Knowledge Paper: PQNK Rose Production

(Paedar Qudratti Nizam Kashatqari – Pristine Organic Farming System)

1. Introduction

In the PQNK system, farming is not about extracting from the land but about regenerating the soil–food web. Rose is an excellent crop for this model—it is perennial, responds well to soil regeneration, and thrives under closed-loop management. Conventional rose farming often relies on synthetic fertilizers, hormones, and chemical pest control—all prohibited in PQNK.

This paper reframes rose production within the closed-loop, no-external-input philosophy of PQNK. The field provides everything: fertility from biomass, pest management from biodiversity, and structure from roots and mulch.

2. Step 1: Break the Hardpan – Foundation for Deep-Rooted Roses

Before planting roses, the hardpan beneath the soil surface must be shattered.

In PQNK practice:

- Use a subsoiler to fracture the hardpan without inverting soil layers.
- Target depth: 18–24 inches (45–60 cm). Done once before planting.

Rose-specific note: Roses develop a strong, branching root system. Breaking the hardpan allows roots to reach deeper moisture and nutrients, reducing irrigation needs and improving drought resilience.

3. Step 2: Correct Soil Chemistry with Water and Acid

If soil pH rises above 7.5–8, nutrients like iron and phosphorus become locked. PQNK uses:

1. Deep leaching irrigation – to push down accumulated salts.
2. Sulfuric acid – 8 kg per acre with irrigation water (one-time correction tool).

Rose-specific note: Roses prefer slightly acidic to neutral pH (6.0–7.0). Correcting pH ensures vibrant blooms and healthy foliage.

4. Step 3: Build Permanent Raised Beds and Plant Jantar (Sesbania)

Parameter	Measurement
Raised bed top width	42 inches
Raised bed bottom/base width	52 inches
Furrow top width	18 inches
Furrow bottom width	8 inches
Furrow/bed height (from furrow base)	8 inches

Standard PQNK Bed-Furrow Profile (Fixed for All Crops). This profile ensures drainage, root zone aeration, and permanent traffic lanes for tractor wheels. Bed and furrow dimensions may be adjusted according to the tractor track.

Planting Jantar (Sesbania) Immediately:

On these beds, before planting roses, sow Jantar (Sesbania aculeata) at high density. Allow it to grow for 60–90 days.

- Jantar taproots penetrate deep into the shattered hardpan.
- They pull up leached minerals and create vertical channels for water and rose roots.

This is a closed-loop fertility-building step. No external manure or fertilizer is brought in.

5. Step 4: Retain, Mulch, and Plant with No-Till

Do not remove the Jantar roots. After 60–90 days, slash Jantar at ground level.

- Roots decompose, feeding earthworms and soil microbes.
- Chop above-ground biomass and lay it immediately as 4–6 inch mulch on the same raised bed.

Now, Plant Roses (No-Till) – Two Rows Per Bed

Using a no-till planter or manual dibbling, plant rose saplings directly through the mulch into undisturbed soil beneath.

Planting Geometry for Roses on 42" Bed:

Parameter	Measurement
Distance from bed edge to first row	10 inches (both sides)
Distance between the two rows on the bed	24 inches (center to center)
Plant-to-plant distance within each row	24 inches

Plants Per Acre Calculation

For an acre measuring 220 ft × 198 ft, 8,712 plants per acre are ideal.

6. Step 5: Pruning Through the PQNK Lens – Rose-Specific

Pruning in PQNK manages energy flow, not forced growth. Roses flower on current season's growth.

For broad-acre farming, high-clearance tractors can be used for pruning operations, allowing efficient management of large rose plantings.

Pruning Calendar for Roses

Time	Growth Stage	PQNK Action	Purpose
Late winter / early spring (Feb–Mar)	Dormant / just before new growth	Hard pruning: Remove dead, weak, or crossing canes. Cut back remaining canes by 1/3 to 1/2.	Stimulate strong new flowering shoots.
After first flush (May–June)	Post-bloom	Deadhead spent flowers just above outward-facing bud.	Encourage repeat blooming.
Mid-summer (July–Aug)	Second growth / flowering	Light maintenance only. Remove diseased or damaged wood.	Maintain airflow.
Late autumn (Nov–Dec)	Dormancy approaching	No heavy pruning. Remove only dead/diseased wood.	Prevent winter damage.

Key PQNK Rose Principle: All pruned biomass is returned as mulch on the bed. No external hormones are used.

7. Weed Management in PQNK – Weeds as Mulch

In PQNK, weeds are taken as mulch, not as competitors.

- The roots of weeds do not compete with crop plants when soil biology is healthy. Instead, they contribute to soil structure and feed the food web.
- However, weeds should not shade the crop plants. If shading occurs, weeds should be mulched or topped using available hand tools or machine tools.
- No herbicide is ever used.

Ideal Live Mulch: Alfalfa

Where possible, alfalfa is used as a living mulch between rose rows and in furrows. Alfalfa:

- Fixes atmospheric nitrogen.
- Suppresses undesirable weeds.
- Can be periodically slashed and left as additional mulch.
- Provides habitat for beneficial predators.

Alfalfa is grown from seed obtained once and then regenerated within the system – no external input required after establishment.

8. Intercropping – The "One More Crop" Within Closed Loop

During the first 2–3 years before rose canopy closes, intercrops are grown on the same beds.

Season	Intercrop	PQNK Function
Kharif (Monsoon)	Jantar, Moong, Guar	Biomass, soil regeneration
Rabi (Winter)	Gram (Chickpea), Lentil, Barseem	Nitrogen fixation, mulch

Crucial PQNK Rule: All intercrop residues remain as mulch. No external inputs.

9. Pest and Disease Management – PQNK Approach for Roses

Roses commonly suffer from aphids, black spot, and powdery mildew. In PQNK:

1. Pruning hygiene – Remove infested canes; bury temporarily in furrows if needed, then return as composted mulch.
2. Enable Bt and predators – PQNK soil encourages Bacillus thuringiensis and over 1,700 predator insects.

3. Vigor – Deep roots + balanced pH + permanent mulch + alfalfa live mulch = naturally resistant roses.
4. Weed management – Topped weeds and alfalfa slashing remove pest habitat without chemicals.

No synthetic fungicides or insecticides are used.

10. Soil Moisture Management (SMM) – Strict PQNK Requirement

Soil Moisture Management (SMM) is strictly adhered to in PQNK. This means:

- No inundation irrigation – water is applied slowly, deeply, and only when needed.
- Permanent mulch (4–6 inches) reduces evaporation and keeps soil moisture stable.
- Deep roots (from hardpan breaking) access subsoil moisture, reducing irrigation frequency.
- Irrigation method: Furrow irrigation only.
- Monitoring: Soil is checked at 4–6 inch depth. Irrigate only when moisture feels dry to touch, not before.

Closed-loop water management means no external water source is assumed beyond rainfall and in-soil storage. Leaching irrigation for pH correction is a one-time exception.

11. Harvesting and Post-Harvest for Roses (PQNK)

Harvest timing:

- Cut flowers when buds show color but before petals open (for longest vase life).
- Harvest early morning or late evening.

Method:

- Use clean, sharp secateurs. Cut stem at 45° angle just above a 5-leaflet leaf facing outward.
- Leave at least 2–3 nodes on the plant for regrowth.

Post-harvest (closed-loop):

- Place stems immediately in clean water (no synthetic preservatives).
- For petal harvest (gulkand, rose syrup): collect fully open blooms on dry mornings.
- All unsold or spent flowers return to mulch layer – nothing leaves the field.

12. Yield Expectations in PQNK Roses (Cut-Flower)

Year	Expected Yield (stems/acre/year)	Notes
Year 1–2	15,000 – 25,000	Plant establishment, soil building
Year 3	60,000 – 85,000	First meaningful harvest
Year 4–5	130,000 – 170,000+	Sustained; soil organic matter rises
Note: With 8,700 plants/acre and 15–20 stems per plant per year, potential exceeds 170,000 stems by Year 4.		

13. Summary: PQNK Rose Production Protocol

Stage	Time	Action
Hardpan breaking	Once before planting	Subsoiler to 18–24 inches
Soil pH correction	Pre-planting	Leaching + sulfuric acid (8 kg/acre)
Bed construction	Pre-planting	42" top / 52" base / 18" furrow top / 8" furrow bottom / 8" height
Jantar sowing	60–90 days pre-planting	High density on beds
Mulch & no-till planting	After slashing Jantar	4–6" mulch. Plant 2 rows/bed: 10" from edge, 24" between rows, 24" between plants
Alfalfa live mulch	After planting	Sow alfalfa in furrows and between rows
Hard pruning	Late winter (Feb–Mar)	Remove dead wood; cut back canes
Weed topping	As needed	Do not allow weeds to shade roses. Top or mulch weeds.
Soil Moisture Management	Throughout	No inundation. Drip or furrow only. Permanent mulch.
Harvest	As buds color	Cut above outward-facing leaf
Post-harvest	Same day	Clean water, no synthetics, recycle waste as mulch

14. Closing Note

The PQNK system for roses is a closed-loop philosophy:

- Soil never bare.
- No organic matter leaves the field.
- Weeds are mulch, not enemies.
- Alfalfa serves as living mulch and nitrogen source.
- Rose roots, Jantar roots, alfalfa roots, and intercrop roots regenerate subsoil together.
- Pruning follows natural phenology.

- Soil Moisture Management (SMM) is strictly followed – no inundation, permanent mulch, deep roots.
- The farmer manages the cycle, imports no solutions.

By following the five PQNK steps – break hardpan, correct chemistry, build beds with Jantar, mulch and no-till plant, and prune to manage energy flow – and by adhering to SMM and weed-as-mulch principles, the farmer creates a self-sustaining rose orchard that yields abundantly for decades without degrading the land or requiring external purchases.

This knowledge paper is prepared for farmers practicing Paedar Qudratti Nizam Kashatqari (PQNK) – the Pristine Organic Farming System. All recommendations adhere strictly to closed-loop, no-external-input principles and Soil Moisture Management (SMM).

Applying PQNK without understanding nature's operating system will not deliver abundance, stability, or nutrient density.

PQNK (pronounced "picnic")—the regenerative & sustainable ***Pristine Organic Farming System*** *—is grounded in* ***Natural Ecosystem Science****. This science employs perennial biodiversity, protects soil with organic mulch, and avoids practices such as water inundation, tillage disturbance, and leaving soil bare.*

It is the ***process*** *that matters most. PQNK is a pristine production system designed not merely for yield, but for optimal, balanced output—where quality, sustainability, and ecological harmony emerge from a self-regulated, zero-external-input methodology.*

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