

The expansion of wine production in Brazil - opening new frontiers

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Introduction: The Viticulture Brazilian viticulture born with the Portuguese in the sixteenth century. But only in the beginning of twentieth century became a commercial activity, on the initiative of the Italian immigrants established in the South.

Results and discussion: Grape production in Brazil in 2007 was 1,354,960 ton, 45% of it is for the wine and juices elaboration and 55% sold as table grapes. 77% of the industrialized products are table wines, 9% grape juice and 13% fine wines. In the Brazilian state of Rio Grande do Sul (RS) is located the principal vine region with an area of 45,000 ha. The region of "Serra" in RS is responsible for the increased production of grapes and wines, with 25 municipalities, 16,000 growers and 650 wineries.

But the grape production has attracted the interest of farmers in several regions of Brazil, on the basis of economic return, the viability of small farms and use of family labor. Non-traditional areas have been highlighted in the production of fine grapes, as the region of "Campanha" in the Brazilian border with Uruguay.

As the market requires, the demand for customized products with high quality, some factors are directly linked with the wine quality, especially considering the high price elasticity in relation to quality. The opening of new frontiers, where these factors are favorable demonstrates an ability to increase production and quality of Brazilian wines.

Conclusions: The new vineyards in the Southern half of RS, in cities like Encruzilhada do Sul, Santa Maria, Jaguari, São Borja, Itaqui, Uruguaiana, Quarai, Santana do Livramento, Dom Pedrito, Bagé, Candiota and Pinheiro Machado, show that the search for a quality production, with protection of the authenticity and integrity, through the creation of protected geographical indications (PGI) or Protected origin Designation (PDO), has worked increasing the value of the wine and break down the traditional paradigm of production in that region, constituting itself as a new vector in the regional agribusiness, enabling Brazil figure in international winemaking scene.

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Combined effect of steam and lactic acid treatment for inactivating *Salmonella enterica* Serovar Enteritidis on chicken skin

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Introduction: Raw poultry carcasses are often contaminated with pathogens, including *Salmonella* spp., *Campylobacter jejuni*, and *Listeria monocytogenes*. Further to best management practices in husbandry, slaughtering and processing, decontaminating treatments might be required.

A previous study¹ has shown that combining heat and lactic acid treatments for decontaminating chicken skin inoculated with *Listeria innocua* seems particularly promising as it cumulates the advantages of each treatment: an immediate bacterial reduction due to heat treatments while acid treatments lead to a bacteriostatic or bactericidal effect during storage. After 7 days of storage at 4°C, the combined treatment was even more effective than each single treatment.

In the present work, the effectiveness of combined heat and lactic acid treatment for inactivating *Salmonella enterica* Serovar Enteritidis was evaluated.

Methodology: Chicken skins were inoculated with *Salmonella enterica* Serovar Enteritidis ($7 \log_{10}$ cfu.cm⁻²) and treated with steam (temperature 100°C, duration 8s) and/or lactic acid (5% v/v for 1 min at 25°C). Surviving bacteria on the skin were enumerated immediately after treatment and after 7 days of storage at 4°C. Bacterial concentration was expressed in \log_{10} cfu.cm⁻². Each treatment was repeated 10 times.

Results and discussion: Single heat treatment reduced immediately the bacterial count by more than 4.5 \log_{10} and no growth of the surviving bacteria was observed during storage.

The lactic acid treatment applied alone was less effective (reduction of 1.5 \log_{10}) but the reduction significantly increased during storage to reach 3.1 \log_{10} .

Combining heat and acid treatments improved significantly the reduction in bacterial counts (6.2 \log_{10} immediately and 6.6 \log_{10} after storage). Heat shock did not enhance acid resistance of *Salmonella* Enteritidis which is in accordance with others studies (Leyer 1993).

Conclusion: Combining mild steam and lactic acid treatments improved the reduction of *Salmonella* Enteritidis on chicken skins (the main site of contamination) and might thus enhance the safety of poultry products.