

ECO-FRIENDLY BIOFERTILIZER FROM RICE STRAW WASTE



INVENTOR: OOI LIK YANG

FACULTY: FACULTY OF INDUSTRIAL SCIENCES AND TECHNOLOGY

UNIVERSITY: UNIVERSITI MALAYSIA PAHANG (UMP)

EMAIL: ooilikyang1997@hotmail.com

CO-INVENTORS: FATIN ARINAH BINTI HANAFI AND DR LEE CHIN MEI



Product Background

- Rice straw is by product of rice plant produced after harvestation.
- 2,000,000 metric tonnes produced in each cultivation session in Malaysia
- With the complex lignocellulosic structure of the rice straw, rice straw does not degrade naturally.
- The problem comes when paddy farmers dispose the rice straw by burning it directly on the paddy field.
- This leads to serious air pollution and promotes the loss of nutrients from the soil.
- Degradation of rice straw by biofertilizer will be a good way to solve the problems.



Novelty and Functions

- Novel biofertilizer that is formulated from microbes and rice straw.
- The microbes colonize the soil and promotes the hydrolysis of rice straw by cellulase produced by microbes.
- Fertilizer formulation effective in promote soil fertility continuously.
- It also fixing the nutrient availability in low fertility soil.

Collaboration/Industrial Partner

- The Oxford & Cambridge Society Malaysia.

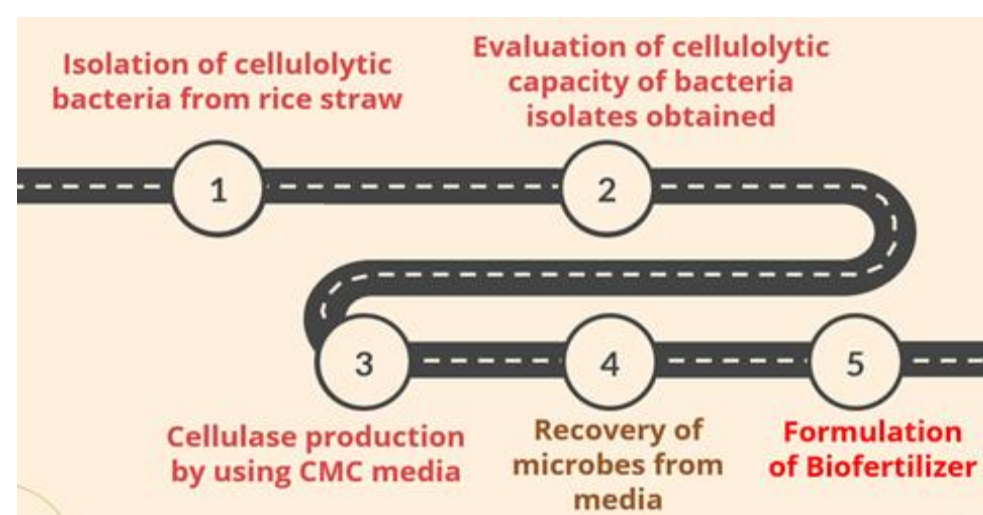


Benefits and Applicability

- Increase farmer income (B40).
- Increase food security level in Malaysia
- Reduce poverty among farmers



Methods



Marketability & Commercialisation

- Projected to reach USD 3758.56 million by 2027.
- Since there is no any available biofertilizer product in the market that originated from degraded rice straw, the potential of this product is huge

Cost Analysis

- Low cost and affordable for the paddy farmers
- Cost of raw materials for biofertilizer is relatively low



Environmental Impact

- Eliminate air pollution caused by burning of the rice straw.
- Improve soil fertility continuously.
- Promote sustainable agriculture.

Status of Innovation

- TRL Level 3: Experimental Proof of Concept.
- Lab Scale.

