



PQNK Knowledge Paper: The Role and Perspective of Supplemental Nutrition in the Perpetual Abundance System



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Subject: Clarifying the Mechanism, Purpose, and Strategic Use of Supplemental Nutrition within the Paedar Qudratti Nizam Kashatqari.

1.0 Executive Summary

This paper addresses a fundamental question in regenerative agriculture: How can foliar application be effective given the plant's natural hydrophobic barriers? We explain the scientific mechanism of foliar absorption, affirming its efficacy. However, we place this understanding within the core PQNK principle that supplemental feeding—whether foliar or soil-based—is a short-term supportive measure, not a permanent solution. Its purpose is to ensure crop establishment and vigor during the initial phase of the rapid biological transition to a "Perpetual Abundance" system. Once the four PQNK adaptation steps are implemented, the soil food web becomes active within a single crop cycle. Therefore, the need for supplementation is brief, and farmers are guided to be vigilant and intervene only when necessary, primarily during the first crop.

2.0 The Scientific Mechanism: How Plants Absorb Nutrients Through Leaves

The plant leaf is protected by a waxy, hydrophobic layer of cutin and wax, known as the cuticle. This defense system, however, is not impermeable. Foliar application works by cooperating with the plant's own biology.

2.1 The Stomatal Pathway: The Natural Gates

Plants breathe through microscopic pores called stomata, which open and close to regulate gas exchange.

- **PQNK Alignment:** Applications are timed for early morning or late evening when stomata are typically open, respecting the plant's natural rhythm. Spraying is avoided during hot, dry periods when stomata are closed.

2.2 The Cuticular Pathway: Intelligent Permeation

Nutrients can traverse the cuticle itself via diffusion—moving from an area of high concentration (the spray film) to low concentration (inside the leaf). This process is facilitated by:

- **Nutrient Solubility:** Nutrients are dissolved in water as ions (e.g., K^+ , NO_3^-) or, more effectively, as chelates.
- **PQNK-Aligned Chelates & Carriers:**
 - **Fulvic Acid:** A powerful natural chelator that also enhances cellular permeability.
 - **Amino Acids:** Derived from fish hydrolysate or plant sources, they chelate nutrients and reduce plant stress.
 - **Seaweed Extract:** Provides micronutrients and bioactive compounds that stimulate plant metabolism.
- **Wetting Agents (Surfactants):** These compounds reduce the surface tension of water, allowing the spray to form a thin film over the leaf instead of beading up.
- **PQNK-Aligned Surfactants:**
 - Saponins (from Quillaja bark or Soapnuts)
 - Phospholipids (e.g., Lecithin)
 - Aloe Vera Extract

2.3 The Metabolic Process: The Plant's Circulatory System

Once absorbed, nutrients enter the apoplast (space between cells) and are actively taken up by plant cells using energy (ATP). They are immediately utilized in photosynthesis and other processes or transported via the phloem to other parts of the plant. This direct delivery makes foliar feeding highly efficient for addressing acute nutrient deficiencies.

3.0 The PQNK Perspective: Rapid Transition and Short-Term Supplementation

The PQNK transition is not a matter of years, but of a single crop cycle. Once the four foundational steps are implemented—(1) breaking hardpan, (2) forming permanent raised

beds, (3) growing a cover crop, and (4) retaining roots and using biomass as organic mulch with no-till planting—a profound biological shift occurs.

Like inoculating milk with a culture to transform it into yogurt within hours, the PQNK system inoculates the soil with life and creates the habitat for it to thrive. The soil food web becomes effectively functional in a very short time.

Therefore, within PQNK:

- Supplemental application is a short-term support for the initial crop. Its purpose is to provide a nutritional safety net during the initial period of crop establishment under the new system, ensuring the first plant cohort thrives and contributes further organic matter to accelerate the process.
- **Vigilance Over Schedule:** Farmers should be observant and intervene with foliar or irrigation supplements only when felt necessary. The system is designed to become self-sufficient rapidly, making broad-scale, scheduled applications counterproductive after the initial establishment phase. Plants will not respond to fertilizer application after a few weeks of its establishment. If a plant responds to fertilizer, it indicates that the soil system is not functioning properly due to an inappropriate transition.

4.0 For the Farmer: Simple and Safe Application Methods

This section provides clear instructions for the short-term support of your first crop in the PQNK system. Remember, this is only a temporary help while the soil life wakes up.

When to Use These Methods?

- If you see signs of weakness: If your first crop seedlings look pale yellow, purple, or are growing very slowly, it may need a short-term nutrient boost.
- Only for the first crop: After the first harvest, your soil should be alive and able to feed your crops on its own.

Method A: Foliar Spray (Spray on Leaves)

This is the fastest way to give nutrients to your crop.

When to Spray: Early morning or late evening. Never spray in the hot sun.

Recipe for 100 Litres of Spray Tank:

1. **Water:** Fill your spray tank with 100 litres of clean water.
2. **Fertilizer:** Add 2 Kg of Nitrophos (NP). Stir well until it fully dissolves.
3. **Citric Acid (The Natural Key):** Add 200 grams of Citric Acid (the same safe powder used in preserving food). This helps the leaves absorb the nutrients effectively.
4. **Mixing:** Stir the mixture very well.

How to Spray:

- Use a sprayer that produces a fine mist.
- Spray until the leaves are evenly wet, but not dripping.
- Cover both the top and bottom of the leaves.

Method B: Application through Irrigation Water (Furrows)

Use this method if the plants are too small to spray or if the soil is very weak.

When to Apply: During a normal irrigation cycle.

Recipe per Acre:

1. **Fertilizer:** Use 4 Kg of Nitrophos (NP) per acre.
2. **Mixing:** Dissolve the 4 Kg of fertilizer in a bucket of water first. Then, add this concentrated solution to your irrigation channel or tank so it mixes thoroughly with the irrigation water.

Crucial Instructions for Water Management:

- **Water Level:** The water in the furrows should never exceed half the height of the furrow.
- **Water Speed:** The water should move slowly along the furrows. This gives the water and nutrients enough time to soak sideways into the raised beds, feeding the roots properly.
- **Do not flood.** Fast, high water will run away and not absorb into the beds.

Important Final Advice

- **Be Vigilant:** Watch your crop. Use these recipes only if you see it is necessary during the first crop's establishment.

The Goal is No More Bottles: A successful PQNK farm will not need these supplements after the 1st crop. Your soil will become your best fertilizer factory.

5.0 Conclusion

Foliar application is a scientifically valid technique for rapid nutrient delivery. However, within the PQNK system, its role is transient. By implementing the four adaptation steps, we create the conditions for the soil to become a living, abundant system almost as quickly as milk turns to yogurt. Supplemental nutrition is merely a brief supportive measure for the first crop during this powerful transition. The farmer's role is that of a vigilant guide, not a constant supplier, working in partnership with a now-active soil ecosystem to achieve perpetual abundance.

Footnote: *Any Production Process That Inundates Soil With Water, Disturbs Soil Through Tillage, Or Leaves Soil Bare Without Organic Mulch Cover Does Not Qualify As Natural Ecosystem Science For Production Agriculture.*

PQNK, to be pronounced as 'picnic', which stands for Paedar Qudratti Nizam Kashatqari, and means: the regenerative & sustainable Pristine Organic Farming System.

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