

A study on the effect of dihydroquercetin added into a diet of growing pigs on meat quality

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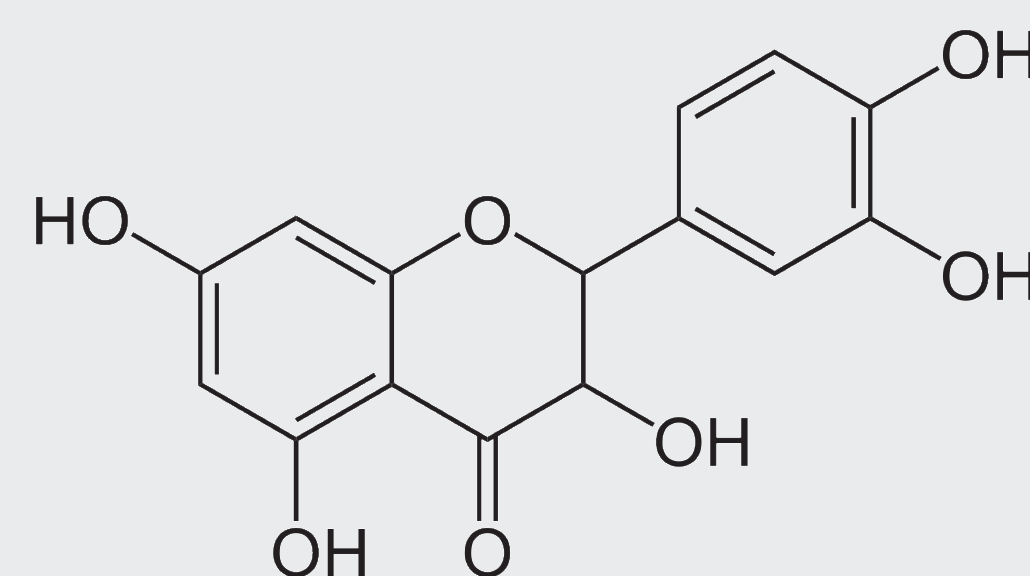
Abstract

Stress in farm animals is the main cause of meat quality deterioration. It is a big problem for meat plant and consumer. Last time consumers began associate low meat quality with the problems of meat safety in general. This tendency influences on meat consumption and trust. As a result, of analysis of the international publications allowed revealing promising directions of using vitamins and dihydroquercetin (DHQ) in pig diets were for improving meat quality. Dihydroquercetin (DHQ) (taxifolin) and quercetin are interesting for pig breeding as adaptogens positively affecting the antioxidant status of animals. The aim of the research is to study the effectiveness of dihydroquercetin usage in feed rations to reduce influence stress of pigs to the meat quality

Use dihydroquercetin as adaptogen did not demonstrated significant effect on meat quality. The obtained data are in agreement with the works by Kremer B.T., 1999; Zou Y., 2016; Ivanova S.G., 2019 and others, who demonstrated an insignificant or ambiguous contribution of adaptogens into meat quality. Therefore, despite the positive trend of the DHQ effect on pork quality, statistically significant differences between two groups were not established. The work was supported by the grant No. 19-16-00068 of the Russian Science Foundation

Material & Methods

Experiments were performed in control and experimental pig groups (hybrid young barrows F2 (LWxL)xD with livestock weight of 35.0±1.0 kg at the beginning of the experiment; 18 animals) exposed to the technological stress (rearrangement) and received 0 and 32 mg DHQ per 1 kg feed, respectively, throughout the feeding period up to livestock weight of 115.0±1.5 kg. Muscle L.dorsi each group were analyzed 24 hours after slaughter.



Results

Results of researching control and experimental samples show that In the control and experimental groups, the loin eye area was 61.02±2.54 and 61.51±3.85 cm² (p=0.83); the content of moisture was 68.9±2.2 and 70.9±0.6% (p=0.39), fat 7.0±2.6 and 4.3±0.8% (p=0.34), protein 22.7±0.3 and 23.3±0.6% (p=0.39); pH₂₄ was 5.39±0.05 and 5.46±0.09 (p=0.51); the moisture holding capacity was 65.97±1.96 and 68.36±2.55% (p=0.47); color: lightness 56.56±2.22 and 60.58±3.16 (p=0.31), redness 3.34±1.06 and 5.54±2.54 (p=0.44), yellowness 9.42±1.43 and 10.79±1.64 (p=0.55), respectively. The intensity of meat odor (a.u. x 10⁷) was 28.29±7.79 and 19.46±2.23 (p=0.29) in raw meat, 123.61±14.49 and 113.06±4.58 (p=0.50) in cooked meat, respectively.

