

Multigreen[®]

Controlled Release Fertilisers (CRFs)

Product Catalogue



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Introduction

Controlled Release Fertilisers (CRFs)

Our Polymer-Coated Fertilisers

Controlled Release Fertilisers (CRFs) is a type of fertiliser designed to release nutrients gradually over a predetermined period. Unlike conventional fertilisers, which release nutrients rapidly, often within hours or days of application. This can lead to surge of nutrients, which if not taken up immediately by the plant, can be lost through leaching (moving down through the soil) or surface runoff (washing away from the soil surface). CRFs provide a consistent supply of essential nutrients to crops, ensuring optimal growth while reducing environmental impact.

Comparing Controlled Release, Slow Release and Conventional Fertilisers

The main difference between Controlled Release (CRFs), Slow Release (SRFs) and Conventional Fertilisers lies in their nutrient release pattern. Conventional fertilisers provides an immediate release, often leading to nutrient loss, while SRFs offer a gradual release but may not always match plant needs. CRFs, however, delivers a consistent, controlled release, aligning with plant growth for optimal efficiency and minimal waste.

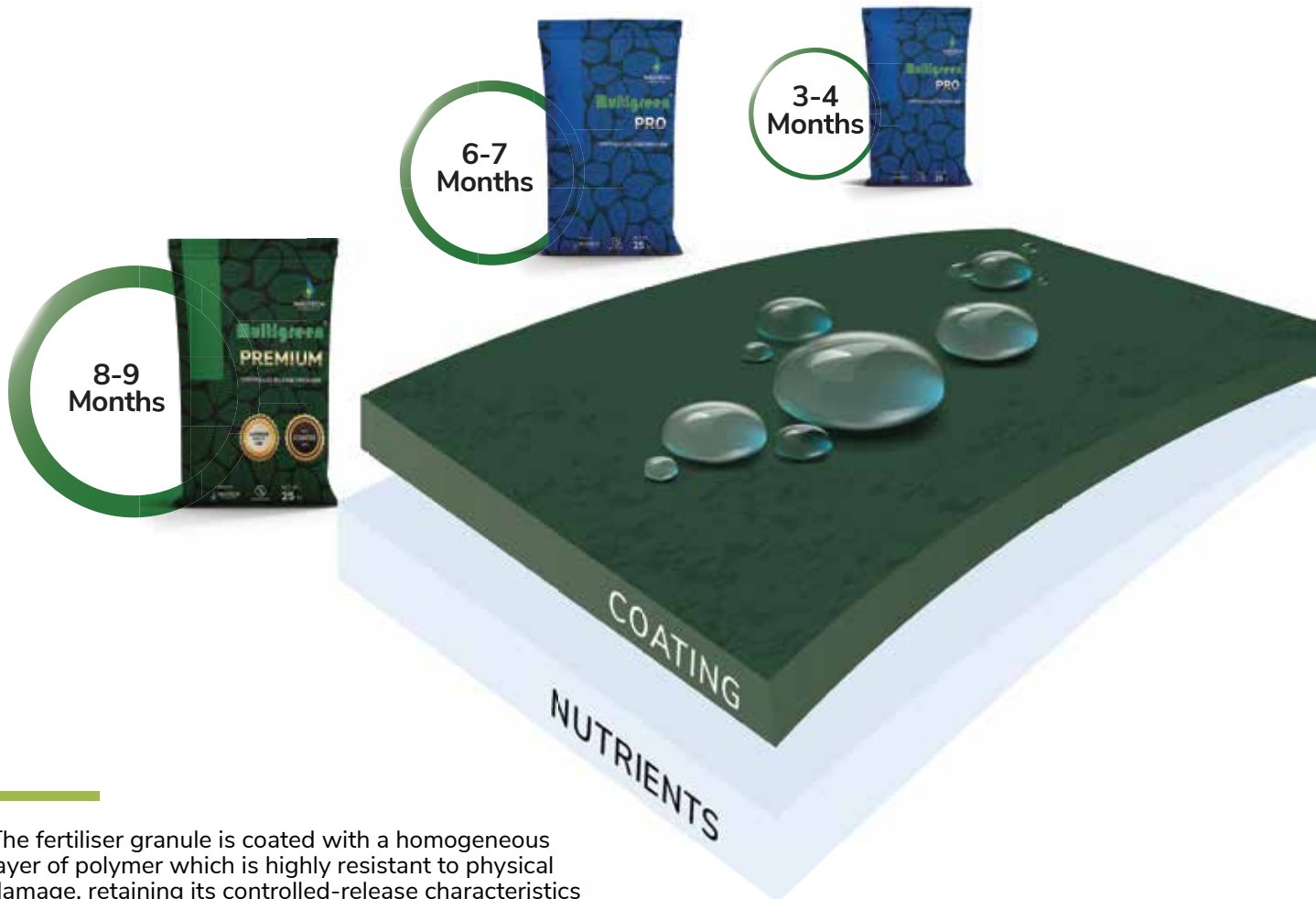


Type of Fertiliser	Controlled Release Fertilisers (CRFs)	Slow Release Fertilisers (SRFs)	Conventional Fertilisers
Nutrient Release Pattern	Gradual and consistent release over time, ensuring nutrient availability as needed.	Release over time but less consistent, due to influence of environmental factors.	Rapid and immediate release.
Nutrient Leaching	Low risk of leaching due to gradual release.	Moderate risk of leaching, depending on release rate.	High risk of leaching and surface runoff due to rapid release.
Efficiency	High efficiency, ensuring nutrient availability in a daily manner.	Moderate efficiency, nutrients may not match plant needs perfectly.	Less efficient, as nutrients might not be fully taken up by the plants.
Long Term Cost	Lowest cost.	Moderate.	Higher cost due to frequent reapplication.

The Science of Polymer-Coated Release Technology

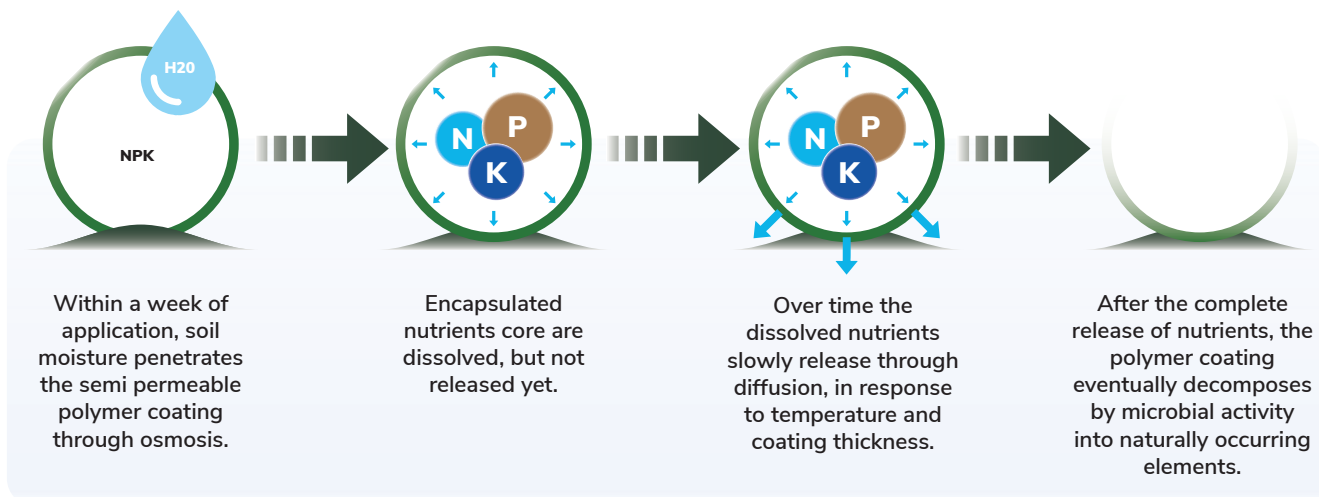
Coating Thickness

Polymer-coated technology demonstrates that increasing the coating thickness results in longer longevity.



The fertiliser granule is coated with a homogeneous layer of polymer which is highly resistant to physical damage, retaining its controlled-release characteristics even after harsh handling.

Understanding the Nutrients Release Mechanism of Multigreen® CRFs



What makes Multigreen® CRFs different?

While many CRFs in the market claim to offer nutrient-controlled release, Multigreen® CRFs distinguish through several key features:

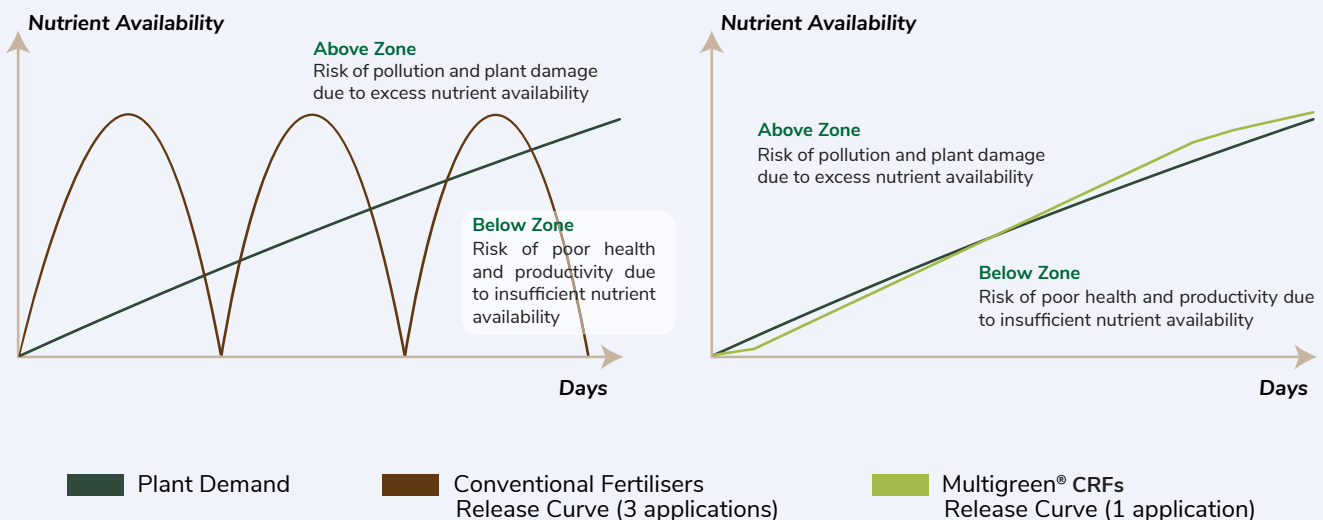
Precise Nutrient Release



Multigreen® CRFs controlled release mimics the plant's natural nutrient uptake patterns, providing a consistent supply of essential elements. The release mechanism is temperature-dependent and work best in tropical climate between 28°C-30°C.

The Multigreen® CRFs coating is designed to release nutrient precisely, meaning a gradual, stable rate that aligns with the plant's nutrient needs. The figures below demonstrate a sudden surge nutrient levels when conventional fertilisers are applied, leading to rapid fluctuations. In contrast, the nutrient release and uptake with Multigreen® is more consistent, ensuring steady availability over time.

Nutrient Availability: Conventional Fertilisers vs Multigreen® CRFs



Temperature-Responsive Release Mechanism

Multigreen® CRFs release nutrients based on soil temperature. As sunlight increases and photosynthetic activity intensifies, soil temperature rises, triggering a proportional release of nutrients. This ensures that plants receive optimal nutrient support during active photosynthesis.



Patented Polymer Coating Technology

Our unique, low-heat blending and patented polymer coating ensure the nutrients are released gradually at a stable and controlled rate. This optimises nutrient efficiency, reducing waste and improving overall plant health.



Sustainability and Biodegradability

Multigreen® CRFs coatings are specifically designed to degrade only upon contact with soil microorganisms. This provides an extended shelf life prior to application and ensures the product naturally breaks down in the soil, minimising environmental impact after use.



Custom Blend Formula

We understand that every crop is unique. With our CRFs, we offer the ability to customise nutrient release based on specific crop requirements, growth stages, and environmental conditions, guaranteeing your crops receive optimal nutrition.

Fertiliser Pollution and Its Environmental Consequences: A Call for Change

Fertilisers have significantly boosted agricultural productivity, but their excessive and inefficient use has led to serious environmental issues, primarily fertiliser pollution. This occurs when nutrients, especially nitrogen and phosphorus, leak into the environment, causing widespread damage to ecosystems and human health.



Sources of Fertiliser Pollution

Agricultural Runoff

When rain or irrigation washes excess fertiliser from fields, it can end up in rivers, lakes, and coastal waters, contributing to water pollution.

Leaching into Groundwater

Nitrates from fertilisers can seep into groundwater, contaminating drinking water and posing health risks, particularly for infants.

Air Pollution

Fertilisers can release ammonia and nitrous oxide, a potent greenhouse gas, into the atmosphere.

Environmental & Health Impacts

Eutrophication

Excess nutrients promote algae growth, reducing oxygen in water and creating "dead zones" where aquatic life cannot survive.

Loss of Biodiversity

Fertiliser runoff can disrupt ecosystems, harming plant and animal species.

Soil Health

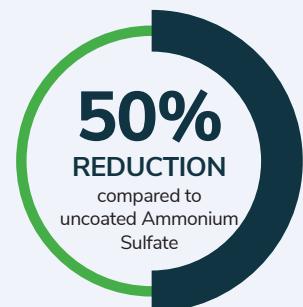
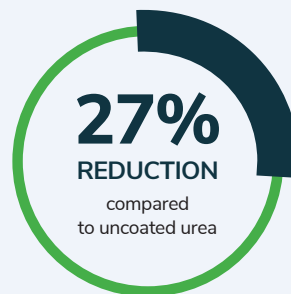
Overuse of fertilisers can degrade soil, reducing its ability to retain water and nutrients over time.

Fertiliser pollution is a pressing issue, but with sustainable farming practices, better management, and solutions like **Multigreen® CRFs**, its environmental and health impacts can be reduced. Balancing agricultural productivity with environmental responsibility is key to protecting our ecosystems for future generations.

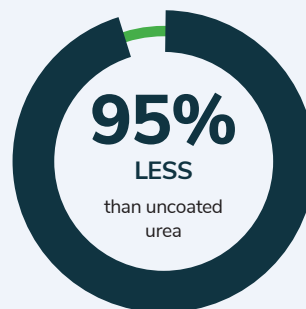
Stop Nutrient Waste

Our technology minimises the loss of nutrients to the air and ground, while delivering nutrients in a precise, prescriptive manner to nourish the plant. A new level of efficiency is achieved through improved synchronisation of fertiliser nutrient release and plant nutrient uptake.

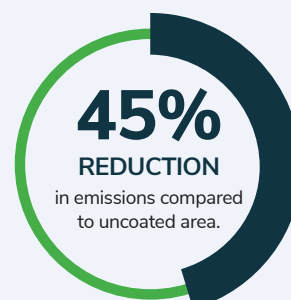
Minimises Leaching



Reduces Volatilisation



Lessens N₂O Emissions



Multigreen® CRFs Products

Differences Between PREMIUM & PRO Series

Multigreen® CRFs PREMIUM and Multigreen® CRFs PRO are innovative types of controlled release fertilisers, designed to provide precise nutrient delivery to plants over time. These fertilisers use advanced U.S. patented polymer coating technology to control the release of nutrients such as Nitrogen (N), Phosphorus (P) and Potassium (K), enhancing plant growth while reducing nutrient loss and environmental impact.



Multigreen® PREMIUM is a **fully coated fertiliser**, where the NPK nutrients are evenly distributed within a single granule. This coating ensures that the release of nutrients occurs gradually and uniformly, providing a constant supply of essential nutrients to plants. This means plants receive a consistent flow of nutrients without the need for frequent reapplication.



Multigreen® PRO is a **custom blend partially coated fertiliser**, where each N, P and K nutrient can be individually coated in one granule. For example, Nitrogen (N) can be released gradually over 90 days, Phosphorus (P) can be left uncoated for immediate use, and Potassium (K) can have a one-month release period. This custom coating helps deliver nutrients at the right time, meeting the specific needs of different plants.

PREMIUM Series



Formula	13-13-13+MgO+B	14-14-14+MgO+B	15-10-20+3MgO+B	20-8-10+3MgO+B
Stages	<ul style="list-style-type: none"> • Nursery • Planting Hole 	<ul style="list-style-type: none"> • Nursery • Planting Hole • Immature 	<ul style="list-style-type: none"> • Vegetative • Post-harvest recovery 	Planting Hole
Soil Type	All Type	All Type	All Type	All Type
Longevity*	Up to 9 months	Up to 4 months	Up to 4 months	Up to 9 months

*Longevity is based on the number of days for 85% nutrient contents to be released into soil with the soil temperature at 30°C.

PRO Series



Formula	15-6-25+3MgO+B	7-5-22+3MgO+B+TE	5-3-17+3MgO+B+TE	12-5-25+3MgO+B
Stages	Immature	<ul style="list-style-type: none"> • Immature • Mature 	<ul style="list-style-type: none"> • Immature • Mature 	<ul style="list-style-type: none"> • Immature • Mature
Soil Type	All Type	Peat Soil	Peat Soil	All Type
Longevity*	Up to 6 months	Up to 4 months	Up to 4 months	Up to 4 months



Formula	9-5-27+4MgO+B+5S	9-20-25	30-15-3	12-12-23+3MgO+B
Stages	Fruiting	Flowering	Vegetative	Reproductive
Soil Type	All Type	All Type	All Type	All Type
Longevity*	Up to 3 months	Up to 1 month	Up to 2 months	Up to 2 months

*Longevity is based on the number of days for 85% nutrient contents to be released into soil with the soil temperature at 30°C.

Choosing The Right Fertiliser For Your Crops

Oil Palm

Multigreen® Product	Oil Palm					
	Stages	Pre-Nursery	Main Nursery	One-Stage Nursery	Planting Hole	Year
		1-2	2-3	4-10	10>	
PREMIUM	13-13-13+MgO+B	●	●	●		
	14-14-14+MgO+B	●	●	●		
	15-10-20+3MgO+B					
	20-8-10+3MgO+B				●	
PRO	15-6-25+3MgO+B					●
	7-5-22+3MgO+B+TE					●
	5-3-17+3MgO+B+TE					●
	12-5-25+3MgO+B					●
	9-5-27+4MgO+B+5S					●
	9-20-25					
	30-15-3					
	12-12-23+3MgO+B					



Multigreen® CRFs can be applied directly to the root zone without the risk of scorching.



Choosing The Right Fertiliser For Your Crops

Durian

Multigreen® Product	Stages	Durian					
		Nursery	Planting Hole	Immature	Flowering	Fruiting	Recovery After Harvesting
PREMIUM	13-13-13+MgO+B		●				
	14-14-14+MgO+B	●	●	●			
	15-10-20+3MgO+B			●			●
	20-8-10+3MgO+B						
PRO	15-6-25+3MgO+B						
	7-5-22+3MgO+B+TE						
	5-3-17+3MgO+B+TE						
	12-5-25+3MgO+B						
	9-5-27+4MgO+B+5S					●	
	9-20-25				●		
	30-15-3						
	12-12-23+3MgO+B						



Choosing The Right Fertiliser For Your Crops

Others

Multigreen® Product	Stages	Paddy	Fruit Vegetables	Leaf Vegetables	Root Crops	Fruit Orchards
PREMIUM	13-13-13+MgO+B		●	●		
	14-14-14+MgO+B		●	●	●	●
	15-10-20+3MgO+B		●	●	●	●
	20-8-10+3MgO+B		●	●	●	●
PRO	15-6-25+3MgO+B		●		●	●
	7-5-22+3MgO+B+TE		●		●	●
	5-3-17+3MgO+B+TE		●		●	●
	12-5-25+3MgO+B		●		●	●
	9-5-27+4MgO+B+5S		●		●	●
	9-20-25		●	●	●	●
	30-15-3	●				
	12-12-23+3MgO+B	●				



WASTECH GROUP

Wastech Multigreen Sdn. Bhd. Wastech Engineering Sdn. Bhd.

- **Headquarters**

Lot 34, Jalan Delima 1/3,
Subang Hi-tech Industrial Park,
40000 Shah Alam, Selangor, Malaysia.

- **East Malaysia Office**

Lot 642, 2.5 Miles, Jalan Sultan Iskandar,
Bintulu Light Industrial Estate,
97000 Bintulu, Sarawak, Malaysia

+603-5611 0181
admin@wastech.com.my

Wastech Hong Kong International Ltd.

Unit 912, 9/F., Block B,
Po Lung Centre,
11 Wang Chiu Road, Kowloon Bay,
Kowloon, Hong Kong.

+852 2983 6731
info@wastech.hk

PT Wastek Agro Indonesia

Gedung Mitramas Lt.2, Jl. Sunter
Permai Raya, Blok A1 No. 1-4,
Jakarta Utara - 14350, Indonesia.

+62 21 6408736
sales@wastekagro.id



www.wastech.com.my