ecokaku

SHUKAKU-RIKI

“POWER HARVEST”

Bio-Organic Fertilizer

Formulated and Manufactured in Japan

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INTRODUCTION

SHUKAKU-RIKI "POWER HARVEST" Bio-Organic Fertilizer is a fermentation product that is environment-friendly and functionally ensures optimum plant growth and development for desirable yield and productivity thus economically rewarding.

Fertilization thru drenching method using the liquid **SHUKAKU-RIKI "POWER HARVEST" Bio-Organic Fertilizer** is the fastest way of boosting plant growth from poor soil fertility, nutrient deficiencies, environmental stress factors, pests, and diseases.

SHUKAKU-RIKI "POWER HARVEST" Bio-Organic Fertilizer richly contains readily available organic nutrients and trace elements that traverse directly to the root system of the plant for better uptake. It has soil conditioners that soften and create better soil structure conducive to the growth of the roots of the crops. Oxygen in the soil will increase due to improved soil aeration and permeability. It is a fertilizer that does no harm to natural environment.

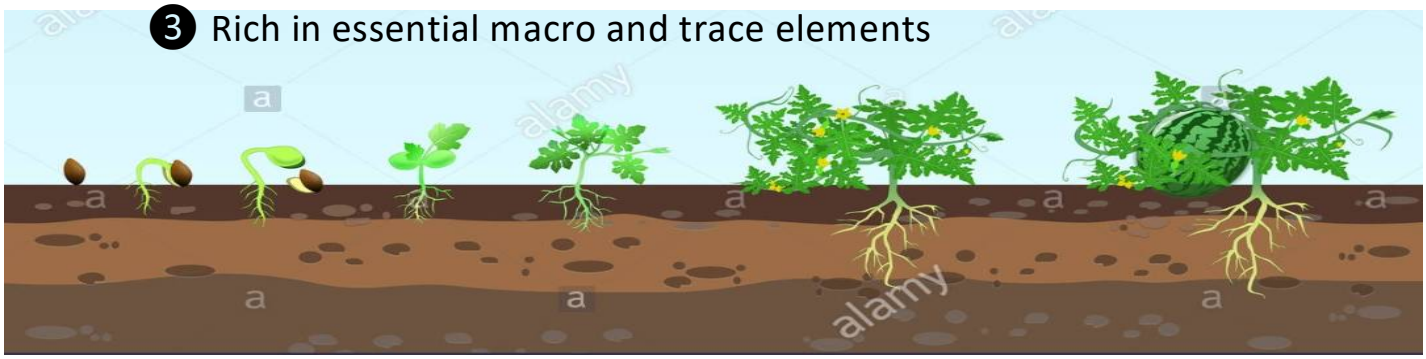
SHUKAKU-RIKI "POWER HARVEST" Bio-Organic Fertilizer can be widely used for the entire cropping season of all kinds of crops at 7-15 days interval for those following Organic Farming System. It can also be applied alternately for at least 14-days interval with synthetic/granular fertilizer. It is highly recommended to reduce synthetic fertilizer application up to 50 percent of the whole recommended rate for those using the Inorganic Farming System. This addresses soil acidity thus promoting optimum nutrient and water uptake ensuring proper growth and development of the plant.

WHAT IS

SHUKAKU-RIKI “POWER HARVEST”

BIO-ORGANIC FERTILIZER?

1. A nutritionally complete power house organic liquid fertilizer formulated and manufactured in Japan
2. Contains alginic acid, amino acid, organic matter and probiotic microorganisms
3. Rich in essential macro and trace elements



POWER HOUSE COMPONENTS OF

SHUKAKU-RIKI" POWER HARVEST "

BIO-ORGANIC FERTILIZER

FOR COMPREHENSIVE PLANT DEVELOPMENT

•ESSENTIAL MACRO ELEMENTS

❶ **Nitrogen** for chlorophyll synthesis which gives plants their green color and is involved in creating food for the plant through photosynthesis.

❷ **Phosphorous** for energy transfer, photosynthesis, and nutrient movement within the plant.

❸ **Potassium** for enzyme activation that affects protein, starch and adenosine triphosphate (ATP) production in the plant.

•ALGINIC ACID

Found in brown algae /sea weed/kelp, is an essential soil conditioner that combines with metals in the soil to create a polymer which retains significant amount of moisture more so during adverse/dry season thus enhancing the soil structure/texture that promotes maximum uptake and mobilization of water and nutrient, and aeration. Thus, plant roots have better access to both nutrients and air within the soil, resulting to optimum growth and development.

•AMINO ACIDS

From fish oil of skipjack and milkfish, act as natural biological stimulants and organic chelating agents for trace elements to promote recovery from abiotic stress. Fish oil also supplies trace elements necessary for overall plant growth and development.

•ORGANIC MATTER/CHICKEN MANURE

Addition of organic matter to soil increases soil water holding capacity, improves soil structure, pH, aeration, and drainage. It also reduces erosion and fertilizer leaching.

•PROBIOTIC EFFECTIVE MICROORGANISMS

Scientifically selected beneficial microorganisms/inoculants are naturally occurring bacteria, fungi and other microbes for very effective biological control. They serve as inhibitors of the growth of harmful or disease-causing soil-borne microorganisms thereby protecting the host plant from possible infection. They also act as decomposers that converts dead tissues in the soil to readily available nutrients for better or facilitated uptake boosting plant productivity and health.

•TRACE ELEMENTS

Calcium (Ca) is for the formation of cell walls and cell membranes. **Magnesium (Mg)** is for activation of specific enzyme systems. **Boron (B)** is for cell wall synthesis and essential for cell division. **Zinc (Zn)** helps the plant to withstand cold temperatures. **Manganese (Mn)** sustains metabolic roles within different plant cell compartments.

HOW DOES

SHUKARU-RIKI “POWER HARVEST” BIO-ORGANIC FERTILIZER **WORK EFFECTIVELY IN THE PLANTS?**

When **SHUKAKU-RIKI “POWER HARVEST” Bio-Organic Fertilizer** is applied directly to the soil, it will immediately act as a **soil conditioner**. It stimulates chemical reactions by combining molecular substances to promote soil decongestion and enhances soil texture thus allowing optimum nutrients and water uptake, and facilitates better air movement.

As a result, all vital nutrients of **SHUKAKU-RIKI “POWER HARVEST”** Bio-Organic Fertilizer are optimized by fast mobilization from the roots upwards. Effective probiotics proprietary in **SHUKAKU-RIKI “POWER HARVEST” Bio-Organic Fertilizer** effectively protect plants from vascular and soil-borne diseases. Thus, plants eventually grow faster, stronger, and healthier becoming vigorously productive.

OTHER IMPORTANT USES OF SHUKAKU-RIKI "POWER HARVEST " BIO-ORGANIC FERTILIZER

1. SOIL CONDITIONER

• Amends soil acidity, structure, soil nutrients deficiencies and availabilities

2. NUTRITIONALLY COMPREHENSIVE FERTILIZER

• Stimulates efficient absorption of all essential nutrients by the plants

3. PLANT GROWTH STIMULANT

• Increases photosynthetic efficiency, accelerates nutrient absorption and operation, increases chlorophyll content, enhances crop quality, has significant effect on rooting, germination, flower promotion, fruit growth and fruit protection of crops.

4. BOOSTING AGENT

• Improvement of crop quality, enhancement of crop drought resistance, disease resistance, stress resistance, and immunity.

ILLUSTRATIVE PROCEDURE FOR APPLICATION OF SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER FOR RICE (Oryza sativa)

❶ Use 4 liters SHUKAKU-RIKI in 200 liters water dilution rate per hectare. Or 320 ml per 16 liters water.

❷ Drench the total 200 liters solution per hectare.

Or 240 ml per 16 liters water at 12 Knapsack per hectare.

Land Prepa-ration, after 2nd pass ploughing done

❶ Use 3 liters SHUKAKU-RIKI in 200 liters water dilution rate per hectare.

❷ Drench the total 200 liters solution per hectare.

Or 240 ml per 16 liters water at 12 Knapsack per hectare.

Land Prepa-ration, after leveling

❶ Use 1-liter SHUKAKU-RIKI in 200 liters water dilution rate per hectare.

❷ Drench the total 200 liters solution per hectare. Or 80 ml per 16 liters water at 12 Knapsack per hectare.

30 Days after planting

ILLUSTRATIVE PROCEDURE FOR APPLICATION OF SHUKAKU RIKI "POWER HARVEST" BIO ORGANIC FERTILIZER CORN (Zea maize)

1 Use 8 liters SHUKAKU-RIKI in 400 liters water dilution rate per hectare. Or 20 ml per 16 liters water.

2 Drench/spray furrow or ridge prior seed sowing of total 400 liters solution per hectare. Or 320 ml per 16 liters /water at 24 Knapsack per hectare.

Solution applied during furrow /ridging prior to seed sowing

1 Use 1 liters SHUKAKU-RIKI in 200 liters water dilution rate per hectare.

2 Drench/spray the total 400 liters solution per hectare.

Or 160 ml per 16 liters water at 12 Knapsack per hectare.

Solution applied as foliar spraying 10 days after planting (DAP)

1 Use 1 liters SHUKAKU-RIKI in 200 liters water dilution rate per hectare.

2 Drench/spray the total 400 liters solution per hectare

Or 160 ml per 16 liters water at 12 Knapsack per hectare.

Solution applied as foliar spraying 25 days after planting (DAP)

ILLUSTRATIVE PROCEDURE FOR APPLICATION OF

SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER

FOR LEAFY VEGETABLES (Cabbage, Chinese Petchay , Lettuce, Spinach, Onion Leaves and etc.)

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 50 ml solution per hill at 5 days application interval.

0-15 days after planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

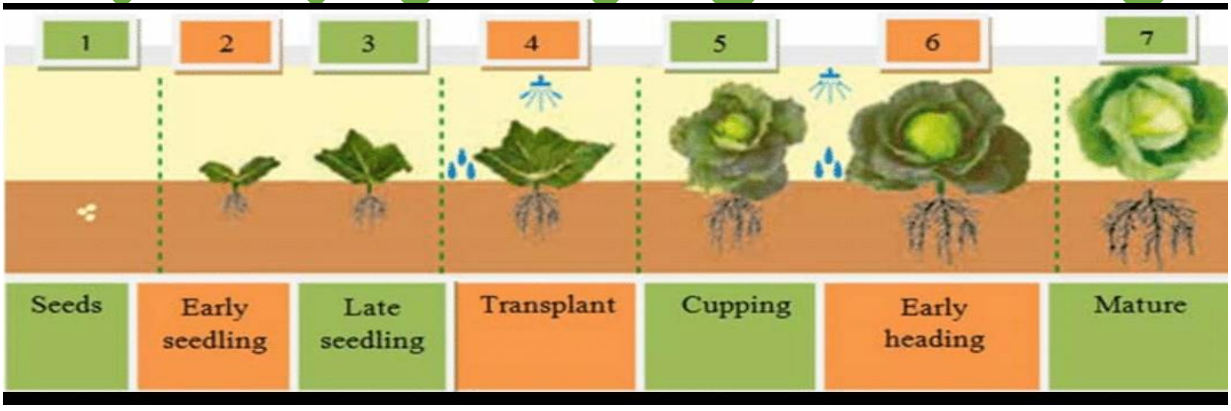
❷ Drench the total 75 ml solution per hill at 7 days application interval.

16-30 days after planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 150 ml solution per hill at 15 days application interval.

31 – 45 Days After Planting



❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 50 ml solution per hill at 5 days application interval.

0 – 15 Days After Planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 100 ml solution per hill at 7-10 days application interval.

16 – 60 Days After Planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 150 ml solution per hill at 15 days application interval.

70 days onwards

ILLUSTRATIVE PROCEDURE FOR APPLICATION OF

SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER

FOR ROOT CROPS (Radish, Carrots, Potato, Onion, Ginger, etc.)

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 5 ml solution per hill at 5 days application interval.

0 – 15 Days After Planting

. ❶ Use 10 ml SHUKAKU per liter of water dilution rate

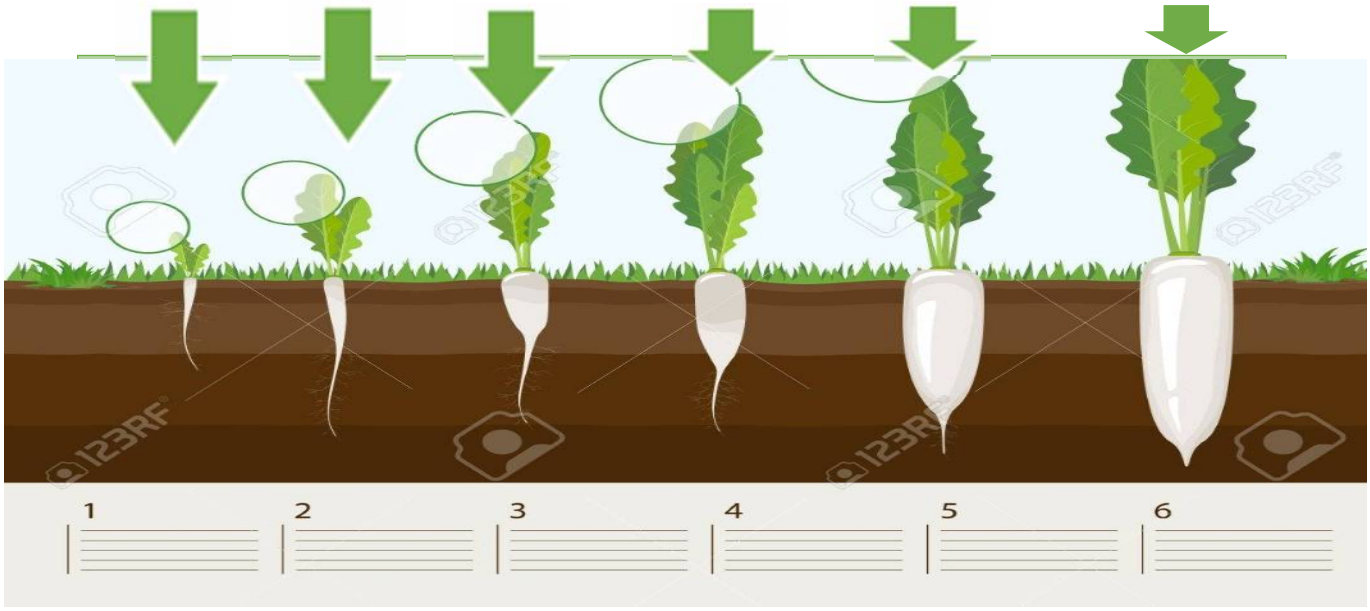
❷ Drench the total 100 ml solution per hill at 7 days application interval.

16 – 30 Days After Planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 150 ml solution per hill at 15 days application interval.

31 – 45 Days After Planting



❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 50 ml solution per hill at 7 days application interval.

0 – 30 Days After Planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 75 ml solution per hill at 10 days application interval.

31– 60 Days After Planting

❶ Use 10 ml SHUKAKU per liter of water dilution rate

❷ Drench the total 150 ml solution per hill at 15 days application interval.

61 – 90 Days After Planting

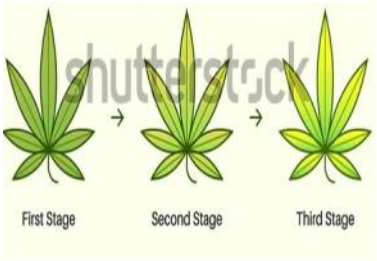
IMPORTANT REMINDERS AND PRECAUTIONS

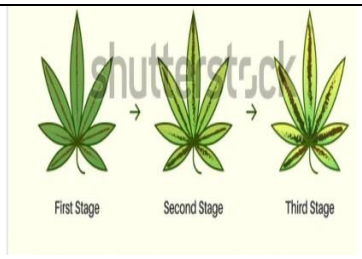
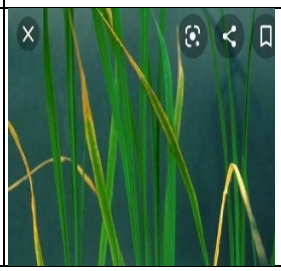
1. **SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER should be applied religiously following the provided guidelines for most efficient farming results.**
2. **Application of SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER incorporated with Synthetic Fertilizer up to 50 percent of the whole cropping requirement is also recommended in 10-15-day alternate application interval for Inorganic Farming System.**
3. **Ensure at least 50-60% moisture availability in the soil prior the application of SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER.**
4. **Shake the SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER product container before pouring the contents into the mixing vessel to avoid the organic materials from being submerged at left at the bottom of the product container.**

5. **Avoid mixing of SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER with any pesticide products because the activities and efficacy of the Probiotics microorganisms will be affected.**
6. **Application of SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER is preferably done at 5-9 o'clock in the morning or 3-6 o'clock in the afternoon to avoid heat factor that might affect its efficacy prior plant absorption.**
7. **Store the product in cool to room temperature and away from children.**

APPENDIX I.

THE PLANT NUTRITION INDEX

MACRO NUTRIENTS	ROLES	DEFICIENCY SYMPTOMS
NITROGEN	**Part of the chlorophyll molecule that gives plants their green color and is involved in creating food for the plant through photosynthesis.**	 

PHOSPHOROUS	**Vital to plant growth and is found in every living plant cell. Its plant functions include energy transfer, photosynthesis, transformation of sugars and starch.**		
POTASSIUM	**Vital for movement of water and nutrients like carbohydrates in plant tissues, involved in enzyme activation within the plant.**		

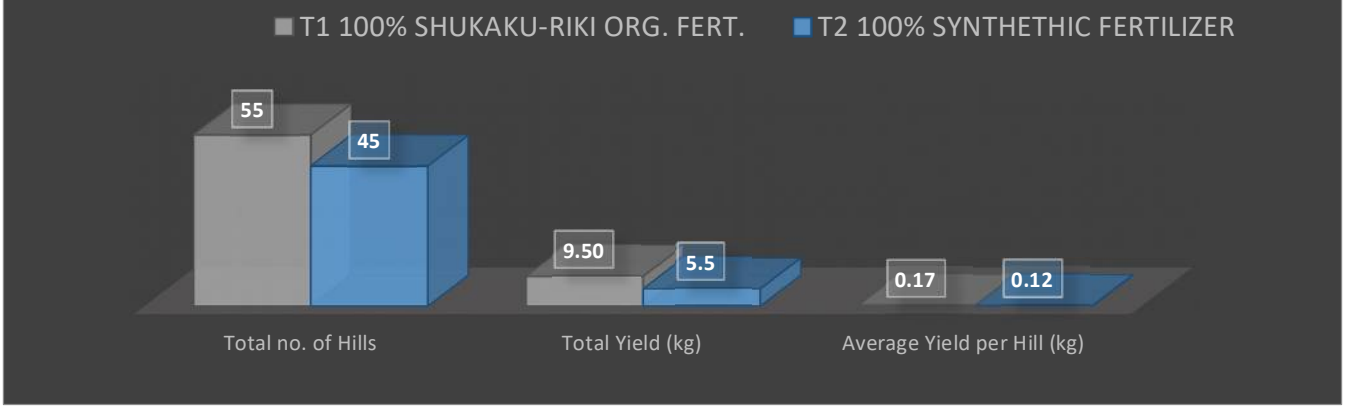
APPENDIX II.

THE SOIL INDEX AND DISORDERS

PARAMETERS			
Category	**pH**	**Description**	**Nutrient Deficiencies and Toxicity**
ACIDITY	**1**	**VERY STRONG ACIDIC**	**Nitrogen, Phosphorous, Potassium, Sulfur, Magnesium, Calcium, Iron Toxicity, Manganese Toxicity.**
	2		
	3		
	4	**Strong Acidic**	
	5	**Moderately Acidic**	

	6	Slightly Acidic	
	7	**NEUTRAL**	
ALKALANITY	8	Slightly Alkaline	Nitrogen Deficiency, Iron Deficiency, Manganese Deficiency, Copper Deficiency, and Zinc Deficiency Note: Strongly Alkaline soil is hard and very compact.
	9	Moderately Alkaline	
	10	Strong Alkaline	
	11	VERY STRONG ALKALINE	
	12		
	13		
	14		

BELL PEPPER:
COMPARATIVE YIELD PERFORMANCE OF SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER- TREATED VS. UNTREATED VEGETABLES
LOCATION: KAPATAGAN, DIGOS, DAVAO DEL SUR

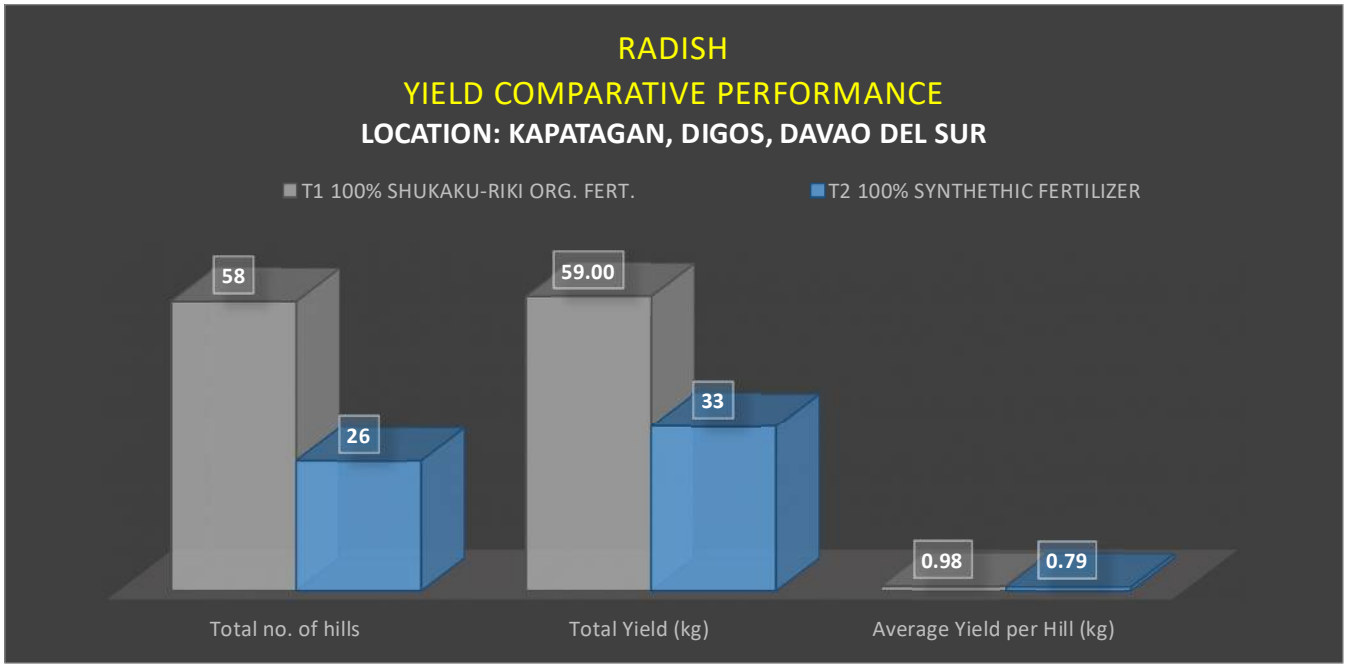


RICE:
COMPARATIVE YIELD PERFORMANCE OF SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER- TREATED vs. UNTREATED PLANTS
Location: Banaybanay, Davao De Oro

RADISH

YIELD COMPARATIVE PERFORMANCE

LOCATION: KAPATAGAN, DIGOS, DAVAO DEL SUR



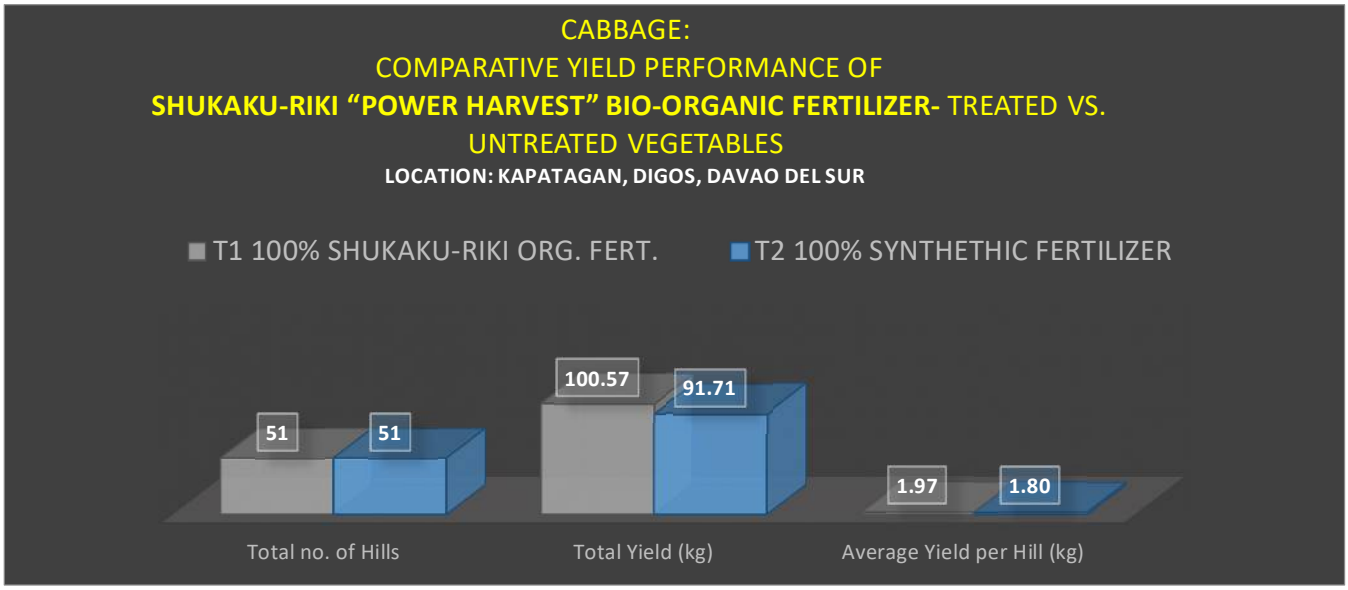
CABBAGE:

COMPARATIVE YIELD PERFORMANCE OF

SHUKAKU-RIKI "POWER HARVEST" BIO-ORGANIC FERTILIZER- TREATED VS.

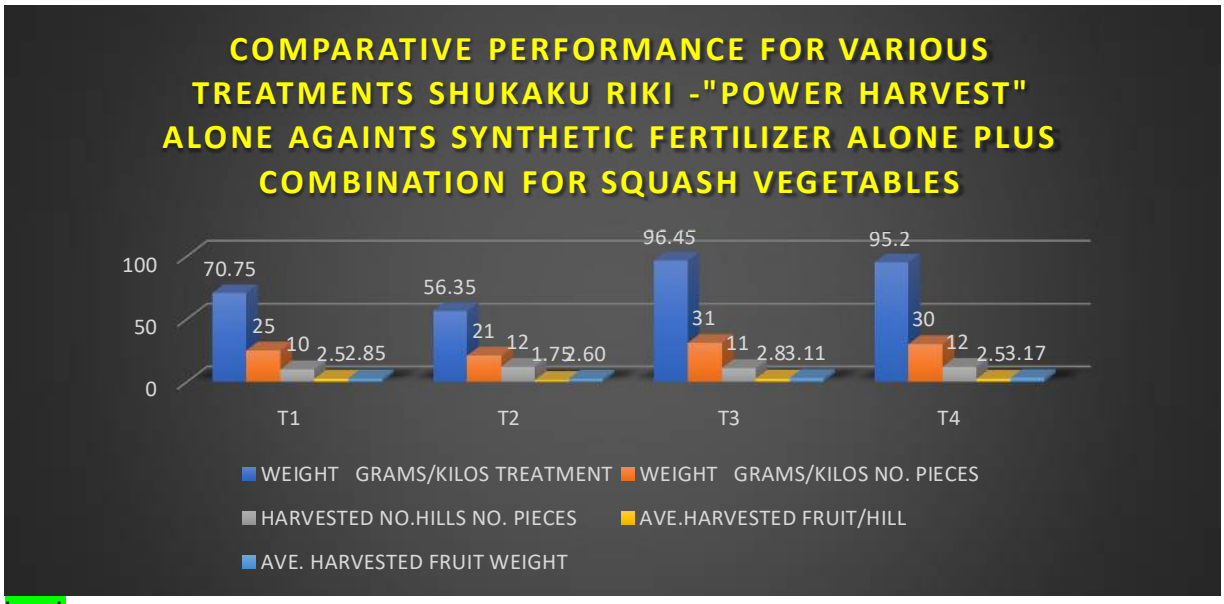
UNTREATED VEGETABLES

LOCATION: KAPATAGAN, DIGOS, DAVAO DEL SUR



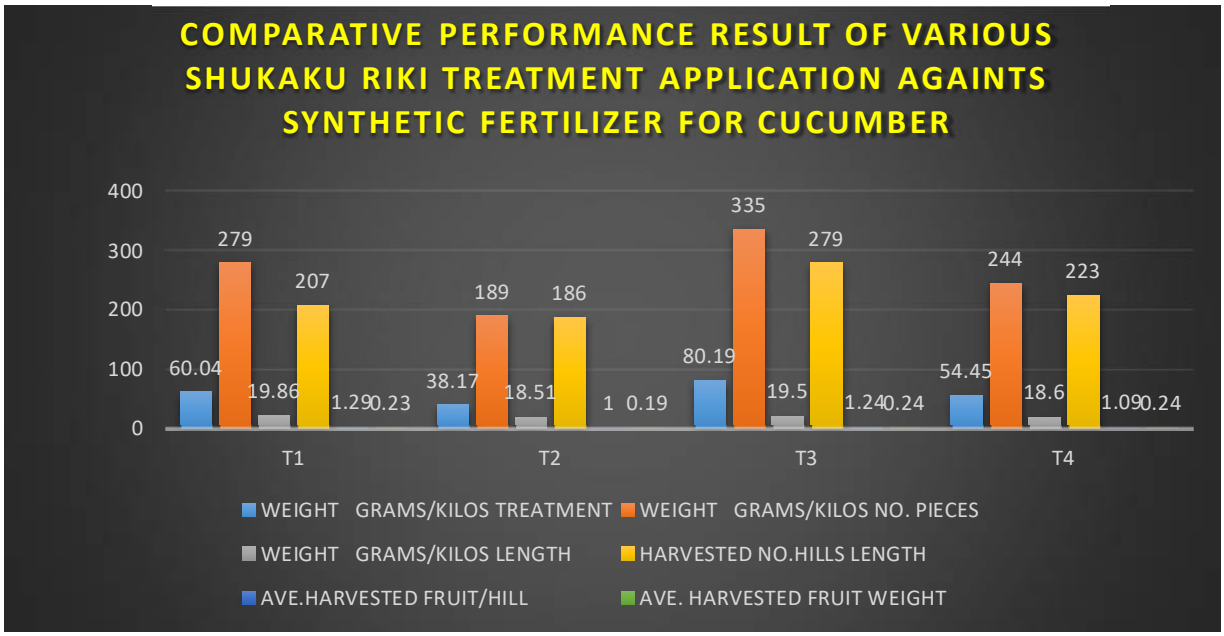
DEMO FARM VEGETABLES

Location: Barangay Ilam, Mulig Toril Davao City



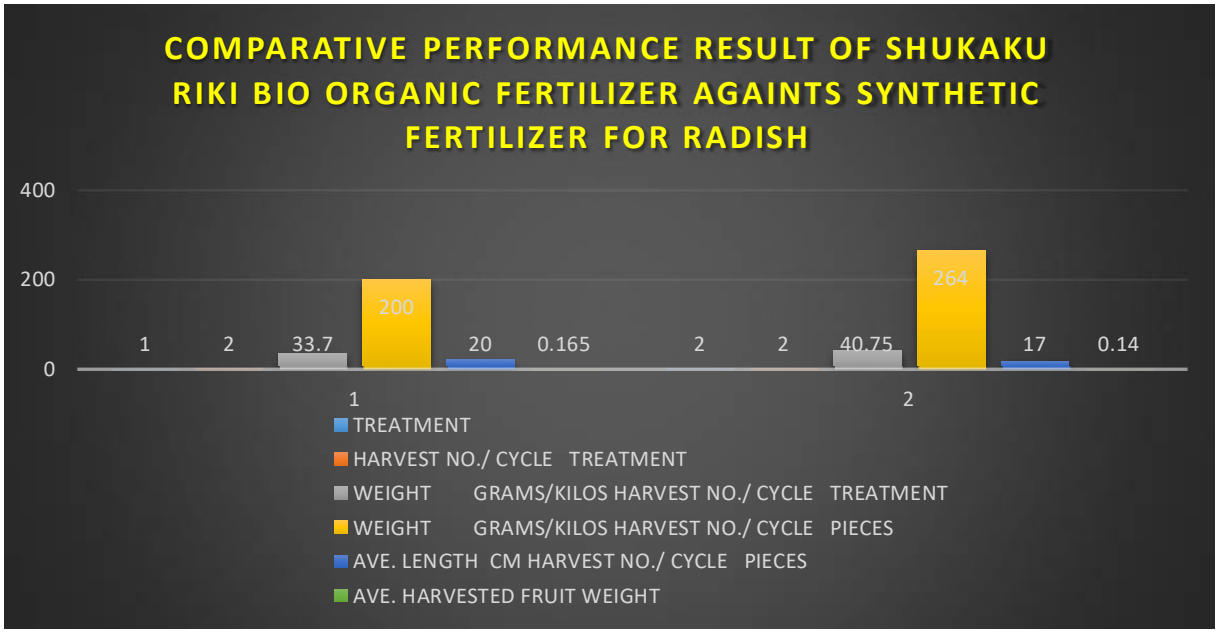
Legend:

T1 – Pure Shukaku Riki Solution T2 - Pure Synthetic fertilizer T3 – 50% Shukaku Riki solution and 50% synthetic fertilizer T4 – 100 % Shukaku Riki and 100 % Synthetic Fertilizer

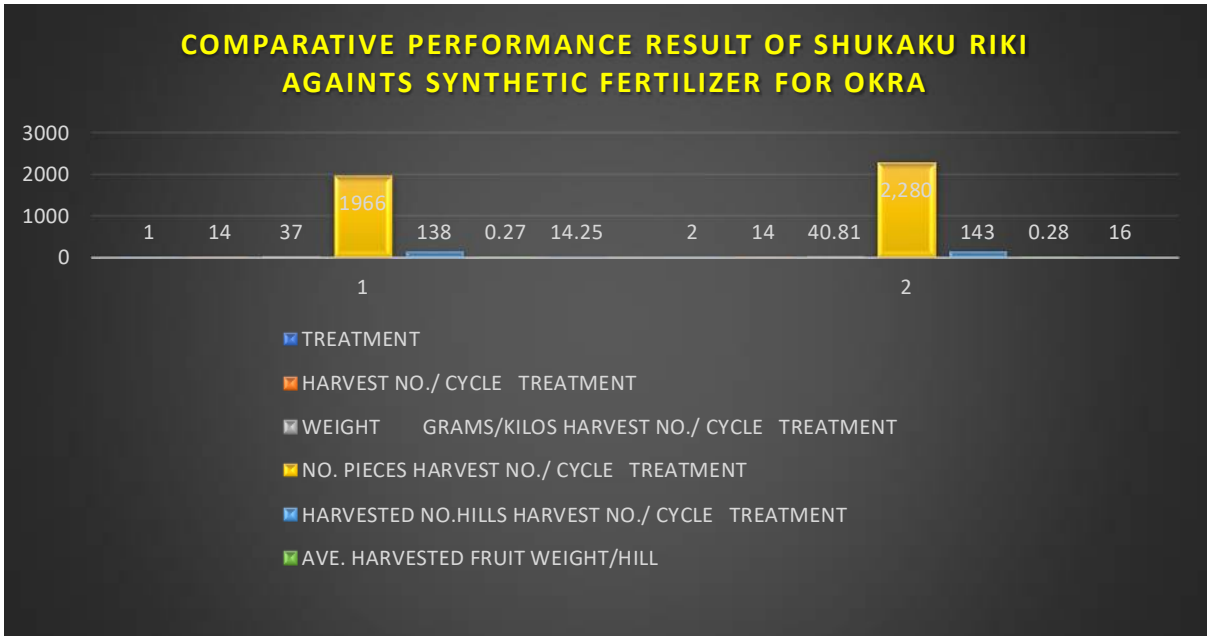


Legend:

T1 – Pure Shukaku Sol. T2 -Pure Synthetic fert. T3–50% Shukaku sol. and 50% synthetic fert. T4 - 100 % Shukaku Riki and 100 % Synthetic Fert.



Legend: T1 – Pure Shukaku Riki Solution T2 - Pure Synthetic fertilizer



Legend: T1 – Pure Shukaku Riki Solution T2 - Pure Synthetic fertilizer

TABLE 1. SHUKAKU RIKI RECOMMENDED RATE TABULATION GUIDE FOR ORGANIC FARMING (PEPPER AND TOMATO)

PHASE/TYPE	METHOD APLICATION	NO. INTERVAL/ FREQUENCY	SHUKAKU SOLUTION PER ML/WATER	DELIVERY OF SOLUTION	AGE OF PLANT (days)	RATE PURE SOLUTION PER KNAP SACK SPRAYER CAN
At planting	Soil Spraying/ drenching	0-15	10 ml	50 ml	0	160 ML/16 LITERS
At maintenance	Soil Spraying/ drenching	16-30	10 ml	75 ml	15	160 ML/16 LITERS
At maintenance	Soil Spraying/ drenching	31-45	10 ml	150 ml	30	160 ML/16 LITERS
At maintenance	Soil Spraying/ drenching	Every 30 Days	10 ml	150 ml	75	160 ML/16 LITERS

TABLE 2. COST ANALYSIS OF 100% SHUKAKU RIKI AS BIO FERTILIZER APPLICATION FOR (PEPPER AND TOMATO)

TYPE	ASSUMED POPULATION HILLS/HECTARE	METHOD APLICATION	SHUKAKU SOLUTION PER ML/WATER	DELIVERY RATE SOLUTION/ HILL	TOTAL LITERS SOLUTION	PRICE PER LITER	TOTAL AMOUNT	COST PER HILL/APPLICATION
OPEN FIELD FARMING PRACTICES	20,000	Soil Spraying/ drenching	10 ml	50 – 75 - 150 ML	55 L	750.00	41,250.00	0.68
FOR PLASTIC MULCHING/ PLOT	10,000	Soil Spraying/ drenching	10 ml	50 – 75 - 150 ML	27.5 L	750.00	20,625.00	0.68