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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Azni Syafena Andin Salamet
Nurfaznim Shuib

Cover design : Syahrini Shawalludin
Layout : Syahrini Shawalludin

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5.	Matrix Board <i>Muhammad Izzul Haiqal Bin Ismadi, Ahmad Aqil Bin Khalid, Muhammad Fakhrulradzi Haiqal Bin Md Ismail, Muhammad Nasrullah Bin Suhaimi & Malik Bin Efendi</i>	741-744
6.	EGNA 3.0 <i>Nur Khaiza Binti Abdullah, Ana Zahra Binti Azman, Nur Umairah Syahmina Binti Mohd Shahrulaza, Nur Anida Farhana Binti Mohd Kairil & Zainab Binti Husain</i>	745-747
7.	GREEN As Model Urban Gardening in School <i>Nayudin Hanif</i>	748-756
8.	IOT Flood Monitoring System <i>Vimalan Pillai A/L Vajathan, Sachinn A/L Dhinakaran, Timothy Nathan A/L Thivianathan, Shaarveen A/L Tamilamuthan & Sanjay A/L Govindasamy</i>	757-760
9.	River Cleaning Robot <i>Yalleni A/P Thayalan, Indujaa A/P Kanaga Naidu, Yogini A/P Venugopal, Sarvina A/P Sasikumar & Thanishka Nair A /P Vimalan</i>	761-764
10.	IOT Based Smart Street Lighting System <i>Shivani Balakrishnan, Darshan A/L Kalidassen, Maniggandan A/L Manimaran, Shweta A/P Sivakumar & Darshanasri Vishnu</i>	765-768
11.	IOT Smart Irrigation Monitoring and Controlling System <i>Thanissa A/P Ganason, Lim Mei Lin, Sagunthali A/P Baskaran, Prishaashree A/P R N Raju & Guruprasath A/L Nanthakumar</i>	769-772
12.	Smart Waste Management System with IOT Monitoring <i>Sachein A/L Kalitazan, Suvarshan A/L Muniswaran, Sheshan A/L Velan, Suvathithan A/L Muniswaran & Dhanesh Shah</i>	773-777
13.	Smart Aquaponic Garden with an IOT Monitoring System <i>T. Yuvan Raj, C. Divashen, K. Nishart Pillaiy, S. Pretthic & S. Rishwin</i>	778-781
14.	Solar Tracker with IOT Monitoring <i>Saathish A/L Kumaran, Abinayashri A/P Srikanth, Hashini A/P K. Navukkarasu, Karthigeyan Utamanseelan & Hamshini A/P Ravachandran</i>	782-785
15.	Morusscented Candle <i>Farehan Binti Fauzi, Lam Mei Shan, Muhamad Haziq Bin Azizan, Syahzanani Binti Mohd Kamal & Muhamad Syamil Bin Zulkhairi</i>	786-788
16.	Paper Mache Mini Whiteboard <i>Keerthika A/P Thinesh, Ahvinaash A/L Vasu & Thanisha Sri A/P Balasingam</i>	789-792
17.	Brain Booster <i>Mohana Murugayan, Loghen Rajakumar & Udayaraj Gobinath</i>	793-797

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)

EGNA 3.0

Nur Khaiza Binti Abdullah
SMK Gemereh, Segamat, Johor.
malikbinefendi@gmail.com

Ana Zahra Binti Azman
SMK Gemereh, Segamat, Johor.
malikbinefendi@gmail.com

Nur Umairah Syahmina Binti Mohd Shahrulaza
SMK Gemereh, Segamat, Johor.
malikbinefendi@gmail.com

Nur Anida Farhana Binti Mohd Kairil
SMK Gemereh, Segamat, Johor.
malikbinefendi@gmail.com

Zainab Binti Husain.
SMK Gemereh, Segamat, Johor.
malikbinefendi@gmail.com

ABSTRACT

Eggs shells and banana skins are the domestic waste used to produce these organic fertilizers. It's effective. One innovation in organic fertilizer production. Can improve the economy of the local community. Reducing dependence on chemicals in the market. EgNa Fertilizer also serves as organic fertilizer and can solve local problems with dermal shell debris. This innovation can prove the effectiveness of egg shells to help tree growth. This product is environmentally friendly, easy & save and safer. The results of the experiments were neutral pH value and the tree became more fertile when added to the egg husk. Among the products contributed to reducing the number of dead plants caused by chemical fertilizers. Furthermore, it also improves the local economy and optimizes the use of egg shells and reduces pollution. No other fertilizers use the egg shell as the main ingredient. Easy to use. Saves natural resources. Improve the economy of the locals. Reduces the problem of dumping eggshells. This product has the opportunity to be marketed because the raw material is natural and it is profitable. Profit is expected as early as the first quarter of marketing. This product is very attractive to buyers, especially nature lovers. Its use is devoted to the agricultural industry. Target groups are farmers and growers. Method of production, Sifted eggshells to get the powder. Eggplant eggs are mixed with stripped bananas skin. Eggplant eggs are mixed with stripped bananas skin. Experimental results show that EgNa is very effective in helping tree seedlings, neutral, safe and portable. In conclusion, EgNa Fertilizer is the best product to solve the environment problem.

Keywords: EgNa, Egg shell, banana.

PRODUCT DESCRIPTION

Egg shells and banana skin peels are known as local waste is key ingredient for organic fertilizer products. It is cost saving and effective. EgNa is a new invention and innovation in fertilizer industry. It helps to save the environment by reducing the amount of egg shell and banana skin being thrown as rubbish and reduce the pollution that may been cause by these

substance. It also reducing dependence on chemicals products on the market. As we all know, agriculture industry like to use chemical based fertilizer that may pollute the environment. EgNa act as an alternative resource for the farmer to use in their field. The usage of EgNa may increase their crop yield. EgNa fertilizer comprise of the following component:

1. Egg shell
2. Banana leaves



Figure 1. Example of liquid EgNa

Table 1: Experiments result of liquid EgNa

EXPERIMENT	RESULT
pH value	pH 8
Egna present against plant growth	Egna increase the the plant growth
Comparison of EgNa Fertilizer's powder with EgNa Fertilizer's fluid	liquid is more effective than powder.
Comparison of EgNa Fertilizer's ingredients with other fertilizer	EgNa Fertilizer is more effective than another fertilizer
Mass of EgNa against plant growth	If the mass of EgNa 20 g, so the number of leaves increase.

NOVELTY AND UNIQUENESS

EgNa uniqueness lies in its concept of making innovation in EgNa fast, easy and accessible, while keeping the design open sourced and the cost as low as possible. Futher more, EgNa also come in 2 types of packing which are liquid and powder form. EgNa helps to reduce the pollution cause by the dumping of domestic waste. Beside is acts as an alternative to the widely used chemical based fertilizer.

BENEFIT TO MANKIND

EgNa fertilizers is easy to use.It helps people to manage their time and increase their productivity. It also save nature's source by using waste material. The usage of EgNa can increase the local economy by increasing their yield of crop, providing new job opportunityand it can also decrease the dumped egg shell and banana skin problem.

ACKNOWLEDGEMENT

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REFERENCES

Fadma Juwita Nasution, Lisa Mawarni, dan Meiriani (2014), Aplikasi pupuk organik padat dan cair dari kulit pisang kepek untuk pertumbuhan dan produksi sawi, Medan, *Jurnal Online Agroekoteknologi*.

Nurlita Harnafi Mashfufah (2014), Uji pontensi pupuk organik dari bahan cangkang telur untuk pertumbuhan seledri, Universitas Muhammadiyah Surakarta,

Nurjanah, Rahmi Susanti, Khoiron Nazip (2017), Pengaruh pemberian tepung cangkang telur ayam terhadap pertumbuhan tanaman Caisim dan sumbaganya pada pembelajaran biologi SMA. Mahasiswa Program Studi Pendidikan Biologi FKIP Universitas Sriwijaya,

Nurjanah, Rahmi Susanti, Khoiron Nazip (2017), Pengaruh pemberian pupuk organik cair kulit pisang sebagai sumber kalium terhadap pertumbuhan dan hasil tanaman terong ungu, Universitas Muhamadiyah Yogyakarta, Ir. Mulyono, M.P., Ir. Hariyono, M.P.

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