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POSSIBILITIES FOR PARTIAL REPLACEMENT OF PORK MEAT IN COOKED SAUSAGES BY MEALWORM FLOUR

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ABSTRACT

Dried and grinded "mealworms" or the larvae of *Tenebrio molitor* in form of flour contain up to two thirds of protein and fat. Therefore, the objective of this study was to investigate the possibility for partial replacement of pork meat by mealworm flour expressed through the changes in color, texture, microbiological status and morphology of cooked sausages. The experimental cooked sausages were prepared by substituting 1.5% (CM1), 2% (CM2) and 3% (CM3) pork meat with mealworm flour. It was found that up to 3% substitution of pork meat with mealworm flour (CM3) decreases the free water in the cooked sausages. The lack of difference in a_W after replacement of pork meat with mealworm flour does not compromise the shelf life and safety of the produced cooked sausages. As the amount of added mealworm flour increases the structural strength, plastic strength and springiness of experimental cooked sausages decreases. The substitution of 1.5% pork meat with mealworm flour (CM1) was the most appropriate for sausage processing without negative color changes. The appropriate pH of mealworm flour, together with the formed stable emulsions and good water binding capacity both before and after cooking, confirmed the potential of suitable meat substitute in meat industry. The microbial status of the experimental cooked sausages (CM1, CM2 and CM3) increased during storage, but still in the regulated limits for cooked meat products.