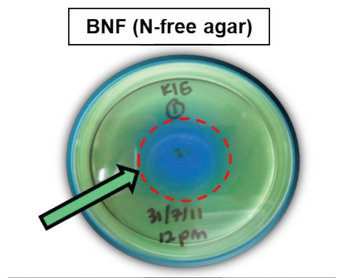
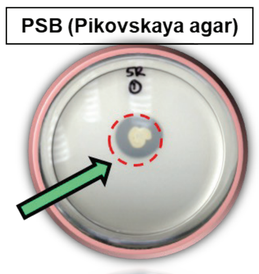
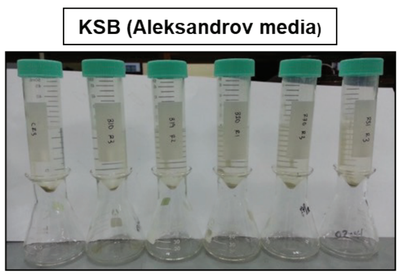
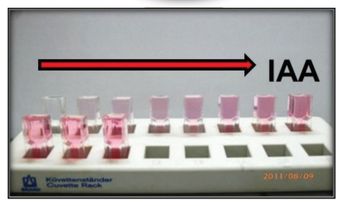
AN IMPROVED FORMULATION OF A LIQUID BIOFERTILIZER

PATENT NO. PI 2022002182

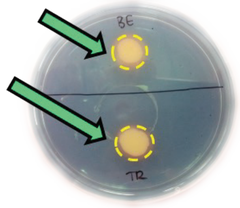




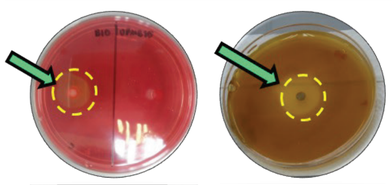




Phytohormone (IAA)

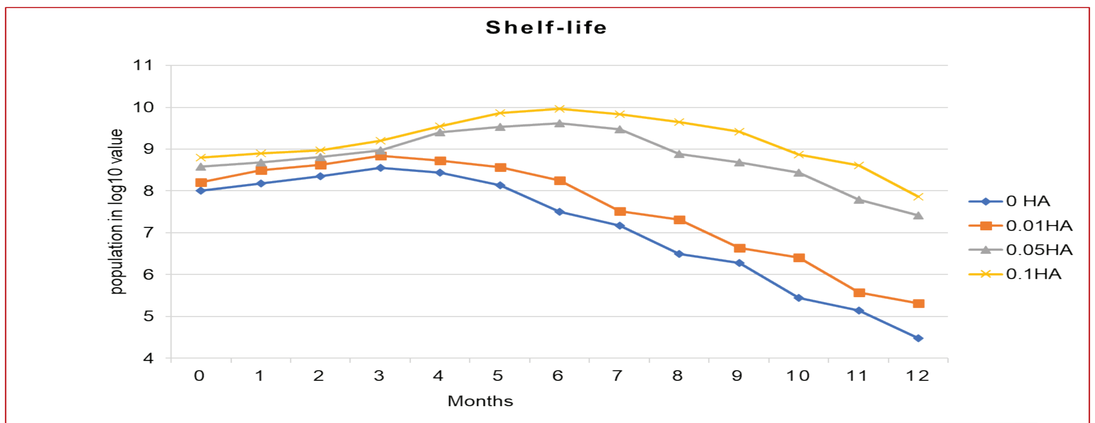


Fe Siderophore (CAS agar)



Cellulase (CMC agar)

Pectinase agar



BRIEF TECHNOLOGY

Formulation of a liquid biofertilizer consisting of optimum amendment for a prolonged shelf life of a consortium of beneficial cellulolytic bacterial strains.

CURRENT ISSUES

- Excessive use of chemical fertilizer could lead to soil quality deterioration, always associated with environmental pollution.
- Biofertilizer is a promising alternative, but most of the current biofertilizer products in the market are in solid form, which is bulky and poses difficulties during storage and large-scale field application. These products normally require a large storage room with controlled ambient conditions.
- The existing products also consist of an unknown population of beneficial microorganisms, sometimes inactive or dead cells, due to the unfavorable composition of the inoculum media.
- The shelf life is also relatively shorter, which could pose a problem during commercialization steps.
- The natural composting process of organic materials is generally slow and often takes a long time due to the insufficient indigenous cellulolytic bacteria

INVENTIVENESS & NOVELTY

This liquid biofertilizer comprises a consortium of cellulolytic plant growth-promoting rhizobacteria (PGPR) which has been proven to promote plant growth and yield and enhance the composting process of organic residues. It is used as one ingredient in a SIRIM-certified, commercialized organic fertilizer called Milagro premium. The formulation of this biofertilizer consists of an optimum range of nutrients, protein, carbon sources, and amendments of humic acid for an extended shelf life of 12 months, under normal room temperature and conditions.

USEFULNESS & APPLICATION

- As beneficial microbe (PGPR), to improve the growth and yield of various crops, while minimizing chemical fertilizer usage
- As cellulolytic bacteria, to enhance the decomposing process of organic residue into a high-quality organic fertilizer

IMPACT OF THE PRODUCT

- This liquid biofertilizer is proven to improve the growth and yield of various crops and enhance the decomposing process of organic residue into a high-quality organic fertilizer, with at least 12 months of shelf-life, stored at room condition.
- This green technology could be used as an alternative to minimize the use of chemical fertilizer, thus promoting an environmentally friendly and sustainable agriculture system.

MARKET POTENTIAL

- Crops - to increase crop growth and yield while minimizing chemical fertilizer usage and promoting sustainable agriculture practices.
- Organic fertilizer - to enhance the composting process of organic residues, such as chicken dung, and sawdust, and to improve the quality of the organic fertilizer.

TRL : 8 – Ready to be commercialized

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