DETAILED PRODUCT INFORMATION



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CHEMICAL VS. ORGANIC FERTILIZER COMPARISON IN A NUTSHELL

We want to create more awareness about the critical state of our soils and environment due to the over-use of chemical fertilizers. It is crucial for farmers to change their mindsets and attitudes to adopt new farming practices for long-term stability, which consequently even leads to higher profitability.

We advocate slow progressive change over 3-5 years to not disrupt production too much whilst embracing new sustainable ways of investing in your soil.



Our vision is to "Invest into Africa's soil to feed the future".

We need to reduce our chemical footprint worldwide.

The problem with artificial fertilizers:

- Artificial fertilizers lose anything from 40-60% Nitrogen, 40-60% potassium, and 30% phosphate through volatilization, fixation, and leaching.
- We have been programmed to always replenish NPK in the soil with chemical fertilizers.
- We have been taught that to achieve 12t/ha on maize, it means we have to replace the exact amount of NPK we took out of the soil. If you have healthy soil this is not the case, the soil and microbes will do it for you.

The problem with MOP:

- MOP is not allowed to be used in Organic farming for good reasons. MOP (KCL, Potassium Chloride) is a source of potassium. Another source of potassium is the Sulphate of Potash, SOP. MOP, however, has a much higher concentration of chlorides/salts (45 times the amount compared to SOP), but because it is far cheaper than SOP, most blenders use this in their fertilizers to be more competitive.
- This means that you are adding more salt to already high levels of salt for the sake of cheap fertilizer. This will ultimately lead to long-term soil degradation and declining yields.



The key to healthy soil:

As a farmer would tell you, healthy soil will consistently produce more yield than poor soil. To try and increase the production from poor soil to match that of healthy soil, requires a large amount of fertilizer which is expensive.

For every 1% increase in organic matter per hectare:

- 22-29 Kg of Nitrogen is available every year
- 5-7 Kg of Phosphate is available every year
- 2-3 Kg of Sulphur is available every year
- 234 000 Liters of available water

This means less irrigation costs which adds to profit to the end product.

Advantages of using our Pure Organic Fertilizer:

- The nutrient supply is more balanced, which helps to keep plants healthy.
- The soil's biological activity is enhanced, which improves nutrient mobilization from organic and chemical sources and the decomposition of toxic substances.
- Colonization of mycorrhizae is enhanced, which improves P supply.
- Root growth is enhanced due to better soil structure.
- Organic matter content of the soil is increased, therefore improving the exchange capacity of nutrients, increasing soil water retention, promoting soil aggregates, and buffering the soil against acidity, alkalinity, salinity, pesticides, and toxic heavy metals.
- Nutrients are released slowly and contribute to the residual pool of organic N and P in the soil, reducing N leaching loss and P fixation, they can also supply micronutrients.
- Food is supplied that encourages the growth of beneficial microorganisms and earthworms.
- Certain plant diseases, soil-borne diseases, and parasites are suppressed.



Organic Bio-Fertilizer:

- A bio-fertilizer is defined as a substance that contains living microorganisms that, when applied to seed, plant surfaces, or soil, colonizes the rhizosphere and promotes growth by increasing the supply or availability of primary nutrients to the host plant.
- Since a bio-fertilizer is technically living, it can symbiotically associate with plant roots. Involved microorganisms could readily and safely convert complex organic material into simple compounds, so that plants can assimilate those nutrients easily.



- Microorganisms produce a symbiotic function to cause improvements to the fertility of the soil.
- It is more cost-effective relative to chemical fertilizers.
- It also provides protection against drought and some soil-borne diseases.
- It increases crop yield by 20-30% by replacing chemical nitrogen and phosphorus by 25% and thus stimulating plant growth without altering the physical and chemical characteristics of the soil.

We have many customer testimonials and results we can provide to back up our product results.



TECHNICAL DATA SHEET

Pure Organic Granules

Average Analysis OFMB	% On Total Product
Dry Matter	96.5
Nitrogen Total	1.3
Phosphate (P205)	2.2
Potassium (K20)	1.5
Magnesium (Mg)	0.4
Sulphur (S)	2.0
Calcium (Ca)	2.2
рН	6.0
C/N Ratio	14.4



Other Elements	mg/kg	
Baron	13	
Manganese (Mn)	228	
Fulvic Acid	4.9% m/m	
Humic Acid	1.5% m/m	
Heavy Metals	mg/kg	Maximum Allowed
Arsenic (As)	<0.5	15
Cadium (Cd)	0.72	20
Chromium (Cr)	32.4	1750
Copper (Cu)	97.5	750
Mercury (Hg)	<0.5	10
Lead (pb)	5.3	400
Nickle (Ni)	8.5	200
Selenium (Se)	<0.5	15
Zinc (Z)	190	2750

Characteristics	Size	Colour	Odor	Bulk Density (kg/M3)
Granules	3-5 mm	Black	Zero	1000
Granules (Large	6-8 mm	Black	Zero	800
Granules (Micro)	<1 mm	Black	Zero	1300
Pellets	8 mm	Black	Zero	750







Product is made from primarily cattle manure and includes gypsum, lime, organic carbon, and other natural organic additives.

Free from all hormones, pathogens and weeds.

High Organic matter content.

No smell.

Registered in RSA, Botswana, Zimbabwe, Zambia and DRC.

Application

Can be applied by air and mechanical planters, spreaders or by hand.

Commercial use:

Can be applied at planting as a basal as with standard fertilizer.

Suitable for all agricultural crops:

Including citrus, macadamias, horticulture, root crops, grain crops, legumes etc.

Ecocert certificate in order.

Product suitable for use in Organic Argiculture conforming to the annexes of the (EC) regulation no. 832/2077

CHEMICAL COMPOSITION

Pure Organic Fertilizer Granules (2-5 mm)





GENERAL DIRECTIONS FOR USE

Pure Organic Fertilizer Granules (2-5 mm)



Inspected by ECOCERT SA F-32600

Product suitable for use in Organic Agriculture conforming to the annexes of the (EC) regulation^{on} 834/2007 and 889/2008 and of NOP Regulation

APPLICATION

CROP	BASAL (per Ha)	TOP DRESSING (per Ha)	TIPS FOR A SUCCESSFUL CROP
BEANS	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 150-200 Kg		Optimum Temperature 18-24 °C. Water requirements 400-500 mm per crop. pH 5.8 to 6.5 fertile sandy loam soils. Plant populations 115,000-177,000.
CITRUS-	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 500 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 700kg	Optimum Temperature 3-40 °C. Water requirements 800-1200 mm per year. pH 6.0 to 6.5, 10-40% clay. Plant populations 250.
MAIZE	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 350-400 Kg 350-400 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 200-300 Kg	Match fertilizer rates to target yield. Time nitrogen applications for greatest response. Adjust plant density to nutrient and water availability 450-600 mm rainfall.
Sorgehum	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 200-300 kg	ORGANIC TOP DRESSING Apply when plants are 30 0 30% 0 33% ORGANIC CONTENT 100 Kg	Plant the right hybrid. Use a pre-emerge herbicide. Use enough fertilizer. Seed it correctly. 300-750 mm.
SUNFLOWER	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 100% ORGANIC CONTENT 150-200 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 23-28 °C. Water requirements 500-1000 mm per crop. pH 6.0 to 7.5 fertile sandy loam soils. Plant populations 25,000-30,000.
SWEET-REED	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 150-200 Kg 150-200 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization Split N and apply at 4 weeks and 8 weeks. 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 20-35 °C Water requirements 1100-1500 mm per crop. pH 6.0 to 7.7 fertile soil.
CROP	BASAL (per Ha)	TOP DRESSING (per Ha)	TIPS FOR A SUCCESSFUL CROP
POTATOES	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 1000-1500 Kg 1000-1500 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Bchhanced Utilization 33% ORGANIC CONTENT 200-300 Kg	Optimum Temperature 18-20 °C. Water requirements 600-750 mm per crop. pH 5.5 to 6.8 well aerated soils Plant population 62,000.
RAPE	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 200-300 Kg	Optimum Temperature 18-20 °C. Water requirements 380-500 mm per crop. pH 5.5 to 6.5, light sand. Plant populations 60,000.
SPINACH	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 20-24 °C. Water requirements 380-450 mm per crop. pH 6.0 to 6.5 sandy loam, well drained Plant populations 80,000-100,000.
POTATORS	ORGANIC + BIO N P K 1 1.5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 21-29 °C. Water requirements 450-600 mm per crop. pH 6.0 sandy loam solls. Plant populations 40,000.
TOMATOES	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 800-1000 Kg	ORGANIC TOP DRESSING Apply 1-2 L of N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT Rot.	Optimum Temperature 20-24 °C. Water requirements 450-600 mm per crop. pH 6.0 to 7.0 with high levels of organic matt Plant populations 24,000.
li e	ORGANIC + BIO N P K 1 1,5 1.2	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization dressings. Split between two side dressings.	Optimum Temperature 18-35 °C. Water requirements 500-600 mm per crop.

500 Kg

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200-300 Kg

CROP	BASAL (per Ha)	TOP DRESSING (per Ha)	TIPS FOR A SUCCESSFUL CROP
BEFTROOT	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 500 Kg Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 10, 20, 30 and 40 days after sowing. 33% ORGANIC CONTENT 200-300 Kg	Optimum Temperature 18-24 °C. Water requirements 300-350 mm per crop. pH 6.0 to 8.0 fertile, high organic matter, well drained soils. Plant population 350,000-500,000.
BROCOLL	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 800-1000 Kg	ORGANIC TOP DRESSING N P K 30 0 0 7,14,21 and 28 days after transplanting. 33% ORGANIC CONTENT 500 Kg 500 kg	Optimum Temperature 15-18 °C. Water requirements 500-750 mm per crop. pH 6.0 to 6.5 with high levels of organic matter. Plant populations 45,000.
BUTERAUT	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT Split the N between 3 top dressings at 3 weekly intervals.	Optimum Temperature 18-27 °C. Water requirements 500-600 mm per crop. / pH 5.6 to 6.5 sandy loam, well drained. Plant populations 12,000.
CABBAGE	N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 800-1000 Kg 1000 Kg 1000 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT Split the N and apply at 14, 28 and 45 days after transplanting.	Optimum temperature 18-20 °C. Water requirements 380-500 mm per crop. pH 5.5 to 6.5 with high levels of organic matter. Plant populations 40,000-45,000.
CARROTS	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING Apply when plants are 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 400 million 200-300 Kg 500 million 500 million	Optimum Temperature 10-25 °C. Water requirements 900 mm per crop. pH 6.5 to 7.0 sandy light soils. Plant populations 900,000-1.5 million.
Caul-	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 800-1000 Kg 1000 Kg 1000 Kg	ORGANIC TOP DRESSING N P K 30 0 0 14, 28 and 45 days after transplanting. 33% ORGANIC CONTENT 500 Kg 500 kg	Optimum Temperature 15-22 °C. Water requirements 500-750 mm per crop. pH 6.0 to 6.5 with high levels of organic matter. Plant populations 33,000
CROP	BASAL (per Ha)	TOP DRESSING (per Ha)	TIPS FOR A SUCCESSFUL CROP
CUCUMBER	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 500 Kg 500 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 15-20 °C. Water requirements 500-600 mm per crop. pH 6.0 to 6.5 fertile, high organic matter, well draine soils. Plant populations 40,000-50,000.
GEM SQUASH	ORGANIC + BIO N P K 1 1,5 1,2 2% S Max.0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 100 Kg	Optimum Temperature 18-27 ℃. Water requirements 500-600 mm per crop. pH 5.6 to 6.5 sandy loam, well drained. Plant populations 12000.
GREEN- BEANS	ORGANIC + BIO N P K 1 1,5 1.2 2% S Max 0.1% CI 100% ORGANIC CONTENT 600 Kg	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization 33% ORGANIC CONTENT 200-300 Kg	Optimum Temperature 24-27 °C. Water requirements 650-750 mm per crop. pH 5.0 to 6.5 sandy loam, well drained. Plant populations 250,000-280,000.
	ORGANIC + BIO N P K 1 1,5 1.2 2% S Mary 0.1% (1)	ORGANIC TOP DRESSING N P K 30 0 0 Enhanced Utilization Apply 4 weeks after planting.	Optimum Temperature 12-20 °C. Water requirements 200-400 mm per crop. pH 5.6 to 6.5 sand to clay, well drained.

PEPPERS

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2% S Max 0.1% CI 0% ORGANIC CONTENT 600 Kg

ORGANIC + BIO

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2% S Max 0.1% CI 0% ORGANIC CONTENT

800-1000 Kg

1000 Kg

200-300 Kg

SU U U U Enhanced Utilization 33% ORGANIC CONTENT

200-300 Kg

DRGANIC TOP DRESSING

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30 Enhanced Utilization 3% ORGANIC CONTENT 200-300 Kg

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Apply half at 2 leaf stage and half at 4 weeks.

Apply 1-2 L of Mainstay Ca per Ha every second week to prevent Blossom End Rot.

0 0 DNTENT

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Voter requirements 200-400 mm per crop. pH 5.6 to 6.5 sand to clay, well drained. Plant populations 60,000-100,000.

Optimum Temperature 22-28 °C. Water requirements 500-600 mm per crop. pH 6.0 to 6.8 fertile, well drained soils. Plant populations 700,000-800,000.

Optimum Temperature 18-20 °C. Water requirements 600 mm per crop. pH 6.0 to 7.0 deep fertile, well drained soils. Plant populations 30,000.

All of our Organic Fertilizers are manufactured from composted Cattle Manure, Gypsum, Lime, Lignin, Molasses and Carbon with other products added depending on the fertilizer being produced.

The cattle manure is wind-rowed and the composting process takes three to six months. The internal temperatures are carefully monitored and when the temperature reaches 65 degrees centigrade, the windrow is turned and water is added when necessary. This process ensures that any weeds or diseases are killed.

Gypsum is an effective soil conditioner and is very effective in correcting high soil sodium and increasing the calcium content of soils without affecting the pH. Gypsum will also add sulphur to your soil and can also help open air and moisture channels in improving soil structure and reducing run-off.

Adding Carbon, in the form of charcoal to the soil produces bigger plants and helps fertilizer work more efficiently. Charcoal helps plants by improving soil pH, increasing water absorption, drawing toxins out of the soil, and promoting beneficial bacteria and fungi. Charcoal is a fine-grained, porous black carbon, and it is generated from plant materials and is non-toxic to plants. There are many tiny pores in charcoal and once applied to soil, the pores will allow air to diffuse into the soil which allows the roots to breathe. The tiny pores will also hold water and nutrients and later supply it to the plants. Charcoal is very stable and it will not decompose to carbon dioxide. So once applied, it will stay in the soil for hundreds of thousands of years.

Lignin is a class of complex organic polymers that form key structural materials in the support tissues of most plants. Lignins are particularly important in the formation of cell walls, especially in wood and bark, because they lend rigidity and do not rot easily. Chemically, lignins are polymers made by cross-linking phenolic precursors.

When molasses is added to organic fertilizers, it provides food for the healthy microbes in the soil. The greater amount of microbial activity in the soil, the healthier plants will be.

PRODUCT REGISTRATION



agricultu	re	9
forestry	&	fisheries

Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA REGISTRAR: ACT NO. 36 OF 1947/REGISTRATEUR: WET NO. 36 VAN 1947 Agriculture Building/Landbou, Beatrix Street /Straat, PRETORIA Private Bag/Privaatsak X343, PRETORIA, 0001 Visit our web site at <u>www.nda.agric.za/act</u> 36/main.htm">http://www.dafi.gov.za/act

> Inquiries: Gail Ballekistan Ref: 20/1/3/J/W50 Tel: (012) 319-7275 • Fax: (012) 319-7179 • e-mail: GailB@daff.gov.za

Wyldegrove (Pty) Ltd P O Box 20377 HUMEWOOD 6013

ATTENTION: S I Bekker

REGISTRATION OF FERTILIZERS

Department:

- 1. The above matter refers.
- Kindly be informed that the applications for registration of the following products have been approved:

NAME OF PRODUCTS	REGISTRATION NUMBERS
Pure Organic Fertilizer Granules	B 5915
Okavango Eco Organic Fertilizer	B 5914

2020 -10- 3 0

lept of Agriculture, Forestry and Fisheria

- Attached are the certificates of registration and approved labels for the above mentioned products.
- 4. This approval is valid until 31 October 2023

Trusting the above is in order

Yours faithfully

REGISTRAR: ACT NO. 36 OF 1947



agriculture, forestry & fisheries Department:

Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA

FOR OFFICIAL USE ONLY

CERTIFICATE OF REGISTRATION: FERTILIZERS

GROUP II FERTILIZER

FERTILIZER, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT NO. 36 OF 1947)

This is to certify that the fertilizer mentioned below and the label attached hereto comply with the requirements of 1. Act No. 36 of 1947 and the regulations promulgated there-under and that it has been registered by me:

1.1	Registration Number awarded	B 5915
1.2	Name Fertilizer:Pure Organic Fer	tilizer Granules

- 1.3 Name of applicantWyldegrove (Pty) Ltd
- 1.4 Type of product ...
- Customs tariff code This registration is subject to the following conditions:

1.5

2.

- 2.1 That the registration is only valid for three (3) years and must be renewed 31 October 2023
- 2.2 That only facsimiles of the attached approved label may be used.
- 2.3 The type and container size must conform to the sizes as stated in paragraph 6 on page 4 of the application form.
- 2.4 That the container in which the fertilizer is offered for transport shall conform to the applicable packaging specifications as laid down by SABS Code of Practice 0229.
- 2.5 That if the source of active ingredient is changed the Registrar must be informed in writing.
- 2.6 That the printed labels, cartons, pamphlets and package inserts be submitted within 2 (two) months from the date of registration in duplicate.
- 2.7 That all adverse effects, including adverse reactions, toxicity, misuse, formulation deviation or any other undesirable effect caused by this product must be reported immediately to the Registrar: Act No. 36 of 1947 by the registration holder.

The granting of this registration does not exempt anybody from the requirements of any other Law.

Pilyantan KiPrivite bay 1040 2020 -10- 30 Furestivi and hisnetii DATE

REGISTRAR: ACT NO 36 OF 1947/

B5915

Uitleg van Misstof-etiket Lay-out of Fertilizer label



Pure Organic Fertilizer Granules

	RE	GISTERE	D PLAN	T NUTRIEN	T CONTE	NT	
N	Р	к	S	Ca	Mg	Zn	Cu
12.1 g/kg	5.7 g/kg	8.4 g/kg	12.3 g/kg	21.5 g/kg	3.0 g/kg	188.3 mg/kg	97.47 mg/kg

CARBON CONTENT 20%

Fertilizer Group 2

Massa 10 kg. / Mass 10 kg.

Gebruiksaanwysings/Directions for use

Lawns 7 kg covers 10 m²

Shrubs & Trees: 500g per-plant.

Flower & Vegetable beds 500g to 0.7 kg per m²

Apply evenly, mix in and water well.

For commercial crops follow Agronomic advice;

Normally this is applied at 200kg-1000 kg per ha depending on crop grown Soil tests are recommended.

Registered and Distributed by: <u>Wyldegrove (PTY) Ltd.</u> Registration number: 2015/137976/07 PO Box 20377, Humewood, Port Elizabeth.6013 Customer care No: 072 185 0890

> ECOCERT-ATTESTATION Suitable for use in Organic Farming according to (EC) nº 834/2007 & 889/2008 Regulations AMO MOIP REGULATION.

Lot No./Batch no.

SECTION: 4 FIRE AND EXPLOSION HAZARD DATA

Flash Point:	N/A
Flammable Limits:	Combustible when exposed to high heat, will burn in a fire.
Extinguishing Media:	Carbon Dioxide, Dry Chemical, Water.
Special Fire Fighting Procedures:	Use extinguishing media appropriate for surrounding fire, use self-contained breathing units.
Unusual Fire and Explosive hazards:	Dioxides from fire, dust when mixed with air can form an explosive mixture.

SECTION: 5 REACTIVITY DATA

Stability:	Stable under normal conditions.
Conditions of Reactivity:	N/A
Hazardous Decomposition or By-products:	N/A
Hazardous Polymerization:	N/A
Conditions to Avoid:	High humidity, extreme heat.

SECTION: 6

HEALTH HAZARD DATA

Routes of exposure: Eyes: Skin: Inhalation:

Ingestion:

Health hazards:

Carcinogenicity:

Emergency and First Aid:

Eyes, skin, inhalation, ingestion. May cause irritation. May cause dryness or irritation. Nuisance dust, may cause irritation of nose, throat and respiratory tract. May cause sickness.

None known, acute or chronic.

N/A.

Eyes:

Flush with cool water for 15 minutes. Obtain medical attention if the condition persists. Irritating, but does not injure eye tissue. **Skin:**

The skin may become dry from dust. Wash thoroughly with soap after handling. Low order of toxicity.

Inhalation:

No hazards under normal conditions. Move to a fresh air area.

Ingestion:

Minimal toxicity. Do not induce vomiting. If ingested, seek a physician as soon as possible.

SECTION: 7 PRECAUTIONS FOR SAFE HANDLING AND USE

If material is released or spilled:	Spills may be easily cleaned up by sweeping up as much solid as possible and washing the remaining spill with copious amounts of water.
Waste and Disposal Method:	Dispose of in accordance with federal, state, and local regulations.
Precautions to be taken in Handling and Storning:	Store in cool, dry places away from children, domestic animals, food and feed products.
Other precautions:	N/A

SECTION: 8 CONTROL MEASURES

Respiratory Protection:	Not required for recommended use.
Ventilation:	Normal.
Protective Gloves:	Protective gloves is not necessary but recommended.
Eye Protection:	Protective eye-ware is not necessary but recommended.
Other Protective Clothing or Equipment:	As determined.
Work/Hygienic Practices:	Normal

SUPPLEMENTAL INFORMATION:

These materials are made from natural products and proper precautions are advised to prevent infection of open wounds, inhalation of excessive amounts of dust, and eye irritation. Proper hygiene practices are necessary to prevent health hazards from any naturally occurring substance such as soil, bark, etc., which should be observed.

DISCLAIMER:

The information accumulated in this MSDS is believed to be accurate, whether originating with the company or not, however, it is provided without warranty of any kind, express or implied. The supplier will not be liable for any losses, injuries, or consequential damages which may result from the use of or reliance on any information contained in this document.

The information contained herein is made available solely for consideration, investigation, and verification by the original recipients hereof. Users should consider this information only as a supplement to other information gathered by or available to them. Users should make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials for the safety and health of employees, customers, and the environment. This hazard information is not a substitute for risk assessment under actual conditions of use. Users have the responsibility to keep currently informed on chemical hazard information to design and update their own programs, and to comply with all applicable laws and regulations regarding safety, occupational health, right to know and environmental protection.

MINERAL CONTENT EXPLAINED

(N) Nitrogen - Stikstof:

Nitrogen is very important and needed for plant growth, it is found in healthy soil and gives your plants the energy they need to grow and produce, nitrogen forms part of the Chlorophyll molecule, and is involved in creating food for plants through photosynthesis.

Nitrogen is excellent and needed for any grass, plants, trees, fruits or vegetables, but there are certain fruits and vegetables that benefit from extra nitrogen and respond exceptionally well, these include the following: Tomatoes, peppers, greens, sweet corn, pole beans, musk melons, cucumbers, squash, okra.

(P) Phosphorus - Fosfor:

This is a vital component of ATP, the energy unit of plants and grass, ATP forms during photosynthesis, has phosphorus in its structure and processes from the beginning of seedling growth through to the formation of grain and maturity, thus its essential for the general health and vigour of all plants and grass types.

The following can draw extra benefit from Phosphorus, plants and grass that grow in cold weather, and which has limited roots and rapid top growth, such as grass, lettuce and legumes.

(K) Potassium - Kalium:

Potassium is associated with the movement of water, nutrients and carbohydrates in plant tissue, its involved with enzyme activation within the plant, which affects protein, starch, and ATP production, the ATP production regulates the rate of photosynthesis.

The following benefits from extra potassium, bushes and trees that produce edible fruits and vegetables, citrus, tomatoes and summer and winter squash.

Lignin - Lignien:

Lignin is a class of complex organic polymers that form key structural materials in the support tissues of most plants. Lignins are particularly important in the formation of cell walls, especially in wood and bark, because they lend rigidity and do not rot easily. Chemically, lignins are polymers made by cross-linking phenolic precursors.

(CA) Calcium - Kalsium:

Calcium is an essential nutrient for plants, grass and soil, it helps with cell wall integrity and maintains the soils Ph structure, this is a very important nutrient as pests and disease can easily wreck a lawn, plant, or soil without the correct structure.

The following can draw extra benefits from Calcium, Lawns, Parks, Golf Courses, plants like; tomatoes, peppers, broccoli, cauliflower, Swiss chard and spinach, extra calcium prevents blossom end rot.

(MG) Magnesium - Magnesium:

Magnesium is actually the powerhouse behind photosynthesis in plants, without magnesium, Chlorophyll cannot capture sun energy needed for photosynthesis, so in short magnesium is required to give leaves, lawns and trees their green colour, magnesium in plants and grass is located in the enzymes, in the heart of the chlorophyll molecule, this is also where your nitrogen plays a part as it forms part of the Chlorophyll molecule.

This is a vital element for grass and plant life, it's one of thirteen mineral nutrients in soil and when dissolved in water is absorbed through the roots of plants or grass, making our product stand out from the rest as it is in liquid form and can be easily absorbed for faster results, and quicker response times.

(NA) Sodium - Natrium:

Sodium aids in metabolism and synthesis of Chlorophyll, it is not essential for plants, but it is a great way to balance your soil and concentrate carbon dioxide.

(S) Sulphur - Swael:

Sulphur is an essential element in forming proteins, enzymes, vitamins, and chlorophyll in plants and grass, its crucial in nodule development and efficient nitrogen fixation in legumes, it contributes to crop winter hardiness, it helps your plants resistance to disease, aids in growth and also in seed formation, hence every plant form, grass type, soil type or lawn will benefit from it.

(FE) Iron - Yster:

Iron is an essential micronutrient for every plant and living organism, it plays a critical role in metabolic processes such as DNA synthesis of chlorophyll and is essential for the maintenance of chloroplast structure and function.

The following can draw extra benefit from iron; turnips, tomatoes, squash, radishes, sweet potatoes.

(MN) Manganese - Mangaan:

Manganese is an important micronutrient for plant growth and development and sustains metabolic roles within different plant cell compartments.

The following can draw extra benefit from manganese; soybeans, wheat, barley, oats.

(CU) Copper - Koper:

Copper activates enzymes in plants which are involved in lignin synthesis and is essential in several enzyme systems, it is also required in the process of photosynthesis, is essential in plant and grass respiration and assists in metabolism of carbohydrates and proteins, copper also serves to intensify colour and flavours in flowers, grass, fruits and vegetables.

The following can draw extra benefit from copper; greenhouses, grass, gardens, roses, fruits and vegetables.

(ZN) Zinc - Sink:

Zinc is important to help the plant produce chlorophyll, and some carbohydrates, leaves discolour when the soil is deficient in zinc and plant growth is stunted, conversion of starches to sugars and its presence in plant tissue helps the plant withstand cold temperatures, its essential to produce auxins, which helps with growth regulation and stem elongation.

The following can draw extra benefit from Zinc, corn, sweet corn, edible beans.

(MO) Molybdenum - Molibdeen:

Molybdenum is an essential component in two enzymes that convert nitrate into nitrate (another form of nitrogen) and then into ammonia before it is used to synthesize amino acids within the plant, it is also needed by symbiotic nitrogen fixing bacteria in legumes to fix atmospheric nitrogen.

The following can draw extra benefit from Molybdenum, lettuce, tomatoes, cabbage, cauliflower, duckweed, grapes, citrus.

(B) Boron - Boor:

Boor is used with calcium in cell wall synthesis and is essential for cell division (creating new plant cells) boron requirements are much higher for reproductive growth, so it helps with pollination, and fruit and seed development.

The following can draw extra benefit from boron; turnips, broccoli, cauliflower, cabbage, Brussel sprouts, apples, pears and grapes.

(NI) Nickle - Nickle:

Nickle is a plant micronutrient it contributes to nitrogen fixation and the metabolism of urea; it is important for seed germination; nickel is also important for bacteria and fungi which are both important for good plant growth.

The following can draw extra benefit from Nickle, beans, alfalfa, pecans, plum, peaches, citrus, barley, wheat, wetland plants.

(CD) Cadmium - Kadmium:

Kadmium inhibits the photosynthesis rate and production of chlorophyll and its activity, it also changes chloroplast structure and function, stomatal opening, transpiration, and antioxidant production, these effects in turn, reduce water and nutrient uptake by plants and grass.

The following can draw extra benefit from Cadmium, tomatoes, barley, spinach, peas.

(CR) Chromium - Chroom:

Chromium affects several processes in plants, namely seed germination, growth, yield, and also physiological processes as photosynthesis impairment and nutrient and oxidative imbalances. It has been shown that CR is able to induce genotoxity in several plant species.

The following can draw extra benefit from Chromium; broccoli, green beans, potatoes, apples, bananas, whole grains, peas, corn, grapes, sweet potatoes.

(AS) Arsenic - Arseen:

Arsenic exposure generally induces the production of reactive oxygen species that can lead to the production of antioxidant metabolites and numerous enzymes involved in antioxidant defence, our arsenic levels are low enough to not pose a toxic risk to plants or humans, and high enough to be beneficial for plants and grass.

The following can benefit from arsenic; leafy vegetables, greens, root vegetables like carrots, beets and radishes, as they carry arsenic in their skins.

(PB) Lead - Lood:

Lead strongly inhibits seed germination, root and plant growth, seedling development, transpiration and chlorophyll production.

The following can benefit from lead; leafy greens, lettuce, silver beet, carrots, potatoes, onion and garlic.

(SE) Selenium - Selenium:

Plants absorb Selenium mainly in the form of selenate using high affinity root sulphate transporters, selenium has been reported to mitigate stress in plants because of its capacity to induce the synthesis of nitrogen compounds, in addition to stimulating the activity of antioxidant enzymes and metabolites.

The following can benefit from Selenium; cabbage, broccoli and cauliflower.

(PH) Ph - Ph:

A PH of 7 indicates a neutral soil, the PH is important because it influences the availability of essential nutrients. Most horticultural crops will grow satisfactorily in soils having a PH between 6 and 7.5.

Calculated Carbon – Berekende koolstof:

Plants use carbon dioxide during photosynthesis, the process whereby the plant converts the energy from the sun into a chemical carbohydrate molecule, plants use this carbon chemical to grow, all plants and grass types benefit greatly from Carbon.

(CN) Calcium nitrate - Kalsium nitraat:

Calcium nitrate helps with cell formation, but it also neutralizes acids to detoxify plants, the nitrogen component is also responsible for fuelling protein production and essentially leafy growth, heat and moisture stress can cause calcium deficiencies in certain crops, like tomatoes.

The following can benefit from Calcium Nitrate: tomatoes, apples, and peppers.

CONTACT US

We would like to invite you to reach out to our support team at any time if you have any queries.

- For any inquiries regarding our product range, collection, delivery arrangements or pricing, please contact:
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