THE EFFECTS OF MUSHROOM POWDER ADDITION AND SALT REDUCTION ON EMULSION STABILITY, COLOR AND TEXTURE CHARACTERISTICS OF SAUSAGES

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Abstract
Mushrooms have been increasingly recognized to be a rich source of bioactive compounds and essential nutrients, including vitamins, minerals, fibres, proteins and nutraceuticals, whereas having low levels of cholesterol, calories, fat and sodium. Additionally, the production of mushrooms is sustainable compared with other protein products of both animal and plant origin, thus having less deleterious effects on the ecosystem. On the other hand, excessive consumption of sodium is a major risk factor for cardiovascular diseases, diabetes, kidney disease and also hypertension. In this research, the effects of mushroom (*Pleurotus ostreatus*) powder addition and salt reduction on some quality characteristics of sausages were investigated. Emulsion stability, color, texture profile and salt content of sausage samples were evaluated. Fresh mushrooms were dried in a tray dryer and then ground to mushroom powder using a hammer mill. Six sample groups with various levels of mushroom powder and NaCl were produced as 0MH:0% mushroom powder and 2.5% NaCl; 3MH:3% mushroom powder and 2.5% NaCl; 5MH:5% mushroom powder and 2.5% NaCl; 0ML:0% mushroom powder and 1.25% NaCl; 3ML:3% mushroom powder and 1.25% NaCl; 5ML:5% mushroom powder and 1.25% NaCl. The lowest emulsion stability values were observed in the 0ML sample group with low NaCl content and no mushroom powder ($P<0.05$). No significant difference was determined in the external surface L^*, a^*, b^* and internal surface b^*, a^* values of the samples ($p>0,05$), however internal surface L^* value of 0MH was found to be higher than the 3MH, 5MH and 5ML ($p<0,05$). 5MH and 5ML samples had the lowest values in terms of hardness, cohesiveness, gumminess, chewiness and resilience while 0MH samples had the highest. Mushroom powder addition did not cause any difference on the salt contents of the samples ($p>0,05$) and the salt content results were consistent with the NaCl added to the sausage formulations. According to these results, mushroom powder and salt improved emulsion stability. However, mushroom powder addition adversely affected the texture and caused a darker color in the inside surface of the sausages.

Keywords: mushroom, sausage, salt, *Pleurotus ostreatus*