

Enhancing tiger nut milk for better stability and consumer appeal

Original Title: Enriching Tiger Nut Milk with Sodium Caseinate and Xanthan Gum Improves the Physical Stability and Consumer Acceptability

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Abstract: Tiger nut milk (TNM) faces challenges with its stability (i.e. uneven distribution of suspended particles such as proteins, fats, and other solids), affecting consumer satisfaction, especially in regions where tiger nuts are grown. This study aimed to improve TNM stability and assess its impact on physical properties and consumer preferences. By adding 3 g/100 g sodium caseinate (“milk protein”) and 0.1 g/100 g xanthan gum (“thickening agent” or “food thickener”) to TNM, its ability to be stable (and not separate), nutritional quality, and the satisfaction of customers was increased significantly.

Gap addressed: Tiger nut milk (TNM) often has problems with particles separating, making it less enjoyable for consumers, especially in areas where tiger nuts are grown. This study focuses on finding ways to keep TNM stable and improve its texture and taste for customers. By adding milk protein and a food thickener, the research aims to make TNM smoother, more nutritious, and more satisfying to drink, addressing a key need in the plant-based milk market.

Sector/Industry focus: Stakeholders in the food and beverage industry, particularly those involved in plant-based milk production and product development, would find value in this research. Additionally, consumers seeking alternative dairy products could benefit from improved tiger nut milk.

Potential uptake or practical application:

- Incorporating sodium caseinates (“milk protein”) and xanthan gum (“thickening agent” or “food thickener”) into TNM production offers a practical solution to enhance stability and consumer preference.
- Enrichment with 3 g/100 g sodium caseinate and 0.1 g/100 g xanthan gum (3 CnX) received the highest consumer rating for all attributes.
- By mitigating creaming and serum formation while improving viscosity and sensory attributes, enriched TNM presents an opportunity for manufacturers to introduce high-quality, desirable plant-based milk products into the market.
- The research used a taste panel and the tiger nut milk with sodium caseinates and xanthan gum was rated the best by consumers.

Key recommendations:

Industry practitioners are encouraged to explore the incorporation of sodium caseinates and xanthan gum into TNM formulations to improve stability and consumer acceptance. Further research could focus on optimizing ingredient ratios and processing methods to ensure consistent product quality and sensory appeal. Collaboration between researchers, food technologists, and manufacturers is essential to facilitate the adoption of enriched TNM into mainstream plant-based milk offerings.

Online link

<https://www.researchgate.net/publication/356665647> [Enriching Tiger Nut Milk with Sodium Caseinate and Xanthan Gum Improves the Physical Stability and Consumer Acceptability](#)