



Tomato by-products fermented extract: A new source of antimicrobial compounds

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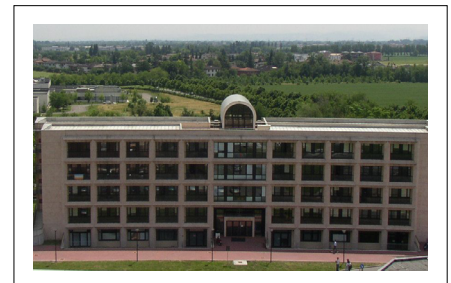
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Abstract

All over the world foodborne diseases are an important cause of morbidity and mortality, and an important impediment to socioeconomic development. In order to avoid foodborne disease risk, methods for preserving food have been applied until today. One of the main objectives of the food industry is the shelf life extension of food products, taking into account the safety requirements and the preference of consumers attracted by a simple and clear label. Among natural sources, agri-food by-products can be a promising raw material for lactic acid fermentation and the consequently production of antimicrobial compounds. In this context tomato by-products were employed as substrate for lactic acid fermentation using *Lactocaseibacillus rhamnosus* as starter. After fermentation an extract was produced and its antimicrobial activity was tested against the main foodborne/spoilage microorganisms (*Salmonella spp.*, *Listeria monocytogenes*, *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus* and *Pseudomonas spp.*). The in vitro antimicrobial activity observed was then tested in minced pork meat comparing its efficacy with two common preservatives used in meat preservation to confirm the potentiality of tomato fermented extract. The present extract confirmed the antimicrobial activity also in minced meat comparing, and in some cases, showing a higher activity than the common preservatives used. Tomato fermented extracts showed a good antimicrobial activity demonstrating to be a promising way for food preservation, but also a great viable option to produce high-value added products from by-products, meeting, at the same time, the consumers demand regarding natural additives.

Biography

Annalisa Ricci has completed her PhD in Food Science at the University of Parma, Italy in the so called "Food Valley" with a dissertation thesis entitled "Lactic acid fermentation: a traditional process for new applications". The main topic of her work is lactic acid fermentation of fruit and vegetable products with different purposes such as the improvement of nutritional and organoleptic properties and the recovery of agri-food by-products for the production of high-value added products, and, among them, antimicrobial extracts.



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