Nutrivant®

Foliar Fertilization

Boost your crops with Nutrivant

ICL

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Nutrivant®

Long-lasting technology for improved foliar nutrition

Nutrivant formulations are designed for arable and large-scale crops. The Nutrivant range consists of fully-soluble formulations that contain a specially-designed macro and micro-nutrient mix for every crop's needs.

The efficiency of foliar feeds can be impaired by the leaf cuticle, a tough membrane that blocks or slows the penetration of nutritional elements and bio-stimulants. Nutrivant contains FertiVant, an environmentally-friendly built-in adjuvant that breaks through this barrier. FertiVant technology ensures the uptake of applied nutrients, which results in dramatic increases in yield, quality, and profits.

Benefits of Nutrivant

- Crop-specific NPK analyses
- Contains the unique Fertivant technology
- Sticking and spreading characteristics for a Long Lasting Performance
- The ultimate preventative foliar product
- Portfolio including high levels of Ca, B, and Zn

Why does Nutrivant perform better?

- Non destructive to the plant tissue
- No toxicity to plants or the environment
- Biodegradable on plant surface
- Unique sticking & spreading system of “coral” pattern
- Long Lasting Penetration (LLP) activity of plant nutrients, over 3 weeks, through the cuticle
- Agro Vant R&D team is assembled by Ben Gurion University of the Negev scientists
- A wide range of crop related formulas gives the ability to obtain better agricultural results
- The technology has been tested in large-scale trials with various NPK’s and micronutrients formulations

Recommendation

Crop		Stage	kg/ha
Wheat	19-19-19+2MgO+B+ME	Tillering	4 - 5
	31-8-7+2MgO+B+ME	Stem extension	4 - 6
	19-19-19+2MgO+B+ME	Grain filling	4 - 6
Maize	8-50-8+2MgO+0.01B+ME	Simulating rooting	4 - 5
	31-8-7+2MgO+B+ME	Stimulates vegetation	4 - 6
	6-18-37+2MgO+0.02B+ ME	Improves bushel weight and grain quality	-
Coffee	8-50-8+2MgO+0.01B+ME	Pre flowering	5
	19-19-19+2MgO+B+ME	Berries expansion	5
	6-18-37+2MgO+0.02B+ ME	ripening	5
Potato	31-8-7+2MgO+B+ME	stimulates vegetation	4 - 6
	19-19-19+2MgO+B+ME	6 weeks after sowing – balanced NPK	ratio 5 - 6
	6-18-37+2MgO+0.02B+ ME	Improve tubers quality and weight	6
Beans	8-50-8+2MgO+0.01B+ME	stimulating rooting	4 - 5
	6-18-37+2MgO+0.02B+ ME	4 weeks from sowing improve quality and weight	4
	6-18-37+2MgO+0.02B+ ME	6 weeks from sowing improve beans quality and weight	5
Rice	31-8-7+2MgO+B+ME	Tillering	4 - 5
	19-19-19+2MgO+B+ME	Stem elongation and booting, balanced NPK	-
	6-18-37+2MgO+0.02B+ ME	Grain filling and hardening	4 - 6
Tomato	31-8-7+2MgO+B+ME	stimulates vegetation	4 - 6
	19-19-19+2MgO+B+ME	6 weeks after sowing balanced NPK	ratio 5 - 6
	6-18-37+2MgO+0.02B+ ME	Improve fruit quality, ripening and weight	6

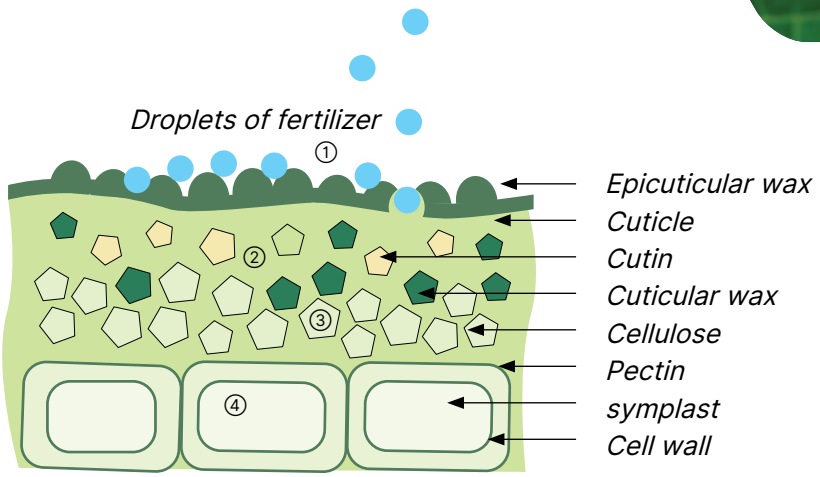
Mechanisms for nutrient uptake and transport

① Wetting of the leaf surface with the fertilizer solution

② Penetration through the cuticle (outer epidermis)

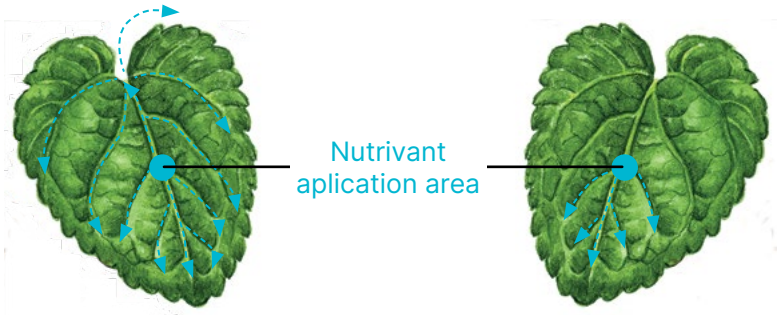
③ Entry into the leaf apoplast (cell wall and intercellular spaces)

④ Uptake into the leaf symplast (cell interior)



Transport of foliarly applied nutrients within and out of the leaf

Translocation to other parts of the plant



High mobility (P, K, N, S...)

Very low mobility (Ca, Mn, Zn, B...)

Fertivant sticking and spreading effect

Fertivant + MKP crystals on a citrus leaf

Fertivant Technology

Advanced Uptake
Fertivant Technology

Fertivant is based on the adjuvant technology that can break through the leaf cuticle. It enables good penetration by the foliar solution with all its dissolved ingreditients. The advanced Fertivant Technology therefore ensures efficient uptake of all valuable minerals and bio-stimulants.

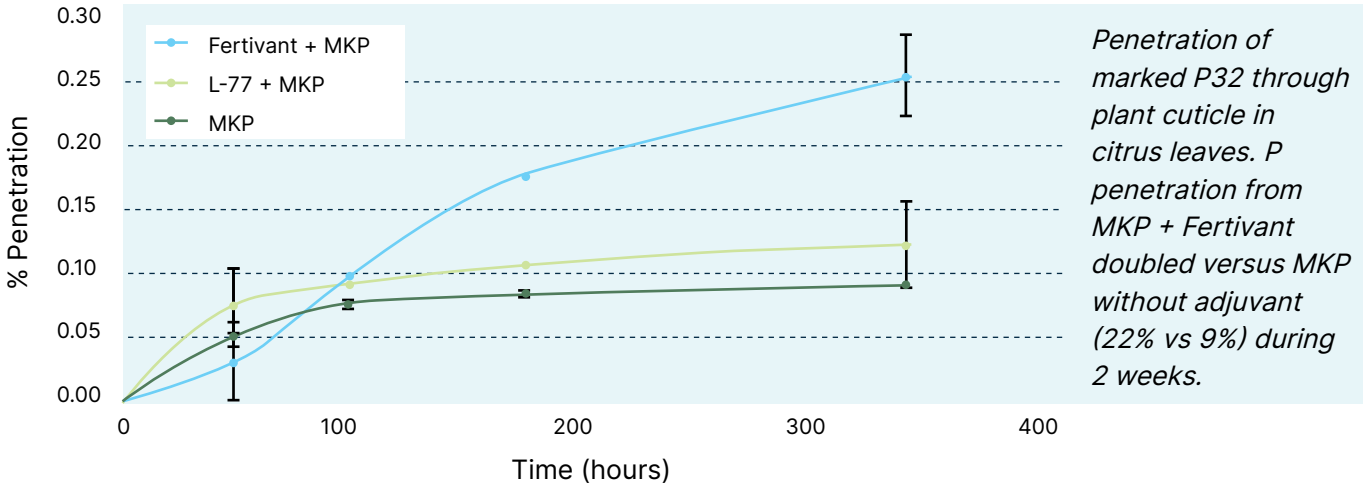
The Fertivant Technology dramatically increases the effectiveness of the foliar spray, improves yields, quality and thus growers' revenues. Its high effectiveness means spray volumes can be reduced, which in turn results in a marked cost saving for the grower. Moreover, the Fertivant Technology provides a continuous release of the nutritive elements, that lasts for up to four weeks after the actual spraying. We call this LLP; Long Lasting Performance. Foliar feeds empolying Fertivant Technology fit into all fertilization programs.

Nutrivant Boosting Yields

- Complementary fertilization with high added value
- Corrective nutrition when deficiencies are noticed
- Growth boosters during critical stages of plant development
- With Nutrivant you will get a small amount, at the right time

Effect of Nutrivant in citrus

Penetration of marked P32 through plant cuticle in citrus leaves. P penetration from MKP + Fertivant doubled versus MKP without adjuvant (22% vs 9%) during 2 weeks.



Penetration of marked P32 through plant cuticle in citrus leaves. P penetration from MKP + Fertivant doubled versus MKP without adjuvant (22% vs 9%) during 2 weeks.

Tips for efficient foliar application

- The best time for foliar spraying is early morning and late afternoon, when humidity is higher and the leaves are in a state of complete turgor with their cells full of water.
- Avoid foliar spraying during the hot hours of the day, absorption at high temperatures is very poor and plants may be exposed to stress and scorching.
- Dew formation after foliar application is an important aid to prolonged penetration, because of re-solubilization of the fertilizers by the dew collected on the leaves.
- Spraying should be done under minimal windconditions. This is especially important with finely atomized sprays, as they drift readily.
- Always spray when soil moisture is sufficient. Leaves will then be turgid and far from water stress. Consider irrigation on the day prior to spraying.
- Avoid foliar spraying just before rain or overhead application of irrigation, to prevent the sprayed material washed off.
- The optimal pH of a foliar spray is slightly acidic (5±0.5).
- Select the appropriate sprayer volume and pressure for each crop. Using the correct volume of spray is essential for achieving full coverage of the plant canopy.

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