India Food Safety Conclave 2025
Powered by : Food Safety Works

# SYMBIOTIC MAKHANA

***Deepika.R, KJ.Sreelakshmi and Dr. S.K. Mathanghi***
*College of Food and Dairy Technology,Tamil Nadu Veterinary and Animal Sciences University, Chennai*

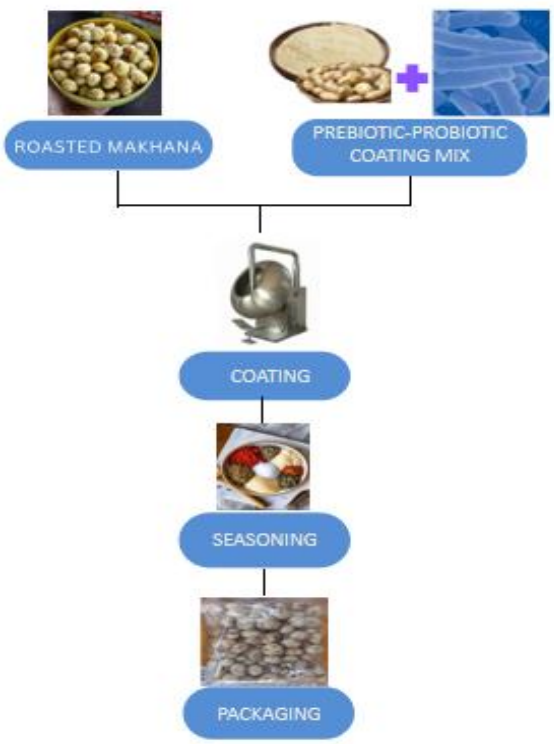
## INTRODUCTION

Symbiotic Makhana is an innovative functional food concept that combines the nutritional richness of fox nuts with the health-promoting benefits of probiotics and prebiotics. Makhana, a traditional superfood valued for its high protein, low fat, and antioxidant content, serves as an ideal base for developing a symbiotic formulation. By integrating live beneficial bacteria (probiotics) and fermentable dietary fibers (prebiotics), Symbiotic Makhana aims to enhance gut health, boost immunity, and support overall well-being. This novel product leverages the synergistic relationship between probiotics and prebiotics to provide a convenient and tasty solution for modern health-conscious consumers. Its development aligns with the growing global demand for gut-friendly, plant-based, and ready-to-eat functional snacks.

## OBJECTIVES

- ✓ To develop a functional food using Makhana.
- ✓ To incorporate probiotics (*L.plantarum)* and prebiotics (Jackfruit seed flour).
- ✓ To evaluate nutritional and functional properties.

## METHODOLOGY




## MARKET POTENTIAL OF SYMBIOTIC MAKHANA

- ✓ Growing demand for Functional foods
- ✓ Rise in digestive health awareness
- ✓ Makhana: A Trending Superfood
- ✓ Snack industry opportunities
- ✓ Target consumers
- ✓ Export potential


## RESULT

- ✓ Probiotic viability:*L.plantarum* maintained at $10^8$ CFU/g after 21 days at 4°C.
- ✓ Prebiotic content:Jackfruit seed flour contributed 4.1 g dietary fiber/100g, promoting probiotic growth.
- ✓ Synergistic effect:Co-cultured makhana showed 1.6× growth enhancement of *L. plantarum* with jackfruit seed flour vs control.
- ✓ pH & acidity:pH reduced to 4.6, indicating active metabolism and organic acid production.
- ✓ Sensory Acceptability:Average score of 8.2/9 (taste, texture, overall) by a 10-

## CONCLUSION

Symbiotic Makhana with *L.plantarum* and jackfruit seed flour showed high probiotic viability, good gut survival, and strong synergistic effects,making it a promising functional snack with proven symbiotic potential.