

**STUDY ON THE QUALITY PARAMETERS AND SHELF STABILITY OF
NON-DAIRY SWEETENED AND CONDENSED MILK
DEVELOPED FROM CHICKPEA (*Cicer arietinum*) MILK AND SESAME
(*Sesamum indicum*) MILK**

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Abstract

The study aimed to create a viable alternative to dairy-based condensed milk using chickpea milk and sesame milk. Chickpeas are a wise food option because of their health-promoting elements, consumption of chickpeas decreased the risk of cancer and chronic disorders. Sesame seed also contains significant amounts of lignans and exhibit strong antitumor, anti-mitotic and antiviral activities. The absence of lactose in those chickpea and sesame milk is a significant benefit, as it will prevent the absorption of lactose, which is frequently present in dairy products. Various formulations were tested, including different ratios of combinations of chickpea milk and sesame milk (T1: 100% cow milk, T2: 75% chickpea milk + 25% sesame milk, T3: 50% chickpea milk + 50% sesame milk, and T4: 25% chickpea milk + 75% sesame milk). Physicochemical analyses were conducted initially and during the six-week storage period to assess the percent moisture, ash, fat, protein, and total solids according to AOAC (2002) methods. Organoleptic characteristics such as taste, texture, color, aroma, flavor, and overall acceptability were also evaluated. The results indicated that T1 had the highest protein, fat, total solid, and ash content with the lowest moisture content. Conversely, T3 exhibited high content of total solids, protein, and ash, yet lower unsaturated fat content and moisture among other nondairy treatments. Over the storage period, moisture increased while protein, fat, total solids, and ash decreased across all formulations. Sensory evaluations showed significant differences among treatments, with T3 being the preferred formulation of nondairy sweetened condensed milk, scoring highest in organoleptic characteristics. After six weeks, T1 and T3 were deemed safest due to lower microbial counts, suitable for consumption within one month. The study concluded that T3 is an optimal plant-based alternative for dairy based sweetened and condensed milk, suitable for lactose intolerance, milk allergies, and vegan individuals.

Keywords: Chickpea, Lactose intolerance, Nondairy sweetened condensed milk, Plant based alternative, Sesame

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