البحث رقم (٢)
الملخص الانجليزي

Biochemical and Microbiological Properties of Edam Cheese with Black Cumin Oil

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Abstract: Edam cheese samples were prepared with the addition of different concentrations of black cumin (Nigella sativa L) oil (0.2, 0.4 and 0.6 % v/w). Significant differences ($P \leq 0.05$) in chemical composition and ripening indices among treated cheese sample (0.6 % oil) and control was observed in all examined parameters. The added black cumin oil increased cheese acidity from 0.79 % in control to 1.13 % in cheese with 0.6 % oil at fresh time, with continuously increase in all cheese samples during ripening. Soluble nitrogen/Total Nitrogen reached 15.91 % in cheese with higher level of black cumin oil at the end of ripening. Free amino acids recorded1.21 g leucine/g cheese in Edam cheese with 0.6 % oil at end of ripening times. Free fatty acids increased with increasing level of oil in Edam cheese samples. Incorporation of black cumin oil in Edam cheese reduced the total viable count (5.97 log cfu/g), yeast & molds (1.00 log cfu/g)at the end of ripening and inhibited the growth of coliform groups. Proteolytic bacteria recorded higher counts (3.19 log cfu/g), while lipolytic bacteria recorded lower counts (2.59 log cfu/g) in Edam cheese with 0.6 % oil comparing to other cheese samples at 60 days of ripening. Panelists accepted the taste of Edam cheese with higher concentration of black cumin oil (0.6 %) with no complains on appearance and smell, while they favored the texture of Edam cheese with higher percentage of oil, then overall acceptability went to 0.6 % oil treated cheese.

Key Words: Edam cheese, Black cumin oil, Ripening indices, Microbiological properties.