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**JOHOR  
INNOVATION  
INVENTION  
COMPETITION  
AND  
SYMPOSIUM  
2023**



"Innovation Inspires a Society  
to be Critical and Creative"

# **JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023**



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Critical and Creative"

**Editors-in-Chief**

**AHMAD KHUDZAIRI KHALID  
NUR INTAN SYAFINAZ AHMAD**



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## **Preface**

**In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.**

**This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.**

**We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.**



## NATMAG CLEANER

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### ABSTRACT

Dirty floors affected by dirt, dust, and debris provide a conducive environment to reproduce and lead to human health problems. Floor cleaners are the solution but most of them are chemical based. In the oil palm industries, most of the empty fruit bunches become waste products and these by product can be converted to other beneficial products.

NatMag Cleaner, Natural Magnificent Cleaner is a multipurpose floor cleaning product made mostly of natural ingredients. It cleans stains and repels insects. The main material is the wastes of empty fruit bunches of the palm oil trees which are dried and burnt to ashes and then mixed together with blended curry leaves, pandan leaves and fragrant lemon grass. The ashes have the ability to clean heavy dirty stains. The fermentation of cellulose in the ashes can break down protein and lipid in stains. The different types of leaves have the specialty and ability of repelling different type of insects.

NatMag Cleaner is an environmentally friendly product. It is a waste to wealth product which is the first ever floor cleaning product using the waste of palm oil empty fruit branches as the main ingredient. It will enhance the usage of Malaysian natural resources and the recycling campaigns. The product helps the society to resolve household problems such as cleaning tough stains, repelling insects and preventing health problems and give an awareness to the society to use natural based product. The unique combination of materials will make the product a Malaysian brand.

**Keywords:** Empty fruit bunches, Pandan Leaves, Curry Leaves, Fragrant Lemongrass.

### 1.0 INTRODUCTION

Empty fruit bunches (EFB) are the remains of the fresh fruit bunches after the fruit has been removed for oil pressing. Empty fruit bunches are a type of mill waste which is very valuable for farmers because it provides nutrients. Floor cleaners can be found in various forms. They are either marketed in liquid form or powder form. Nowadays cleaning products are created, designed and used to clean various types of flooring. An acidic tile cleaning solution can be used on ceramic and porcelain floors. Household and cleaning products such as soaps, polishes and grooming supplies often include harmful chemicals.

Many cleaning supplies or household products can cause health problems, including cancer. Some products release dangerous chemicals. Other harmful ingredients include ammonia and bleach.

### 2.0 OBJECTIVE

The objectives of producing the product are problems of cleaning tough dirty floors and most of the floor cleaners in the market are chemical based. There are not many natural based

products in the market. Some floor cleaners give side effects to the users which involved health problems. It will prevent allergies due to the use of artificial and chemical materials. Empty fruit bunches are waste products of palm oil industries. It is used as the main material in the product. This product helps to turn waste to wealth. Besides that, the other materials are leaves that are commonly used in Malaysian cooking. The usage of the leaves helps to promote the natural resources of Malaysia.

This product will preserve the environment by using safe and natural substances. It produces a safe and environmental product. It is easy to prepare because the product uses local resources which are easy to obtain. We hope this will enhance the customer to use Malaysian product.

### **3.0 DESCRIPTION OF INNOVATION/METHODOLOGY**

NatMag Cleaner is invented by improving the already made products in the market which are floor cleaning products. This product has multifunction purposes which cleans floor and at the same time repels insects. It can be used for different types of users and premises. The main purpose of Natura Cleaner is to help overcome tough floor stains. It also has the ability to repels insects. The main ingredients are from natural resources and mixed together with other materials to enhance the quality of the product.

NatMag Cleaner is produced from the mixture of the ashes of palm oil empty bunches, pandan leaves, lemon fragrant grass, tobacco leaves and curry leaves. The empty bunches of palm oil tree are dried and burnt slowly. The ashes are collected and mixed with the blended fragrant lemon grass, pandan leaves and curry leaves. The solution is then dried to form the cleaning powder.

The ashes of the oil palm empty bunches is able to clean tough and dirty stains. Fragrant lemon grass contains citronella oil which is unfavorable to insects. Pandan leaves and curry leaves also give the same effect to insects. The mixture of these materials is able to produce a multipurpose floor cleaner.

NatMag Cleaner will give an alternative to the customers to choose a safe and environmental floor cleaning product in the market. It has special features and will be one of the potential products in the market. It can be one of the Malaysian product that can be highlighted because the production of the product uses simple and local materials that can easily be found.

### **4.0 ADVANTAGE/IMPACT/RESULTS/NOVELTY**

The product helps the society to resolve household problems by using natural based product. It is a multipurpose product which helps to clean and repels insects. The main material, the palm oil empty fruit bunches is the waste product of palm oil industries and the product helps to turn waste to wealth. The usage of pandan leaves as a cockroach repellent, curry leaves and fragrant lemon grass as a repellent to insects increase the quality of the floor cleaning product. The product will ensure that the premises will always be clean and clear of insects. Since the main material is the palm oil empty fruit bunches, added to the blended pandan leaves, curry leaves and fragrant lemon grass, the product is different from other floor cleaners in the market. It will be a Malaysia product with big potential.

## **5.0 CONCLUSION**

NatMag Cleaner is a natural based floor cleaner. It is a multipurpose floor cleaner which cleans dirty floor and at the same time, repels insects. It can be a potential product due to the multiple usages provided by the product. It uses the waste product of one of the main and important plantations in Malaysia which is palm oil trees. The empty fruit bunches are used as the main materials and this become a special aspects in the production of this product. It will a product that Malaysia can be proud of and a product with Malaysia identity.