



The Effect of Different Sodium Reduction Strategies on The Chemical, Microbial and Sensory Quality of Boerewors

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Abstract

Introduction: Sodium reduction in practical terms translates to adapting alternative methods and use of different kinds of replacers. There has thus far not been any assessment on the effect that Na reduction will have on fresh sausages such as boerewors. The purpose of this study was to determine if the lowered salt levels, suggested by regulations for 2019, and salt replacers in boerewors will have an effect on the chemical, microbial and sensory quality of boerewors.

Methodology: Five treatments of boerewors batters were formulated: Negative control (NC) with 0.00% salt, potassium chloride (K600) with 1.25 % salt and 0.55% KCl, potassium lactate (L600) with 1.25 % salt and 0.55% K-Lactate, lowered salt content (N600) with just 1.25% salt, and positive control (PC) with 1.8% salt. Ash, NaCl, Na, K, pH, a_w , lipid stability, moisture, total bacterial count, coliform count, yeast and mould count, colour, thaw- and cooking losses and sensory acceptability were determined. Evaluations were performed on days 0, 3, 6 and 9 on samples stored at 4°C.

Results and Discussion: The treatments showed significant ($p < 0.001$) differences in the % ash, % NaCl, Na and K contents which were in accordance with the formulations of the treatments. There were no significant differences between the treatments in terms of pH, a_w , moisture and colour, except for the control. All of the TBARS values were below that of an organoleptic threshold of 0.5 mg MDA/kg. The microbial counts were all within limits and the treatments overall helped inhibit microbial growth. Higher concentrations of NaCl proved to have a positive effect in reducing thaw, cooking and total losses which in turn will also influence texture and overall acceptability. Consumers were only able to distinguish the negative control from the other treatments and not between the other four treatments which shows that the replacers did not have a negative effect on the sensory quality.

Conclusions: The reduction of sodium and addition of different salt replacers were effective without having a negative effect on product quality or stability.

Biography: Celia Hugo

Celia Hugo is a Professor in the Food Science division of the University of the Free State. Her research focusses on food quality and safety especially with the use of natural preservatives.