

# HYDROLON A

**NPKS 6-0-4-0 + 4.7% Ca & 1% Mg**

An "A" tank all in one hydroponic mix. HYDROLON A for all hydroponic crops must be supplemented with HYDROLON B

## BENEFITS OF HYDROLON A

- Specially designed calcium, potassium and magnesium blend in nitrate form suitable for fertigating hydroponic crops grown on run-to-waste or recirculatory and aeroponics systems.
- Free of chlorides, sulphate and urea with ideal Ca/Mg ratio of 4.6:1.
- High electrical conductivity due to ionic forms of nutrients.
- Also suitable for soil grown crops and for soil amendments to open its structure and displace sodium.
- Improves soil base saturation and promotes the uptake of other nutrients.
- Removes calcium, potassium and magnesium related disorders in crops.
- Can be safely tank mixed with other calcium and nitrogen products in any proportion thus reducing the labor expenses and cost of the precious irrigation water.
- Provides metabolically active nitrogen in nitrate form.
- Extremely safe for application to all plants due to its nutrient form.

## THE IMPORTANCE OF CALCIUM, POTASSIUM AND MAGNESIUM

The hydroponic crops are fed regularly with the nutrient rich solution containing the ionic forms of all essential nutrients. Generally, hydroponic growers use two to three different tanks containing nutrient concentrates and inject the required amount into the lines to feed their crops. Nitrate nitrogen, calcium, potassium and magnesium have been incorporated into HYDROLON A solution to feed the crops.

Regular feeding of calcium, the secondary nutrient is essential to maintain

a healthy growth of all plants including nut crops, citrus, spuds, vegetables and vines. Calcium helps in cell wall growth and strengthening by complexing with the cellulose fibres providing rigidity to plant cells. It also regulates the processes involved in plant hormone induced cell growth and development by modifying various proteins such as Calmodulin in plants. Calcium is relatively immobile and its redistribution to fruits from leaves is almost insignificant. Calcium travels up the xylem stream regulated through evapotranspiration. In glasshouse conditions, the dry air or air with low humidity drives calcium uptake to combat blossom end rot. Plants growing under high humidity often show calcium disorders due to impaired transpiration, a physiological deficiency that may be prevented by foliar application of HYDROLON A, if required. For better skin texture and colour in fruits, it is mandatory that calcium must not be limiting.

Potassium helps in sugar production and its translocation into the fruit. Potassium creates negative water balance in the fruits that pull water into the fruit from the leaves thus helps fruit in the expansion process. Fruits develop better colour, high brix and have better shelf life with potassium application. Hence, in hydroponic systems it is mandatory to have some potassium with calcium in HYDROLON A solution as they both synergistically help grow better fruits. Magnesium plays the most crucial role in chlorophyll synthesis, the green pigment that captures sun light and converts it into plant food.

Magnesium is the central atom of the chlorophyll molecule surrounded by the nitrogenous groups controlling the vital process of photosynthesis essential for crop growth and productivity. Magnesium mobilizes sugars and is an essential part of ATP activation process that helps in the energy storage in cells catalysing various enzyme systems that regulate metabolic processes. Magnesium deficiency results in chlorotic bands on older leaves coupled with their earlier defoliation. The leaf blade turns yellow from the margin inwards and assumes bronze colour.

It is important that correct Ca/K/Mg ratios be maintained on the exchange sites to avoid the deficiencies of these vital nutrients. Magnesium and calcium play an important role in determining the base saturation of the soil. Calcium helps in displacing sodium and restores soil structure in sodium infested soils or soils irrigated with high sodium water.

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CHARACTERISTICS: pH: 6.0 - 6.4; Specific Gravity: 1.21 - 1.23

AUS Analysis W/W%: 5.7% N, 3.7% K, 4.7% Ca, 1% Mg

International Analysis W/W%: 4.7% N, 3.0% K<sub>2</sub>O, 3.9% Ca, 0.8% Mg

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## APPLICATION

**Carnations / Ornamentals: Feed solution: 1.5 - 3 ml/L.** Apply from planting through to active growing/flowering period. Start with lower rates from early vegetative and gradually increase the rates through to flowering.

**Egg plants / cucumbers: Feed solution: 2 - 4 ml/L.** Apply from early stages of growing season starting lower rate and gradually build up rates until fruiting to harvest.

**Blueberries / Strawberries: Feed solution: 2 - 4 ml/L.** Apply regularly with increasing rates upto first flowering, maintain rates until full harvest. Check EC regularly.

**Tomatoes/Bell peppers: Feed solution: 3 - 5 ml/L.** Increase rates from early vegetative to first truss and maintain high rates until full harvest.

**Lettuce / Spinach / Bok choys / Ornamentals: Feed solution: 1 - 2 ml/L.** Increase rates from first heart until full growth/harvest.

In hot weather, use lower rates. Fertigation rates depend on calcium requirement of each crop.

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NOTE: The suggested rates of application of the Product are designed for typical Australian conditions and should be used as a guide only. Each farmer's climatic conditions, water quality, soil types, application processes and practices may differ and therefore necessitate corrections to ensure optimum results. Good agricultural practice requires that application be avoided under extreme weather conditions such as temperatures over 28°C, high humidity, frost, rain etc. It is recommended that when applying to a crop or area for the first time, or in combination with other chemicals, a small test area should be sprayed and observed prior to the total spray. Where possible, it is recommended that regular leaf tests are conducted to determine actual plant nutrient availability during each growth cycle. Soil tests at least once per year are essential.