di Renzo T, Preziuso M, Zotta T, Iacumin L, Coppola R (2014) Survey of antibiotic resistance traits in strains of *Lactobacillus casei/paracasei/rhamnosus*. *Annals of Microbiology*, DOI: 10.1007/s13213-014-1015-8.
- Iacumin L, Ginaldi F, Manzano M, Anastasi V, Reale A, Zotta T, Rossi F, Coppola R, Comi G (2015) High resolution melting analysis (HRM) as a new tool for the identification of species belonging to the *Lactobacillus casei* group and comparison with species-specific PCRs and multiplex PCR. *Food Microbiology* 46, 357-367.
- Ricciardi A, Parente E, Tramutola A, Guidone A, Ianniello RG, Pavlidis D, Tsakalidou E, Zotta T (2015) Evaluation of a differential medium for the preliminary identification of members of the *Lactobacillus plantarum* and *Lactobacillus casei* groups. *Annals of Microbiology*, DOI: 10.1007/s13213-014-1004-y.