

## Effect of Taxifolin with Lactic and Ascorbic Acids on Physicochemical and Microbiological Parameters of Dry-Cured Pork Sausages

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The taxifolin (TXF) is recently rediscovered as a highly potential antioxidant with reported therapeutic properties. However, the data about possible protective properties of TXF and information about its stability is scarce in meat sausages. The aim of this work was to evaluate the antioxidant and antimicrobial activity of TXF when it is used together with ascorbic acid (AA), linalool, dipeptide carnosine (CAR), lactic acid (LA) and their mixtures in dry-cured pork sausages during storage. Also, possible biochemical interactions among these bioactive substances on cell apoptosis and proliferation-related variables in the human cervical cancer HeLa cells have been investigated. The activity of tested materials against lipid and protein oxidation, the growth of microorganisms and stability of TXF has been evaluated in dry-cured sausages after 0, 30, 60, 90 and 150 days of storage. The evaluation of TXF stability has been performed by UHPLC analysis. On the 150 day of storage the total amount of TXF was higher in sausages with TXF+LA (40% less) and with TXF+AA (54% less), comparing with the 1<sup>st</sup> day of storage. Meanwhile, the retained amount of TXF in the samples without acids was 60% less, comparing with the initial amount. TXF antioxidant capacity (DPPH) was higher in the samples with LA or AA and effectively inhibited the processes of lipid peroxidation as well as slowed down the rate of lipolysis. Moreover, TXF mixtures with acids reduced the number of total aerobic bacteria, mold and yeast during storage of sausages. The treatment of combination of the three compounds (TXF, CAR and AA or LA) on HeLa cells (by MTT method) resulted in a significantly lower percentage of live cells number than treatment only with individual substances in different concentrations ( $P < 0.05$ ). The outcome of this study can help develop new meat products with better nutritional quality and beneficial health properties.

### Biography:

Sonata Gustiene was born in Lithuania August 17, 1985. In 2004, she finished a secondary school and entered the Lithuanian University of Health Sciences, Veterinary Academy, veterinary food safety speciality. In 2008, she got a Bachelor's degree in Public Health and continued her studies successfully for the Master's degree. In 2010, she got a Master's degree in Public Health. After the university she started working as a quality manager in the meat processing company. In 2016, she decided to improve her knowledge in doctoral studies at the Lithuanian University of Health Sciences, Veterinary Academy.

The working group she belongs to has experience in investigation of food chemical composition and in evaluation of antioxidant influence on quality parameters in meat products as well as in creation of new analysis methods and development of functional meat products.

The foreseen dissertation topic: The Development and Application of Bio-preservation Tools Ensuring the Safety and Quality of Meat Products.