EVALUATION OF THE INCORPORATION OF RED CURRANT POMACE AND EXTRACT IN MEATBALLS USING CONVENTIONAL QUALITY ASSESSMENT

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Meat is a vital protein source in human diets, but its production is costly and environmentally impactful. Consequently, there is a discernible trend towards the development of meat-based products that incorporate plant-derived and unconventional ingredients such as antioxidant phytochemicals to inhibit oxidation processes and the formation of potentially carcinogenic compounds during meat processing. There is growing interest in biorefining agri-food by-products to extract nutrient-rich substances for various applications, including use in meat products. Ensuring safety and stability in meat products, given their susceptibility to microbiological contamination and oxidation, is crucial. This study aimed to determine the impact of additives on the quality and lipid oxidation of meat products. Red currant pomace was analyzed for its proximate composition, dietary fiber content and antioxidant capacity. For meat products containing additives, the color, pH, myoglobin form changes, texture profile and lipid oxidation during storage was quantified and a sensory evaluation was performed. Red currants had 25% dietary fiber, 16% protein and a lower antioxidant capacity and total phenolic content compared to the extract. The addition of red currant pomace and extract to meat products reduced their pH values. The addition of 1.5 and 3% pomace reduced their lightness (L*), yellowness (b*) and redness (a*) compared with those of the control sample. The firmness increased with the addition of the pomace, while the extract did not have any effect. Plant-based additives (pomace or extract) strongly inhibited lipid oxidation (by more than three times compared to the control) during the storage of meat products. Sensory evaluation of meat products showed that the control sample and the sample with the extract were the most acceptable for the panelists. Taken together, red currant pomace and extract may be considered promising antioxidant-containing and fibre-rich materials for use in pork meat products and may increase their nutritional quality due to red currants' health benefits.