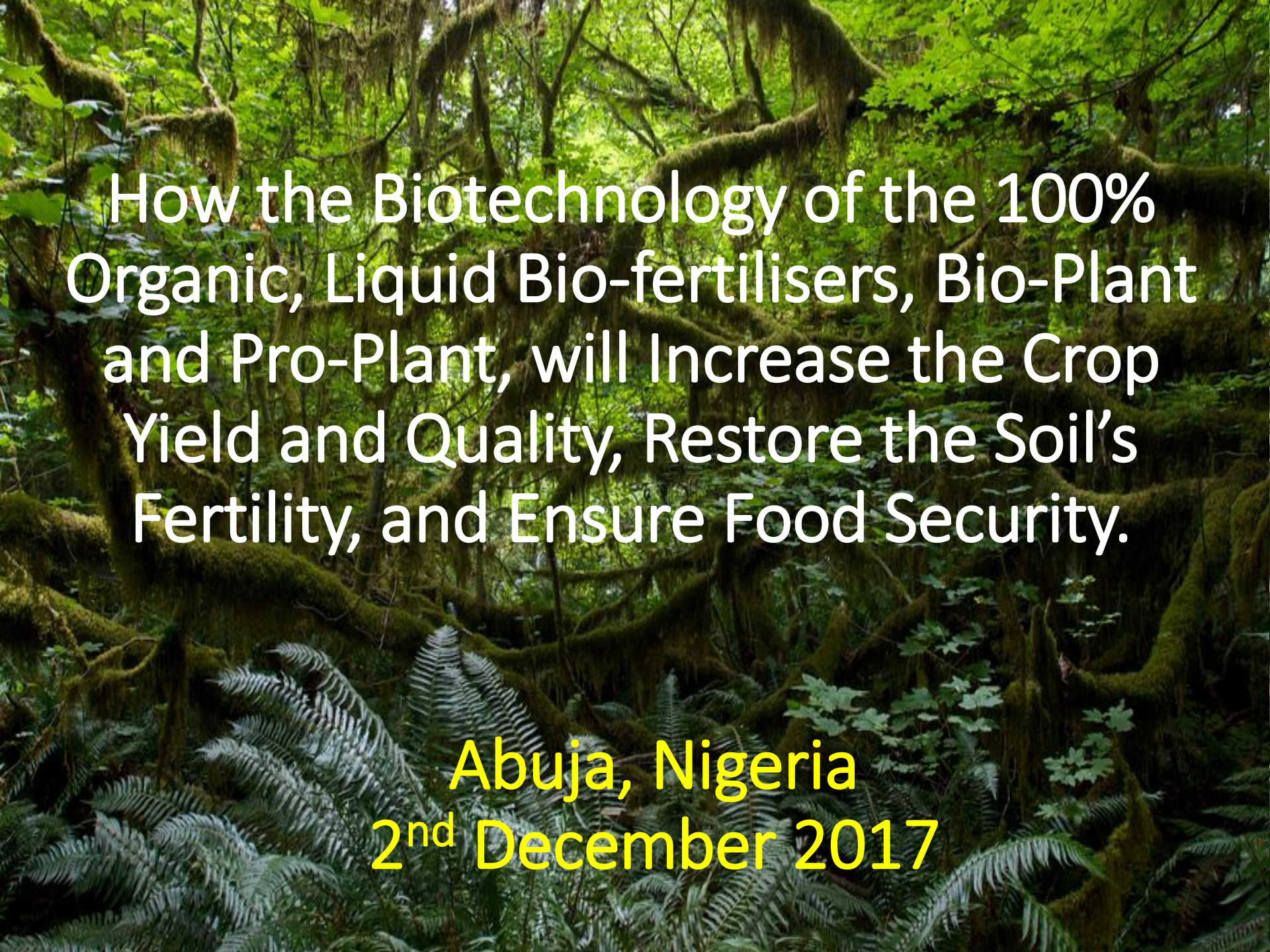

How the Biotechnology of the 100% Organic, Liquid Bio-fertilisers, Bio-Plant and Pro-Plant, will Increase the Crop Yield and Quality, Restore the Soil's Fertility, and Ensure Food Security.
Abuja, Nigeria
2nd December 2017


Bio-Plant
Pro-Plant
ไบโอ-แพลนท์ 99
BIO-PLANT
สูตรดิน
โปร-แพลนท์ 99
PRO-PLANT
สูตรใบ

Nigeria needs a new paradigm for agriculture.


Microbial life is killed. CO_2 is released. Organic matter is lost.


Land becomes degraded. CO_2 is released. Organic matter is lost.


Soil structure damaged. Soil erosion. Top soil is lost. Leaching.


Microbial life is killed. Land degraded. CO_2 is released. Health. Leaching.


The Nation


OXFAM

Soil Fertility Maps of Nigeria

Soil organic carbon is the basis of soil fertility. It releases nutrients for plant growth, promotes the structure, biological and physical health of soil, and is a buffer against harmful substances.

Chemical Sprays Kill the Microbial Life

Cancers Caused by Pesticides

- Bladder Cancer ● Bone Cancer ● Brain Cancer
- Cervical Cancer ●Mouth Cancer ● Eye Cancer
- Gallbladder Cancer ● Kidney/Renal Cancer
- Larynx Cancer ● Leukemia ● Lip Cancer
- Liver/ Hepatic Cancer ● Lung Cancer ● Lymphoma
- Melanoma ● Colorecatal Cancer ● Multiple Myeloma ● Neuroblastoma ● Oesophageal Cancer
- Ovarian Cancer ● Pancreatic Cancer
- Prostate Cancer ● Soft Tissue Sarcoma
- Stomach Cancer ● Sinonasal Cancer
- Testicular Cancer ● Thyroid Cancer
- Uteran Cancer

Do You Need to Change?

- Food security issues: Family, state, nation levels.
- Soil fertility problems: chemical agriculture.
- Agriculture is often not profitable.
- Youth migrate to the cities.
- Rural poverty.
- Water supply poisoning.
- Health problems. Unhappiness and stress caused by worry about low crop yields, income, and debts.
- Suicides.
- Western markets are changing: Organic food!
- How will you sell your chemical produce?

Organic Farming
The Effect of Organic Farming

https://www.youtube.com/watch?v=MeZo3h3OcFo

Note: The video will inspire the farmers to practise 100% organic farming with Bio-Plant and Pro-Plant.

Section 1

The Nature and Benefits of Bio-Plant and Pro-Plant.


Bio-Plant
Pro-Plant
ไบโอ-แพลนท์ 99
BIO-PLANT
สูตรดิน
โปร-แพลนท์ 99
PRO-PLANT
สูตรใบ

What is Bio-Plant?

- It is a microbial, liquid bio-fertiliser for the soil. “Bio” means it is alive. It is alive because it is full of alive micro-organisms.
- It is made with sugarcane molasses using bio-technology.
- It is chemical-free and toxin-free. You do not need a mask or gloves to use it.
- It is very concentrated with micro-organisms; the micro-organisms multiply very rapidly; and it restores the fertility of the soil. It turns organic matter into a “factory”, which multiplies micro-organisms extremely rapidly.
- It makes wonderfully rich compost.

What is Bio-Plant?

- It provides the plants with an abundance of soil nutrients through microbial action.
- There are micro-organisms, which produce and make available for the plants:
  * Nitrogen * Phosphorus * Potassium * Trace Nutrients
  * The 80% of NPK lost in the soil in chemical agriculture.
- It strengthens the plant's immune system, and enables farmers to stop using chemical sprays.
- Certain micro-organisms clean toxins in the soil, e.g. from gold mining and oil pollution; and also clean waste water.

What is Bio-Plant?

- Bio-Plant contains micro-organisms, which:
  - Enhance the efficiency of the Carbon and Nitrogen cycles.
  - Act as a bio-fungicide through microbial action.
  - Degrade organic matter.
  - Fertilise the soil.
  - Restore the structure of soil and it becomes crumbly and looser; and the natural smell returns.
  - Increase the uptake of minerals (immune system, yield, etc.)
  - Produce enzymes and other organic compounds, which plants need to grow well and healthily.
  - Carry out bio-remediation: degrade pollutants, poisons, and toxins and remove them by turning them into useful or harmless forms.

“A nation that destroys its soil, destroys itself.” Franklin D. Roosevelt

Healthy Soil is the Key to Food Security and to Feeding the Population

Soil Degraded by Chemical Agriculture

What is Pro-Plant?

- It is a liquid bio-fertiliser, which provides 50+ nutrients by foliar-spraying the leaves, buds, flowers, and fruit.
- The nutrients are available immediately.
- It is made from fresh fish using bio-technology techniques.
- It is chemical-free and toxin-free. You do not need a mask or gloves to use it.
- It strengthens the plant's immune system; and coats the leaves with micro-organisms, which protect the plant against fungal attacks.
- Pro-Plant increases the quality of produce.
- Bio-Plant and Pro-Plant together will enable Nigeria to become known for 100% organic food production.

100% Organic Farming Rice Field Test in Taraba State – Pro-Plant Used Only

- In this field test on rice, the farmers did not prepare the soil with Bio-Plant and organic matter, and only sprayed Pro-Plant on the rice.
- Nevertheless, the farmers said that their crop yield was more than they ever got with Urea and NPK.
- No empty seed shells.
- Also, their costs were very much lower because they only needed one litre of Pro-Plant per hectare.

Bio-chemical Farming Maize Field Test in Karfe Town, Suleja, Niger State, Nigeria

- The maize seeds were soaked in Bio-Plant and water for 12 hours before planting.
- The soil, which was in poor condition owing to years of chemical farming, was prepared with a bio-chemical mixture of Urea and Bio-Plant.
- Bio-Plant was mixed with NPK and this bio-chemical mixture was sprinkled around the maize plants during the crop. Pro-Plant was sprayed regularly on the maize.
- The farmers almost doubled their yield. Normally, they only produced 30-40 bags of maize per hectare, but this test produced 60 bags per hectare.
- Normally, the farmers have problems with insects during their maize crops, but this time there were no problems with insect pests at all. No chemical sprays were used.

Bio-chemical Farming Maize Field Test in Karfe Town, Suleja, Niger State, Nigeria

Benefits of 100% Organic Farming with Bio-Plant and Pro-Plant

- Higher nutritional value. The crop quality is higher. For example:
  - Larger size, fresher appearance, shiny leaves, less broken rice, etc.
  - Improved taste of the fruit and vegetables.
  - Farmers can use the seeds as mother seeds, and increase their crop quality and yield more.
- The organic produce keeps longer.
- Higher Brix value. The crops are healthier and can resist disease and pests.
- Beneficial insects return.
- There is no need to use chemical sprays.
- The produce is free of poisons, eg. carcinogens.

Benefits of 100% Organic Farming with Bio-Plant and Pro-Plant

- There is no river and water supply pollution caused by run-off of nitrates and chemicals.
- Few problems with weeds.
- The crops are much more drought-resistant.
- Lower production cost and a higher profit.
- As the soil's fertility is restored, the yield surpasses that of chemical fertilisers.
- Farmers can get a higher price for their crops because of the higher quality and because they are organic.
- There is a growing demand for organic produce.

Maize Test in Chanchaga Village, Niger State, Dry Season, 2015/2016

- Bio-Plant and Pro-Plant were tested on maize using different farmers to evaluate their impact compared to inorganic NPK fertilizer.
- Results obtained revealed that plots treated with Pro-Plant combined with Bio-Plant had significantly higher yields.
- In all the treatments where Pro-Plant was used either alone or combined with NPK or Bio-Plant, an appreciable yield increase was obtained.
- “Any treatment that involves Pro-Plant is therefore highly recommended to maize farmers.”

The Director,

Farm Input Support Services Department,

Federal Ministry of Agriculture and Rural Development.

The Adverse Effects of Chemical Agriculture

https://www.youtube.com/watch?v=WKMpmIbbwwI

Section 2

The Benefits of Bio-compost and How to Make It.

**“Compost is NOT a fertiliser.
It’s an inoculate of beneficial organisms
for your soil”**

Dr. Elaine Ingham

The Benefits of Compost

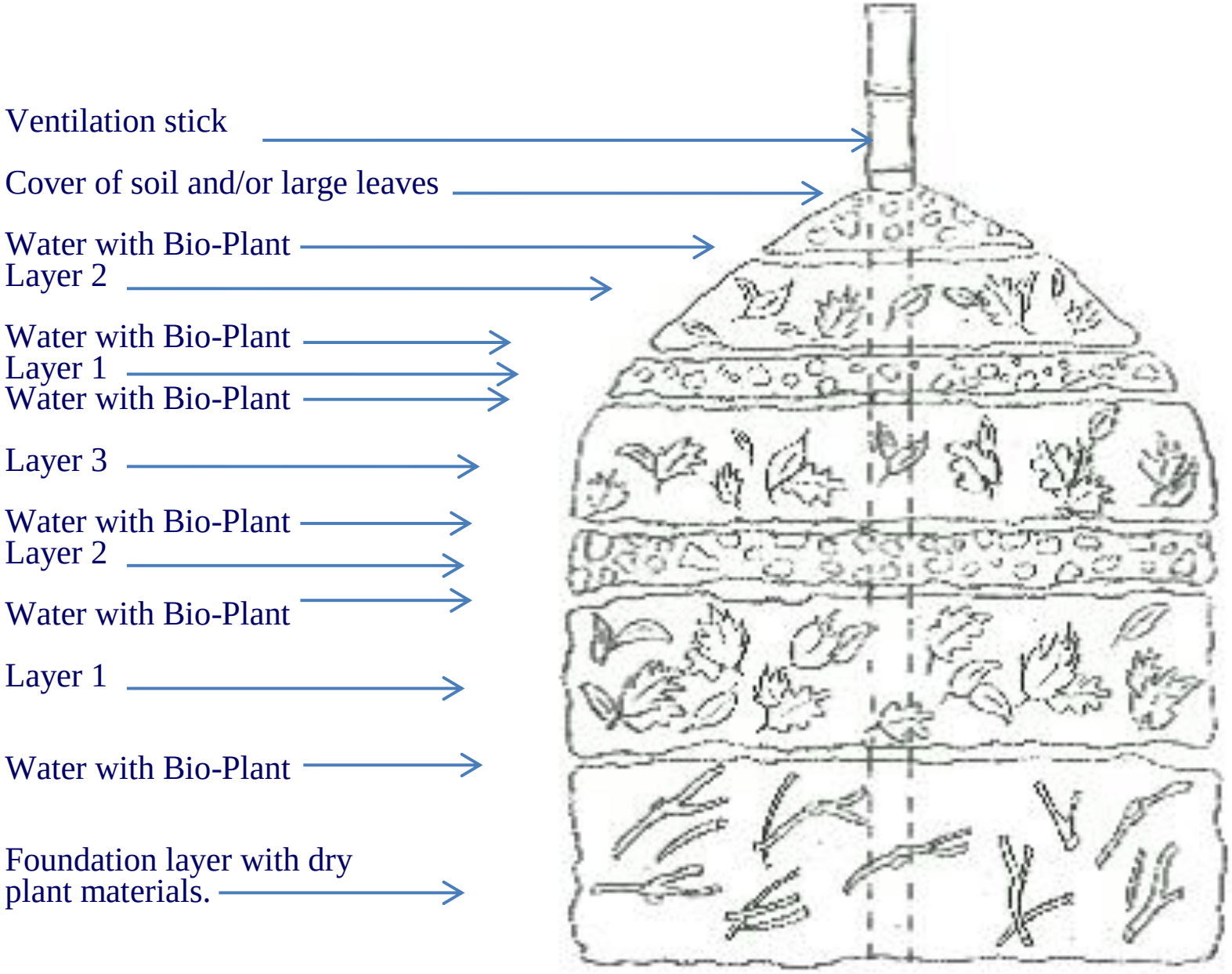
https://www.youtube.com/watch?v=PXWiOaUnXU8

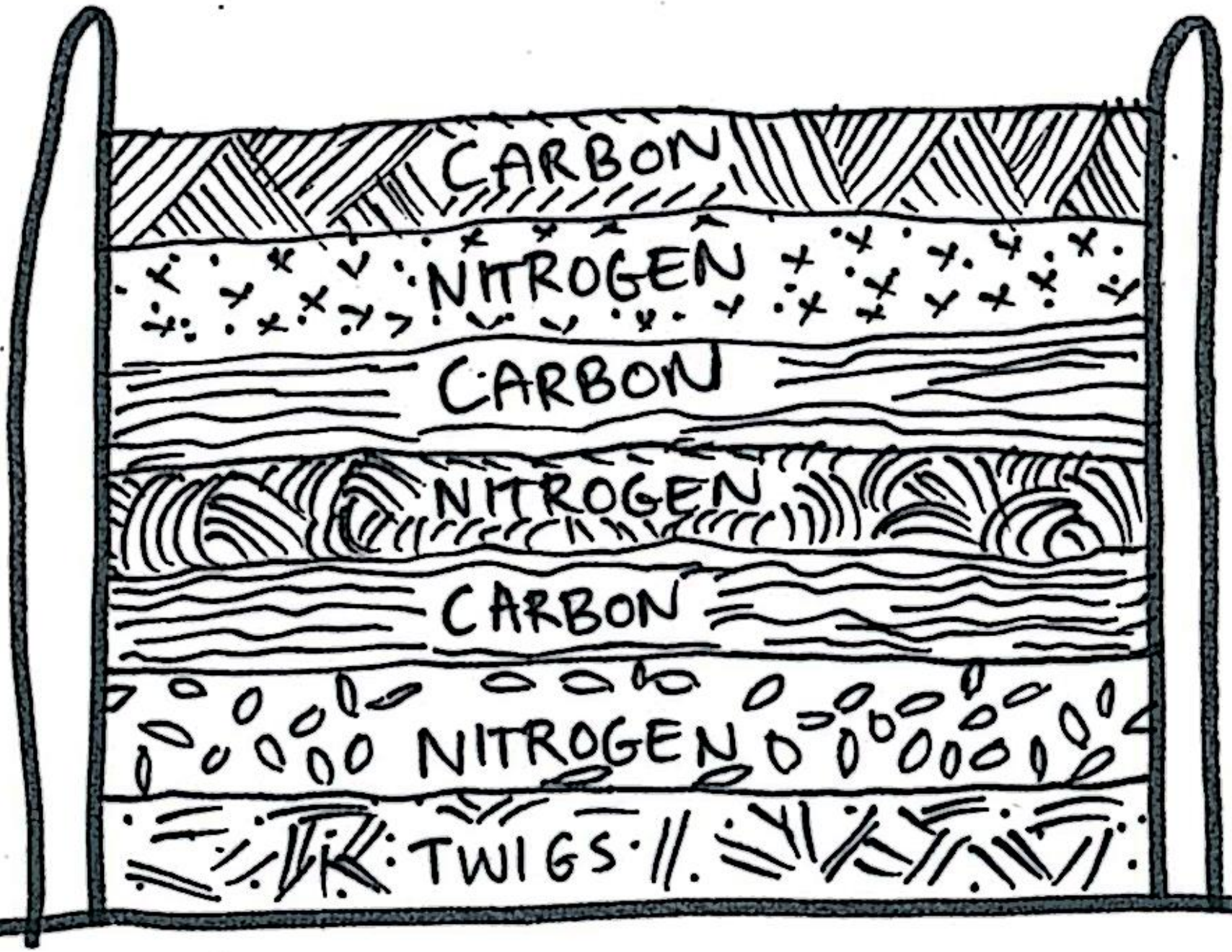
3:13


ORGANIC
fertilizers
feed the soil
and the plant
TRADITIONAL
fertilizers
feed only the plant
and damage the soil
PLANT NUTRIENTS
ORGANIC MATTER
MICRO-ORGANISMS
SOIL NUTRIENTS
PLANT NUTRIENTS

Chemical Sprays Kill the Microbial Life


Compost Made With Bio-Plant
Will Turn Your Soil Into This


Ventilation stick
Cover of soil and/or large leaves
Water with Bio-Plant
Layer 2
Water with Bio-Plant
Layer 1
Water with Bio-Plant
Layer 3
Water with Bio-Plant
Layer 2
Water with Bio-Plant
Layer 1
Water with Bio-Plant
Foundation layer with dry
plant materials.


CARBON
NITROGEN
CARBON
NITROGEN
CARBON
NITROGEN
TWIGS

Turning Over the Compost Pile

BEFORE

AFTER

Section 3

Soil Preparation With Organic Matter and Bio-Compost

Method 1
Preparing the Soil with Uncomposted Organic Matter

Ploughing Crop Stubble into the Soil

Disadvantages of Cultivation

1. Disturbs the natural **structure** built up by organisms such as earthworms.
2. Can damage the soil structure if done when soil conditions are not suitable, or by using heavy machinery.
3. Dormant seeds may be brought to the surface where they will germinate.
4. Leaving a bare surface may cause erosion or the leaching of nutrients.
5. Moisture may be lost from the soil.
6. Hard work!

Create Rows of Organic Matter and Mix in Bio-Plant in Water.

Cover the Field with the Treated Organic Matter and Plough It into the Soil

Plant Between the Stubble

- No-till and reduced-tillage farming leaves old crop residue on the ground instead of plowing it into soil. This covers the soil, keeping it in place.
  - *Here, corn grows up out of a "cover crop."*

In the 1950s and 60s, university researchers showed that leaving stubble from the last harvest on the field and planting crops like corn through the stubble protected moisture and produced better yields.

Planting Between the Stubble and Crop Residue

The Crop Has Been Planted Between the Stubble

Place Organic Matter in the Planting Holes / Ditches and Spray Bio-Plant on It

Fill Planting-Trenches with Organic Matter Sprayed With Bio-Plant

How to Destroy the Microbial Life of the Soil

Method 2

Preparing the Soil with Bio-Compost

Fill the Trenches with Compost Before Planting

Tomato Plant Holes Filled with Compost Before Planting

Section 4

The Benefits of Planting Cover Crops

Cover Crops

https://www.youtube.com/watch?v=56-H7oRI5Dk

Section 5

Seed Preparation

How to Prepare Rice Seeds

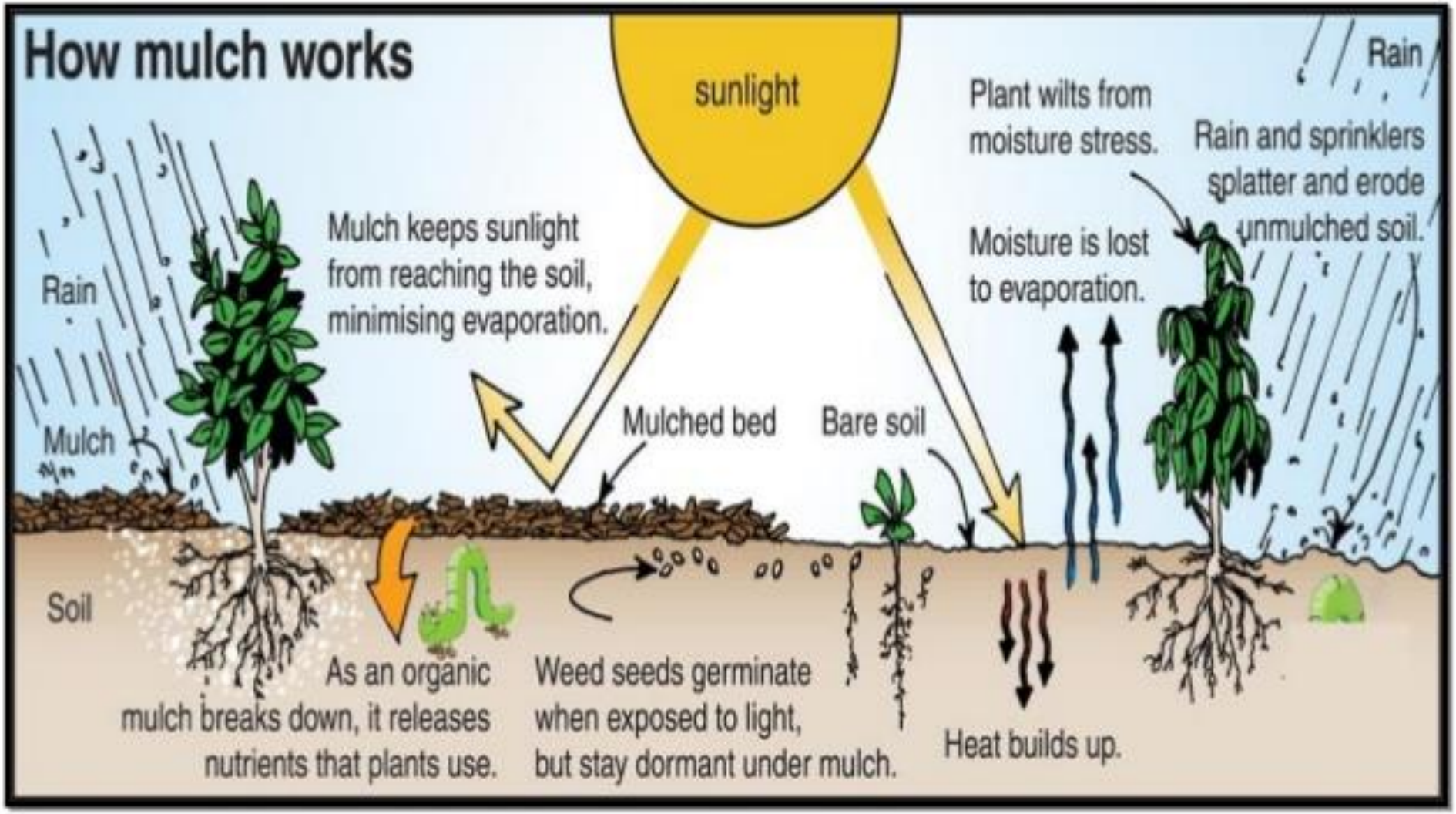
Rice - Principles of SRI Part 1

https://www.youtube.com/watch?v=sF5wBOpgV24

Section 6

Mulching the Soil

Working of Mulch



Mulching
The Magic of Mulch

https://www.youtube.com/watch?v=dUVpRfRlkIg&list=PLefsPOoRytGwgMS2i_Yym7RC4NaJNIqmO&index=46

Section 7

How to Apply Pro-Plant

When to Spray Pro-Plant

Foliar Feeding and Fertilizing your Plants - Benefits and the Science

https://www.youtube.com/watch?v=wHyflvaVuIM&t=443s

5:26 – 7:17

Foliar Spraying - Bell Pepper 9000x speed time lapse

https://www.youtube.com/watch?v=LAVX1fit1Z0

Note: The main point to learn here is the importance of good soil, and of spraying Pro-Plant on the leaves, buds, flowers, and vegetables as they grow.

Section 8

Weeding the Soil

Weeding a Rice Field

https://www.youtube.com/watch?v=3eIjssE2Sk4

Mechanical Rice Field Weeder

Motorised Rice Field Weeder

BSM

BEST MACHINERY

HENAN BEST MACHINERY CO.,LTD

Value For You

BSM

Motorised Rice Field Weeders

A Rice Field Full of Weeds

Weeding a Maize Field

https://www.youtube.com/watch?v=NLBFteTtdvM

The Main Points

- There is no need to use herbicides.
- Herbicides will kill the soil's microbial life.
- There are hand-pushed weeders and the motorized weeders. Choose whichever fits your budget.
- Weeding could add 1-2 MT of yield to a rice crop.

Section 9

How to Grow Various Crops with the Bio-fertilisers.

Using the Bio-fertilizers for Growing Rice

Typical Effects on Rice

- Unlike chemical rice, which is tall and has many green leaves, organic rice grown with the bio-fertilizers is yellowish-green, shorter, and has fewer leaves.
- The stems are stronger, so the rice plants do not lean over like chemical rice.
- If you pull up a rice plant, you will see about 20% more roots than on a chemical rice plant.
- The roots are stronger and longer.
- The rice heads contain much more grain.
- The rice seeds do not tend to fall off during harvesting.
- The soil is softer and more fertile, and has a lot of worms and insect life.

Typical Effects on Rice

- Bigger rice yields.
- There is no problem with the usual rice diseases because the micro-organisms develop in the rice plants a strong immune system.
- The quality of the rice is such that the seed becomes in demand as mother seeds.
- The taste of the rice is sweeter and more flavoursome.

Using the Bio-fertilizers for Growing Maize

Conservation Agriculture – Islands of Hope

https://www.youtube.com/watch?v=IEf-5WUHoyo

Note: Conservation agriculture methods can be used to increase crop yields of all crops. Perhaps the farmers would like to apply some of the techniques.

A Maize Field Full of Weeds

Maize Intercropped with Squash

The Benefits of Intercropping with Maize

PUMPKIN/ SQUASH: A living mulch that shades soil, helps retain moisture and inhibits weeds

CORN

CORN: Living support trellis & protective shady 'umbrella'

CORN: Provides sugars to feed nitrogen-fixing bacteria on bean roots

PUMPKIN/SQUASH

BEANS: Bacteria converts nitrogen in soil to boost growth

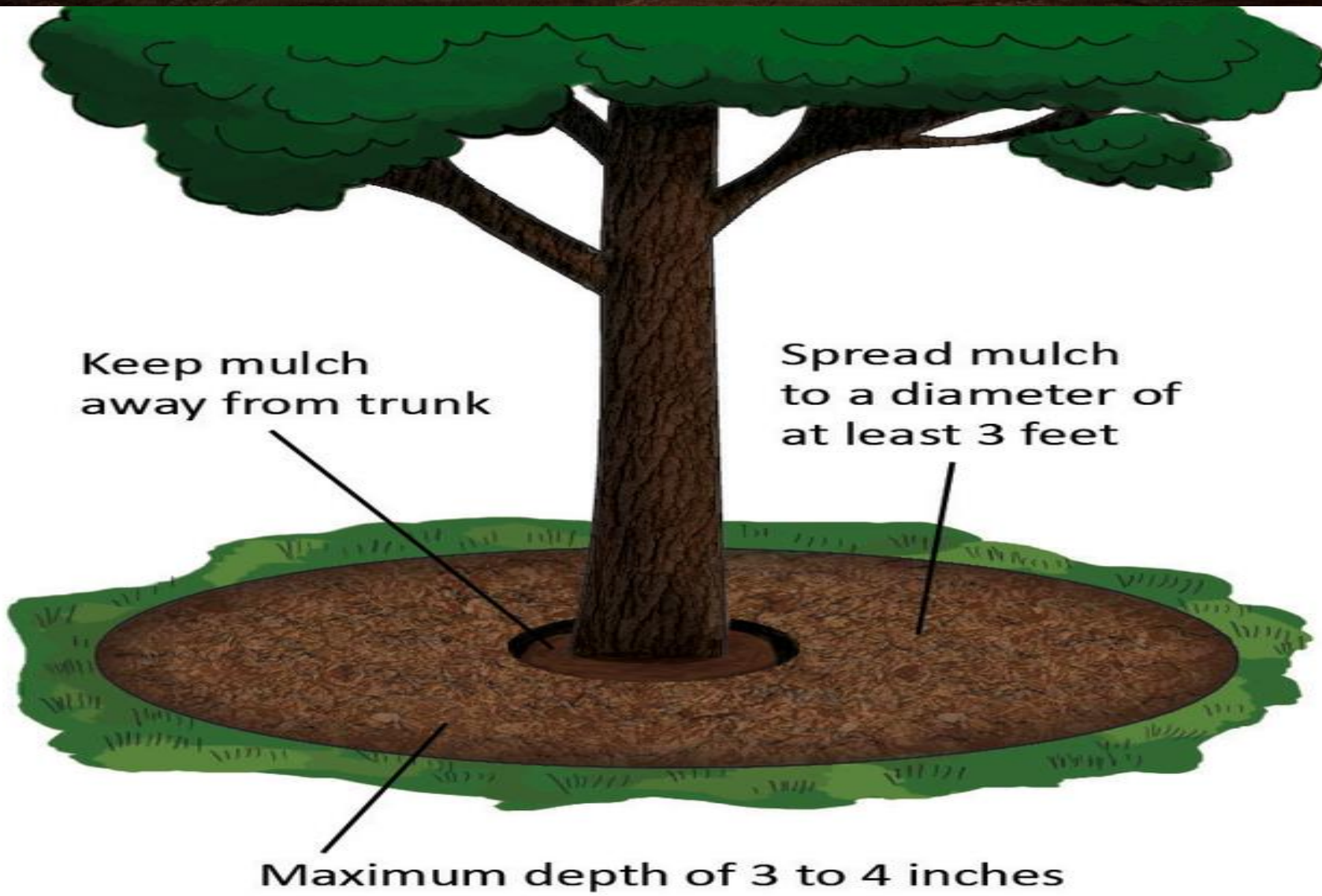
BEANS

Using the Bio-fertilizers for Growing Fruit Trees

Typical Effect on Fruit

- Fruit trees produce more fruit, the fruit is larger, crispier, tastier, sweeter, and the Vitamin C level is higher by about 20%.
- The taste of chemical fruit pales in comparison.
- Mangoes grow large and become very sweet.
- Excellent for 100% organic fruit exports.

Where to Spread Compost and Mulch



Mulch Around Fruit Trees

Mulching with Wood Chips

The General Effects of Using the Bio-fertilizers With Some Crops

Typical Effects on Pineapple

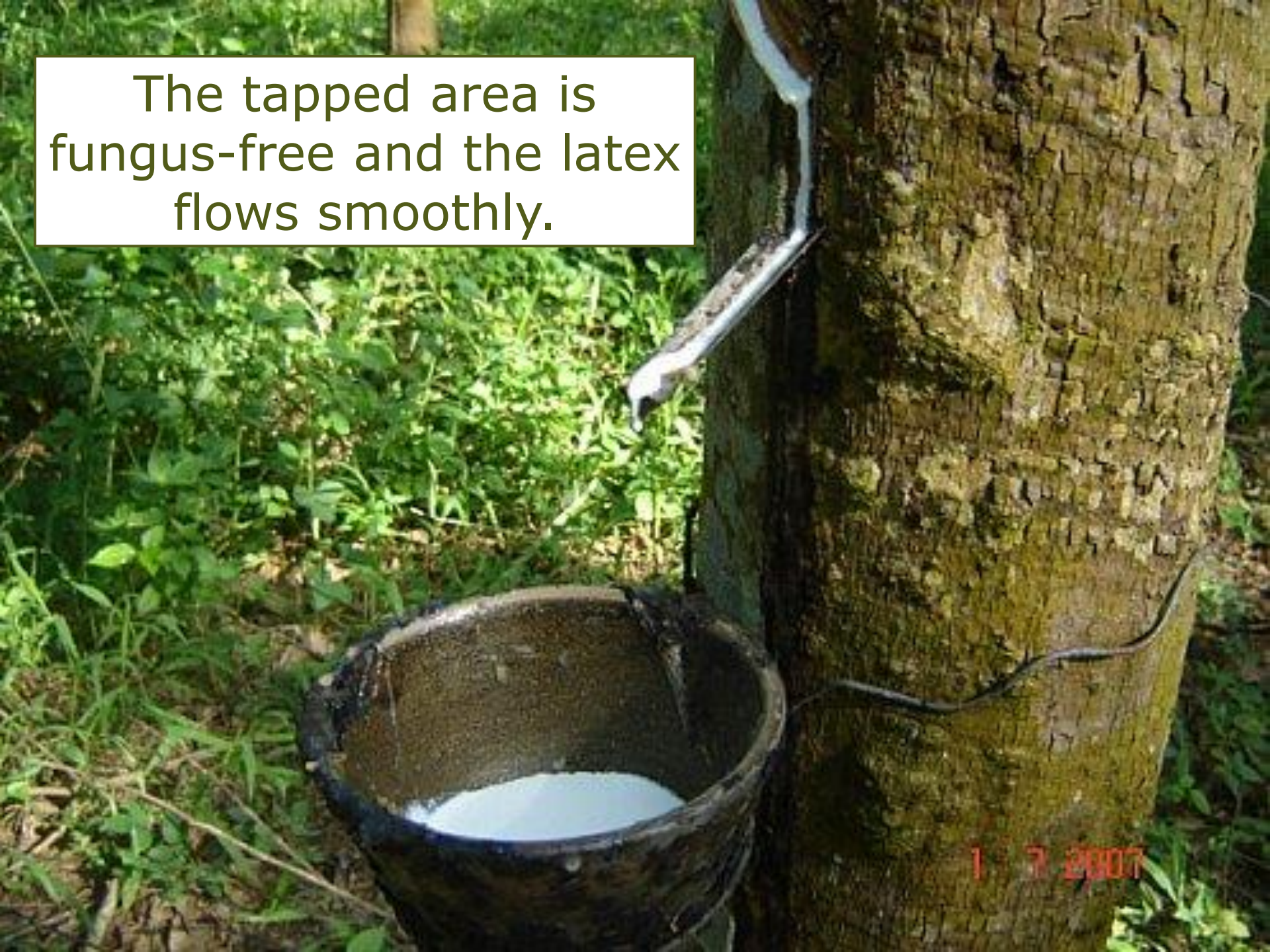
- The fruit is much sweeter than pineapple grown with chemical fertilizer. About 35% sweeter.
- The pineapples are heavier.
- The pineapples look fresher and more attractive to eat.
- There are more suckers and slips so that more pineapple plants can be planted and grown.
- There are more roots and the roots are longer.
- The problems with disease disappear.
- The pineapples keep longer after harvest.

100% Organic Farming Cucumber Field Test in Akwai, Ibom State

- The soil, which was in poor condition before the test, was prepared with Bio-Plant mixed with organic matter.
- The seeds were soaked in Bio-Plant and water.
- Pro-Plant was sprayed regularly on the plants. No chemical sprays were used.
- The farmers said that the cucumbers were larger than those grown with chemicals; they tasted better; they looked fresher; and the quality was better.

Typical Effects on Rubber Trees

- In Vietnam almost all rubber plantations use Bio-Plant and Pro-Plant now, and produce 100% organic latex for export.
- The trees produce more latex than when chemicals were used in the past. Much lower costs.
- The latex is softer and flows easier.
- The growth of young trees is usually 20% - 25% faster than normal, and the saplings can be transplanted a month earlier than normal.
- Bio-Plant stops the growth of fungus when brushed onto the trees.


The tapped area is fungus-free and the latex flows smoothly.

Typical Effect on Tea Bushes

- The following benefits are common in tea plantations in Thailand and Vietnam:
  - The yield is 20%-30% higher.
  - The leaves look fresher and shine more.
  - The tea bushes have more leaves and branches.
  - The quality and fertility of the soil is superior.
  - The quality of the tea is higher.
  - The tea has a more pleasant scent.
  - The tea has less tannin.
  - The Vitamin C level is higher.
  - Fungicides and insecticides are no longer needed.

Effect on Tea Bushes

- OCIRTHE, the main tea association in Rwanda carried out tea plantation tests in 2010 with very positive physical and quantitative results.
- The tea leaf colour in the test areas changed from a dark green shade to a lighter green with a distinct shine visible. The leaves were softer and looked fresher.
- This change highlighted improvement in the health of the tea plants and a reduction in the tannin content.
- There was a noticeable increase in the size of the tea leaves as well as evidence of more leaves per tea bush. This change co-relates to the effective increase in yield.

Bio-fertilizer Tea Growing in North Thailand

Effect on Chillis

- Chillis are longer and heavier than chemical chillis, usually by 20% - 30% while the production costs are much lower both in bio-chemical farming and 100% organic farming.
- Like with all crops produced with the bio-fertilizers, the chillis keep fresh much longer – usually 1-2 weeks.

Effect on Coffee Trees

- There are many farmers in North Thailand growing coffee with the bio-fertilizers in a 100% organic manner.
- The organic coffee has more aroma, a better flavour, more body, and a fresher after-taste.
- The yield is especially good when the trees are grown from the sapling stage with Bio-Plant and Pro-Plant. Almost all the berries turn dark at the same time.

Effect on Tobacco

- In organic farming tests on tobacco in South China the yield increased about 30% compared to chemical tobacco.
- The tobacco leaves became larger, longer, and fresher-looking.

Section 10

How to Use the Bio-fertilisers in Bio-chemical Farming

Using the Bio-fertilizers for Bio-chemical Farming

- When farmers mix 330 cc of Bio-Plant with each 50 kgs bag of chemical fertilizer in bio-chemical farming they can halve the amount of chemical fertilizer they use.
  - Each 50 bag can be used over twice the area.
  - Usually, their costs drop by about 45%.
- If they also spray Pro-Plant on the leaves (500 cc per hectare) the yield will rise 25%+.
- If the farmers soak the seeds in Bio-Plant and Pro-Plant as well, they will add 5% to the yield.

Using the Bio-fertilizers for Bio-chemical Farming

- If the farmers prepare the soil with Bio-Plant mixed with organic matter (1 litre with 5 MT of organic matter – ideally 40+% should be chicken dung and cow dung), the yield will increase further.
- The yield will increase each season with the input of micro-organisms in Bio-Plant.
  - Big yield increases of 50%, such as in Thailand with rice and maize, come when the soil is also prepared with Bio-Plant.
- The main advantage with bio-chemical farming is that farmers can almost halve their costs and still increase their crop yield.

Bio-chemical Farming Maize Field Test in Karfe Town, Suleja, Niger State, Nigeria

- The maize seeds were soaked in Bio-Plant and water for 12 hours before planting.
- The soil, which was in poor condition owing to years of chemical farming, was prepared with a bio-chemical mixture of Urea and Bio-Plant.
- Bio-Plant was mixed with NPK and this bio-chemical mixture was sprinkled around the maize plants during the crop. Pro-Plant was sprayed regularly on the maize.
- Normally, the farmers has problems with insects during their maize crops, but this time there were no problems with insect pests at all. No chemical sprays were used.
- The farmers almost doubled their yield. Normally, they only produced 30-40 bags of maize per hectare, but this test produced 60 bags per hectare.

Bio-chemical Farming Maize Field Test in Karfe Town, Suleja, Niger State, Nigeria

Bio-chemical Farming Rice Dry Season Field Test in Jamaare, Bauchi State

- The rice seeds were soaked in Bio-Plant and water for 18 hours before planting.
- The soil was in poor condition. It was prepared with a bio-chemical mixture of Urea and Bio-Plant.
- Bio-Plant was mixed with NPK.
- Pro-Plant was sprayed regularly on the rice plants during the crop.
- No chemical sprays used.
- The farmers normally only produced 50 bags of rice per hectare, but this test produced 80 bags per hectare, which is a 60% increase.

Gombe State, Nigeria
Bio-chemical Maize Field Test

- The yield increased 2X and 3X above the chemical Control areas.
- Pro-Plant also had an insecticidal effect on weevils, grasshoppers, and even aphids, which impressed the farmers in the area.


Chemical Maize
Bio-chemical Maize with Bio-Plant, and Pro-Plant sprayed on the leaves.


A Mature Cob in Plot I With the Stem and
Leaves Still Green

Bio-chemical Rice Field Test Yield Results

Location	Treatment	Yield/Plot (Kg)	Yield/Hectare (Kg)
Pokata	T1	750	3,000
	T2	325	1,300
Posulte	T1	500	2,000
	T2	350	1,400

Group Photograph of the Farmers After Observing the Very Good Results

Section 11

The Credit Fund for State Governments

The Credit Terms

- We can provide the bio-fertilizers on credit for 12 months for purchases of US$20+ million. 0% interest.
- A 30% deposit would be paid when the contract starts. The remaining 70% would be paid at the end of each 12-month period.
- A contract can be for 5 years. The price will not change for the duration of the 5-year contract.
- Payment will be by a Standby Letter of Credit guaranteed by an international bank. This is a rule of Thai banks.

Benefits

- It will ensure an adequate and continuous supply of healthy, 100% organic, chemical-free fertilizer for all farmers.
- All farmers will be able to receive on credit the bio-fertilizers for their crops, and pay back after selling their crops.
- The bio-fertilizers will increase the quality and yield of crops significantly above what chemicals can achieve, and for a lower cost. The nutritional content of food will be higher.
- Farmers not using any fertilizer will be able to restore the soil's fertility and increase the yield and quality of their crops.
- There will be a significant impact on the happiness, stress levels, health, and wellbeing of the population.

Benefits

- The bio-fertilizers will restore the microbial life and fertility of the soil. This will enhance the yields and quality of all crops.
- The Credit Fund will provide the means to increase the area of arable land used for crops, to diversify crops, to make agriculture sustainable, and to help to ensure the state's food security.
- The money saved on subsidizing chemical fertilizers and sprays can be used to develop rural infrastructure, irrigation, farming community and rural development projects, and strong, prosperous farming communities.

Benefits

- Agriculture-related industries can be developed:
  - The horticulture industry will benefit tremendously. The bio-fertilizers have a noticeable effect on the scent, quality, size, and freshness of flowers, which will also keep longer.
  - Jatropha can be grown for biofuels and animal feed.
  - 100% organic cocoa and organic latex for exporting.
- The state can become an exporter of 100% organic food.
- Bio-Plant can be used to turn waste into fertilizer as well as to treat waste water.

Section 12

Final Thoughts

Benefits for Wealth and Food Security

- The bio-fertilisers will enable the farmers to transform their agricultural practices and to increase their wealth by restoring the fertility of their soil, by increasing their crop yields, and by producing higher quality, organic produce.
- Food security issues can be solved in this way.

Economic Benefits

- Nigeria can become a major producer and exporter of 100% organic produce.
- Benefits:
  - Farmers will benefit by getting higher prices.
  - Economic development for each state, which will become major producers of 100% organic produce.
  - This will create new jobs and food industries.
  - Nigeria will be able to adapt to the changes in consumer demand in Western markets.

Job Creation

- Job creation from new exports, eg. 100% organic tea, coffee, cocoa, flowers, vegetables, herbs, fruit.
- The greenhouse business will boom.
- Jobs in the tourism and spa industries.
- Jobs in the cosmetics industry.
- Entrepreneur opportunities: health food shops, health drinks, gifts of organic products, …
- Agriculture will be profitable.
- Youth can be encouraged to take up farming.
- Women will be trained to make and sell compost.

Health Benefits

- Food will be chemical-free.
- No more water supply poisoning.
- Improved health. Decline in illness and cancers.
- Improved feeling of wellbeing.
- Less worry and stress.
- People will have hope for a brighter future.

Or ng
The Effe Farming

https://www eZo3h3OcFo

Note: The video will inspire the farmers to practise 100% organic farming with Bio-Plant and Pro-Plant.