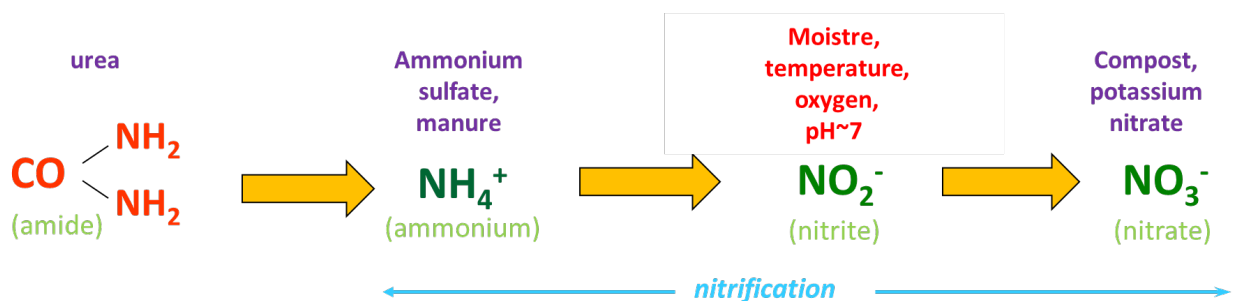


The avocado is a subtropical cultivar originally from Central America. Brought to Israel in the early 20th century, but commercial cultivation began only in the 1960s.

Avocado is sensitive to cold weather, saline soil, and poorly drained plots as it is a subtropical plant. nevertheless, it requires considerable irrigation and prefers low acidic levels surrounding its rootstock.

A significant characteristic of its cultivation is the shallow root system. Generally, the primary avocado root system reaches a depth of just 15-20 cm, even in a mature plantation. This fact obligates the grower to plan irrigation, and particularly the appropriate fertilization.

When growing avocado, it is usual to fertilize with 30 kg of nitrogen during the season, with additional phosphorus and potassium. The nitrogen may be applied as ammonium, nitrate, or amide (urea).



This decomposition is carried out by bacteria. At the end of the decomposition process, the molecule electric charge changes from positive (ammonium) to negative (nitrate), which causes the nitrogen to become very mobile in the soil. This is the origin of the concept of **nitrate leaching**.

Aside from the financial cost of removing expensive fertilizer from beneath the rhizosphere, nitrogen leaching constitutes an environmental problem due to





groundwater contamination. From our recent years' experience, about 30% of the nitrogen applied during the growing season washed out beneath the rootstock.

At GAT Fertilizers we are the first in Israel (and probably the world) to market a new line of pelletized solid water-soluble fertilizer - GATIT Blue, which contains nitrification inhibitors (NI) additives that interfere with bacterial nitrogen decomposition. Using this fertilizer inhibits the nitrification process in the soil. This material is soluble and mobile within the soil and is thus very appropriate for mixing with urea or ammonium rich formulas.

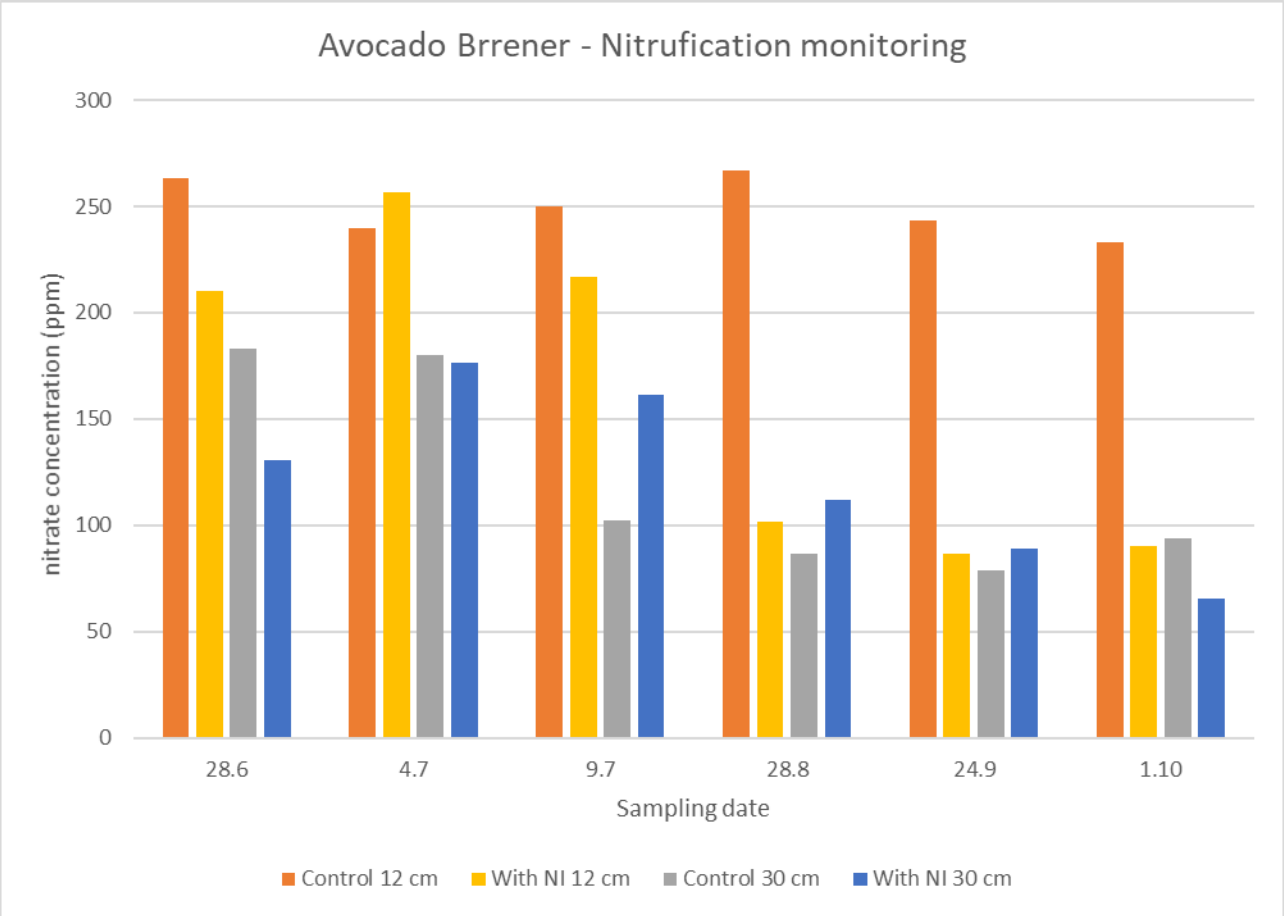
This material is familiar worldwide, as an inhibitor of nitrification, primarily for use in manure and pasture areas. It does not function as a poison, and does not a Bactericide, but rather contains nitrogen, which interferes with the bacteria's functioning, delaying it for 25-55 days, depending on the temperature. During the recent growing season, GATIT Blue was tested under field conditions in two avocado plots, with different soil conditions and different nitrogen compositions with very good results.

In the first trial, GATIT Blue was tested in a "Reed" avocado plot, planted in 2014 in heavy soil, in the avocado plantation at Givat Brenner - Israel.

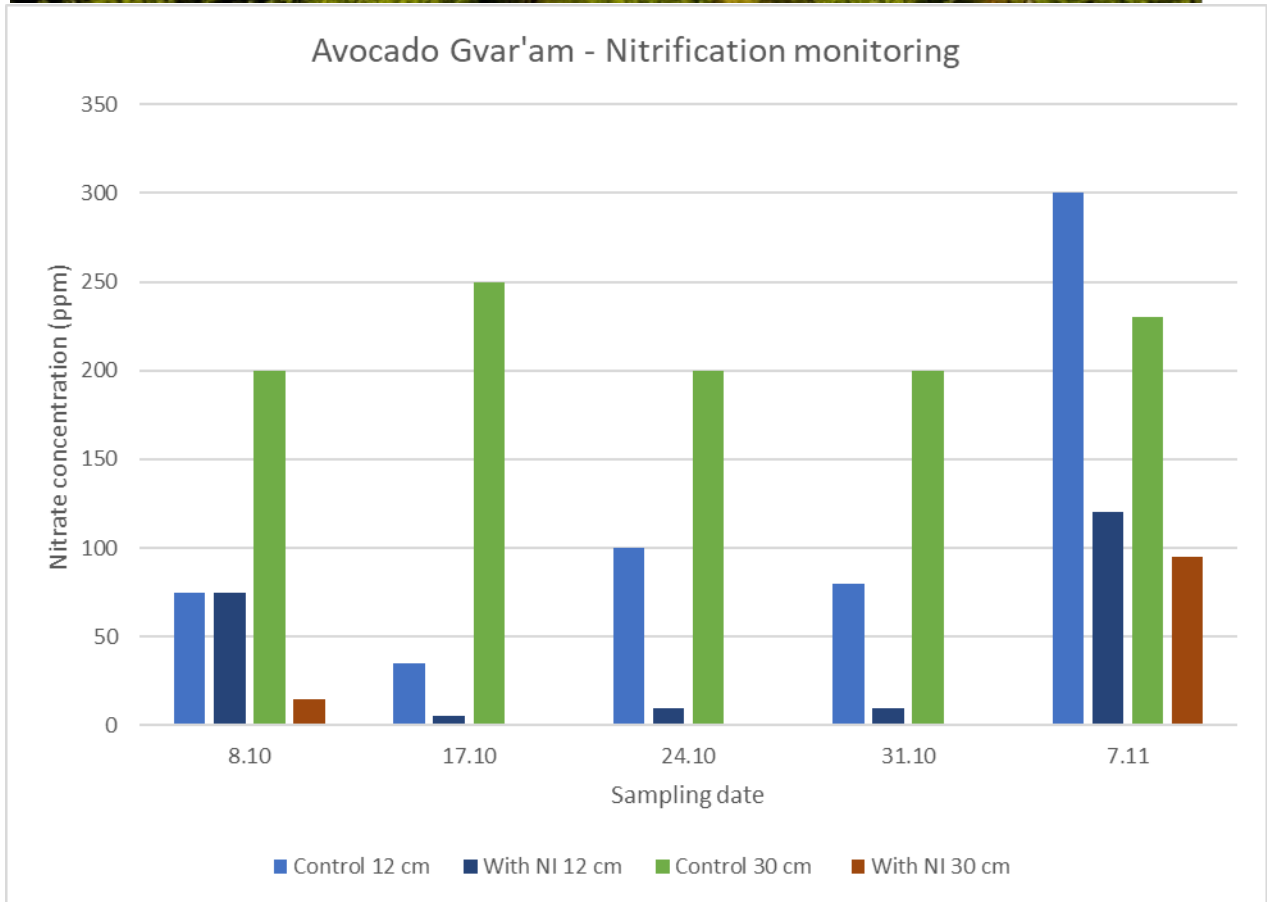
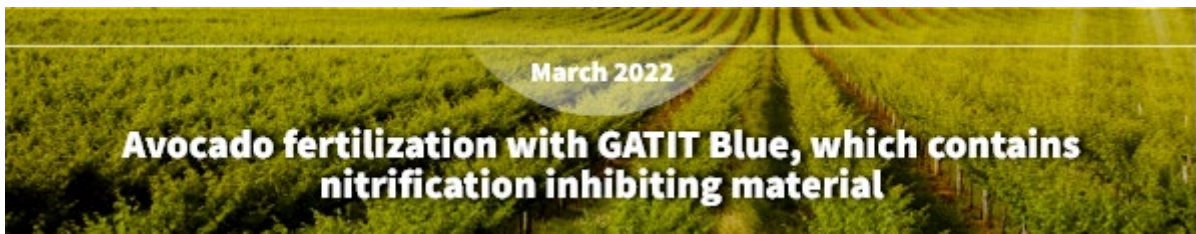
The trial was conducted with GATIT Blue fertilizer, based on urea and FerroGat (chelated iron). During the trial, the nitrate level was examined at the rhizosphere depth (12 cm.), and below the rootstock (30 cm.). Based on the results in the graph below, despite that, the two plots were treated with the same type of fertilizer at the same dose, in the experimental plot the nitrogen level at the rhizosphere was significantly lower.

Conclusion - in the rhizosphere, the ammonium level was significantly higher.





In the second trial, we examined the GATIT Blue in a "Hass" avocado plot planted in 2016, in sandy soil at the Kibbutz Gvar'am orchard. In these plots, due to the sandy soil, fertilization was done using ammonium-based formula with FerroGat (chelated iron) and with the Blue additive. Application was proportional fertilization, twice daily. two plots received the same type of fertilizer at the same dose.




The graph shows that the nitrate level at the rhizosphere and below the rootstock was very high, compared to the control. It is also noticeable that the level of nitrate leaching in the control plot is much higher compared to the treated area.

In the current season, this material is available combined with fertilizer at a variety of formulas. The proportion of the material in the fertilizer is mixed according to the type of nitrogen in the fertilizer and its concentration in the solution. This fertilizer series is called GATIT Blue and comes in a matching color of the powder/pellets.

Fertilizing with the GATIT Blue series offers several advantages:

- 1. The nitrogen remains as ammonium and is fully available upon application.**





March 2022

Avocado fertilization with GATIT Blue, which contains nitrification inhibiting material

2. **The nitrogen remaining as ammonium is not leached and remains available to the plant even when irrigation occurs the day after fertilization.**
3. **Most types of plants significantly prefer nitrogen uptake as ammonium, rather than nitrate.**
4. **The absorption of ammonium, per season gives the rhizosphere an acidic pH and improves absorption of additional nutrients by the tree.**

At GAT Fertilizers our experienced professional staff of agronomists is available to guide you and assist in preparation of an optimal fertilization program for your plot's requirements.

Eran Ben Yaakov, Agronomist

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