i-SPiKE 2023

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

"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
3rdInternational Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPiKE 2023)

ECO -FARMING POCKET

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ABSTRACT
At the end of 2019, the world was shaken by the emergence of a new variation virus that forced the government to run the Movement Control Order . Many of them lost their jobs and sources of income. So they began to venture into agriculture. Statistics show that agriculture has increased dramatically. However, some of them are not able to farm properly due to the seeds that germinate slowly and do not grow well. Germination is the most important stage to ensure that the tree grows well. Germination refers to the process by which an organism grows from a seed or a spore (Susan Kleatz Beal,1998) The most common forms of germination include a seed sprouting to form a seedling and the formation of a sporeling from a spore. Thus, germination occurs primarily in plant and fungal species. The EcO- Farming Pocket are designed to ensure that germination can take place successfully without causing loss to the buyer.

Keywords:. Agriculture,Increased,Sprouting

INTRODUCTION

Seedling germination is the first process that should be carried out carefully. Therefore, we have innovated the method of seed germination by using organic materials and waste materials such as hydrogel that comes from baby diapers and banana peels. We extract fiber taken from fruit waste to be used as a catalyst to accelerate the germination of trees.The fibre from banana consists of thick-walled cell tissue, bonded together by natural gums and is mainly composed of cellulose, hemicelluloses and lignin.

A hydrogel used is a network of crosslinked polymer chains that are hydrophilic, sometimes found as a colloidal gel in which water is the dispersion medium. A three-dimensional solid results from the hydrophilic polymer chains being held together by cross-links. Hydrogels are highly absorbent (they can contain over 90% water) natural or synthetic polymeric networks.

METHODOLOGY

1) Prepare all the apparatus and material needed

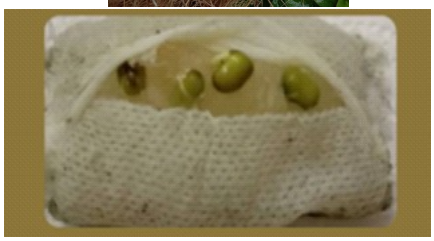
2) Take fiber from banana peel using the forcep

3) Grind all the fibers and place on greaseproof paper

4) Heat the fibre layer to keep it dry

5) Place a layer of fibre on top of the hollow tissue and insert once a layer of hydrogel. Sew all parts.

Final Product



FINDINGS

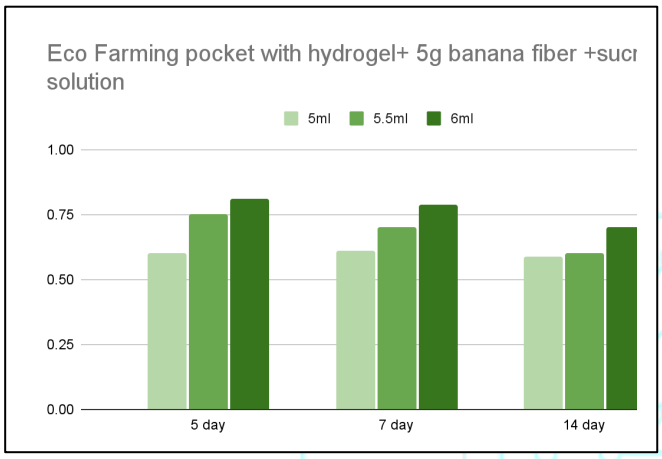
We conducted several experiments to prove that this Farming Pocket is a more effective way to germinate seeds in a short time.There are two main focus which is how long the Farming Pocket can maintain their humidity than the wet tissue.Secondly is to study whether the

Farming Pocket can germinate the seed faster than using a wet tissue. The experiment was conducted for a week to see the differences in the two methods.

Humidity and Elongation of germination test

TYPE	Prototype	Humidity Test (after 2 weeks)		Height of germination seed (cm)		
		Initial of Water Volume (ml)	Final of water volume(ml)	After 5 day	After 7 day	After 14 day
1	Eco Farming pocket with hydrogel	5.0	2.5	0.5	0.61	0.78
		5.5	2.7	0.53	0.54	0.62
		6.0	2.73	0.61	0.62	0.65
2	Eco Farming pocket with hydrogel + 5g banana fiber	5.0	2.66	0.60	0.61	0.63
		5.5	2.7	0.52	0.54	0.59
		6.0	3.0	0.50	0.51	0.51
3	Eco Farming pocket with hydrogel + 5g banana fiber + sucrose solution	5.0	2.2	0.6	0.75	0.81
		5.5	3.0	0.61	0.70	0.79
		6.0	3.4	0.59	0.60	0.70

Table show the best protype (Type 3) that shows increasing of height in Germination Seed



Germination test (using green bean)

Two former was provided ,one of them filled by wet tissue ,meanwhile the other one has been placed inside the Farming Pocket .The result has been took after 3 days.

	Using Tissue	Using Eco Farming Pocket
Day 1		
Day 3		

CONCLUSION

Based on the results that have been recorded, it is clear that these crop pockets are more conducive to germination.Indirectly, progress in the agricultural sector also contributes to the country's economic growth. At the same time we can harness waste and reduce waste in society. The advantages of this crop pocket are eco -friendly, suitable for beginners, available at a very cheap price and can be taken anywhere.

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