

3rd International Conference and Exhibition on **Probiotics, Functional & Baby Foods** September 23-25, 2014 Hotel Royal Continental, Naples, Italy

Probiotic vegetable foods containing health promoting molecules

Francesca Valerio¹, S L Lonigro¹, M Di Biase¹, Sisto A De Bellis P, M Dekker² and P Lavermicocca¹

¹National Research Council, Italy

²Wageningen University, The Netherlands

The vegetable matrix - table olives, artichokes and cabbage can act as biological carrier for delivering probiotic populations to the gut. The use of a probiotic strain as a starter can allow the consumption of probiotics in fermented vegetables as an alternative to the milk-based products. The functional benefits of probiotic vegetable foods are linked to the presence of health promoting molecules - polyphenols, glucosinolates, vitamins, monounsaturated fatty acids, prebiotic sugars, etc. - as well as to the high count of live probiotic cells able to colonize the human gut. The efficacy of a probiotic food mainly depends on the ability of the probiotic strain to survive during processing and/or to compete with metabolically active microorganisms occurring in the food matrix. The probiotic human isolate *Lactobacillus paracasei* LMG-P22043 was successfully used to pilot the fermentation of vegetables such as debittered green olives, artichokes or blanched white cabbage leading to final products containing about log 8 CFU/g live cells. During fermentation, the probiotic strain colonized the vegetable surface dominating the natural lactic acid bacterial population thus decreasing the pH of brines to a safe pH value. Interestingly, in blanched cabbage the fermentation process preserved the content of glucosinolates otherwise completely lost during conventional fermentation of sauerkraut. We can conclude that *L. paracasei* LMG-P22043 can be used in the dual role of starter and probiotic culture which allows the control of fermentation processes and the realization of final products with functional appeal.

Biography

Francesca Valerio is a food microbiologist mainly working on the microbiological aspects of food quality, on the improvement of nutritional quality and shelf life of traditional foods. She has contributed to the development of new functional and probiotic foods by studying the role of beneficial bacteria during the food process and the modulatory activity that microbes and their metabolites explain in the human gut. Her current research activities also concern the control of growth of microbial pathogens and food contaminants by biopreservatives. She has published more than 21 papers in reputed journals.

francesca.valerio@ispa.cnr.it