Assessment of technological characteristics in chicken sausages utilizing inulin for fat reduction

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Summary

Due to the high demand for low-fat, healthier meat products, alternative strategies are pursued to reduce fat content while maintaining the fundamental properties of traditional products. The research strives to obtain products with reduced fat content and caloric value with the addition of inulin. Four groups of cooked chicken sausages were tested: the control group without fat replacement, the second with 50%, the third with 75%, and the fourth with 100% fat replacement with inulin suspension. Sausages with a higher inulin content had a significantly ($p<0.05$) higher process loss and cooking loss than the sausages from the control group. The first and second groups had significantly ($p<0.05$) better emulsion stability. Reducing the fat content in sausages significantly affected ($p<0.05$) some sausages characteristics, such as moisture, L*(lightness), a* (redness), and b* (yellowness). As a result, the caloric value of sausages with inulin was significantly ($p<0.01$) impacted throughout all groups. In summary, the study demonstrates that incorporating inulin as a prebiotic dietary fiber enables the production of cooked sausages with reduced fat content and optimal physico-chemical properties. This innovative meat product not only offers lowered energy value but also holds exceptional nutritional value, representing a significant source of calories derived from reduced fat content supplemented with prebiotic fibers (inulin).

Keywords: inulin, fat, cooked chicken sausages, functional food