



Stoller Enterprises, Inc.

Nitro Plus 9

Calcium 9.00%, Amine Nitrogen (NH₂) 9.00%, Boron 0.10%

Nitro Plus is also available in other formulas (for specialist uses including seedling establishment, saline soil remediation, dormant spray and more) and with added micronutrients.

A superior controlled release amine nitrogen / calcium fertiliser for quality, yield, root promotion, and stress tolerance.

Research proves that plants perform best when they take up all forms of N. Unfortunately ammonium and urea are quickly converted to nitrates in the soil, so crops generally take in mainly nitrate (regardless of what type of N is applied to the soil). Unlike nitrate N the nitrogen in **Nitro Plus** starts being metabolised by the plant as soon as it enters the roots. This means the plant can utilise the N immediately and quickly develop a large root system.

Nitro Plus supplies controlled release nitrogen in a form that encourages root growth and bud and fruit development instead of the excessive vegetative growth associated with other types of nitrogen.

Nitro Plus gives quick emergence, strong healthy root systems, better establishment, increased disease resistance and extended life of the plant.

Advantages of **Nitro Plus** include:

- Increased yield and quality
- Helps combat physiological disorders
- Good establishment - even in stress conditions.
- Drought and disease resistance
- Strong root growth
- Improves saline and sodic soils



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Controlling Nitrogen's Role in Plant Diseases

A significant amount of research reveals two vital factors regarding plant diseases:

1. The nitrate form of nitrogen increases the disease susceptibility plants,
2. Calcium increases the disease resistance in plants, and

How and Why does this happen?

Plants under stress produce extra high levels of ethylene in their tissue. The presence of ethylene leads to production of enzymes that act like “PAC MAN.” These PAC MAN enzymes decompose cell wall tissues, thereby enabling disease to enter the plant.

High levels of nitrates increase the PAC MAN action in the plant tissue and predispose the plant to disease.

On the other hand, calcium in the plant tissue decreases the PAC MAN enzymes and greatly reduces (maybe eliminates) the plant's susceptibility to disease.

Despite the best attempts to cultivate disease –free plants from disease-free seeds in disease-free soil, growers rely on an arsenal of agrochemicals to keep plants healthy. The fact is that many bacterial and fungal pathogens are omnipresent.

Considering this concept, diseases do not take down plants; plants decompose their tissue and invite disease to invade them. In our farming practices, we encourage this process by applying high rates of nitrogen. And, when it comes to calcium, we often rely on soil reserves to be sufficient.

But what about the weather?

It is recognized that many diseases are influenced by the weather and environmental conditions. Increased moisture and warm temperatures do more than just provide ideal conditions for the growth and movement of pathogens. Therefore, it is also important to consider how the weather influences nutrient uptake, plant growth and ethylene production. The conditions that encourage disease also encourage the uptake of nitrate nitrogen. Furthermore, these conditions influences the distribution and concentration of calcium within a plant, leading to more calcium to more calcium in older leaves and less calcium movement to new growth and reproductive flowering and fruiting tissue. Finally, the stress of weather changes causes the plant to produce ethylene, which decompose and weakness plant tissue. Thus, increased disease pressure comes not only from greater pathogen activity, but also from weaker plant growth and the negative effects of ethylene.

What can be done?

Use liquid Nitro Plus as at least one third of your nitrogen source. Remember, it takes much higher levels of calcium in plant tissue than are necessary for normal yields in order to reduce disease susceptibility. Also, follow a foliar program that enhances the plant's resistance to stress to avoid the ethylene production that will invite pathogens to penetrate the plant tissue.



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Recommendations

- **Nitro Plus (in open fields) - Through irrigation systems:**
 - ▶ **For all vegetable and fruit crops in open field, with irrigation water:**

Apply 50 - 100 lts per hectare with first water after planting.

You can repeat the above application every 2 - 4 weeks till end of harvest.
- **Nitro Plus (in green houses) - Through irrigation systems:**
 - ▶ **For all vegetable crops in green houses, with irrigation water:**

Apply 5 - 10 lts per 500 m² (100 - 200 lts per hectare) with first water after planting.

You can repeat the above application every 2 - 4 weeks till end of harvest.
- **Nitro Plus (foliar spray on ever green trees “Citrus, Olives and Mangoe”):**
 - ▶ Add 1.5 - 3 lts per 100 lt of water. Start application at 30 days before flower appearance.
 - You can repeat application every 3 - 4 weeks till end of harvest.
- **Nitro Plus (for dormant spray to woody tissue on “Deciduous trees”):**
 - ▶ Make a 5% to 7% **Nitro Plus** solution.
 - Thoroughly wet the woody parts of the tree after the leaves have fallen. It is best to make this application approximately 30 days after all leaves have fallen from the tree. Do not, however, apply this **Nitro Plus** solution to the woody parts of the tree during the period of six weeks before flowering. That is too late. We do not want to damage any of the flowers.

The need for this treatment is to put adequate calcium in all parts of our fruit tree. This is very important for the control of hormone movements within the tree as well as supplying enough calcium for developing fruits. This is the best and most economical methods of getting significant amounts of calcium into tree crops. Do not exceed 100 liters per hectare.
- **Nitro Plus (for Turf):**
 - ▶ Apply 5 to 10 lts per 1000 square meter. Repeat every 30 days after cutting.