



PEDAVAR
THE TRANSFORMATIVE PRODUCER



PQNK - Natural Ecosystem Science for Production Agriculture



Onion and its Seed Production

PQNK - To Be Pronounced As 'Picnic', Which Stands For
Paedar Qudratti Nizam Kashatqari, And Means: The
Regenerative & Sustainable Pristine Organic Farming System.

Commercial Onion Seed Production: A PQNK Ecosystem

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Executive Summary

This factsheet outlines the **PQNK (Natural Ecosystem Science for Production Agriculture)** approach to commercial onion seed production. PQNK is a fundamental paradigm shift that moves beyond both Ancient Conventional Industrial (ACI) and modern "organic" systems. It eliminates all external inputs by leveraging nature's innate provisioning and protection systems. By managing the soil ecosystem to unlock the **abundant mineral wealth naturally present in the soil**, PQNK produces superior quality seed and bulbs with exceptional economics.

The PQNK Method: Beyond "Organic"

PQNK farming is **organic-plus**. It is predicated on the understanding that a functioning soil ecosystem, maintained by a permanent organic mulch, is self-sufficient.

- **Beyond Organic Inputs:** The modern organic system is correctly identified as an extension of the ACI framework, merely substituting approved inputs for synthetic ones. These inputs remain costly and often result in yield drag. PQNK eliminates this dependency entirely.
- **The Nutrient Engine:** The thick layer of organic mulch serves a dual purpose:
 1. **Microbial Food:** It feeds the soil food web (bacteria, fungi, protozoa, nematodes).
 2. **Biochemical Catalyst:** This microbial activity, in the right environment, **unlocks the vast reserves of mineral nutrients naturally bound in the soil substrate**. The mulch is not the primary source of nutrients but is the fuel for the microbial engine that makes native soil minerals plant-available.

Weed Philosophy: Weeds are recognized as nature's response to soil ecosystem collapse. The mulch system eliminates them not by attack (herbicides), but by making their presence unnecessary—creating a stable, protected, and pore-rich soil environment.

Production Specifications & Cycle

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Year 1: Bulb Production Phase (PQNK Method)

- **Planting:** Utilizing a No-Till planter through a permanent mulch layer.
- **Density:** 9 lines on a 42-inch-wide bed with 4-inch spacing both within and between rows achieves an optimal density of ~235,000 seeds per acre.
- **Bulb Yield:** This ecosystem-driven approach yields approximately 200,000 high-quality bulbs per acre for seed stock.

Input Elimination through Ecosystem Services

- **Fertilizers: Eliminated.** Microbial activity, fueled by mulch, solubilizes and cycles the abundant natural minerals in the soil, providing complete and balanced nutrition.
- **Pesticides/Fungicides: Eliminated.** A fully functional ecosystem is populated with beneficial organisms that provide natural protection. Plants, receiving balanced nutrition from native minerals, exhibit innate resistance.

Addressing the Key Question: Bulb Size & Seed Yield

Does the size of the bulb planted affect True Onion Seed (TOS) yield?

Yes, absolutely. The size (and consequently, the stored energy and nutritional content) of the mother bulb has a direct and significant correlation with the potential seed yield.



The Most Economical Bulb Size

The most economical bulb size is not necessarily the largest, but the **optimal size that provides the highest seed yield return per unit of production cost.**

- **Very Small Bulbs (<½ inch diameter):** Often produce a single, weak seed stalk with low umbel weight and poor seed set. The yield is economically unviable.
- **Medium Bulbs (½ inch to 1¼ inch diameter):** This range is typically considered the **most economical**. These bulbs are large enough to produce 3-5 strong, well-developed seed stalks (scapes) per bulb, each bearing a large, productive umbel. They represent the best balance between the cost of producing the bulb and the seed yield returned.
- **Very Large Bulbs (>1½ inch diameter):** While they can produce more seed stalks (sometimes 6-8+), the **law of diminishing returns applies**. The increase in seed yield often does not proportionally offset the additional land, time, and resources required to grow such a large bulb. They may also be more prone to issues like splitting and are better suited for the fresh market.

PQNK Advantage: By producing bulbs within the optimal, economical size range naturally and without input costs, PQNK maximizes the profitability of the subsequent seed crop.

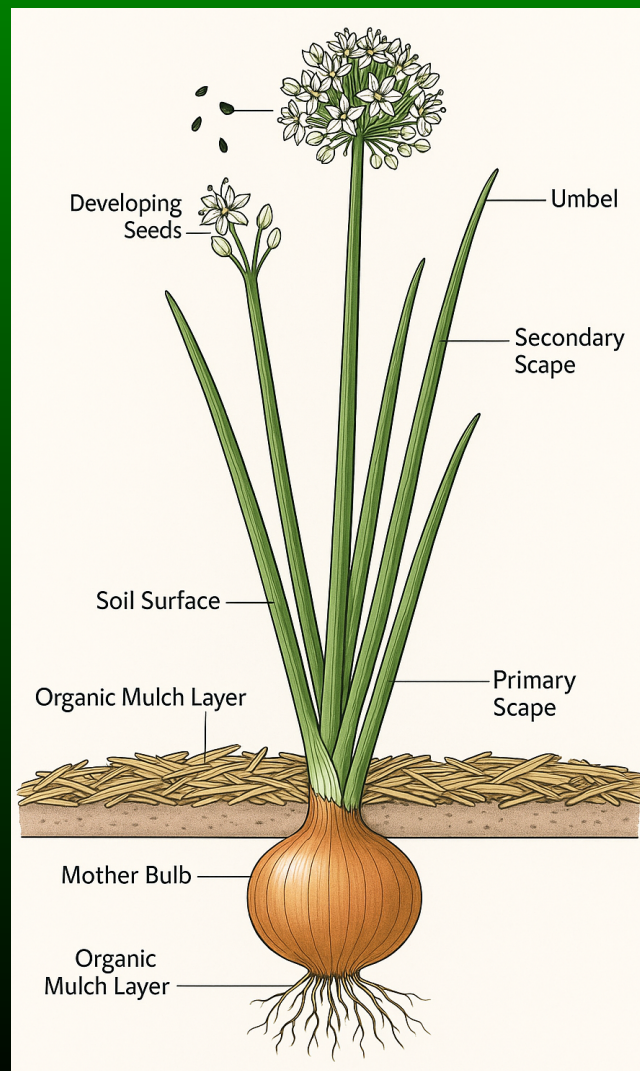
Product Quality & Economic Advantages

PQNK produces a distinct **organic-plus** product. The quality stems from plants fed a diverse array of minerals unlocked naturally from the soil, resulting in complete metabolic expression.

Economic Impact On Onion Production in PQNK

Economic Impact: PQNK achieves the highest profitability by attacking the cost side of the equation: **\$0 input cost** for fertilizers and pesticides. This, combined with a premium-quality product that commands higher market prices and has reduced storage losses, creates an unrivaled economic model for seed production.

Quality Parameter	PQNK Result	Conventional / Organic Comparison
Nutrition	True Density & Diversity from native soil minerals.	Variable; organic often relies on approved bulk nutrient inputs (composts, meals) without the same mineral diversity.
Dry Matter	Higher. Lower water content, more solids.	Lower dry matter, higher water content.
Post-Harvest Loss	Significantly Reduced. Less shrinkage in storage.	Significant weight loss (10-15%+) is standard.
Shelf-Life	Greatly Extended. Disease-free and structurally dense.	Limited by decay and physiological aging.
Flavor & Aroma	More Intense & Complex. Full metabolic profile.	Milder, often diluted by high water content and simplified nutrition.



Onion Plants And Yield Potential

Onion plants and yield							
Row to row & Plant to plant Dist.	Plants/ Ac	Gram Weight	Bulbs in 1 Kg	Kg/Ac	Mound/ Ac	Prc per Kg	Income Rs./Ac
4" x 4" : 9 rows on a 42" bed top	235,000	40	25	9,400	235	100	940,000
		80	12.5	18,800	470		1,880,000



**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**

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