

**EFFECT OF ANTIMICROBIAL COMPOUNDS IN
BASIL (*Ocimum sanctum*) LEAVES ON THE SHELF
LIFE OF PANEER**

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Abstract

Paneer is a traditional heat and acid coagulated dairy product that appeals the diet-conscious consumers. It is rich with high quality proteins, fat, minerals and vitamins. Paneer reduces some health problems such as; joint problems, stomach disorders, diabetes, cancer, *etc.* The shelf-life of paneer is a major constraint. It is reported to be only 5 days under refrigeration, though its freshness is lost within a day at room temperature. *O. sanctum* (Basil) is a medicinal plant use in the food industry as a food preservative in some countries such as Malasiya, Singapore Thailand, *etc.* *O. sanctum* leaves contain a volatile oil, which is having antioxidant and antimicrobial properties. Those essential oils are Eugenol, Carvacol, Methyl eugenol, Caryophyllene, Ursolic acid and Apigenin. The purpose of this study is to findout the most effective incorporation method of extracting antimicrobial compounds which was incorporated to extend the shelf-life of paneer. Paneer was prepared using buffalo milk, lime juice and salt. At first, there were three incorporation methods such as; water extraction at room temperature, pieces of leaves and dried powder. A series of preliminary trials were conducted with four different incorporation methods such as 1% of powdered *O. sanctum* leaves, 1% pieces of *O. sanctum* leaves, 1% extract of *O. sanctum* leaves and 0%. The best incorporation method for shelf life was determine by conducting microbiological parameters such as total colony count, yeast and molds and coliform bacteria. Selected paneer was evaluated with different incorporation level (1%, 0.75%, 0.5%, 0%) of powdered *O. sanctum* leaves. The preferred incorporation level was determine by the sensory evaluation using 50 untrained panelists. Paneer without incorporated *O. sanctum* leaves was used as control. Non parametric data were analyzed using Friedman non-parametric test by MINITAB 15 software and parametric data were analyzed by one way ANOVA (CRD) using SAS 9.1 software. Significant means of treatments were separated using the Least Significant Difference ($P < 0.05$) test (LSD). 0.5% powdered *O. sanctum* leaves incorporated to the expected yield of one litre buffalo milk paneer was selected as the best ($P < 0.05$) level by evaluating appearance, color, texture, taste, odour and overall acceptability. Powdered *O. sanctum* leaves incorporated paneer had a long shelf-life. Results was found the pH (5.25), total acidity (0.63) and total plate count ($4 \log_{10}$ CFU/ml) up to 5th day of room temperature and pH (5.35), total acidity (0.79) and total plate count ($2.89 \log_{10}$ CFU/ml) up to storage and 15th day of refrigeration storage.