

FORTIFICATION OF BUTTER BY ADDING CLOVE OIL



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2018

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ABSTRACT

Butter is complex biological dairy product composed of mainly milk fat and other minor components such as water, mineral, vitamins and enzymes. Butter is rich in milk fat components beneficial for health. In this study the effect of clove oil addition on the properties of butter, was evaluated taking into account that clove oil is a source of antioxidants.

Clove oil was added to butter at 4 levels (0.0%, 0.25%, 0.50% and 0.75% w/w). The butter samples were then kept in refrigerator for 8 weeks. The moisture, fat, pH, titratable acidity, antioxidant and free fatty acids content as well as sensory characteristics of clove oil added butter samples were determined during storage period.

At day one highest antioxidant activity was in butter with 0.75% clove oil. At the end of the storage period butter without clove oil showed the highest value of moisture (25.16 ± 0.20) and butter with 0.75% clove oil showed the lowest value of moisture content (24.83 ± 0.41). The lowest value for the pH during the storage period was showed by butter without clove oil (5.04 ± 0.10) and highest value of pH taken by butter with 0.75% clove oil (5.98 ± 0.09). The titratable acidity was highest in butter without clove oil (0.34 ± 0.014) and lowest value for the titratable acidity was taken by butter with 0.75% clove oil added butter (0.14 ± 0.006). Free fatty acid value was highest in butter without clove oil and lowest in butter with 0.75% clove oil respectively (1.01 ± 0.051) and (0.71 ± 0.052). Fat content was not significantly different ($p > 0.05$) within the treatments.

In sensory evaluation at day one, panelist were mostly preferred butter with 0.25% clove oil. Lower score was taken by butter with 0.75% clove oil for the taste and odor.

At 8th week of the storage period butter with 0.50% clove oil was taken the highest score for the overall acceptability. Butter without clove oil was taken lowest score for the odor, taste and overall acceptability.

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