



INTERNATIONAL EXHIBITION & SYMPOSIUM ON PRODUCTIVITY, INNOVATION, KNOWLEDGE & EDUCATION

**“Optimizing Innovation in Knowledge, Education and Design”**

## ***EXTENDED ABSTRACT***



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*“Optimizing Innovation in Knowledge, Education and Design”*

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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 3<sup>rd</sup> 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

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





## MEHLCATE GIFT

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### ABSTRACT

The word 'Mehlcate' is a translation from German and Portuguese language of flour and avocado while the word gift is a translation from a German language that means poison. As it is named, Mehlcate gift is a rat poison that is made from avocado seeds, flour, and a few other ingredients. Mehlcate Gift is a replacement for existing rat pesticides in the market. Common pesticides at the market usually use blood thinner to cause internal bleeding in rats. These rat pesticides are safe to handle but can be extremely dangerous if accidentally ingested. It will cause so many symptoms such as nosebleeds (not caused by trauma to the nose), bloody diarrhea (hematochezia), and shortness of breath (dyspnea). These rat pesticides will lead to seizures, internal bleeding, and heart attack if left untreated. Our product's objectives are to prevent all these to happen and indirectly reduce the use of chemicals in our daily life. We have done so many experiments and countless research to choose the best ingredients to make a pesticide that we can use without worries. The ingredients that we use for these pesticides are avocado seeds, milk, beeswax, flour, and sugar. All the ingredients that we use are safe and edible. These pesticides have been proven that it would harm the rat's internal organs and kill the rats within 7 days (based on experiments). We have concluded that this Mehlcate Gift is safe and can be used anywhere and anytime.

**Keywords:** Chemical-free, Costly efficient, Easy to use, Environmentally friendly

### INTRODUCTION

The main topic of our innovation is to kill rats without using harmful chemical ingredients. Our innovation's background is based on a teacher's complaint at our school about the presence of rats. Since the main problem occurred at our school so we choose to make something that is



more suitable for our school's environment. Our aim is to decrease the number of rats that are roaming around us. We all know that rat is an animal we need to get rid of from our life. Nowadays, there are many types of pesticides on the market. Unfortunately, most of them have harmful chemicals to our nature. So, our team decided to invent a pesticide that is safe for the environment and safe for humans too. It is significant because we want our school to be free from rats so that our environment is much healthier and cleaner. In addition, diseases such as leptospirosis (rat fever) and salmonella cannot be spread around. The initial objective is to kill those rats that are roaming around the school area. We expect that the school compound will be free from the presence of rats. One of our teacher's rooms has been attacked by a rat at the door and there are rat feces on the teacher's tables. The situation became worse as time moved forward. The rat poison on the market contains chemicals such as cholecalciferol, bromethalin, and phosphides. This may risk the teachers and other staff. These poisons also got very strong odors that will stick to the books. This will cause books and other tools to have an unpleasant odor to teachers and students. Therefore, this situation will disrupt the learning and teaching process in the classroom.

## METHODOLOGY

We did some research before we start this project. We found that bay leaves can attract rats from their smell and flour can attract any rats. To prepare this product, there are several steps that need to be done. The first step is to crush the avocado seeds into pieces. The second step is we need to melt the beeswax. After the beeswax is completely melted, mix all the ingredients in a container. Stir the mixture until everything is well blended. Finally, put them into a mold and let them dry.

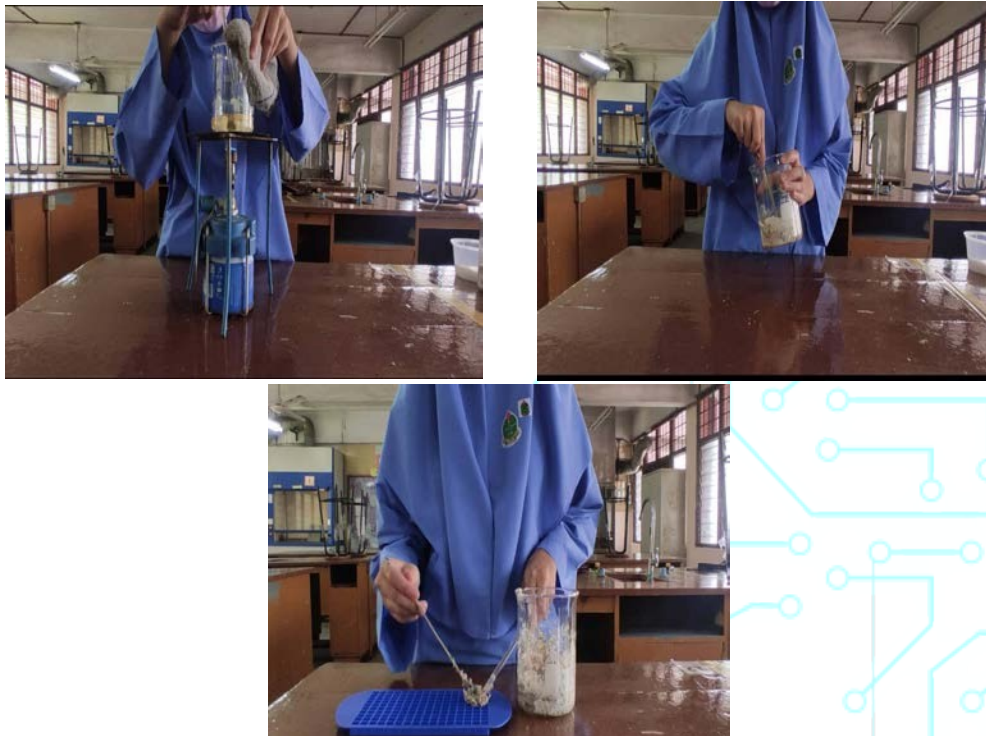






Figure 1: The process of melting the beeswax and mix with the ingredients

## FINDINGS

After we did some observation for a week, we collected some data that prove Mehlcate Gift did kill the rat. We did an experiment and took a few pictures as a piece of evidence. We kept a rat with a few cubes of Mehlcate Gift to prove it. Table 1 below shows the result that we obtained after one week of the experiment.

Table 1: The result of the experiment

DAY	CONDITION	PICTURE
1	Alive (Active)	
3	Alive (Inactive)	
5	Alive (Inactive)	
7	Dead	

## COSTING

Table 2 : The cost of the ingredients used

ITEMS	WEIGHT (PER/30PCS)	PRICE (RM)
Avocado Seeds	30g	-
Sugar	30g	RM 0.10
Flour	30g	RM 0.95
Beeswax	70g	RM 1.50
<b>Total</b>		<b>RM 2.55</b>

After doing some calculations, we found that the ingredients of Mehlcate Gift cost only 8 cents per piece.

## MARKETING TARGET

Our main target for our product is to chase rats that endanger human safety and at the same time, we do not want to damage our precious environment by creating poisons that are safe for humans and the environment. Thus, we aim to expand the production of this product so that it can be used in crowded areas such as schools, hotels, restaurants, and markets.

## CONCLUSION

Based on the experiment that has been conducted on this product, we concluded that Mehlcate Gift is a perfect substitute for common pesticides available in the market because it is environmentally friendly, biodegradable, and made from 100% natural ingredients that are safe if ingested or ingested accidentally. This proves that we can make full use of rice flour and reduce avocado seed residue. And of course, we also hope that our society begins to realize the importance of keeping the earth healthy by using natural materials that are much safer than chemicals.

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