

Khuba Soil Conditioner

- **SOIL** : is a mixture of organic matter, minerals, gases, liquids, and organisms that together support life. Earth's body of soil, called the pedosphere, has four important functions: as a medium for plant growth, as a habitat for organisms, as a means of water storage, supply and purification, and as a modifier of Earth's atmosphere. All of these functions, in their turn, modify the soil and its properties.
- The term *pedolith*, used commonly to refer to the soil, translates to *ground stone* in the sense *fundamental stone*, from the ancient Greek **πέδον** *ground, earth*. Soil consists of a solid phase of minerals / organic matter (the soil matrix), also a porous phase that holds gases (the soil atmosphere) and water (the soil solution). Accordingly, scientists can envisage soils as a three-state system of solids, liquids, and gases.
- Soil is a product of several factors: influence of climate, relief (elevation, orientation, slope of terrain), organisms, and the soil's parent materials (original minerals) interacting over time. It continually undergoes development by way of numerous physical, chemical and biological processes, which include weathering with associated erosion. Given its complexity and strong internal connectedness, soil ecologists regard soil as an ecosystem.

DESERT / ARID LAND

- Water & nutrients needed for plants are scarce in desert.
- Water retention: To avoid water loss due to percolation, use minimum **ONE INCH LAYERING** of **KHUBA SOIL CONDITIONER**.
- Breathability of land for easy exchange of oxygen / carbon which avoids drowning of plants due to excess water (negative impact of use of plastic liners)
- Application details video: https://youtu.be/MoxkkGcu_0I
- **ADD 1/10 OF KHUBA SOIL CONDITIONER WITH MUD FOR REFILL**, to provide easy access of macro & micro nutrients to plants.
- Our products Hygroscopic nature also draw water from air and keep the plant surrounding wet and cool.
- **Retains water, and thus reduces water usage.**
- **Planting such trees will not require fertilization for minimum 2 year.**
- Our product retains precious water and simultaneously provide essential nutrients to plants for better growth.
- Creates conducive environment for growth and higher yield.
- Refer Illustration <https://img1.wsimg.com/blobby/go/8bfecb2e-e2a7-4825-90ad-38a337c2522e/downloads/Desert%20Usage%20Illustration.pdf?ver=1635073437448>

Chemical Fertilizers

- **Non-organic fertilizers do not have all necessary nutrients for better growth, further they are quick acting & have very short life in consideration to plant life.**
- Most inorganic fertilizers provide only that well-known trio, nitrogen (N), phosphorus (P), and potassium (K). These three, known as the macro-nutrients, are indeed required in greater quantity than any others, but they are only three of the thirteen nutrients plants need. The three chemicals that qualify as secondary nutrients, calcium, sulphur, and magnesium are generally ignored, as are the trace nutrients, boron, chlorine, manganese, iron, zinc, copper, etc. While these are needed in far smaller quantities than the macro-nutrients, they are still essential.
- **Khuba Soil Conditioners have all the required nutrients, including trace elements derived from natural sources, thus making them organic and have many added feature like sustained release and water retention capacity.** It's time for sustainable agriculture, which means meeting society's present food and textile needs, without compromising the ability for current or future generations to meet their needs.
- For decades, we have produced the bulk of our food year after year, **using large amounts of chemical pesticides and fertilizers that damage soil, water, air, and climate.**
- Now everyone needs to increase their knowledge base on sustainable agriculture for healthy living, sustenance and benefit of mankind.

SOIL FERTILITY

- Soil fertility for food production refers to the ability of soil to support & sustain plant growth, including by making nitrogen, phosphorous, sulphur, and other nutrients available for plant uptake. It is facilitated by: **i) Nutrient storage in soil organic matter. ii) Nutrient recycling from organic to plant-available mineral forms. iii) Physical and chemical processes that control nutrient sorption, availability, displacement and eventual losses to the atmosphere and water.**
- Managed soils represent a highly dynamic system, and it is this very dynamism that makes soils function and supply ecosystem services. Overall, the fertility and functioning of soils depend on interactions between the soil mineral matrix, breathability of plants & microbes, exchange of carbon and oxygen and many more. These are responsible for both building and decomposing soil organic matter and therefore for preservation and availability of nutrients in soils. To sustain soil functions, the balanced cycling of nutrients in soils must be maintained yet taking care of crucial areas to land breathability etc.
- We are a in house research based, knowledge based and innovation driven that is pioneering solutions to challenges throughout the value chain in agriculture. To achieve Sustainable, for resource-efficient, greener & more vibrant farming communities.

FAQ

- Is your product a fertilizer ? No it's a soil conditioner.
- Why do you call it soil conditioner ? Our product enriches the soil with required natural minerals to create a conducive environment for plant growth. It boosts both nutrient efficiency and organic matter content in the soil.
- Is it organic ? It is organic as the contents are combination of natural minerals.
- Do you have different products for various crops ? No our product is balanced with required minerals and is generally suitable for all types of soil.
- As it is mineral enriched soil, can we plant seeds directly in your product? Yes you can plant seeds directly, but it is not advisable as cost of cultivation goes up.
- How do we test that its organic ? You can grow few plants in a pot using only our product and test the plant & yield to confirm its authenticity. Note: do not mix any other soil which may contaminate the plant intake and also test quality of water being used for watering the plants.
- Do we need to increase or decrease the application over a period of time ? It will decrease on multiple application as the farm becomes more fertile and gets stabilized.
- Does your product play any additional role ? yes our product has capacity to retain water and keep the surrounding area cooler and nutrients are released in sustained manner as per the dynamic needs of the plant, thus making the plants healthy & robust.
- What if the farm is having excess or reduced nutrients in specific area ? Farmer can provide us soil test report, with which we can tailor make our product to meet shortfall in soil or for specific crops. Such requirements may kindly be discussed with the manufacturer for manufacture and supply.

APPLICATION

- How should I use it ? you can use it while tilling or spread it by tractors or sprinkle it with hands or you can mix it with water & spread it in farms.
- How to apply in farm ? you can use the total quantity for the entire tenure of the crop at once while preparing the land, or while seeding or after seeding. Thus reducing labor cost. Alternatively you can apply in parts as usual.
- Will your product work for entire tenure of 9 months for sugar cane or in some cases like Mango's where the crop is on yearly basis ? Yes our product is suitable for single application preferably at the start of planting for better results and our product sustains through out.
- How can you use all required material at once? Our product has been designed for slow release of nutrients in response to the dynamic needs of plants.
- What will happen if it rain heavily after total application ? if the top soil is carried away due to heavy rains, our product is lost along with it. In such fields, it is advisable to apply in parts.
- What happens if your product falls on leaf or roots directly ? Our product does not harm in any way because our product is neutral in nature.
- What if we use excess ? It does not harm the plant, as you can grow any plant directly in our product, but cost of cultivation goes up.
- What if we use less ? the plant will be under nourished.
- How much should we use & when ? As a generality the same quantity as you were earlier applying other products and at the same time.
- Every land is different so how do we know what quantity to apply ? To know the real potential of your field for any particular crop, mark small area and test run using different quantity of the product. Thus you can ascertain right quantity, cost and its benefits.

WATER

- Chemical based fertilizers need heavy watering after application, how much water is needed for your product ? Similar quantity as that of general fertilizers.
- What if the farmer is unable to water his farms after application ? Our product does not harm the plant in such event. Yet for better results it is advised to water the crops after application as early as possible.
- What are effect of excess water in the field ? Our product does not loose its efficacy in the event of water logging, until and unless it is washed away.
- Effects of water logging ? Our product does not loose its efficacy in the event of water logging.
- What are the effect in the event of hot or cold season ? our product do not create stress in such events.
- Can it be used in drip irrigation ? No this product cannot be used in drip irrigation.

COMBINING

- Can we use conventional organic fertilizer with your product? Yes our studies have shown that use of organic fertilizer preferably farm waste and the like in combination with our product yield good results.
- What quantity is to be used ? As a general rule similar quantity as that of chemical based fertilizer should suffice to give similar results. Yet the farmer may try out variation by in small patches and decide upon the matter.
- What other fertilizers are to be used with your product ? If the farmer uses required quantity of our product, then we do not need any chemicals based fertilizers.
- Can we use your product along with chemical based fertilizers ? There is no harm in using it, the farmer may try out different combinations to suit his crop and fields.
- How can we compare ? Use our product independently to know the difference on output and cost of cultivation.

- How do you improve soil ? Our product carries required natural nutrients which nurture the soil with organic matter that reduces dependency on chemical inputs.
- What natural minerals do ? They restore depleted mineral content and maintain soil fertility to nurture plant growth.
- Enhance biological activity ? Our product enhances biological activity and biodiversity of soils, thus improve the efficiency of nutrient use to produce more robust crops where by help enhancing the quality attributes of produce as well as yield.
- Improve organic matter ? our product enhances organic matter in soil.
- Can we use your product in fields which were earlier over fertilized, overexploited and have now become barren ? Yes even in such fields our product has shown excellent results. We recommend a slightly higher dosage for such barren land in the initial year.

- What are the impact on environment ? Our products do not have any impact on the ecosystem as all the ingredients are from natural sources.
- What happens if it leaches into surrounding environment ? it does not have any negative impact to surrounding region.
- Does your product help in reducing earlier impact of excessive usage of pesticide, weedicide or chemical fertilizers ? Our product reduces earlier soil negative impacts and the results can be seen on multi applications over a period of time.
- What happens after 2 or 3 years of usage of such products ? The required application of manures decreases and the soil is able to regenerate most of the nutrients itself.

RESULTS

- When can the results be seen in farms ? visible results can be seen after 4 weeks of application and major changes can be seen after multiple application.
- How will the final produce be ? farmers have reported the yield to be fully grown, consistent in size & increased weight.
- Nutritional value ? The yield carries major nutrients provided by the soil, thus providing better health to consumer.
- Will it taste different ? Yes they taste better
- What of Shelf life ? Noted to extend shelf life.

COMAPRISON

Application	KHUBA SOIL CONDITIONER ORGANIC	Chemical Fertilizer	Water Retainers For Deserts
Breathable Sand	Yes	No	Yes
Water retention	Enhanced	No	Enhanced
Anti seepage	Yes if applied properly	No	Yes if applied properly
Air circulation	Yes	No	Yes
Optimize soil	Yes	No	No effect
Excess Water	No impact	No action	No Impact
Better plant growth	Yes	Partly	Partly
Nature	Hygroscopic	NA	Hydrophobic
Effect of heavy rains	Minimal changes	Nullifies	Minimal Changes
Ground contamination	No effect	High	Unknown
Water contamination	No effect	Very high	Unknown
Ingestion by animals	Non Toxic	Toxic	Unknown
Soil nutrients	All Available	Minimal	NA
Activity / life span	Very long period	Short period	NA
Effect of Heat-	No effect on plant	Negative to plant	NA
Nutrient Uptake by plant	Easily available anytime	Either use or discard	NA
Nutrient availability	Available throughout	Only for short period	NA
Nitrogen	Available throughout	Either use or discard	NA

COMAPRISON

Application	KHUBA SOIL CONDITIONER ORGANIC	Chemical Fertilizer	Water Retainers For Deserts
Plant strength	Strong sustained strength	Only when applied for short period	NA
Plant fatigue	Constant strength	Variations of availability	NA
Excess Nitrogen	Constant supply	Leads to plant softening	NA
Over supply of Nitrogen	Not vulnerable	Vulnerable to pest attack	NA
Undersupply of Nitrogen	Constant availability	Leads to lowers growth	NA
Variation of Nitrogen	Constant growth	Lower plant strength	NA
Variation of Nitrogen	Not effected	Final yield effected	NA
Soil Organic matter	Not reduced	Reduced	NA
Organic matter reduction	Constant yield	Lower yields	NA
Organic Matter	Constantly replenished	Not replenished	NA
Organic Matter effects	Gains fertility	Looses fertility	NA
Colonization of plant roots with mycorrhizae	Enhanced	Reduced	NA
Exchange of nutrients	Enhanced	Reduced	NA
Balanced nutrient supply	Balanced	Erratic	NA
Biological Activity	Improved mobilization of nutrients	Reduced	NA
Phosphorus	Enhances colonization of mycorrhizae, which improves P supply to plant	Intake is erratic	NA
Soil Structure	Enhanced leading to better root growth	Not enhanced	NA

COMAPRISION

Application	KHUBA SOIL CONDITIONER ORGANIC	Chemical Fertilizer	Water Retainers For Deserts
Buffering Acidity	Buffers acidity	No	NA
Buffering Alkalinity	Buffers Alkalinity	No	NA
Micro nutrients	Enhances intake	Not available	NA
Micro nutrients retention	Yes	No	NA
Micro organism	Sustains and enhances	Does not sustain	NA
Earth worm	Sustains and enhances	Does not sustain	NA
Soil borne diseases	Minimizes	Does not help	NA
Air borne diseases	Minimizes	Does not help	NA
Effect of heavy rains	Minimal changes	Nullifies	NA
Nutrient release	Consistent	Inconsistent	NA
Long term effect	Soil fertility enhanced	Soil loses fertility	NA
Plant growth	Constant	Variable	NA
Change in weather	Minimal effect	Can be disastrous	NA
Stunted growth	Minimal effect	Possible	NA
Yield of desired product	Constant	Subjected to variation	NA
Quality of yield	High	Average	NA
Life span of Produce	Extended	Average	NA

REACH US



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