



**Ministry of Agriculture Livestock and Irrigation**  
**Department of Agriculture, Shan State (Eastern)**

# **Let's Apply Organic Farming for Healthy World**

**(Indigenous Micro-Organism - IMO)**

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# Introduction

- *“Organic Farming is a crop production system for sustaining the health of soil and people by using biological materials while avoiding the use of synthetic based chemicals and materials”.*
- The excessive use of synthetic chemicals in crop production inhibiting the growth and viability of the beneficial micro organism in the soil
- Soil fertility are lowering gradually. Lowering crops growth and quality of crop products
- The chemicals and the residues are negatively affecting to the health of people.

Topic : Let's Apply Organic Farming for Healthy  
World

Crop : Potato (Kufriyoti)

Trial Method : RCB

Village : Kyaing Ka Village

District : Kyaingtong

State : Shan State (Eastern)

Presented by : **Daw Khin Htay Yee**

Designation : Dy – Staff Officer, DOA

Kyaingtong District Land Use Division

Type of soil	- Upland (Sandy soil)
Annual rainfall	- 111 days / 54.57 Inches
Monthly rainfall (average)	- 9 days / 4.55 inches
Maximum/minimum temperature	- 32.8° C / 11.7° C
pH	- 5.5
Cropping pattern	- Soy bean – potato
Source of water	- Rainfed

# Production and Application of Indigenous Microbe-Organism (IMO): a Chemical Free Technology

 IMO is the production and use of micro organisms from the soil under bamboo that are effective for improving plants growth and soil fertility

 IMO technology is being applied for organic crop production in Malaysia.

# Steps in Producing IMO

## (IMO#1) Production of organic fertilizer 1<sup>st</sup> step

- Put and distribute about 3 handful of cooked rice on the 3.5 cm depthed plastic tray or dish and then cover with a piece of white paper. (in raining season to also cover with plastic )



Then, place it under the bamboo where there is abundant composted bamboo leaves. Cover it with a transparent plastic sheet and press the surrounding with some available heavy things. Keep it for two nights. On the third day morning white coloured fungus will be emerging on the surface of rice.



## (IMO#2) Production of organic fertilizer 2<sup>nd</sup> step

Put 0.1 viss of brown sugar or jaggery powder on rice that with fungus and gently mix them. Then place the into a clean and dry plastic container.



- 🕒 Cover the opening of the plastic container and then sealed it with tape to be air tight
- 🕒 Keep it for 3 to 5 days



## (IMO#3) Production of organic fertilizer 3<sup>rd</sup> step

 Keep 3 bottles of rice water for 2 nights. Together with 6 bottles of clean water pouring them into a showering can. Stirred the solution until thoroughly mixed.

 Put the rice containing micro organism made in IMO#2 after keeping 3 to 5 days in the plastic bottle into the solution and mix them.



Pour and mix the solution onto 10 pyi of rice bran to get the mixture with suitable moisture.





Cover the pile of mixture with the banana leaves, and further, with the poly ethylene bags cover on top.



Keep it under the protected shade for 3 to 5 days



## (IMO#4) Production of organic fertilizer 4<sup>th</sup> step (1:1)



After keeping IMO#3 for 3 to 5 days thoroughly mix it further with the same amount of volume of top soil. Put in water for getting suitable water content.





Cover it again with banana leaves and poly ethylene bags as it was done in the step 3. The white coloured fungus can be seen after keeping it for 3 to 5 days.



## (IMO#5) Production of organic fertilizer 5<sup>th</sup> step (1:10)

-  Mix 10 bags of manure with a bag of (IMO#4) product. 11 bags of organic fertilizers (for 1 ac) will be obtained.
-  Microbes are growing well if no more bad odour. after 7 to 10 days. It can be kept and used from one to 3 months.



# The Benefits from Application of IMO

-  Support for the accessible major and micro elements, maintain and/or improve soil structure Increase soil fertility within a short timeframe,
-  Reducing weeds, more resistant to pest and diseases and the changing climate.
-  Conserve more to soil moisture (20 times to normal soil)
-  2 to 5 time better growth of the the root/ tuber
-  Higher profitability for lower investment rate and return.
-  Higher yield, product quality and shelf life
-  Cheap and can be produce near by home yard

# Trial: Comparison of the Affect of IMO to other Fertilizer on the Yield of Potato

## Findings

SN:	Description	Average yield per plant (kg)	Average yield per Acre (Viss)	(+/-)
1	Chemical Fertilizer (13:5:7)	0.17	2888	(-) 170
2	IMO Bio Fertilizer	0.16	2718	-
3	Chicken Manure	0.15	2548	(+)170
4	EM-Bokashi	0.15	2548	(+) 170
5	Control	0.11	1869	(+) 851



# Comments and Recommendation

## Comments:

- IMO Fertilizer – 170 viss less than applying chemical fertilizer
- IMO Fertilizer – 170 viss higher than applying Chicken manure or EM-Bokashi
- IMO Fertilizer – 851 viss higher than control plot

## Recommendation:

- Applying IMO is especially suitable and will benefit more for the growers practicing GAP or Organic Farming
- IMO is recommended for sustainable production of crops

# Reference

**Organic Farming training notes from CARTC**

**Professor Dr. Mying Lwin's Organic Farmer's notse in 2016**

THANK YOU

