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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

ZODIA ARMY

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ABSTRACT

The aim of this innovation is to form a balm to repel mosquitoes while caring for our skin health. The impact of innovating this balm was felt after seeing news of the dengue attack on news. Zodia plant was used by Indonesians to repel mosquitoes and was declared as a medical plant by the Director-General of Horticulture Indonesia. In this balm, Zodia was the main ingredient, along with rosemary, virgin coconut oil, and shea butter. The main features of life sciences lend important insights into non-disease processes such as dengue, malaria, zika, extra in the long run. The advantage is that this was innovated by using a typical homemade method. Zodia Army is user-friendly for all age groups and skin type. Zodia Army is part of an essential item for every household to protect every single life from mosquitoes and have a peaceful life indoors and outdoors. By anticipating the United Nations Sustainable Development Goals (SDGs)

SDG 3: Good Health and Well-being.

SDG 15: Life on Land.

The essential features and originality of this Zodia Army are that there is no blending of any form of chemical that is unsafe for our skin. and it is created entirely of organic plants. The benefits of this balm can be noticed in the long run, since it improves the surrounding environment by lowering mosquito-related problems all over the world. Our goal is to protect each life from mosquito borne diseases and it's proven in the analysis and testimonial which was carry during experiment of this project.

Keywords: Zodia, Balm; Mosquito, Organic, and Repel

INTRODUCTION

If we have the option, we should avoid being bitten by mosquitos. Anti-mosquito sprays can help lower mosquito populations, but they are expensive and have health risks. Chemical pesticides are commonly used in community efforts to control vectors. Insecticide use can result in mosquito resistance as well as toxicity in humans. As a result, developing effective control to avoid such impacts is important. Natural pesticides generated from plants can be used for this type of control.

OBJECTIVE

If we have the option, we should avoid being bitten by mosquitos. Anti-mosquito sprays can help lower mosquito populations, but they are expensive and have health risks. Chemical pesticides are commonly used in community efforts to control vectors. Insecticide use can result in mosquito resistance as well as toxicity in humans. As a result, developing effective control to avoid such impacts is important. Natural pesticides generated from plants can be used for this type of control.

PRODUCT DESCRIPTION

Zodia Army is prepared in the form of a balm using the traditional homemade method. The weight is around 50 grammes, and it is stored in an aluminum container.

Zodia

Zodia plant belonging to the Rutaceae family is said to contain evodiamine and rutaecarpine. From some of the literature, this plant is useful as an anti-cancer property. According to the results of an analysis conducted at the Research Institute for Spices and Medicinal Plants (IMACRI) by gas chromatography, the oil is distilled from the leaves of this plant contains linalool (46%) and a-pinene (13.26%) in which linalool is well known as a repellent mosquito. From tests made the author of the dengue fever mosquito (Aedes) which often makes people excited, that is by rubbing the leaves Zodia to the arm, then his arm is inserted into the box containing the dengue fever mosquito and compared with the arm without Zodia rubbed with the leaves, indicating that leaves Zodia able to dispel the mosquitoes for six hours to expel the power (power protection) for more than 70%. In addition, the arms that are bitten by mosquitoes will quickly recover bumps and itches when rubbed with a leaf Zodia. This is a new hope to repel an attack of dengue mosquitoes in the future, namely the movement back to nature by using the plants around us to combat dengue fever.

What is Zodia	Zodia is known as a native plant from Papua
Zodia Benefit	1. Natural Mosquito Repellent 2. Anti Cancer 3. Disregard body smell 4. Reduce swelling by Mosquito
How Long the smell will be there	Approximately 6 hours
How many percentages does the smell work	70%

Rosemary

Rosemary, also known as Salvia Rosmarinus, is a fragrant plant that is also a strong antibacterial herb. Rosemary is also beneficial to the skin. It contains anti-aging qualities and helps to give skin a healthy glow. Natural antimicrobial extracts derived from herbs, spices, and plants can be used in the food industry to prevent the growth of foodborne pathogens and food spoilage bacteria, as well as to improve shelf life and stability.

Coconut Oil

The advantages of coconut milk are preserved by virgin coconut oil, which is not destroyed by the heating processes that conventional coconut oil goes through. Coconut oil has long been used as a moisturizer and carrier oil.

Shea Butter

Shea butter is a fat derived from the African shea tree's nut (Vitellaria paradoxa). It's suitable

for almost all skin types as sun care cream

BACKGROUND

On the 10th of September 2021, while watching Al-Jazeera with my grandfather, news of Dengue fever was broadcast. To get rid of mosquitos, Grandma uses aerosol spray. Its not safe for long run for human being. When doing research on natural insect repellents, I came across the Zodia plant from Indonesia. While searching for Zodia, I discovered that I could also get Rosemary at Nursery. We ordered a Zodia plant from Shopee because we couldn't find it locally. We planted Zodia and Rosemary in our garden.

Benefit of Zodia

- Natural Mosquito Repellent
- Long-Lasting Effective
- 70% of the fragrance active for 6 hours

Benefit of Rosemary

- Preservatives ; Good Fragrance ;Increase Long life spans

The benefit of Shea butter

- Suitable for all types Skin ;Contain Natural Nutrients ;Heal the skin wrinkles and scars

The benefit of coconut oil

- The best carrier oil ; It's effective for skin ;As best moisturize

METHODOLOGY

Zodia and rosemary essential oil were extracted using a two-boil method. Zodia essential oil should be kept in a tightly sealed glass container. Rosemary oil was extracted using a double boil method. Rosemary Zodia essential oil should be kept in a tightly covered glass container. Using the double boil method, we'll need approximately 2 tablespoons Shea Butter. Once the Shea Butter has melted, combine it with the Zodia and Rosemary essential oils. To get the best results, use a small mixer to ensure that all of the ingredients are well combined. Store in a tightly sealed container. The product is ready to use after a few minutes.

NOVELTY AND UNIQUENESS

The uniqueness of Zodia Army is that we produce homemade coconut oil as a carrier oil to prevent using chemicals on Zodia Army. We extracted Zodia and Rosemary essential oils from homemade coconut oil using the double boil method.

BENEFIT TO MANKIND

The benefit of Zodia leaves is that they are a natural mosquito repellent with long-lasting

effects, and 70% of the aroma is active for 6 hours. Rosemary's natural preservatives increase long life spans while providing a pleasant aroma. The benefit of Shea butter is that it is suitable for all skin types and contains natural nutrients that improve in the healing of skin wrinkles and scars. The benefit of coconut oil is that it is the best carrier oil for skin and the best moisturizer.

POTENTIAL COMMERCIALIZATION

Zodia Army has a high commercialization potential as we use a natural, chemical-free technique. The balm not only prevents against mosquito-borne sickness, but it also helps to improve our skin and retain moisture. The price is affordable at RM 6.50 for 50g.

RECOMMENDATION

- Repellent mosquito
- Repellent insect
- To keep the skin moisturizer
- Stay stress-free
- Exercise: yoga/ tai chi/ walking, etc
- Zodia Army can be mixed with water and made as handy spray as needed.

RESULTS & DISCUSSION

The analysis was done on 8th Oct 2021 at Kompleks Sukan Pandamaran. The person applies Zodia Army on hands and did not apply on other body parts. The mosquito did near the person's hand. After an hour 1 mosquito sit on the leg and bite the leg. Another person applies on leg and hand and the mosquito bite on ears this was on 7th Oct 2021 at Botanic Garden.

CONCLUSION

Zodia Army is suitable for all skin types and ages. This Zodia Army has no chemical weapons. This balm has a better life shelf. This Zodia Army will save us from mosquitos regularly if we use it regularly. In the long run, mosquito sickness will decline since this blood-sucking insect will be unable to process food for itself, reducing mosquito reproduction. The mosquito's life cycle will be slowed. We can gradually lessen these cases by doing so. With God's creation of the Zodia plant, we protect each life created by him. The rosemary properties help us release our stress by inhaling this balm, which does not influence any of our physiological systems.

ACKNOWLEDGMENT

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