# nitrotain™ TE

CROP RETAINED NITROGEN

Liquid Nitrogen, Potassium and Trace Elements; nutrition, for foliar, soil or fertigation applications. **Nitrotain™+TE** retains nitrogen in the plant or within the soil, minimising atmospheric and leaching loss or the acidification of soils.

## CROPS:

Tree Fruits, Vines, Vegetables, Cereal crops.

## NITROTAIN™ + TRACE ELEMENTS

**Nitrotain™+TE** is formulated to protect the ammonium and nitrate forms of nitrogen, providing a slower/longer nitrogen characteristic. The trace elements address deficiencies which often limit the utlilisation and conversion of Nitrogen to protein within the plant.

| | NITROTAIN™ + Trace Elements | | | | |
|---|---|---|---|---|---|
| | w/v % | | | | |
| **Nitrogen** | (N) | as | Carboxyl-amide Complex | 93 g/L | 9.3 |
| **Nitrogen** | (N) | as | Ammonium Lignonitrate | 25 g/L | 2.5 |
| **Nitrogen** | (N) | as | Potassium Lignonitrate | 35 g/L | 3.5 |
| **Nitrogen** | (N) | as | Ammonium Lignoureate | 55 g/L | 5.5 |
| Potassium | (K) | as | Potassium Lignosulphonate | 40 g/L | 4.0 |
| Sulphur | (S) | as | Ammonium Lignosulphonate | 15 g/L | 1.5 |
| Magnesium | (Mg) | as | Magnesium Lignosulphonate | 15 g/L | 1.5 |
| Manganese | (Mn) | as | Manganese Lignosulphonate | 750 mg/L | 0.075 |
| Iron | (Fe) | as | Iron Lignosulphonate | 300 mg/L | 0.030 |
| Boron | (B) | as | Ammonium Lignoborate | 520 mg/L | 0.052 |
| Copper | (Cu) | as | Copper Lignosulphonate | 250 mg/L | 0.025 |
| Zinc | (Zn) | as | Zinc Lignosulphonate | 250 mg/L | 0.025 |
| Molybdenum | (Mo) | as | Ammonium Lignomolybdate | 100 mg/L | 0.010 |
| Cobalt | (Co) | as | Cobalt Lignosulphonate | 120 mg/L | 0.012 |
| Selenium | (Se) | as | Ammonium Lignoselenate | 25 mg/L | 0.002 |

## NITROGEN EFFICIENCY:

Nitrogen is an essential element for the production of amino acids, nucleic acids, proteins, vitamins and is essential for plant growth, energy reactions and the production of Carbohydrates.

Nitrogen Fertilisers tend to be inefficient as they are highly soluble with Nitrate Nitrogen being leached from soils especially under irrigation, or ammonium Nitrogen being lost to the air as ammonia. Both forms are also acidifying by carrying Calcium and Magnesium out of soils or by the build up of H+ ions. Acidification deep in the soil is extremely difficult to rectify.

**Nitrotain™+TE**, is formulated to negate Nitrogen loss by chelating or complexing the Nitrogen, avoiding the atmospheric or leaching losses and soil acidification. These stable forms of organic nitrogen are rapidly transferred into the plant via leaves or roots.

**Nitrotain™+TE** may be applied as a foliar, by fertigation or via hydroponics.

## POTASSIUM:

**Nitrotain™+TE** contains Potassium. As an essential element, Potassium is critical to the synthesis of proteins from applied Nitrogen and the Potassium in **Nitrotain™+TE** further enhances the efficiency of Nitrogen utilisation. The low mobility of potassium may limit its availability to plants in sandy soils or dry conditions.

## TRACE ELEMENTS, MAGNESIUM AND SULPHUR:

Although trace elements are only required in very small quantities, they are often overlooked and may be a limiting factor in plant growth.Trace elements are often bound in soils and are best applied as a foliar spray.

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## Nitrotain™+TE POST HARVEST.

Research has demonstrated that 72 to 80% of new growth in spring used nutrients, especially Nitrogen, accumulated in the previous autumn. (Policarpo 2001). Early cell development and division is determinant of fruit size at harvest and because there are no mature leaves during early fruitlet growth, the tree relies on nutrient reserves.

Similarly grapevines draw previous season nitrogen, stored in the roots and trunk, to sustain vine growth up to the 5-leaf stage. Stored nitrogen provides approximately 20% of that used by the vine between budburst and flowering. (WA Dept Ag Bull. 4421)

Furthermore rootlet actively commences after budburst in spring, remaining inactive until soil temperatures reach 20ºC.

**Trial to compare Spring bud nutrients using liquid urea and Nitrotain™+TE as post harvest treatments.**

Apricot trees were foliar sprayed post harvest on 9/4/08 and bud nutrients measured 7 days after application and at the following spring on the 15/9/08.

### RESULTS:

| | Liquid Urea vs Control | Urea Spring vs Autumn | Nitrotain TE vs Control | Nitotain TE spring vs Autumn |
|---|---|---|---|---|
| Nitrogen | - 0.23% | + 9% | + 22.4% | + 63% |
| Potassium | - 0.11% | + 27% | + 17.1% | + 76% |

### CONCLUSION:

**Nitrotain™+TE** applied as a post harvest foliar spray, significantly increased the levels of Nitrogen and Potassium in the following season spring buds.

**Nitrotain™+TE** can be blended with BudBuilder-Nitro Cal-Mag Plus.

**Recommended Application Rate:** 10L/ha after harvest, dilute from 50/1 to 100/1 with water.

## Nitrotain™+TE SEASONAL TOP-DRESS.

**Nitrotain™+TE** will not "burn" the fruit or leaves and may be a useful top-dress through the growing season, particularly if water is limited and the plants have experienced heat or hydration stress.

**Recommended Rate:** 5L/ha every 4 weeks mixed with crop protection sprays.

## Nitrotain™+TE TO SIZE FRUIT

Applied late in the season **Nitrotain™+TE** may boost the fruit size when applied 4 weeks before harvest, when fruit sizing has been limited late in the season due to heat or hydration stress.

**Recommended Rate:** 10-20 L/Ha 3 to 4 weeks before harvest.

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ECTOL PLANT & CROP NUTRIENTS