



Knowledge Paper: Transforming Garlic and Onion Cultivation through the PQNK Regenerative System

Subject: A Paradigm Shift in Domestic Production, Import Substitution, and Farmer Prosperity. November 13, 2025



Executive Summary

Garlic and onion, essential staples in global cuisines, have traditionally posed significant cultivation challenges, leading to a heavy reliance on imports. Conventional methods, characterized by low-density planting on flat fields and high labour input, have become economically and environmentally unsustainable due to rising labour costs and the excessive use of agro-chemicals. This paper presents the PQNK (Paedar Qudratti Nizam Kashtqari) production system as a transformative solution. PQNK, a regenerative and pristine organic farming system, revolutionizes garlic and onion cultivation by leveraging raised beds, organic mulch, and precise water management. The result is a dramatic increase in yield and quality, a drastic reduction in input costs and labour, and the production of superior, high-value crops that are enabling import substitution and creating new pathways for farmer profitability and future export potential.

1. Introduction: The Conventional Challenge

The cultivation of garlic and onion has long been hampered by a series of interconnected challenges:

- **Labour-Intensive Practices:** Conventional methods require manual hoeing for weeding and bed formation, a task facing a critical shortage of labour.
- **Decreasing Cultivation Area:** As labour becomes scarce and expensive, the viable cultivation area for these crops has been steadily decreasing.
- **High Input Reliance:** Traditional farming often depends on synthetic fertilisers, weedicides, fungicides, and pesticides, increasing production costs and environmental footprint.
- **Post-Harvest Losses:** Conventionally grown bulbs often have higher water content, leading to significant weight loss and spoilage during storage.

These factors have created a supply-demand gap, making sustained imports a necessity and undermining the economic viability of domestic production.

2. The PQNK Intervention: A Regenerative Framework

PQNK, pronounced "picnic," stands for Paedar Qudratti Nizam Kashtqari. It is defined as a regenerative and sustainable Pristine Organic Farming System. Its core philosophy is to work with nature rather than against it, creating a closed-loop, highly efficient ecosystem for crop production. The application of the PQNK lens to garlic and onion cultivation involves several key technological and philosophical shifts.

2.1. The Pillars of the PQNK System for Garlic & Onion

1. Optimized Plant Geometry on Raised Beds:

The PQNK system abandons flat planting for a structured system of raised beds. This simple topological change is revolutionary, allowing for at least four times more cloves to be planted per acre. This geometric efficiency optimizes space, light, and resource access, forming the foundation for unprecedented yield increases.

2. Mulching for Ecosystem Management:

After planting, the raised beds are covered with a thick layer of organic mulch. This serves multiple regenerative functions:

- **Weed Suppression:** Smothers weeds, eliminating the need for manual hoeing and chemical weedicides.
- **Water Conservation:** Drastically reduces evaporation, maintaining consistent soil moisture.
- **Soil Health:** As the mulch decomposes, it enriches the soil with organic matter, fostering a thriving soil biome.

3. Precise Furrow Irrigation:

Water is applied sparingly and strategically directly into the furrows between the raised

beds. This targeted approach ensures water reaches the root zone efficiently without wastage, promoting healthy plant growth while conserving a critical resource, especially in dry soil conditions.

4. A "Minimal Intervention" Philosophy:

PQNK farming is defined by what it does not require. Successful farmers are producing up to 300 mounds (12,000 kg) per acre of high-quality garlic (Dessi white or pink variety) **without:**

- Synthetic fertilisers
- Weedicides
- Fungicides or Pesticides
- Further hoeing or intensive labour

This not only slashes production costs but also ensures a pristine, chemical-free final product.

3. Outcomes and Impacts of the PQNK System

The implementation of the PQNK system leads to a cascade of positive outcomes.

3.1. Enhanced Yield and Quality:

- **Yield:** Yields of 250-300 mounds per acre (10,000 - 12,000 kg) make garlic and onion cultivation highly viable.
- **Quality:** The produce is superior, with lower water content. This results in minimal weight loss during storage and a significantly extended shelf life without quality deterioration.

3.2. Economic Prosperity for Farmers:

The economic model under PQNK is transformative. At a conservative yield of 250 mounds (10,000 kg) per acre and a minimum wholesale price of Rs. 100 per kg:

- **Gross Revenue:** Rs. 1,000,000 per acre.
- **Net Profit:** Given the minimal input costs, the profit per acre for this six-month crop is exceptionally high, often exceeding one million rupees, fundamentally changing the livelihood of farmers.

3.3. Market Differentiation and Standards:

PQNK produce is not merely organic; it surpasses organic standards. It is the result of a "natural production" system that rebuilds agro-ecology, giving it a unique market position as a premium, high-value product.

3.4. Macro-Economic Impact: Import Substitution to Future Export:

The scalability and success of the PQNK system are having a direct national impact.

- **Import Reduction:** Within a few years, the increased domestic production from PQNK farms has already led to a significant reduction in garlic imports.

- **Export Potential:** The consistent high quality and natural production method position PQNK garlic and onion as strong candidates for the international export market, with the potential to generate foreign revenue.

4. Conclusion and the Path Forward

The PQNK system for garlic and onion represents a holistic solution to a complex agricultural problem. It successfully addresses cultivation challenges, environmental sustainability, and economic viability simultaneously. By shifting the paradigm from input-intensive to knowledge-intensive farming, PQNK has:

- Increased production efficiency through optimized planting and water management.
- Restored agricultural sustainability by eliminating chemicals and enhancing soil health.
- Boosted farmer profitability by drastically reducing costs and creating a high-value product.
- Strengthened national food security by enabling import substitution and creating a pathway for exports.

The continued promotion and adoption of the PQNK system are crucial. Supporting policies, farmer education, access to specialized PQNK machines and market linkage initiatives will ensure that this "picnic" revolution continues to transform the agricultural landscape, turning current challenges into future opportunities for prosperity and self-reliance.

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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pedaver@gmail.com
 WhatsApp +92 320 677 6666

Conventional practice of garlic production



Picture gallery

PQNK production system for Garlic



Garlic on PQNK

