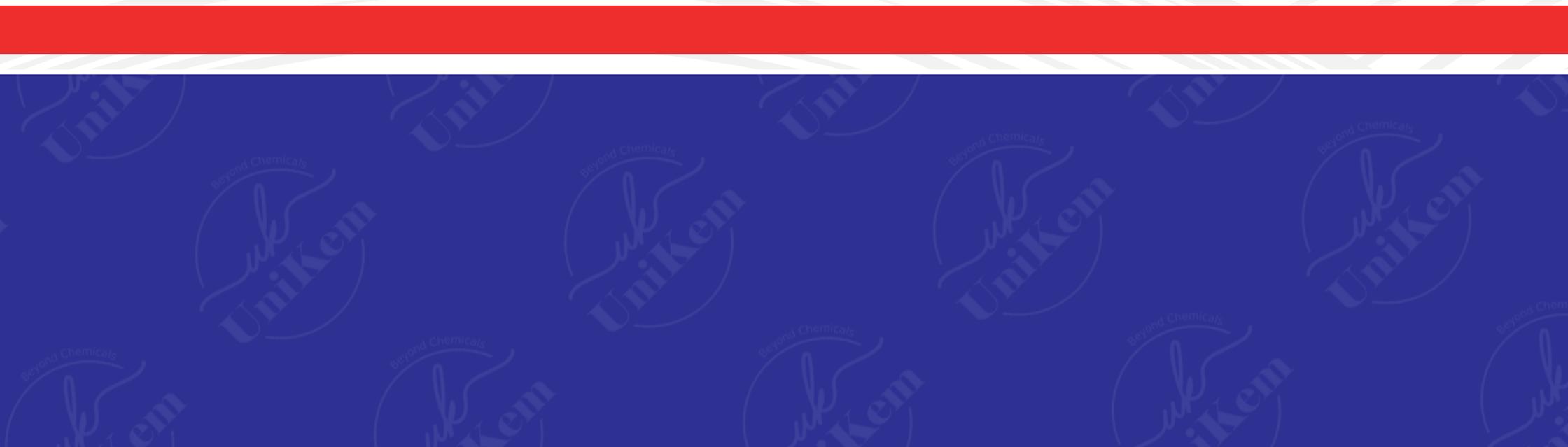


Fertilisers and Plant Growth Regulators





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About us

At **Unikem Ltd**, we take pride in being a leading manufacturer and reliable supplier of agrochemicals, catering to the diverse needs of agricultural communities worldwide. With a commitment to excellence and innovation, we specialize in offering a comprehensive range of fertilisers, plant growth regulators, and pest management solutions, empowering farmers to enhance crop yields and optimize agricultural productivity sustainably.

With years of industry experience and a dedicated team of experts, Unikem Ltd stands as a beacon of quality and reliability in the agrochemical sector. We adhere to stringent quality control measures at every stage of production, ensuring that our products meet the highest standards of efficacy, safety, and environmental sustainability. Our continuous research and development efforts enable us to stay at the forefront of technological advancements, offering cutting-edge solutions tailored to meet the evolving needs of modern agriculture.

Operating proudly from the **United Kingdom**, Unikem Ltd leverages its extensive network of high-quality manufacturing partners across the globe to deliver a diverse range of agrochemical solutions to our clients worldwide. Whether it's collaborating with renowned manufacturers or harnessing the latest innovations in agricultural science, we are committed to forging strategic partnerships that enable us to provide our customers with access to the best-in-class products and services.

Unikem Ltd offers a comprehensive product portfolio designed to address the multifaceted challenges faced by today's farmers. From specialized fertilisers enriched with essential nutrients to cutting-edge plant growth regulators that enhance crop resilience and yield, our solutions are tailored to optimize agricultural performance while promoting sustainable farming practices. Additionally, our pest management solutions offer effective protection against a wide range of agricultural pests, safeguarding crops and ensuring a bountiful harvest.

At Unikem Ltd, customer satisfaction lies at the heart of everything we do. We understand the unique requirements and challenges faced by our clients, and our dedicated team works tirelessly to provide personalized solutions that exceed their expectations. Whether it's offering technical support, conducting on-site consultations, or facilitating timely product delivery, we are committed to building long-lasting partnerships based on trust, integrity, and mutual success.

Unikem Ltd is your trusted partner in agrochemical solutions, offering a comprehensive range of high-quality **Fertilisers, Plant Growth Regulators, Pest Management Solutions and other Active Chemical Substances**.

With a global network of manufacturing partners, a commitment to quality and innovation, and a customer-centric approach, we strive to empower farmers worldwide with the tools and technologies they need to thrive in today's dynamic agricultural landscape. Experience the Unikem difference and unlock the full potential of your agricultural endeavors.



In a world where the demand for food is ever-growing, the role of fertilisers and plant growth regulators has become increasingly pivotal in ensuring sustainable and efficient agricultural practices. At Green Harvest, we understand the fundamental significance of these elements in maximizing crop yields and promoting global food security.

As the global population continues to surge, agricultural systems face unprecedented challenges. Fertilizers, enriched with essential nutrients, play a crucial role in enhancing soil fertility. Our range of premium fertilisers is designed to provide crops with the nutrients they need for robust growth, improved resistance to diseases, and increased overall yield.

Beyond fertilisers, plant growth regulators (PGRs) are integral to fine-tuning plant development and optimizing crop performance. Our carefully formulated PGRs assist in controlling plant growth processes, from seed germination to fruiting, ensuring that plants reach their full genetic potential. This not only leads to healthier and more vigorous crops but also helps farmers manage resources efficiently.

The importance of using fertilisers and PGRs extends beyond immediate crop benefits. A judicious application of these elements contributes to sustainable agriculture by minimizing environmental impact and conserving resources. By tailoring our products to meet the specific needs of different crops and soil types, Green Harvest is committed to promoting responsible and eco-friendly farming practices.

In this brochure, we delve into the science behind our fertilisers and plant growth regulators, elucidating how each product is meticulously crafted to address the unique requirements of diverse crops. We explore the essential nutrients that drive plant growth, the synergies between fertilisers and PGRs, and the positive impact they collectively have on agricultural ecosystems.

Join us on a journey to unlock the full potential of your crops. Whether you are a seasoned farmer or just starting in agriculture, Green Harvest is your trusted partner in sustainable food production. Together, let's cultivate a greener, healthier, and more bountiful future.

Discover the power of precision agriculture and harvesting success with UniKem!



Importance of Soil and Leaf analysis before using fertilisers!

Soil analysis helps determine the nutrient content and pH levels in the soil. Understanding the existing nutrient levels enables farmers to tailor fertiliser applications to supplement deficiencies effectively. Similarly, leaf analysis provides insights into the nutritional status of the plants, allowing for precise adjustments in fertiliser formulations.

Soil and leaf analyses guide farmers in selecting the right type and amount of fertiliser needed for specific crops. This precision in application prevents overuse or underuse of fertilisers, promoting resource efficiency and cost-effectiveness.



Analyzing soil and leaves helps in avoiding excessive fertiliser application, which can lead to nutrient runoff and soil pollution. By understanding the nutrient needs of the crops, farmers can minimize environmental impact and contribute to sustainable farming practices.

This also provides early indicators of nutrient deficiencies or imbalances. Timely identification allows for corrective measures, preventing potential crop yield losses and maintaining overall crop health.

In addition, the data you gain from such analysis allow for the formulation of customized fertilisers tailored to the specific requirements of a particular crop and soil type. This targeted approach ensures that crops receive the essential nutrients they need for optimal growth and development.

Through precise analysis, farmers can optimize fertiliser use, avoiding unnecessary expenses on excess fertilisers. This not only saves costs for farmers but also contributes to the overall economic sustainability of agricultural practices.

Properly analyzing soil and leaves ensures that crops receive the right balance of nutrients, leading to improved quality and increased yields. This is essential for meeting the demands of a growing population and achieving food security goals.

This is a proactive approach that enhances the effectiveness of fertilization practices, minimizes environmental impact, and contributes to sustainable and economically viable agriculture.

Straight Fertilisers

Straight fertilisers, also known as single-nutrient fertilisers or simple fertilisers, contain only one primary nutrient. The three main nutrients that plants require for healthy growth are nitrogen (N), phosphorus (P), and potassium (K), often referred to as NPK. Straight fertilisers provide a concentrated source of a specific nutrient, allowing for targeted supplementation based on the needs of the plants or the soil.

Examples of straight fertilisers include:

Urea (46-0-0): This is a nitrogen-only fertiliser, promoting leafy, vegetative growth in plants.

Superphosphate (0-20-0): This fertiliser contains only phosphorus and is used to stimulate root development, flowering, and fruiting.

Muriate of Potash (0-0-60): This is a potassium-only fertiliser that helps with overall plant health, fruit development, and disease resistance.

Straight fertilisers are often used when there is a specific nutrient deficiency in the soil or when a particular nutrient is needed in higher quantities for a specific stage of plant growth. However, it's essential to note that many crops and plants benefit from a balanced fertiliser containing a mix of nitrogen, phosphorus, and potassium, as well as secondary and micronutrients, for comprehensive nutrition.



MonoKem (MAP - Monoammonium Phosphate)



Formulation: 12-61-0
 11-60-0
 Packaging: 10 and 20kg bag
 Appearance: Powder or Crystalline

MPoKem (MKP: Monopotassium Phosphate)



Formulation: 0-52-34
 Packaging: 10 and 20kg bag
 Appearance: Powder or Crystalline

SoloKem (SOP: Potassium Sulphate)



Formulation: 0-0-50 +18s
 0-0-52 +18s
 Packaging: 10 and 20kg bag
 Appearance: Powder or Crystalline

CalciKem (CN: Calcium Nitrate)



Formulation: 16-0-0+26 CaO
 Packaging: 10 and 20kg bag
 Appearance: Granulated or Crystalline

UPhoKem (UP: Urea Phosphate)



Formulation: 17-44-0
 Packaging: 10 and 20kg bag
 Appearance: Powder or Crystalline

MagniKem (MgN: Magnesium Nitrate)

Formulation: 10-0-0 +16 MgO
 Packaging: 10 and 20kg bag
 Appearance: Powder or Crystalline

MonoKem



MAP: Monoammonium Phosphate	
Available Formulation:	12-61-0 and 11-60-0
Packaging	10 and 20kg bag
Apperance	Powder or Crystalline
Phosphorus (P)	26%
Nitrogen (N)	10.5%
pH	4-4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.1 kg/m3

Monoammonium phosphate (MAP) is a versatile fertiliser widely used in farming due to its high phosphorus and nitrogen content. As a water-soluble source of these essential nutrients, MAP is easily absorbed by plants, promoting robust root development, flowering, and fruiting. Its balanced composition makes it suitable for various crops, including cereals, fruits, and vegetables. MAP's acidity also helps in neutralizing alkaline soils, improving nutrient uptake. Moreover, its compatibility with other fertilisers and ease of application make it a popular choice among farmers striving for optimal crop yields and quality.



MKP: Monopotassium Phosphate	
Available Formulation:	0-52-34
Packaging	10 and 20kg bag
Appearance	White crystalline powder
Total Phosphorus (P)	52%
Total Potassium (K)	34%
pH	4-4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.2 kg/m ³
Relative solubility of phosphorus in water	95%

Monopotassium phosphate, commonly known as MKP, is a water-soluble fertiliser that contains phosphorus (P) and potassium (K) in highly available forms. It is widely used in farming as a source of these essential nutrients for plants. MKP is particularly valued for its ability to quickly dissolve in water, making it suitable for fertigation systems where nutrients are applied directly to plants through irrigation. It is also used in foliar sprays to provide an immediate nutrient boost to crops during critical growth stages. Additionally, MKP is known for its role in promoting root development, flowering, and fruiting, thus contributing to overall plant health and yield. Its versatility and effectiveness make Monopotassium phosphate a valuable tool in modern agricultural practices.



SOP: Potassium Sulphate	
Available Formulation:	0-0-52 +18 SO ₃
Packaging	10 and 20kg bag
Apperance	Powder or Crystalline
Total Potassium (K)	52%
Nitrogen (N) and Phosphorus (P)	0%
Chlorine content	0.1 - 0.3%
pH	4-4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m ³

Potassium sulfate, a chemical compound composed of potassium, sulfur, and oxygen, serves as a vital nutrient in farming. This water-soluble salt provides potassium, a crucial element essential for plant growth and development. Farmers utilize potassium sulfate primarily as a fertiliser to enhance soil fertility and boost crop yields. Its application improves the overall quality of crops by promoting root development, increasing disease resistance, and enhancing fruit and flower formation. Additionally, potassium sulfate is preferred in regions where soil pH levels must be carefully managed, as it has a neutral pH. With its versatile benefits, potassium sulfate remains a valuable asset in modern agricultural practices, ensuring healthier and more abundant harvests.

UPhoKem



UP: Urea Phosphate	
Available Formulation:	17-44-0
Packaging	10 and 20kg bag
Apperance	Powder or Crystalline
Total Nitrogen (N)	17%
Total Phosphorus (P)	44%
pH	4-4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m3

Urea phosphate, also known as urea orthophosphate, is a compound commonly used in farming as a fertiliser. It contains both nitrogen and phosphorus, two essential nutrients for plant growth. Urea phosphate is highly soluble in water, making it easily absorbed by plants, which promotes healthy root development and overall growth. Additionally, the nitrogen in urea phosphate facilitates chlorophyll production, enhancing photosynthesis and leading to improved crop yields. Its versatility and effectiveness make urea phosphate a valuable tool for farmers looking to maximize the productivity of their fields while ensuring sustainable nutrient management practices.



CN: Calcium Nitrate	
Available Formulation:	16-0-0+26 CaO
Packaging	10 and 20kg bag
Apperance	White flake
Total Nitrogen (N)	16%
Total Calcium (CaO)	26%
pH	4
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m3

Calcium nitrate, a water-soluble fertiliser composed of calcium and nitrogen, plays a vital role in modern agriculture. Its application provides essential nutrients to plants, facilitating healthy growth and development. Calcium nitrate serves as a convenient source of both calcium and nitrogen, two nutrients crucial for plant metabolism, cell division, and structural integrity. In farming, it is commonly used as a foliar spray or applied directly to the soil to address calcium deficiencies and enhance overall plant health. Furthermore, calcium nitrate aids in preventing disorders like blossom end rot in tomatoes and peppers by ensuring proper calcium uptake. Its versatility and effectiveness make it a valuable tool for farmers striving to optimize crop yields and quality.

MagniKem

MgN: Magnesium Nitrate	
Available Formulation:	10-0-0 +16 MgO
Packaging	10 and 20kg bag
Apperance	White crystalline powder
Total Nitrogen (N)	10%
Total Magnesium (Mg)	16%
pH	4
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m3

Magnesium nitrate, a chemical compound composed of magnesium and nitrate ions, plays a crucial role in farming practices. It serves as a highly effective fertiliser, providing essential magnesium and nitrogen nutrients to plants. Magnesium is a vital component of chlorophyll, the pigment responsible for photosynthesis, while nitrogen is essential for overall plant growth and development. When applied correctly, magnesium nitrate helps improve soil fertility, enhances plant vigor, and promotes higher yields in a variety of crops. Its water-soluble nature makes it readily available to plants, ensuring efficient nutrient uptake. Additionally, magnesium nitrate can help correct magnesium deficiencies in soil, thus contributing to balanced nutrient levels for optimal crop production.

NPK Fertilisers

NPK fertilisers are fertilisers that contain three essential nutrients: nitrogen (N), phosphorus (P), and potassium (K). The three numbers on the fertiliser packaging represent the percentage by weight of each of these nutrients in the fertiliser, and they are always listed in the same order: N-P-K.

Here's what each nutrient contributes to plant growth:

Nitrogen (N): Promotes leafy, vegetative growth. It is crucial for the development of chlorophyll, which is essential for photosynthesis.

Phosphorus (P): Stimulates root development, flower and fruit formation, and overall energy transfer in the plant. It plays a significant role in the early stages of plant growth.

Potassium (K): Supports overall plant health, helps in the regulation of water movement, and is vital for various physiological processes, including enzyme activation and photosynthesis.

For example, a fertiliser labeled as 10-20-10 would contain 10% nitrogen, 20% phosphorus, and 10% potassium by weight. The remaining percentage is often composed of filler material.

NPK fertilisers are widely used in agriculture and gardening to provide plants with a balanced supply of essential nutrients. These fertilisers are formulated to address the specific nutrient needs of plants at different stages of growth.



UniKem range of NPK Fertilisers

NPK: Balance Formulations



Formulation: 20-20-20 + TE + MgO
 19-19-19 + TE + MgO
 18-18-18 + TE + MgO

Packaging: 10 and 20kg bag

Appearance: Powder or Crystalline

NPK: High Potassium



Formulation: 12-12-36 + TE + MgO
 6-11-44 + TE + MgO
 13-8-38 + TE + MgO
 13-3-43 + TE

Packaging: 10 and 20kg bag

Appearance: Powder or Crystalline

NPK: High Phosphorus



Formulation: 10-50-10 + TE
 10-52-10 + TE
 13-40-13 + TE
 10-40-10 + TE + MgO

Packaging: 10 and 20kg bag

Appearance: Powder or Crystalline





NPK + TE + MgO	
Available Formulation:	20-20-20, 19-19-19 and 18-18-18
Packaging	10 and 20kg bag
Apperance	Crystalline powder
pH	4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m3
Relative solubility of phosphorus in water	98%

NPK balance refers to the proportion of three essential nutrients—nitrogen (N), phosphorus (P), and potassium (K)—in soil or fertiliser, crucial for plant growth and development. This balance is fundamental in farming practices as it directly impacts crop yield, quality, and overall health. Nitrogen supports leafy green growth and protein synthesis, phosphorus aids in root development, flowering, and fruiting, while potassium enhances disease resistance, water uptake, and overall plant vigor. Farmers carefully manage NPK ratios through soil testing and targeted fertilization to ensure optimal nutrient availability, promoting sustainable agricultural practices and maximizing crop productivity while minimizing environmental impact.

Including TE (Total Element) in NPK formulations is crucial as it provides a clear indication of the overall nutrient content, aiding in precise fertiliser application. This ensures that plants receive the necessary balance of nutrients for optimal growth and development. Additionally, TE helps farmers and gardeners make informed decisions regarding fertiliser selection, promoting efficient and effective nutrient management practices.



UniKem range of NPK Fertilisers

GrowKem High K



NPK + TE + MgO	
Available Formulation:	12-12-36, 6-11-44, 13-8-38 and 13-3-43*
Packaging	10 and 20kg bag
Appearance	Crystalline powder
pH	4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m ³
Relative solubility of phosphorus in water	98%

NPK high P fertilisers are formulations containing high levels of phosphorus (P) alongside nitrogen (N) and potassium (K). These fertilisers are essential for promoting robust plant growth, especially during critical stages such as root development and flowering. Phosphorus is a vital nutrient for energy transfer within plants and plays a crucial role in processes like photosynthesis, DNA synthesis, and cell division. High P fertilisers are particularly beneficial in farming scenarios where soil phosphorus levels are low or where crops have high phosphorus demands. By providing readily available phosphorus, NPK high P fertilisers enhance crop yields and improve overall plant health, ensuring optimal growth and development.

Including TE (Total Element) in NPK formulations is crucial as it provides a clear indication of the overall nutrient content, aiding in precise fertiliser application. This ensures that plants receive the necessary balance of nutrients for optimal growth and development. Additionally, TE helps farmers and gardeners make informed decisions regarding fertiliser selection, promoting efficient and effective nutrient management practices.

*: No MgO in the mix



GrowKem High P



NPK + TE	
Available Formulation:	10-50-10, 10-52-10, 13-40-13 and 10-40-10
Packaging	10 and 20kg bag
Appearance	Crystalline powder
pH	4.5
Moisture (mechanical free water)	<0.1%
Bulk density	1.0 kg/m ³
Relative solubility of phosphorus in water	98%

NPK high K, or nitrogen-phosphorus-potassium with a high concentration of potassium, is a crucial fertiliser in farming. This blend provides essential nutrients that promote plant growth, flowering, and fruiting. Potassium plays a vital role in improving the plant's resilience to stress, enhancing root development, and aiding in photosynthesis and water regulation. Farmers commonly use NPK high K fertilisers to boost crop yields, particularly in potassium-deficient soils, and to enhance the quality of fruits and vegetables. Its balanced nutrient composition supports overall plant health and contributes to sustainable agricultural practices by optimizing resource use efficiency.

Including TE (Total Element) in NPK formulations is crucial as it provides a clear indication of the overall nutrient content, aiding in precise fertiliser application. This ensures that plants receive the necessary balance of nutrients for optimal growth and development. Additionally, TE helps farmers and gardeners make informed decisions regarding fertiliser selection, promoting efficient and effective nutrient management practices.

Which one is better? Granulated or Crystalline Fertilisers

The choice between granulated fertilisers and crystalline fertilisers depends on several factors, including the specific needs of your crops, ease of application, storage considerations, and cost. Here are some considerations for both types:

Granulated Fertilisers:

Slow-Release Options: Many granulated fertilisers are available in slow-release formulations, providing a steady and prolonged release of nutrients over time. This can be beneficial for consistent plant nutrition and reduced risk of nutrient leaching.

Ease of Handling: Granulated fertilisers are often easy to handle, spread, and mix. They have a uniform particle size, making application more consistent and preventing issues such as clogging in spreaders.

Uniform Nutrient Distribution: Granules are typically uniform in composition, ensuring that each granule contains a consistent mix of nutrients. This uniformity contributes to balanced nutrient distribution in the soil.

Storage Stability: Granulated fertilisers tend to be more stable during storage. They are less prone to clumping or absorbing moisture, which can affect the nutrient content and application quality.

Bulk Application: Granulated fertilisers are well-suited for bulk application, making them efficient for large-scale farming operations. This is particularly important when covering expansive areas with consistent nutrient requirements.

management approach. Many farmers use a combination of both types based on the requirements of different crops and growth stages. It's important to consider factors such as nutrient release characteristics, application methods, and storage conditions when making this decision.

Crystalline Fertilisers:

Water-Soluble Formulations: Crystalline fertilisers are often water-soluble, allowing for quick nutrient availability to plants. This can be advantageous in situations where rapid nutrient uptake is needed.

Foliar Application: Because of their solubility, crystalline fertilisers can be applied as foliar sprays, providing a direct and immediate nutrient supply to the plant's leaves. This method is useful for addressing nutrient deficiencies quickly.

Precision Application: Crystalline fertilisers can be applied with precision, allowing for accurate dosing and targeted nutrient delivery. This can be advantageous for crops with specific nutrient requirements at different growth stages.

Greenhouse and Hydroponic Systems: Crystalline fertilisers are often used in greenhouse and hydroponic systems, where precise control over nutrient concentrations is essential for optimal plant growth.

Specialized Formulations: Some crystalline fertilisers are designed with specific nutrient ratios or additives to address particular plant needs. This flexibility can be beneficial for tailoring nutrient applications to specific crops or soil conditions.

Ultimately, the choice between granulated and crystalline fertilisers depends on your specific farming practices, the crops you are cultivating, and the desired nutrient management approach. Many farmers use a combination of both types based on the requirements of different crops and growth stages. It's important to consider factors such as nutrient release characteristics, application methods, and storage conditions when making this decision.



Trace elements / Micronutrient

Trace element fertilisers, also known as micronutrient fertilisers, provide essential trace elements or micronutrients that are required by plants in smaller quantities compared to primary nutrients (nitrogen, phosphorus, and potassium). While plants need these micronutrients in smaller amounts, they are still crucial for various physiological processes and overall plant health.

Common micronutrients include:

Iron (Fe): Essential for chlorophyll synthesis and overall plant growth.

Zinc (Zn): Involved in enzyme activation, particularly important for seed development.

Manganese (Mn): Plays a role in photosynthesis and the breakdown of carbohydrates.

Copper (Cu): Important for various enzyme functions and overall plant metabolism.

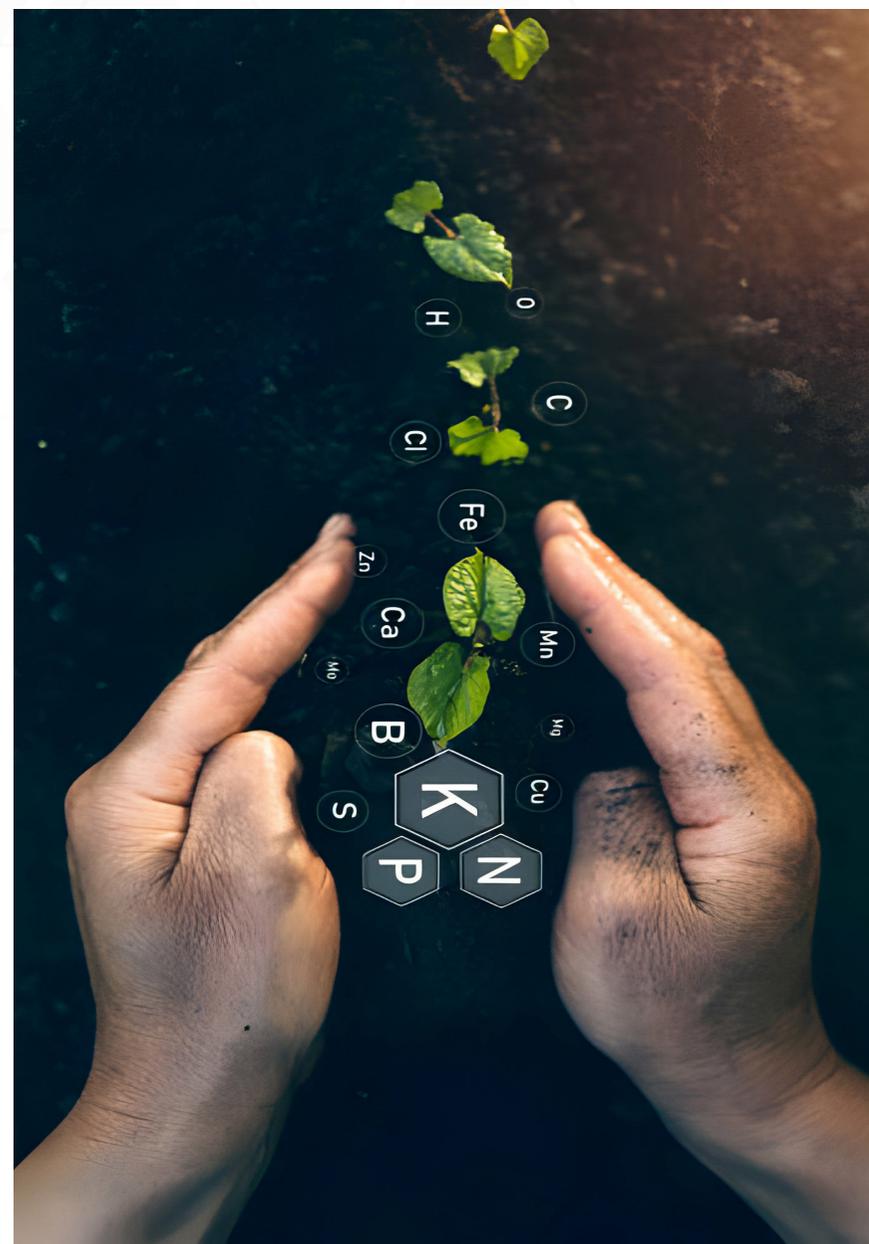
Molybdenum (Mo): Necessary for nitrogen fixation in legumes and the conversion of nitrates to amino acids.

Boron (B): Aids in cell division, pollen formation, and sugar transport.

Chlorine (Cl): Involved in photosynthesis and osmotic regulation.

Nickel (Ni): Essential for certain enzyme functions, particularly in nitrogen metabolism.

It's important to note that while these micronutrients are essential, excessive application can be harmful to plants. The right balance of micronutrients is crucial for optimal plant growth and development. In some cases, soil tests may be conducted to determine if there are deficiencies or excesses of certain micronutrients, and then appropriate trace element fertilisers can be applied to address those specific needs.



UniKem range of Trace Elements / Micronutrient



FeroKem (Fe EDDHA)

Ortho Ortho: 3.8
4.8
Packaging: 1kg bag or box
Apperance: Water Soluble Podwer



ZinKem (Zn EDTA)

Formulation: Zn 15%
Packaging: 1kg bag or box
Apperance: Water Soluble Podwer



MicroKem P (MicroMix EDTA)

Formulation: Fe4%, Zn3%, Mn3%, B1% +
Amino acid10%
Packaging: 1kg bag or box
Apperance: Water Soluble Podwer



ManKem (Mg EDTA)

Formulation: Mn 13%
Packaging: 1kg bag or box
Apperance: Water Soluble Podwer



SiIKem (SiLIC+K)

Formulation: SiO₂:25%, K₂O:13%, AA*:2%
Packaging: 1 Lit bottle
Apperance: Liquid



PK Kem (P K)

Formulation: P₂O₅:30%, K₂O:20%
Packaging: 1 Lit bottle
Apperance: Liquid



FruitKem (N/Zn/B+AA)

Formulation: N:7%, Zn:3%, B:1%,
AA*:5%, SW*:2%
Packaging: 1 Lit bottle
Apperance: Liquid

OM*: Organic Maters
AA*: Amino Acid
SW*: Seaweed
HA*: Humic Acid

Amino Acids, Humic Acids, Phosphoric Acids and Seaweed Extract

Amino acids and Humic acids play critical roles in improving nutrient availability to plants. Amino acids are **organic compounds** that serve as building blocks for proteins and enzymes, essential for various metabolic processes in plants. They enhance the uptake of nutrients such as nitrogen, phosphorus, and potassium, making them more readily available to plants. Humic acids, on the other hand, increase the cation exchange capacity (CEC) of soils, which helps to retain and release essential nutrients for plant uptake, thereby improving nutrient availability in the root zone.

Humic acids contribute to soil **structure improvement** by promoting aggregation of soil particles, resulting in **better soil porosity and water retention**. This improved soil structure allows for better aeration and water infiltration, which are crucial for root development and overall plant growth. Additionally, humic acids can help mitigate soil compaction issues, leading to **healthier root systems and improved nutrient uptake**.

Amino acids and humic acids play roles in enhancing plant stress tolerance. Amino acids act as osmoprotectants, helping plants to cope with various environmental stresses such as drought, salinity, and extreme temperatures. Humic acids stimulate the synthesis of stress-related proteins and enzymes in plants, thereby improving their ability to withstand adverse environmental conditions and reducing yield losses during stress events.

Both amino acids and humic acids **promote microbial activity in the soil**, which is essential for nutrient cycling and organic matter decomposition. Amino acids serve as a food source for beneficial soil microorganisms, stimulating their growth and activity. Humic acids provide a conducive environment for microbial proliferation by enhancing soil structure and moisture retention, leading to increased microbial diversity and activity in the rhizosphere.

The combined effects of improved nutrient availability, enhanced soil structure, and **increased stress resistance contribute to higher crop yields and improved quality**. Plants supplied with adequate amino acids and humic acids exhibit better growth, increased flowering and fruiting, and enhanced nutrient content, resulting in improved marketable yields and product quality.

By improving soil health, nutrient efficiency, and stress tolerance, the use of amino acids and humic acids in farming practices promotes environmental sustainability. These organic amendments help **reduce the reliance on synthetic fertilizers and chemical inputs**, thereby minimizing the risk of nutrient runoff and water pollution. Additionally, they contribute to the long-term sustainability of agricultural ecosystems by promoting soil health and biodiversity.



UniKem range of Amino Acids, Humic Acids, Phosphoric Acids and and Seaweed Extracts



AminoKem P (Amino Acid 70/90)

Formulation: 70/90 %AA P
 Packaging: 0.5kg and 1kg bag or box
 Appearance: Powder



AminoKem L (Amino Acid 15/35)

Formulation: 15/35 %AA L
 Packaging: 1 Lit bottle
 Appearance: Liquid



HumiKem P (Humic Acid 60/80)

Formulation: 60/80 %HA P
 Packaging: 1kg bag or box
 Appearance: Powder



HumiKem L (Humic Acid 15/25)

Formulation: 15/25 %AA L
 Packaging: 5 Lit container
 Appearance: Liquid



AlgaeKem (Seaweed extract)

Formulation: 100% seaweed extract
 Packaging: 1kg bag or box
 Appearance: Powder





Soil Enhancers and Water Conditioners

Soil enhancers and water conditioners play a pivotal role in modern farming practices, offering essential tools to enhance agricultural productivity and sustainability. The importance of these inputs stems from their ability to address key challenges faced by farmers, including soil degradation, nutrient depletion, and water quality issues.

One of the primary functions of soil enhancers is to improve soil structure. Over time, continuous farming can lead to soil compaction, reducing water infiltration and root growth. Soil enhancers, such as organic matter and cover crops, contribute to soil structure by increasing its porosity and water-holding capacity. This, in turn, promotes better nutrient absorption by plants and creates a more conducive environment for beneficial microorganisms.

In addition to enhancing soil structure, these products also play a crucial role in replenishing essential nutrients. Intensive farming practices often deplete the soil of vital elements like nitrogen, phosphorus, and potassium. Soil enhancers, including fertilisers and organic amendments, help restore nutrient levels, ensuring optimal conditions for plant growth. This not only boosts crop yields but also prevents nutrient imbalances that can lead to reduced crop quality.

Water conditioners are equally significant in agriculture, particularly in regions facing water scarcity and poor water quality. Irrigation water often contains salts, which, when accumulated in the soil, can hinder plant growth. Water conditioners help mitigate these issues by improving water penetration, reducing surface tension, and preventing salt buildup. This contributes to more efficient water usage and enhances crop resilience to drought conditions.

Furthermore, water conditioners can address the challenges associated with poor water quality. Contaminants like heavy metals and excess minerals in irrigation water can have detrimental effects on crops and soil health. Water conditioners assist in reducing the impact of these contaminants, safeguarding both the environment and the long-term sustainability of farming practices.

The importance of soil enhancers and water conditioners extends beyond immediate crop yields. By promoting soil health and sustainable water management, these inputs contribute to the overall resilience of agricultural systems. Sustainable farming practices, facilitated by the use of soil enhancers and water conditioners, help mitigate the environmental impact of agriculture, conserve natural resources, and ensure food security for future generations.

In conclusion, soil enhancers and water conditioners are indispensable tools for modern agriculture. Their role in improving soil structure, replenishing nutrients, and addressing water quality issues underscores their importance in fostering sustainable and productive farming practices. As global challenges such as climate change and population growth intensify, the responsible use of these inputs becomes increasingly crucial for the resilience and sustainability of our food systems.



UniKem range of Soil Enhancers and Water Conditioners and other specialized formulations



RaizoKem (Rooting aid)

Formulation: OM*:20%, SW*:5%, HA* 3%
 N:2%, K₂O:1%, Zn:1%, Cu:0/5%
 Packaging: 5 Lit Container
 Appearance: Liquid



PhosphoKem (Phosphoric Acid)

Formulation: 45% or 85% Phosphoric Acid
 Packaging: 5 Lit container
 Appearance: Liquid

SaltoKem



SaltoKem is a specialized fluid mineral fertilizer meticulously crafted for application in saline or sodic soils, addressing the unique challenges presented by such soil conditions. Formulated with precision, SaltoKem is tailored to effectively nourish crops while mitigating the adverse effects of high salinity or sodicity on plant growth. Its carefully balanced composition delivers essential nutrients to crops, promoting robust and healthy development even in challenging soil environments. By providing targeted nutrition and aiding in soil reclamation, SaltoKem empowers farmers to optimize crop yields and sustain productivity in saline or sodic soils, ensuring resilient agricultural practices in diverse agricultural landscapes.

Packaging: 5 Lit Container

PHKem

PHKem is a specialized fluid formulation meticulously engineered for the precise purpose of harmonizing the pH levels of both soil and water. Designed with a keen focus on achieving optimal balance, PHKem serves as an essential tool for farmers and agricultural practitioners aiming to fine-tune the acidity or alkalinity of their agricultural environments. With its targeted approach, PHKem offers a reliable and efficient solution for enhancing soil fertility and promoting healthy plant growth by ensuring that the pH levels are conducive to optimal nutrient uptake and overall crop performance.

Packaging: 0.5 Lit Bottle

It is very important to read labels before you use them!

Reading labels and following instructions when using fertilisers is essential for achieving the intended benefits while minimizing potential risks. It ensures precision in nutrient application, supports environmental stewardship, and contributes to the overall success of farming operations.

Correct Application Rates: Fertilizer labels provide recommended application rates to ensure that crops receive the appropriate amount of nutrients. Following these rates prevents over-application, which can lead to nutrient imbalances, environmental pollution, and potential harm to plants.

Nutrient Composition: Fertilizer labels detail the nutrient composition, indicating the percentage of nitrogen, phosphorus, potassium, and other micronutrients. Understanding these ratios helps farmers select the right fertiliser for specific crops and growth stages, ensuring balanced nutrition.

Crop-Specific Recommendations: Labels often include crop-specific recommendations, helping farmers tailor their fertiliser choices to the needs of different plants. This customization promotes optimal growth and maximizes crop yield.

Application Methods: Fertilizer labels provide guidance on the recommended application methods, such as broadcast spreading, side-dressing, or foliar spraying. Choosing the correct application method ensures efficient nutrient uptake by plants.

Timing of Application: Instructions specify the best timing for fertiliser application, considering factors like plant growth stages and seasonal requirements. Following these recommendations supports synchronized nutrient supply with the crop's development.

Environmental Impact: Fertilizer labels often include information on environmental precautions, such as avoiding application before heavy rainfall. Adhering to these instructions minimizes the risk of nutrient runoff, protecting water sources and ecosystems.

Storage and Handling Guidelines: Labels provide information on proper storage and handling practices, including temperature considerations and precautions against moisture. Adhering to these guidelines maintains the quality and effectiveness of the fertiliser.

Safety Precautions: Fertilizer labels include safety information, highlighting potential hazards and recommended safety measures during handling and application. Following these precautions ensures the well-being of the applicator and minimizes health risks.

Legal Compliance: Compliance with labeled instructions is often a legal requirement. Deviating from recommended practices may result in environmental violations or compromised crop quality.

Economic Efficiency: Accurate application based on label instructions prevents wastage and optimizes the economic efficiency of fertiliser use. This is especially important for farmers managing input costs and aiming for sustainable agricultural practices.

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