



# Production of Cat Litter from Agricultural Industrial Biomass Waste

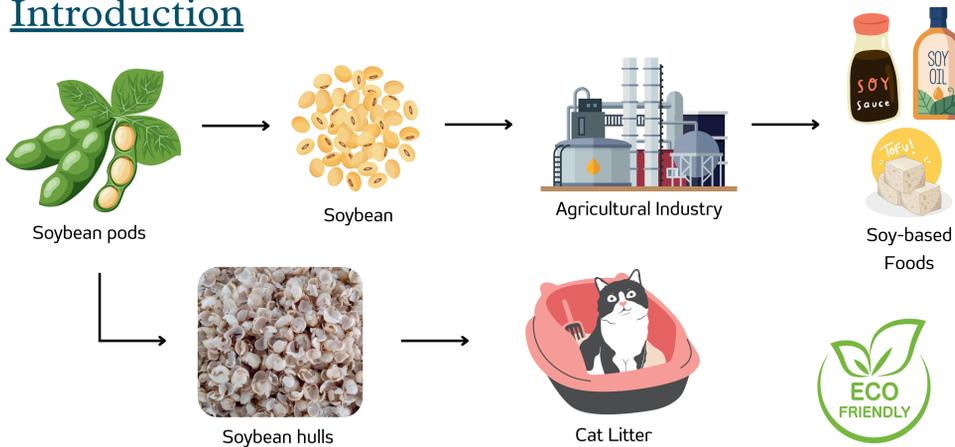


Kyoko Kawagoe and Jutamas Sopsing  
Advisor : Asst. Prof. Dr.Parimanan Cherntongchai

## Abstract

This study developed an eco-friendly cat litter using soybean hulls and biochar to enhance absorption, clumping, and odor control. Four formulations (0%, 10%, 20%, 30% biochar) were tested, with 20% biochar performing best absorbing over four times its weight, achieving 86% clumping, and significantly reducing odors. The results highlight soybean hulls and biochar as sustainable materials for reducing industrial waste and enhancing agricultural byproduct utilization.

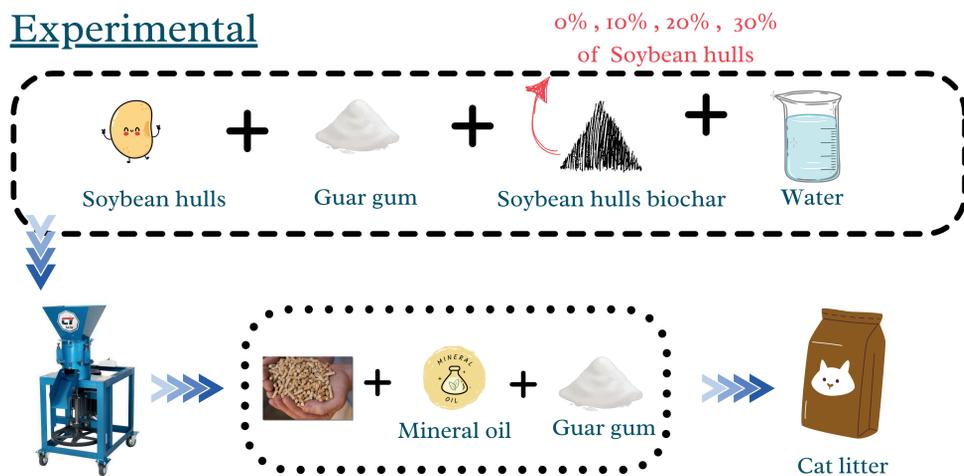
## Introduction



## Objective

- The objective of this study is to explore the production of cat litter from soybean hulls, an agricultural industrial by-product.
- To study and compare the liquid absorption, clumping ability, and odor reduction capabilities of four cat litter formulas, consisting of 0%, 10%, 20%, and 30% biochar by weight of soybean hulls, in order to determine the most suitable formula for producing bio-based cat litter.

## Experimental



## References

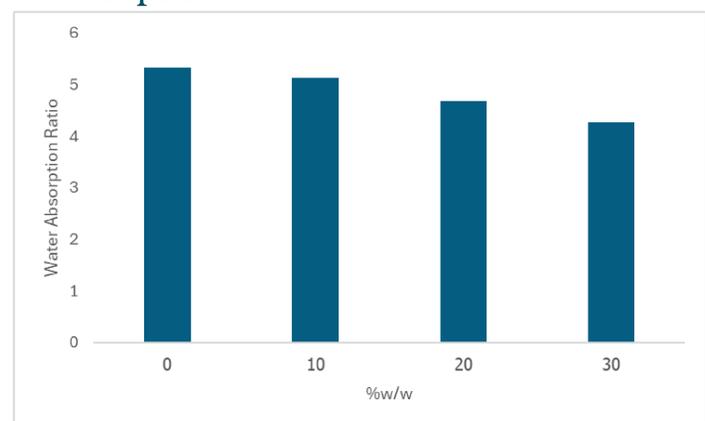
Vaughn, Steven F. Production of an Odor-Reducing, Low-Dust, Clumping Cat Litter from Soybean Hulls and Soybean Hull Biochar.” Bioresource Technology Reports 21. (2023)

## Acknowledgement

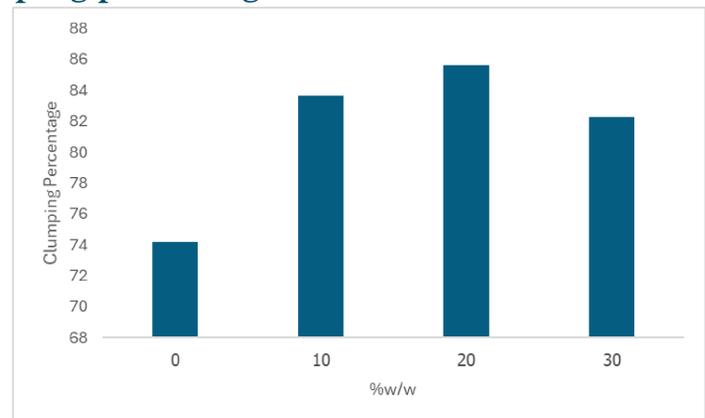
Department of Industrial Chemistry, Faculty of Science, Chiang Mai University.

## Results & Discussion

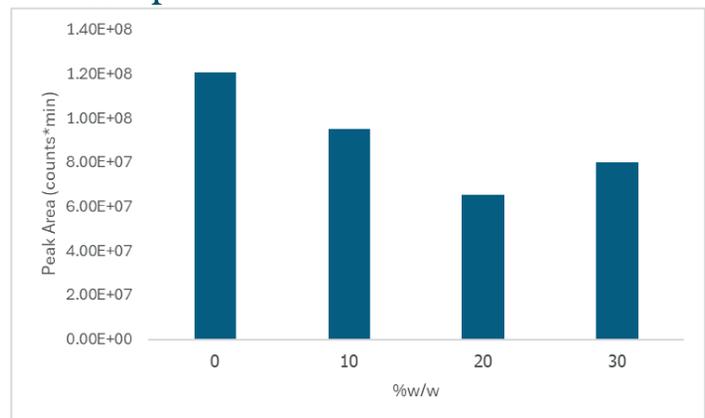
### Hydration capacities



### Clumping percentages



### Volatile absorption



## Conclusion

A study found that cat litter made from soybean hulls with 20% biomass charcoal by weight has suitable properties for use, as it exhibits excellent water absorption, clumping ability, and odor absorption compared to cat litter with different compositions.