Wellcrop Global

FARMING AS NATURE INTENDED

NATURAL 100% ORGANIC

NON TOXIC

GrowPro®

ORGANIC SOIL ENHANCER

Climate Smart Microbial Growth Formula

PRODUCT MANUAL

Contents

Welcome To Wellcrop

John Lumb, Executive Chairman

Dear Farmer,

Welcome to the Wellcrop family. I want to share with you my desire to help you become a more successful and climate smart farmer.

Through our years of research and development, it was important to me that we thoroughly test our product in all conditions and on all types of soil. I fully believe that you deserve a guarantee that the product you are buying is a genuine, healthy and non-toxic alternative to chemical fertilizers that really works.

I know that your soils are stressed due to a combination of erratic rainfall patterns causing drought conditions and the continued use of fertilizers and other chemicals.

What many people think of as 'just dirt' is an incredibly complex mixture of rock-derived minerals, plant-derived organic matter, dissolved nutrients and gases.

Over several decades, your farm may have lost about half of the topsoil that natural processes have produced over thousands of years. Topsoil should be rich in soil organic matter which is critically important. It helps soil hold onto water and nutrients and contains microbes that recycle nutrients into plant food. The loss of soil organic matter has made you increasingly reliant on fertilizers, pesticides and herbicides.

GrowPro is a non-chemical alternative - a premium natural product which is non GMO.

GrowPro adds natural microbes back to your soils to help restore soil organic matter. It enhances the microbes that are responsible for soil formation and crop growth. Our research shows that adding efficient microbes to soils can massively increase the percentage of plant carbon that is transformed into food for the crop and for the soil. A healthy, microbial inoculated soil will restore water retention, with your field taking on a sponge like quality, soaking up every drop of rain and helping to protect your crop against drought conditions should they arrive.

Having been tested for several years on farms across Zambia, GrowPro has been proven to give better yields and healthier, more pest-resilient crops. It offers you an unparalleled opportunity to combat erratic rainfall and rejuvenate your depleted soils.

The benefits of using microbial soil enhancers are massive and you, the Zambian farmer, are now at the forefront of a sustainable farming revolution.

As a company, we provide ongoing support through our network of distribution agents, agronomists and extension workers. We have a strong presence in Zambia, on the web and on social media. We are always here to help.

GrowPro takes the most beneficial microbes and applies them to your farm, restoring your soils to the fertility that your ancestors once farmed. GrowPro is 'farming as nature intended.'

A photo from one of our training days, which took place in March 2019 at AgBIT in Silver Rest, just outside Lusaka, Zambia.

Maurine Kituyi, who attended the March 2019 training day, proudly holding her packet of GrowPro after applying to her farm.

Farming As Nature Intended

BACKGROUND

WellCrop Global are a microbial technology company developing microbial crop solutions for the agricultural industry. We identify the optimal collection of microbes to produce high quality inputs and crop care products, creating sustainable farming practices, as well as helping the environment.

WellCrop Global are committed to improving the productivity and profit for farmers, providing affordable and chemical free products.

All of our products are produced under strictly controlled parameters, in collaboration with a team of highly qualified scientists.

CLIMATE SMART

Currently farmers rely on traditional chemical fertilizers which are expensive, inefficient logistically and have adverse long term effects on yields, soils and the environment. With an estimated 9 billion global population by 2050, the world needs a climate smart alternative which allows farmers to grow more and grow sustainably.

SMALLHOLDER TO CARBON FARMER

WellCrop helps farmers realise the potential of carbon sequestration in soils, the realisation of turning world soils into sinks for atmospheric CO2.

Storing the carbon contained in organic matter within the soil is one way to mitigate climate change by reducing greenhouse gas emissions (in this case carbon dioxide).

WATER PRESERVATION

Using GrowPro will increase ground water availability by up to 30%, a major tool in the fight against drought conditions. In fact the microbes will continue to multiply exponentially and remain living in both layers of soil. At the time of drought, they provide support to plants and rhizosphere with their hormones and water retention capacity.

LOGISTICS

As freight transport - whether by air, land or sea - relies heavily on fossil fuel for propulsion and is still a long way from being able to switch to cleaner energy sources, it is one of the hardest sectors to decarbonise.

We reduce the footprint for the Agricultural sector by replacing heavy, bulky inorganic additives traditionally used in both organic and inorganic agriculture with our lightweight product.

Example: 200 hectares of land would traditionally use 80 tons of inorganic fertilizer equal to 8 x 10 ton lorries. With GrowPro, 200 hectares of land requires 1,000kg, equal to just 1 light weight pick-up truck.

Tomatoes grown exclusively with GrowPro at AgBIT in Silver Rest in 2019.

Maize grown exclusively with GrowPro in Chongwe during the 2018 season. This crop survived an extensive drought.

GrowPro®

Easy to use, water soluble and lightweight, GrowPro Organic Soil Enhancer is a natural blend of microbes. It enables plants to use all of the nutrients available in the soil and air to grow crops naturally, chemical free and with greater yields.

Suitable for all crops except legumes. For legume crops, please see our separate product, GrowPro Legume.

Benefits

- ✓ **Up to 30% Yield Increase**
- ✓ **Increases Soil Health**
- ✓ **Larger and Deeper Root Systems**
- ✓ **Up to 30% Water Saving**
- ✓ **Easy To Use**
- ✓ **Climate Smart & Chemical Free**

Key Features

Biological Nitrogen Fixation
Converts atmospheric nitrogen into organic compounds, allowing the plant to take in Nitrogen as a food source, optimizing plant growth and development.

Phosphate Solubilization
Solubilizes bound phosphate in the soil and makes it available for uptake by plants. Promotes early root formation and growth, improves quality of fruits, vegetables and grains, helps plants survive in harsh weather conditions and increases water retention.

Potash Mobilization
Mobilizes the potash present in soil and makes it available for plant uptake, promoting further growth.

Mobilization and Mineralization
Mobilizes and mineralizes soil nutrients such as sulfur, magnesium and calcium into a form that is easily used by the plant.

Soil Restoration
Rejuvenates the soil and maintains its health rather than depleting the Earth's nutrients like traditional chemical fertilizers. Unlike inorganic fertilizers, our product will not wash away in heavy rains. GrowPro's microbes continue to populate, increasing and maintaining the nutrient health of the soil. Once applied to the soil, the microbial network introduced by GrowPro naturally multiplies and increases the health of the soil and plant, creating deeper and denser root systems.

What Does GrowPro Contain?

The following active microbes are present in GrowPro:

Nitrogen Fixing (the two strains support each other):

Azotobacter chroococcum spp

Free living microbes which produce three enzymes (catalase, peroxidase, and superoxide dismutase) to "neutralise" reactive oxygen species. It also forms the dark-brown, water-soluble pigment melanin at high levels of metabolism during the fixation of nitrogen, which is thought to protect the nitrogenase system from oxygen.

Azospirillum brasilense spp

Free living microbes with symbiotic manners, they have the ability to affect the growth of numerous agricultural crops worldwide through the excretion of various hormones and the bacteria's ability of nitrogen fixation. They colonize the surface of plant roots through a two step process: attachment and anchoring. A glycoprotein is used for attachment and an unidentified polysachharide is used to anchor the bacterium to the plant root hair.

Phosphate Solubilisation:

Bacillus megaterium

Secretes acid phosphatases and phytases, which are helpful to convert an insoluble form of phosphate into a soluble form that can be taken up by the roots.

Potash Mobilization:

Frateuria aurantia

These microbes are responsible for the movement of potash elements in the soil and plants for easy transportation of other nutrients, improving the health and vigor of the plant.

The following fungi are present in GrowPro:

Vesicular-arbuscular mycorrhiza

Contains spores and fragments of mycorhizal fungle filaments. They are obligate saprophytic in nature and require living hosts to survive. They penetrate in to the plant cells of roots and produce balloon like vesicles. The structure of arbuscules increase the contact surface between the hyphal and cell cytoplasm to facilitate the transfer of nutrients between them. They enhance water, phosphorus and micro-nutrient uptake as well as helping to increase beneficial micro-organisms in the rhizosphere.

They also:

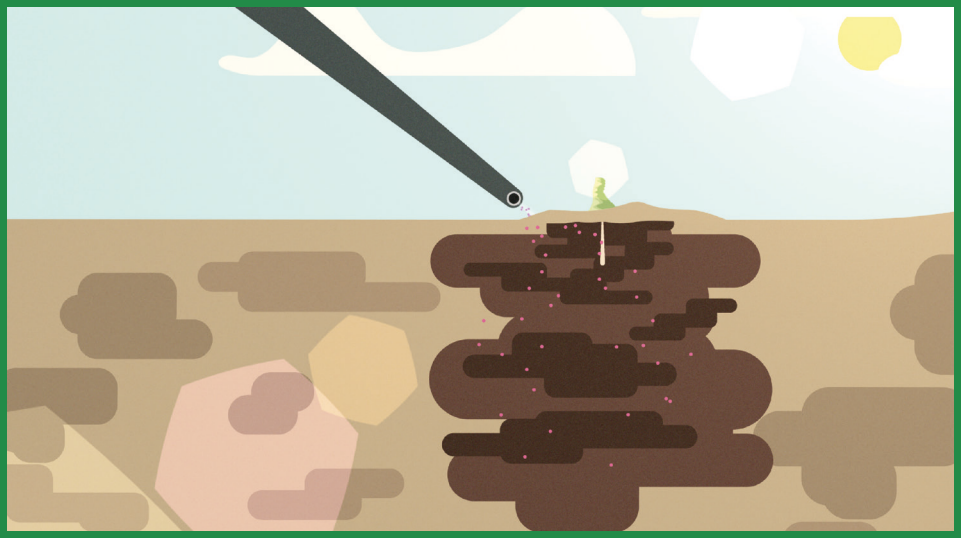
- **Improve soil structure and quality.**
- **Make feeder roots more resistant to infection by soil borne pathogens.**
- **Enhance seedling survival.**
- **Enhance tolerance to soil stresses like high salt level, heavy metal, toxicity and drought.**
- **Conserve soil moisture thereby surviving soil moisture in a water deficient time.**

How Does GrowPro Work?

1.

GrowPro Microbes are applied to the soil and begin multiplying, forming colonies around the root network.

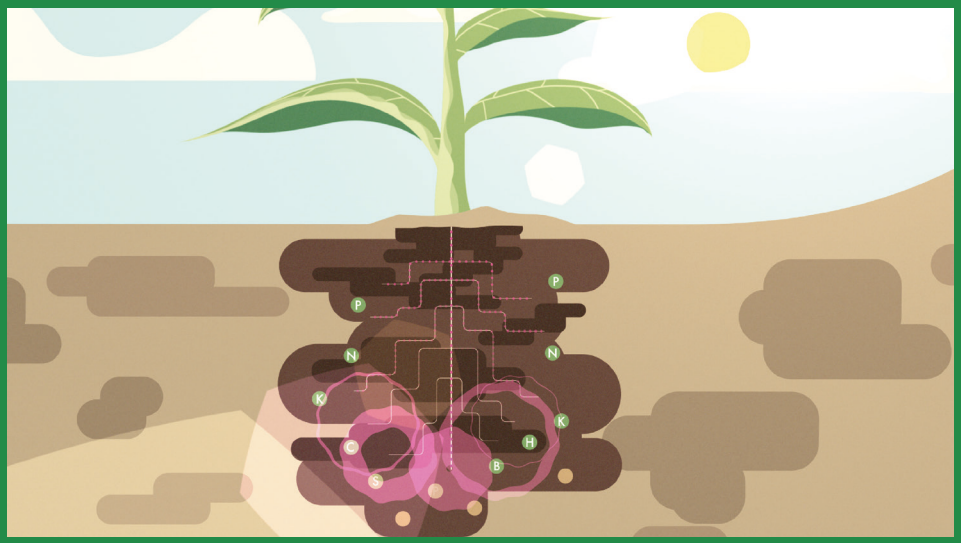
The microbes multiply in and around the roots, performing their natural functions, including the mineralization of nutrients and nitrogen fixation.



2.

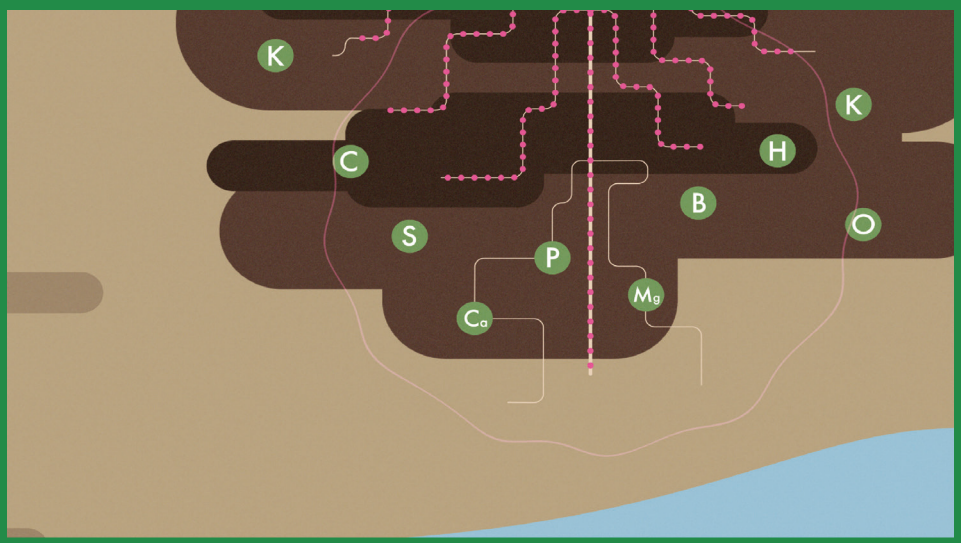
Plant roots hunt for food but the nutrients in their natural state are inaccessible as they are not in a soluble form. Our microbes convert these nutrients in to an accessible form for the plants, increasing nutrient availability in the soil and uptake to the plant.

This creates a healthier plant with a stronger, deeper and denser root system.



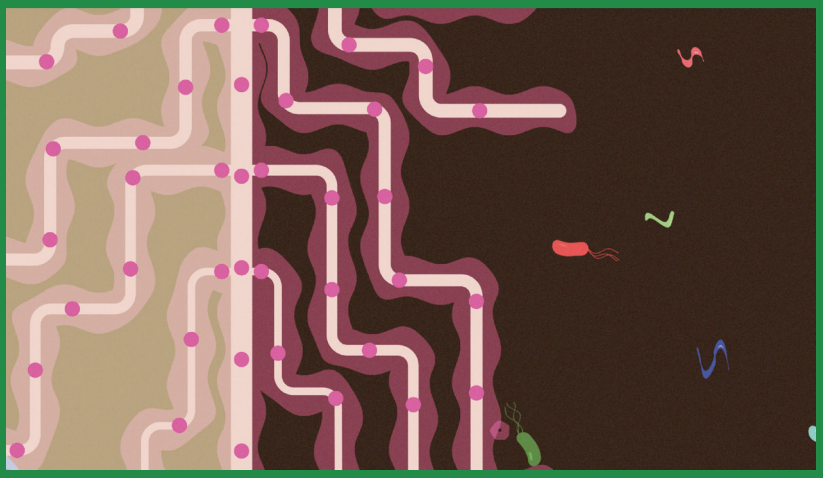
3.

Our microbes help the extended roots find moisture from much deeper underground, allowing plants to receive more water and therefore survive and grow through times of drought, accessing nature's irrigation.



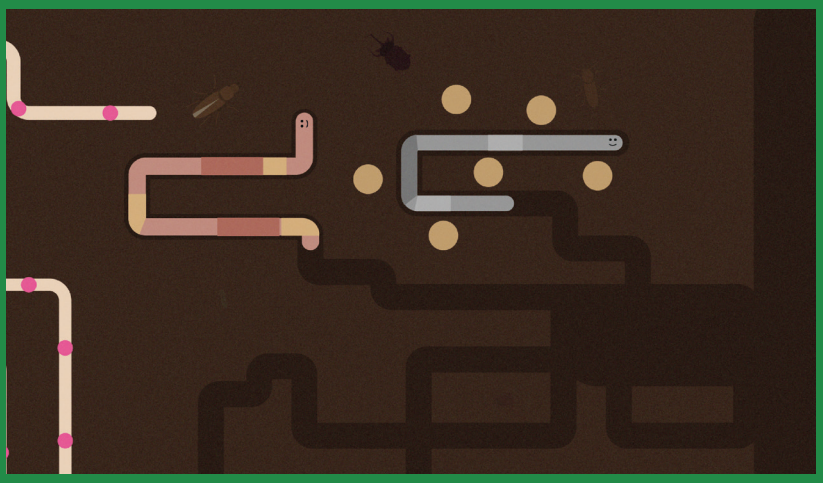
4.

Our microbial network creates a natural barrier from disease causing organisms and viruses, increasing the natural health of the plant.



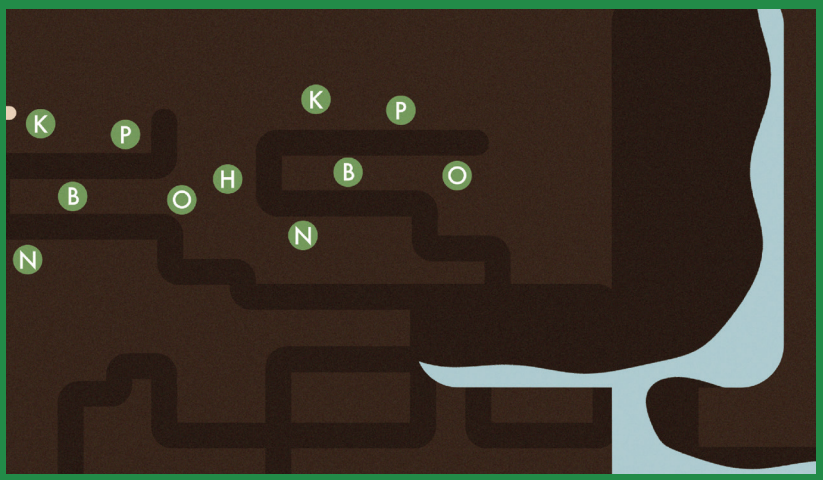
5.

The activity of the microbes creates an increase in soil organic matter, as their presence encourages beneficial insects such as earthworms to populate the soil. When the organisms and roots eventually die, they decompose and create organic matter, increasing the nutrients in the soil available to the microbes, creating the cycle of life that plants thrive on.



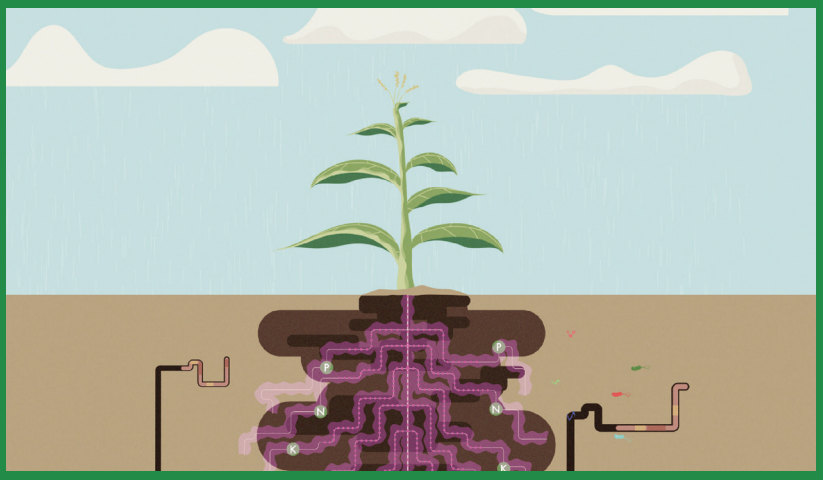
6.

This activity leads to the creation of tunnels, crevices and pathways which is beneficial for the increase in rainfall absorption within the soil.



7.

This overall increase in activity leads to a healthy soil, full of rich nutrients, soil organic matter and a microbial network which works with the plant to create a harmonious organic relationship.



GrowPro®

APPLICATION GUIDE

1.

Tear open your 1kg packet of GrowPro and pour the contents in to 40 litres of non chlorinated water. If you have chlorinated water, just make sure you leave it standing for 48 hours before diluting GrowPro in to it. This will allow time for the chlorine to disperse.

2.

Stir the mixture thoroughly for a couple of minutes until it is fully diluted. Make sure you apply to your soil directly after dilution as the water will now contain active microbes.

3.

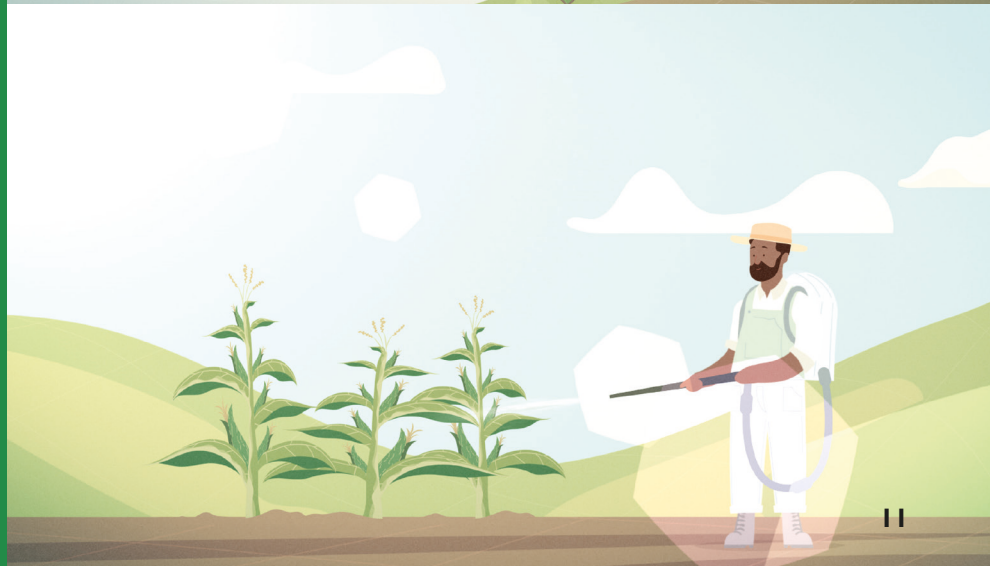
Apply to the soil before sunrise or after sunset via drip irrigation, watering can, also known as drenching, or spraying.

4.

Recommended Usage:
1 Hectare = 5kg
1 Acre = 2kg
1 Lima = 1kg

5.

When using chemical pesticides/fungicides/insecticides, ensure that you spray on to the plant but do not spray the soil as the GrowPro microbes must be kept away from direct contact with them.



Product Specifications

Weight
5kg box containing 5 x 1kg GrowPro packets.

Storage & Safety
Store in a cool and dry place at room temperature.
Keep away from direct sunlight.
Avoid skin and eye contact.
Keep away from children's reach.

Recommended Usage
1 Hectare - Apply 5kg of GrowPro per Crop Cycle.
1 Acre - Apply 2kg of Growpro per Crop Cycle.

Suitable for all crops except legumes. For legume crops, please see our separate product, GrowPro Legume.

For best results, use GrowPro at the early stage and mid stage of the crop cycle.

GrowPro can however be used on crops throughout the crop cycle, even if other products like chemical fertilizer have been applied previously. Just allow a minimum of 15 days between chemical fertilizer and GrowPro application.

When diluting GrowPro in to chlorinated water, make sure the water has been standing for 48 hours to remove traces of chlorine.

Application Tips

Dosing

When it comes to dosing GrowPro, always remember that we are not chemical so you cannot overdose GrowPro.

Recommended usage per crop cycle is as follows:
1 Hectare (10,000 square metres) = 5kg GrowPro
1 Acre (4,046.86 square metres) = 2kg GrowPro
1 Lima (2,500 square metres) = 1kg GrowPro

Watering Can

Make sure you wash your watering can thoroughly before pouring your diluted GrowPro mixture into it.

Spraying

Before each application, make sure both your sprayer and the nozzle are washed and cleaned thoroughly. You may have to unscrew the nozzle to clean it.

Timing

Make sure your first application of GrowPro is 14 days after germination.

Crop Care

When using chemical pesticides/fungicides/insecticides, ensure that you spray on to the plant but do not spray the soil as the GrowPro microbes must be kept away from direct contact with them.

Application Guide

GrowPro®

Key Information

The following are guidelines for applying GrowPro Organic Soil Enhancer on vegetables.

For best results, use GrowPro at the early stage and mid stage of the crop cycle. GrowPro can however be used on crops throughout the crop cycle, even if other products like chemical fertilizer have been applied previously. Just allow a minimum of 15 days between chemical fertilizer and GrowPro application.

When diluting GrowPro in to chlorinated water, make sure the water has been standing for 48 hours to remove traces of chlorine.

When using chemical pesticides/fungicides/insecticides, ensure that you spray on to the plant but do not spray the soil as the GrowPro microbes must be kept away from direct contact with them.

Storage & Safety

Store in a cool and dry place at room temperature.
Keep away from direct sunlight.
Avoid skin and eye contact.
Keep away from children's reach.

Recommended Usage

1 Hectare - Apply 5kg of GrowPro per Crop Cycle
1 Acre - Apply 2kg of GrowPro per Crop Cycle

Crop Type: Leafy, Stem, Fruit-Bearing Vegetables; Bulbs, Tubers; Other Root Vegetables

Crop Duration: 1-7 months

Artichokes	Eggplant	Radishes
Asparagus	Garlic	Shallots
Broccoli	Gourds	Spinach
Cabbages	Leeks	Squash
Carrots	Lettuce	Sweet Potatoes
Cassava	Okra	Tomatoes
Cauliflower	Onions	Turnips
Chicory	Potatoes	Yams
Cucumbers	Pumpkin	Other Vegetables

For Further Application Guide Information: www.wellcropglobal.com/application-guides

Application Guide

GrowPro®

The following are guidelines for applying GrowPro Organic Soil Enhancer on vegetables. Use directly after dilution as the water will now contain active microbes. Apply to the soil before sunrise or after sunset via drip irrigation, spraying, watering can or drenching.

Per Hectare	
Application Timing	**Application Rate**
14 Days After Germination (Only one application required for 1 month crop duration crops)	Dilute 2 x 1kg packets of GrowPro in to 80 litres of non chlorinated water.
28 Days After Germination	Dilute 3 x 1kg packets of GrowPro in to 120 litres of non chlorinated water.

Per Acre	
Application Timing	**Application Rate**
14 Days After Germination (Only one application required for 1 month crop duration crops)	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.
28 Days After Germination	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.

Per Lima	
Application Timing	**Application Rate**
14 Days After Germination	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.

For Further Application Guide Information: www.wellcropglobal.com/application-guides

Application Guide

GrowPro®

Key Information

The following are guidelines for applying GrowPro Organic Soil Enhancer on cereals.

For best results, use GrowPro at the early stage and mid stage of the crop cycle. GrowPro can however be used on crops throughout the crop cycle, even if other products like chemical fertilizer have been applied previously. Just allow a minimum of 15 days between chemical fertilizer and GrowPro application.

When diluting GrowPro in to chlorinated water, make sure the water has been standing for 48 hours to remove traces of chlorine.

When using chemical pesticides/fungicides/insecticides, ensure that you spray on to the plant but do not spray the soil as the GrowPro microbes must be kept away from direct contact with them.

Storage & Safety

Store in a cool and dry place at room temperature.
Keep away from direct sunlight.
Avoid skin and eye contact.
Keep away from children's reach.

Recommended Usage

1 Hectare - Apply 5kg of GrowPro per Crop Cycle
1 Acre - Apply 2kg of GrowPro per Crop Cycle

Crop Duration: 4-6 months		
Barley Maize (Corn) Millet	Oats Rice Rye	Sorghum Wheat Other Cereals

Application Guide

GrowPro®

The following are guidelines for applying GrowPro Organic Soil Enhancer on cereals. Use directly after dilution as the water will now contain active microbes. Apply to the soil before sunrise or after sunset via drip irrigation, spraying, watering can or drenching.

Per Hectare	
Application Timing	**Application Rate**
14 Days After Germination (Only one application required for 1 month crop duration crops)	Dilute 2 x 1kg packets of GrowPro in to 80 litres of non chlorinated water.
28 Days After Germination	Dilute 3 x 1kg packets of GrowPro in to 120 litres of non chlorinated water.

Per Acre	
Application Timing	**Application Rate**
14 Days After Germination (Only one application required for 1 month crop duration crops)	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.
28 Days After Germination	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.

Per Lima	
Application Timing	**Application Rate**
14 Days After Germination	Dilute 1 x 1kg packet of GrowPro in to 40 litres of non chlorinated water.

For Further Application Guide Information: www.wellcropglobal.com/application-guides

Notes

Contact Details

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