



Abstract

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Comparison of Chemical and Microbiological Parameters of Charcoal Versus Gas and Solar Energy Treated Milk

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Abstract:

The effect of heat treatment using different sources of heat on the chemical composition and microbial quality of milk was studied. Raw cow, goat and sheep milk were heated with charcoal, gas and solar energy at 99°C for 12 min, cooled to 20°C and chemical (fat, protein, total solids, ash (titratable acidity), vitamin C) composition as well as microbiological examination (total viable bacteria count) were carried out. Results showed that fat, total solids and ash contents were high in cow milk heated with solar energy, while protein content was high when milk was heated with gas, and the titratable acidity was high in milk heated with charcoal and gas. The fat, total solids and ash contents of goat milk were high when milk was heated with gas, while the protein content and titratable acidity were high when milk was heated with solar energy. The fat contents of sheep milk was high when milk was heated with gas, while the protein and total solids content were high in milk heated with solar energy, and ash content and titratable acidity were high in milk heated with charcoal. Vitamin C content was high for all milks when heated with solar energy, while the total viable bacteria count was high in milks of all species when heated with charcoal. Solar energy was shown to be suitable for heating milk from chemical view point, while heat treatment of milk with gas was found to be better microbiologically.

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