



\*\*\*\*\*

## PRODUCTION OF BIODEGRADABLE FACE MASK USING SUSTAINABLE SNAKE PLANT (SANSEVIERIA TRIFASCIATA)

**ABAS, DIAN CLYDE M.**  
**BAZE, CHLOE ANDREA Q.**  
**GARCIA, TRISTAN JAICEL S.**  
**PUNONGBAYAN, MA. AIRA JOIE A.**  
Balayan Senior High School

### ABSTRACT

This study analyzed Sansevieria Trifasciata (snake plant) fibers as a sustainable and biodegradable face mask alternative. This research proposal employed an experimental research design to investigate the effectiveness of snake plant fiber face masks. The findings indicate that snake plant fibers possess a unique combination of strength, breathability, and moisture retention, making them a viable alternative to surgical face masks. The properties of the snake plant fiber face mask were evaluated through tests focusing on tensile strength, water-resistance and filtration efficiency. The two-way T-TEST confirms that the Snake Plant fiber mask has high moisture retention, absorbing 0.93g of water, but refining its cellulose content or applying hydrophobic treatments can enhance water resistance while maintaining breathability. The mask demonstrated significantly higher durability than the surgical face mask, withstanding an average force of 39.03N compared to 10.61N. Its filtration efficiency is comparable to that of surgical face masks, showing no significant difference in smoke filter efficiency with p-values of 0.2302 and 0.1151 in two- tail and one-tail tests, respectively. This

\*\*\*\*\*

### Editorial Team

**Editor-in-Chief:** Alvin B. Punongbayan

**Associate Editor:** Andro M. Bautista

**Managing Editor:** Raymart O. Basco

**Web Editor:** Nikko C. Panotes

### Manuscript Editors / Reviewers:

Chin Wen Cong, Christopher DC. Francisco, Camille P. Alicaway, Pinky Jane A. Perez,  
Mary Jane B. Custodio, Irene H. Andino, Mark-Jhon R. Prestoza, Ma. Rhoda E. Panganiban, Rjay C. Calaguas,  
Mario A. Cudiamat, Jesson L. Hero, Albert Bulawat, Cris T. Zita, Allan M. Manaloto, Jerico N. Mendoza

\*\*\*\*\*

# INSTABRIGHT e-GAZETTE

ISSN: 2704-3010

Volume VI, Issue IV

March 2025

Available online at <https://www.instabrightgazette.com>



\*\*\*\*\*  
study highlights the potential of snake plant fibers as a natural and sustainable alternative to disposable face masks, offering valuable insights for future research and development in the field of healthcare.



\*\*\*\*\*

## Editorial Team

**Editor-in-Chief:** Alvin B. Punongbayan

**Associate Editor:** Andro M. Bautista

**Managing Editor:** Raymart O. Basco

**Web Editor:** Nikko C. Panotes

### Manuscript Editors / Reviewers:

Chin Wen Cong, Christopher DC. Francisco, Camille P. Alicaway, Pinky Jane A. Perez,  
Mary Jane B. Custodio, Irene H. Andino, Mark-Jhon R. Prestoza, Ma. Rhoda E. Panganiban, Rjay C. Calaguas,  
Mario A. Cudiamat, Jesson L. Hero, Albert Bulawat, Cris T. Zita, Allan M. Manaloto, Jerico N. Mendoza

\*\*\*\*\*