

Aussie Fertilisers For Aussie Conditions



 **Macracote[®]**

Controlled Release Fertiliser

“Unique and Efficient Plant Nutrient System”

LANGLEY FERTILIZERS

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Sunpalm Australia Pty Ltd

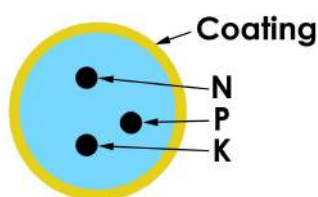


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What is Macracote®?

Macracote® is a spherical granule of gold, compounded CRF type of fertiliser with a diameter of 2 to 4mm. This is manufactured by coating granular NPK with a polymer composition of modified wax, natural additives and with trace elements. Plant nutrients of most of the Macracote® range of fertilisers is on linear pattern for the specified duration. Macracote® is also available in blends of sigmoid release pattern of nutrients. A wide variety of the Macracote® range with various nutrient compositions and varying release rates are manufactured, that meet the fertilisation requirements of many kinds of plants. As the release rates of the nutrients are accurately controlled by a blend of special coating technology, one single dose application is possible for the entire fertilisation to the plants, adjusting the rate of release to match the plant growth throughout the required period.

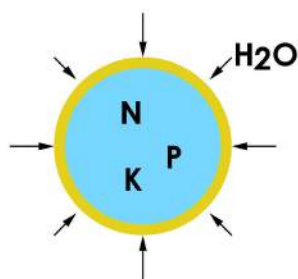
These fertilisers are used predominantly in wholesale production nurseries, forestry and in a variety of horticultural applications.



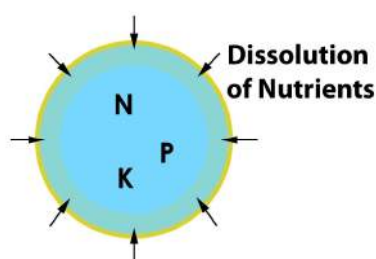
How does Macracote® work?

The controlled release of plant nutrients from Macracote® fertilisers is a physical process, consisting of three steps;

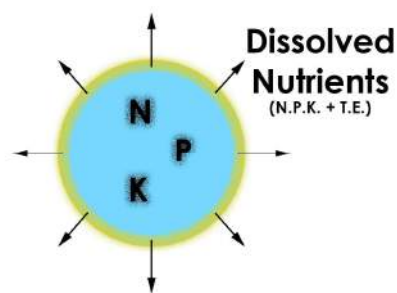
Step 1: Water penetration through its coating



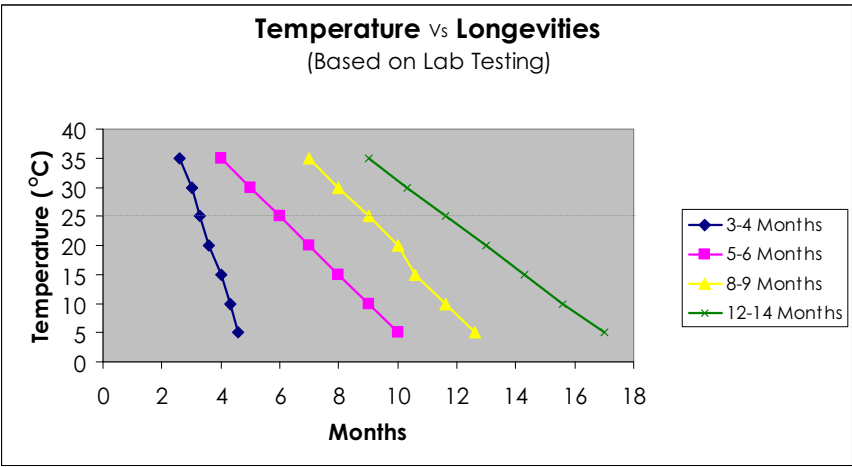
Step 2: Nutrients dissolving in the water within the coated granule



Step 3: The release of nutrients in solution, through the unique coating which is in the form of a semi permeable membrane, by the reverse osmotic pressure of the penetrating water.



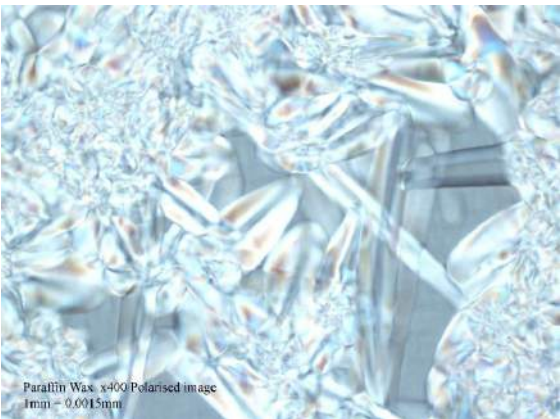
The Release of nutrients from Macracote® is not influenced by microbial activity but is highly dependant on soil temperature variance.



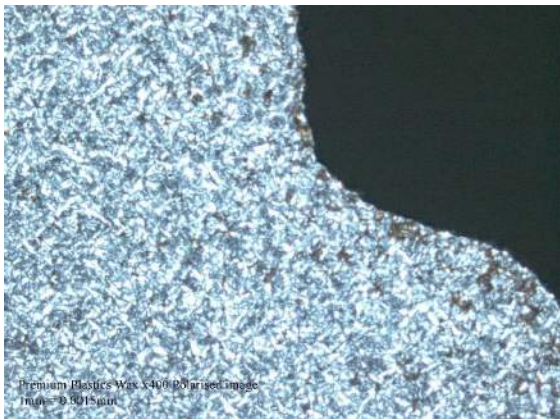
The table above clearly demonstrates the longevity of various Macracote® blends which are predicted at 25 degree centigrade. This is only a guide as all the fertilisers are affected by the complexity and variety of field conditions.

What makes Macracote® Unique?

Macracote® technology is unique and differentiated in that the release of all the nutrients through the coating is simultaneous and at an even rate irrespective of the varying molecule sizes of N, P and K. This is due to the unique crystalline structure and morphology of its modified coating.



(Crystalline structure of ordinary wax while viewed in polarized light)



(Modified wax coating on Macracote® while viewed in polarized light)



How reliable is Macracote®?

During the past 25 years in nursery trials across Australia, Macracote® has proven to be as good as, or better than leading brands of (CRF) controlled release fertilisers available in the marketplace.

Does Macracote® dump?

No, the special polymer coating composition of the modified wax possesses excellent heat storing properties and sustains to the harshest climate conditions by working as heat insulator around the NPK granules. Selecting the right blend is the critical factor in achieving a predictable release pattern. Variation of temperature-dependant nutrient release has been achieved by the incorporation of additives in the modified wax coating. Other factors to consider are plant species and plant sensitivity to specific nutrients e.g.: Phosphorus sensitive plants.

Which nurseries are using Macracote®?

Nurseries all over Australia are using Macracote®. Contact us for the 'Macracote® Testimonial' handout or to know specific nurseries in your area using Macracote®.

Why should I consider Macracote® when I am content with my current CRF brand?

The main reason would be the price. Macracote® is competitively priced due to the fact that it is produced in Australia unlike other leading brands which are imported from Overseas and the costs associated with importation means that a large portion of the price you pay is actually freight and related costs. We consistently prove to nurseries that we can achieve the same or better results with savings of 20 –30%. As a progressive nursery in an ever increasingly competitive market, can you ignore Macracote's® cost savings?

Does the thickness of the coating affect the nutrient value of Macracote®?

No, regardless of the CRF brand, you are purchasing the NPK as a percentage (%) of weight (normally 25 kg). Macracote's® coating percentage and thickness does not affect the label rate of nutrients. By law all CRF are sold by w/w. Langley Fertilizers, guarantees the label rates of nutrients (w/w) as listed on each bag of Macracote®!

Why would I use Tablets of CRF fertilisers?

Over the years Langley Fertilizers has successfully developed and supplied various speciality CRF tablet products to the industry. These tablets are an easy and cost effective way to feed nutrients to newly planted trees, shrubs and container plants. Langley Fertilizers tablets have been used by professional growers and landscapers for over 25 years. These tablets contain all the necessary nutrients to feed plants for one year. Typhoon tablets are renowned for their reliability and performance. Other tablets such as Macratap®, Troforte™, Ultramag and Fruit & Vine tablets are specifically formulated to match the nutrient requirements of growers. There are General Purpose and Native Plant tablets. Standard sizes carried in stock are ten and twenty gram tablets, packed in cartons containing ten kilograms net. This amounts to approximately 1000 ten gram tablets or 500 twenty gram tablets per carton.

How does a Typhoon™ Tablet work?

The tablet is placed halfway up the side of the root ball of the plant, near the root ball. The tablet gradually breaks down into a powder and disperses into an area about 100mm in diameter. When moisture levels are high, the process of breaking down the tablet into powder and dispersion is fast. If you dig it up after a period of time, all you will find is a white smudge in the soil, rather than a tablet.

It is important to note that even when the tablet breaks up, the nutrients lock onto the soil molecules and remain available to the plants in slow release form, and do not leach away. The tablet has to breakdown and

actually dissolves slowly by microbial activity for nutrients to become plant available. Throughout the life of the tablet, it supplies the food and energy to beneficial microorganisms, these then gently and gradually release nutrients back into the soil to become plant available. A single application lasts for approximately one year.

Why do I need to use Microplus®?

Extra trace elements are often required in potting mixes in addition to those supplied by Macracote®. Microplus® is a powder developed specially to supply trace elements in potting mixes.

Why would I use Mycorrhizal products?

Langley Fertilizers has developed easy to apply products incorporating Mycorrhizal fungus which is one of the smartest soil organisms as it learns to go directly to the roots by penetrating cell walls without harming the cells to form a symbiotic state, rather than hanging around in the rhizosphere outside the roots. The principle function of Mycorrhizal fungus is to enhance nutrient absorption from soil and deliver them to plants, and therefore contributes to improving in overall plant growth, plant vigour and plant survival by improving the root system. Langley Fertilizers has developed Troforte Myco-PWDR for soil mixes in powder form and Troforte Myco Tab in tablet form. To find out if particular plant is non-mycorrhizal, contact us on info@sunpalmaustralia.com.au

Are these products safe?

Yes. Used as directed, all these products are beneficial to plant growth. If you need more information, please contact your local distributor or Sunpalm Australia Pty Ltd and also ask for MSDS.

How do I get more information?

Contact us for the Technical Data Sheet which is individually available for each product in the Langley Fertilizers product range.

What size containers are the products in?

Macracote®, Meister, Microplus® and Troforte Myco PWDR are all packed in 25 kilogram bags. Nitroform is packed in 22.7 kilogram bags. Typhoon, Troforte- Myco Tab and Fruit & Vine tablets are packed in boxes containing 10 kilograms and are available in 10, 20, 25 and 40 gram sizes.

Who makes these products?

All Macracote®, Typhoon, Microplus® and Troforte M products are manufactured by Langley Fertilizers, the Fertiliser division of Sunpalm Australia Pty Ltd in Australia except Meister and Nitroform which are imported and distributed by Sunpalm Australia.

How do I decide which fertilisers to use?

Base your decision on the particular plants being grown, their known fertiliser needs, the projected growing time, and your previous usage. You may select one in the range or alternatively, you may contact us for more advice on

info@sunpalmaustralia.com.au or +61 (0)8 9302 1633.

More Questions? We'd love to answer them. Contact us either through e-mail, your local distributor or directly on +61 (0)8 9302 1633.

Langley Coated Granular Fertilisers

| Product | Release Period (Months) | N P K | Recommended Use |
|--------------------------|--------------------------|--------------|---------------------------------------------------------------------|
| Macracote® Gold | 3 to 4 | 12 4 10 + TE | Indoor foliage, cut flowers and vegetables |
| Macracote® Blue | 3 to 4 | 16 4 10 + TE | Fast growing foliage and flowering shrubs |
| Macracote® Brown | 3 to 4 | 18 1 8 + TE | Natives or wherever a low P is required |
| Macracote® Green | 8 to 9 | 12 4 10 + TE | Indoor foliage, cut flowers and vegetables |
| Macracote® Yellow | 5 to 6 | 15 3 9 + TE | Medium term foliage and flowering shrubs |
| Macracote® Red | 8 to 9 | 15 3 9 + TE | Long term foliage and flowering shrubs |
| Macracote® Orange | 12 to 14 | 16 4 10 + TE | Long term foliage and flowering shrubs, advance stock |
| Macracote® Grey | 8 to 9 | 18 1 8 + TE | Natives or wherever a low P is required |
| Macracote® Extra | 8 to 9 | 15 3 8 + TE | General purpose for harsh climate with extra T.E |
| Macracote® Extra | 12 to 14 | 15 3 8 + TE | General purpose for harsh climate with extra T.E |
| Macracote® Lilac | 6 to 8 | 18 8 7 + TE | Suitable for use as a base fertiliser for mixing into growing media |
| Macracote® Pink | 6 to 8 | 11 4 15 + TE | Suitable for plants requiring high potassium feeding |
| Macracote® Purple | 6 to 8 | 13 9 9 + TE | Useful for profuse flowering, uniform fruiting |

Langley Tableted Fertilisers

| Product | Release Period (Months) | N P K | Recommended Use |
|----------------------------------|--------------------------|---------------|---------------------------------------------------------|
| Typhoon™ General Purpose | Up to 1 Year | 20 4 8 + TE | Shrubs, Trees in planters from 175mm up |
| Typhoon™ Native | Up to 1 Year | 20 1 10 + TE | For all Native plants and trees |
| Macratap® | Up to 1 Year | 16 4 8 + TE | Highly recommended for all types of palms |
| Fruit & Vine | Up to 1 Year | 12 4 8 + TE | Most Fruit trees, Vines and Olives |
| Ultramag (High Magnesium) | Up to 1 Year | 7 0 0 + 33 Mg | Wherever the soil and/or plant is very low in Magnesium |



Langley Nitrogen Fertilisers

| Product | Release Period (Months) | N P K | Recommended Use |
|----------------------------------------------|-------------------------|-------------|---------------------------------------------------------|
| Meister (Granular 2 to 4mm) | 100, 270 & 400 Days | 40 0 0 + 0 | Broadcast, Potting mixes, topdressing and dibbling use |
| Nitroform (SGN 140- Chip) | Up to 1 Year | 38 0 0 + 0 | Ideal for lawn, topdressing, potting mixes and dibbling |
| Nitrolok-U 120 (Granular 2 to 4mm) | 120 Days | 38 0 0 + TE | Potting mixes, topdressing, broadcast applications |

Langley Trace Elements and Mycorrhizal Products

| Product | Release Period (Months) | N P K | Recommended Use |
|---------------------------|-------------------------|-------------------|-----------------------------------------------------------------------------|
| Microplus® | Powder | 0 0 0 + TE | Potting mixes |
| Troforte Myco PWDR | Powder | 0 0 0 + TE + Myco | Ideal for lawn, vegetables production and soil mixes for healthy seedlings. |
| Troforte Myco Tab | Tablet | 0 0 0 + TE + Myco | Ideal for fruits & Vine trees for nutritional value and yields. |

Langley Fertilizers has evolved an array of multi-nutrition products in granular, tablet and powder forms, that cater to the need of nutritional requirements of various horticultural and nursery applications. We also manufacture custom blends to cater to the specific needs of growers.

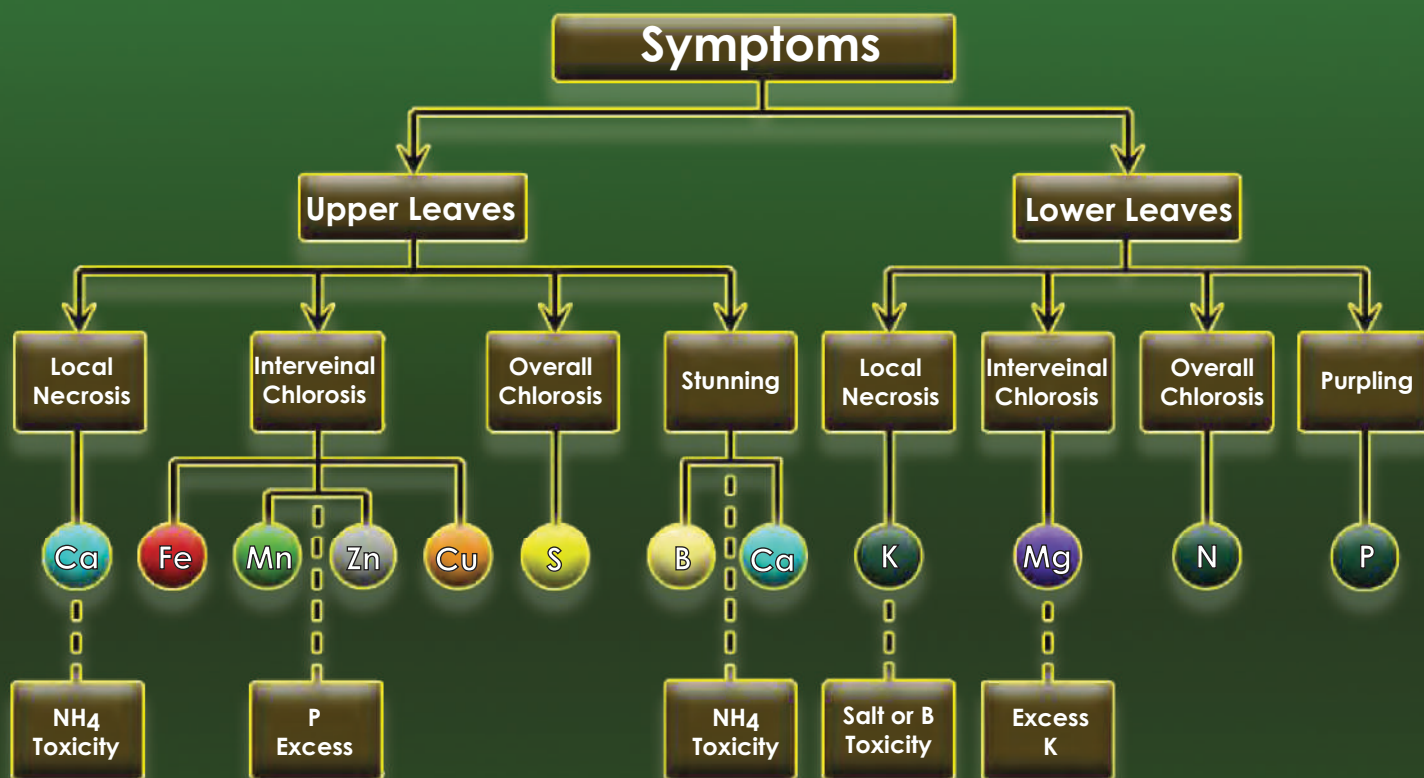
The use of micronutrients is essential in plant production, and it is crucial and vital to develop methodologies for proper formulation of such products.

Langley Fertilizers has developed its own proprietary technology for special coating on NPK granules that makes Macrocoate® unique and differentiated from other products in the market place. We have formulated a series of Controlled Release Fertilisers incorporating micronutrients to cater to the **“Balanced Nutritional Requirements”** of Australian growers and specific to Australian conditions.

We invite in-field trials anywhere in Australia. For more detailed information, you may contact us on info@sunpalmaustralia.com.au or directly on 08-93021 633



“Basic Guide to Interpretation and Diagnosis of Nutrient Disorders”



Nutritional disorders include deficiencies of nutrients, toxicities, excess of nutrient or group of nutrients and high or low pH. There could also be non-nutritional causes of chlorosis due to old age, lack of root aeration or virus diseases. Nutrition disorders commonly limit growth considerably before symptoms appear. Symptoms are often ambiguous due to disorder. However a generalised guide to diagnosing nutrient disorder can help the grower.

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