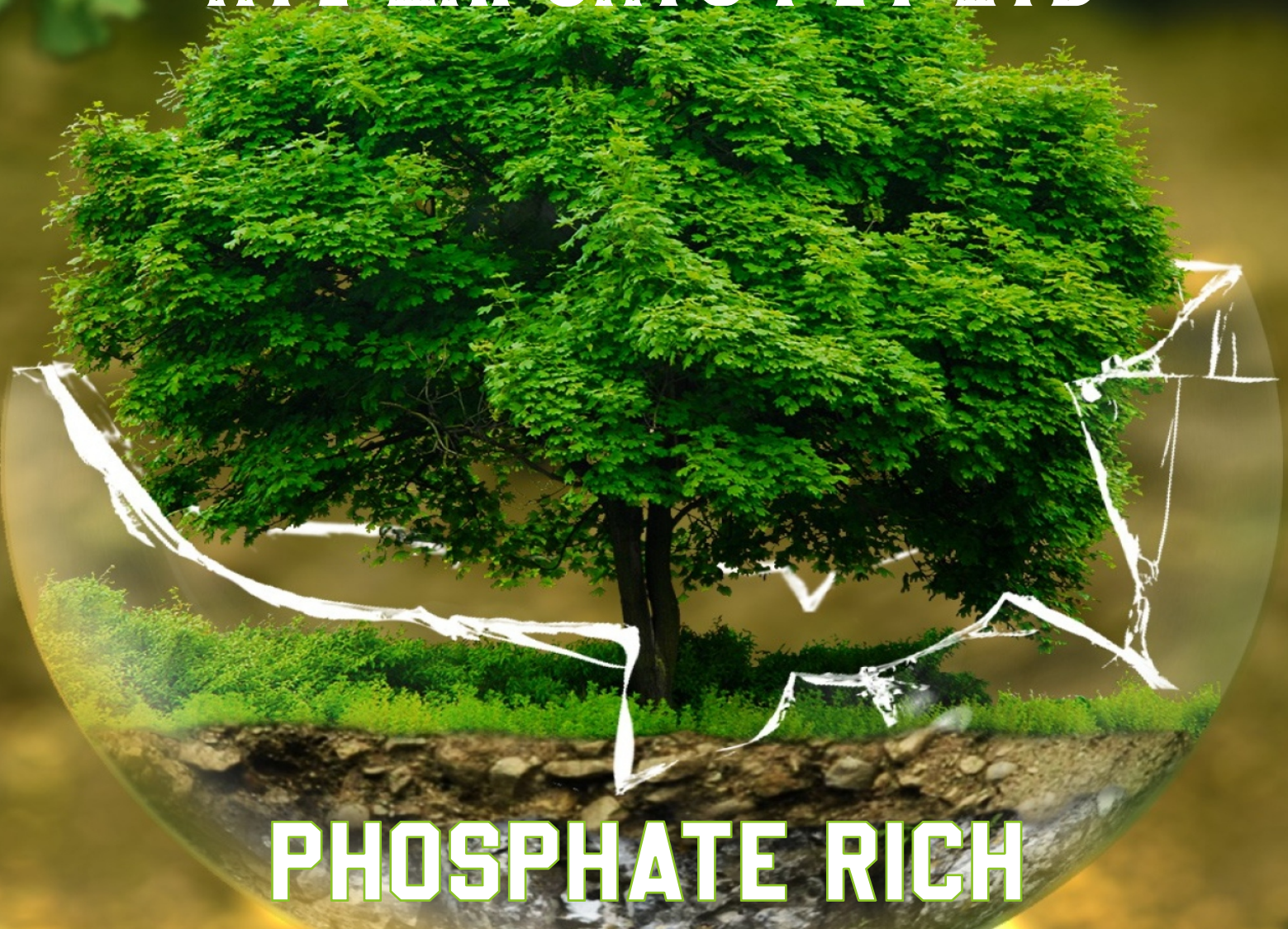




VELMURUGAN FERTILISER COMPANY RTV EXPORTS PVT LTD

A large, lush green tree is depicted inside a glass globe. The globe is cracked and shattering, with white lines representing the cracks. The base of the globe shows a rocky, uneven surface. The background is a soft-focus image of green foliage.

**PHOSPHATE RICH
ORGANIC MANURE**

PROM

PROM - Phosphate Rich Organic Manure

Phosphate Rich Organic Manure is a type of fertilizer used as an alternative to Di Ammonium Phosphate (DAP) Mono-ammonium Phosphate (MAP) and Single Super Phosphate (SSP). The P in NPK is Phosphorus.

Phosphorus is required by all plants but is limited in soil, creating a problem in agriculture. In many areas phosphorus must be added to soil for the extensive plant growth that is desired for crop production. The solubility depends upon PH of the soil, ambient condition and bacteria present in the soil.

In short, it acts as basic nutritional food for soil when sowing and improves the soil structure. The presence of Phosphorus, Nitrogen & Organic Carbon helps to keep the luster/moisture of soil, and the presence of organic carbon helps to improve the efficiency of crop growth as well as prevents land from being acidic & toxic.

PROM - Production

Phosphate Rich Organic Manure (PROM) is a value added product produced by co-compositing high-grade rock phosphate (32% P_2O_5 +/- 2%) in fine size (say 80% finer than 54 microns) with organic matter collected from various sources such as Press-mud, Straw of Paddy or Wheat, Cow-dung, Soy Meal, Vermin, FYM, Waste from Fruit Industries and Distillery etc. Phosphate Solubilizing Bacteria (PSB) and nitrogen fixing bacteria are added to improve the efficiency. Rock phosphate is soluble phosphate and it is effective in both acidic and alkaline soil.

PROM - Granular Form

- Controlled Release
- Even Distribution
- Ease of Application
- Reduced Wind Erosion
- Visual Monitoring

PROM - Powder Form

- Uniform Mixing
- Quick Availability
- Ease of Incorporation
- Localized Application
- Flexibility



PROM - Quality Specifications of Enriched Manure

S.No.	Parameter	Requirement
(i)	Moisture per cent by weight, maximum	30-40
(ii)	Colour	Brown to Black
(iii)	Bulk density	<1.0
(iv)	Total Viable Count (N,P,K and Zn Bacteria) or (N and K Bacteria)	5.0x10 ⁶ (within 3 months from the date of manufacture)
(v)	Total Organic Carbon, per cent by weight minimum	14.0
(vi)	Total Nitrogen (as N) per cent by weight minimum	0.8
(vii)	Total Phosphates (as P2O5) per cent by weight, minimum	8.4
(viii)	Total Potash (as K2O) per cent by weight, minimum	0.8
(ix)	NPK Nutrients Total N, P2O5, and K2O	Nutrients should not be less than 3.0%
(x)	CN Ratio	<18
(xi)	pH	6.5-8.0
(xii)	Conductivity (as dSm 1) not more than	1
(xiii)	Particle Size	Not less than 90 per cent of the material shall pass through 4mm IS Sleeve.
(xiv)	Heavy metals content (as mg/kg), maximum	
	Arsenic (As203)	10.0
	Cadmium (as Cd)	5.0
	Chromium (as Cr)	50.0
	Copper (as Cu)	300.00
	Mercury (as Hg)	0.15
	Nickel (as Ni)	50.00
	Lead (as Pb)	100.00
	Zinc (as Zn)	100.0



PROM vs DAP

PROM	DAP/MAP/SSP
Organic Fertilizer	Synthetic Chemical Fertilizer
Slow-release beneficial for sustained plant growth and reduced risk of nutrient leaching.	Fast-acting delivers nutrients directly to plants and more risk of nutrient leaching..
Soil improvement contributes to improving soil structure, water retention, and microbial activity due to the organic matter content.	The ammonium content can contribute to soil acidification over time, which may require additional management to maintain soil pH.
Environmental benefits: Organic sources in PROM are more environmentally friendly, as they reduce the need for synthetic phosphate fertilizers that can lead to nutrient runoff and water pollution.	Environmental concerns: Rapid nutrient release can increase the risk of nutrient runoff into water bodies, contributing to water pollution and eutrophication.
Long-term impact: The organic matter in PROM enhances soil fertility over time by increasing nutrient availability and promoting soil health.	Acidification: The ammonium content in DAP can contribute to soil acidification over time, which may require additional management to maintain soil pH.
Nutrient variability: The nutrient content of PROM can vary depending on the source and processing methods, leading to inconsistent nutrient supply.	Precise nutrient content: DAP's nutrient content is consistent and can be accurately calculated, allowing for precise application and nutrient management.
Easy to handle, transport and apply due to its granulated form	Easy to handle, transport and apply due to its concentrated form.
Balanced nutrient ratio since it has other essential nutrients like potassium and micronutrients, potentially leading to nutrient imbalances.	Imbalanced nutrient ratio: While DAP provides phosphorus and nitrogen, it lacks other essential nutrients like potassium and micronutrients, potentially leading to nutrient imbalances.

PROM - Common Usages

Here are some common usages of PROM in agriculture:

1. **Soil Enrichment:** PROM can be mixed into the soil before planting to improve soil fertility and nutrient content. This helps to provide a slow-release source of phosphorus that can support plant growth throughout the growing season.
2. **Fertilizer Application:** PROM can be used as a fertilizer by broadcasting it on the soil surface or incorporating it into the soil. This helps to provide a sustained supply of phosphorus to plants over time, ensuring they have access to this essential nutrient during critical growth stages.
3. **Seed Bed Preparation:** PROM can be mixed into the soil in seed beds before sowing seeds or transplanting seedlings. This helps to establish a nutrient-rich environment for young plants, promoting healthy root development and early growth.
4. **Top Dressing:** PROM can be applied as a top dressing during the growing season. This is particularly beneficial for crops that have a longer growing period, as it provides a continuous supply of phosphorus as the plants grow.
5. **Crop-Specific Application:** Different crops have varying phosphorus requirements at different growth stages. PROM can be applied in quantities and timings that align with the specific needs of each crop, ensuring optimal nutrient availability.
6. **Compost and Manure Enrichment:** PROM can be mixed with compost or animal manure to enhance their nutrient content. This results in nutrient-rich organic matter that can be applied to the soil, providing a balanced nutrient profile for plants.
7. **Transplanting:** When transplanting seedlings or young plants, PROM can be applied in the planting hole to provide a localized source of phosphorus that supports the establishment of the transplants.
8. **Tree and Shrub Planting:** PROM can be applied when planting trees and shrubs to promote healthy root development and overall plant growth. It helps to establish a nutrient-rich zone around the plant's root system.
9. **Organic Farming:** PROM is often used in organic farming practices as a source of phosphorus that aligns with organic principles. It provides a natural and sustainable option for enhancing soil fertility and nutrient availability.
10. **Long-Term Fertilization:** In areas where frequent fertilizer applications are not feasible, PROM can provide a longer-lasting solution due to its slow-release properties. This is especially useful in remote or resource- constrained regions.

PROM Advantages

The use of PROM in agriculture offers several benefits:

1. **Phosphorus Supply:** PROM is a natural source of phosphorus, which is a crucial nutrient required for plant growth, root development, and overall plant health. Phosphorus is essential for processes like photosynthesis, energy transfer, and nutrient uptake.
2. **Slow Release of Nutrients:** PROM releases phosphorus slowly over time as it undergoes natural decomposition processes. This slow release helps to provide a sustained supply of phosphorus to plants, which can be particularly beneficial for crops with longer growth periods.
3. **Improved Soil Fertility:** PROM contains organic matter that helps improve soil structure and water-holding capacity. It also enhances microbial activity in the soil, promoting nutrient cycling and creating a healthier soil environment for plant roots.
4. **Environmental Sustainability:** PROM is derived from natural sources such as rock phosphate, making it a more sustainable option compared to synthetic fertilizers, which often require energy-intensive processes to manufacture. Using PROM reduces the environmental impact associated with synthetic fertilizer production and use.
5. **Reduced Nutrient Runoff:** PROM's slow-release nature reduces the risk of excessive nutrient runoff into water bodies, which can cause water pollution and ecosystem imbalances. This can contribute to improved water quality in surrounding areas.
6. **Cost-effectiveness:** While the initial investment in PROM might be higher compared to some synthetic fertilizers, its slow-release properties can lead to longer-lasting effects, reducing the frequency of fertilizer application. Over time, this can lead to cost savings for farmers.
7. **Less Nutrient Lockup:** In some soils, synthetic fertilizers can react with minerals and become unavailable to plants. PROM can be less prone to this phenomenon, ensuring that the phosphorus remains accessible to plants for a longer duration.
8. **Suitable for Organic Farming:** PROM is often considered acceptable for use in organic farming practices, as it is derived from natural sources and aligns with organic principles.
9. **Crop Yield and Quality:** Proper application of PROM can lead to improved crop yields and quality due to the steady supply of phosphorus, which is crucial during critical growth stages like flowering and fruiting.

PROM Benefitted Plants

Here are some types of plants that are often much benefitted by the application of PROM:

1. **Flowering Plants:** Ornamental flowers and flowering perennials often have high phosphorus demands during their blooming phase. PROM can encourage vibrant and prolific flowering, enhancing the aesthetic value of gardens and landscapes.
2. **Fruiting Plants:** Plants that produce fruits, such as tomatoes, peppers, cucumbers, melons, and strawberries, tend to have higher phosphorus requirements during their flowering and fruiting stages. PROM can help support healthy fruit development and improve overall yield and quality.
3. **Root Crops:** Root vegetables like potatoes, carrots, beets, and radishes rely on adequate phosphorus for robust root development. Applying PROM can result in healthier root systems and more substantial yields of these crops.
4. **Legumes:** Leguminous plants like peas, beans, and lentils have a symbiotic relationship with nitrogen-fixing bacteria. PROM can complement their nutrient needs by providing a source of phosphorus that supports both vegetative growth and nitrogen fixation.
5. **Cruciferous Vegetables:** Vegetables from the cruciferous family, such as broccoli, cauliflower, and cabbage, benefit from sufficient phosphorus for healthy growth and the development of edible parts.
6. **Cereal Crops:** Crops like wheat, barley, and oats can benefit from PROM during their early growth stages, ensuring strong root systems and vigorous vegetative growth.
7. **Oilseed Crops:** Plants like sunflowers and canola that produce oil-rich seeds require ample phosphorus for seed development. PROM can contribute to higher seed yields and oil content.
8. **Herbs:** Culinary and medicinal herbs, such as basil, parsley, and mint, can benefit from PROM for enhanced leaf growth and overall vitality.
9. **Perennial Plants:** Trees, shrubs, and perennial plants often have long growth cycles. PROM can be particularly advantageous for establishing these plants during their initial stages of growth and supporting their long-term development.
10. **Organic Farming:** PROM is often used in organic farming practices across a variety of crops, as it aligns with organic principles and provides a natural source of phosphorus.

PROM Respond in Organic Cultivation

Nutrient Supply: PROM releases phosphorus gradually over time as it decomposes. This slow-release nature ensures a steady and prolonged supply of phosphorus to plants, supporting their growth throughout the growing season. This can lead to improved root development, flowering, fruiting, and overall plant health.

Soil Fertility: PROM contributes to improving soil fertility by providing both organic matter and essential nutrients. The organic component enhances soil structure, water-holding capacity, and microbial activity, which in turn supports nutrient cycling and availability to plants.

Reduced Runoff and Leaching: PROM's slow-release properties reduce the risk of excessive nutrient runoff and leaching. This helps prevent water pollution and minimizes the loss of nutrients from the soil, making it environmentally friendly and sustainable.

Crop Yield and Quality: Proper application of PROM can lead to increased crop yields and improved crop quality. Phosphorus is crucial for reproductive growth, so its steady availability can result in better fruit set, larger fruits, and higher yields.

Long-Term Benefits: PROM contributes to the long-term health of the soil by gradually enriching it with organic matter and nutrients. This can lead to sustained improvements in soil fertility, plant productivity, and overall ecosystem resilience.

Organic Farming Compliance: PROM aligns well with the principles of organic farming. Since it is derived from natural sources and undergoes a natural decomposition process, it fits into organic farming systems that emphasize sustainability and minimal environmental impact.

Sustainability: The use of PROM reduces reliance on synthetic fertilizers, which can have negative environmental consequences. By opting for organic alternatives like PROM, organic farmers can contribute to more sustainable agricultural practices.

Soil Microbial Activity: PROM's organic components can support beneficial soil microbial communities. Healthy microbial activity enhances nutrient availability, root health, and disease resistance in plants.

Local Resource Utilization: PROM can utilize local resources such as rock phosphate, which might be available in certain regions. This reduces the need for importing fertilizers and strengthens local agricultural systems.

PROM - Adaptation

PROM is more commonly adopted in the following contexts:

Organic Farming: PROM aligns well with organic farming principles, which emphasize the use of natural and sustainable inputs. In regions with a strong focus on organic agriculture, PROM may be adopted as a source of phosphorus.

Sustainable Agriculture: In areas where sustainable agricultural practices are promoted, PROM can be used to reduce dependency on synthetic fertilizers, which often have environmental and ecological drawbacks.

Resource-Constrained Regions: In regions where access to synthetic fertilizers is limited due to economic or logistical reasons, PROM can provide affordable source of phosphorus.

Soil Remediation: PROM is sometimes used in soil remediation projects to improve soil fertility and restore nutrient balance in degraded soils.

Crop-Specific Use: Certain crops with higher phosphorus requirements, such as fruiting plants, legumes, and root crops, may benefit more from PROM, leading to its targeted adoption in these contexts.

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IT MAKES HEALTH A DIFFERENCE

