

**FACTSHEET: Commercial Production of Rhodes Grass
(*Chloris gayana*) under the PQNK (Paedar Qudratti Nizam
Kashatqari) Lens Region: Punjab & Adjacent Areas
(Semi-Arid to Arid Climates)**



1. PQNK Core Philosophy Applied

PQNK—pronounced ‘picnic’—is the regenerative Pristine Organic Farming System. For Rhodes grass, this means cultivating in harmony with nature’s rhythms, rebuilding soil life, enhancing the water cycle, and creating a resilient, self-sustaining farm ecosystem without synthetic chemicals. The crop is valued not just as a commodity, but as a living contributor to farm health.

2. Climatic Suitability & PQNK Adaptation

- **Native Climate:** Tropical/Subtropical, drought-tolerant, prefers warm seasons (25-35°C).
- **Punjab & Adjacent Areas:** Hot summers (ideal), mild winters (dormant below 15°C), annual rainfall 300-500mm (often erratic).
- **PQNK Adaptation:**
 - **Water Intelligence:** Use rainwater harvesting (ponds, contour bunds) to capture monsoon rains for supplemental irrigation. Deep taproots access groundwater, making it a climate-resilient choice.
 - **Microclimate Creation:** Plant alongside leguminous trees (e.g., Kikar or Shisham) for partial shade, wind protection, and natural nitrogen fixation.
 - **Season Syncing:** Sow post-winter (Feb-March) to use spring warmth & monsoon rains. Avoid water-logged soils—PQNK emphasizes living soil structure for perfect drainage.

3. Soil & Land Preparation under PQNK

- **Soil Preference:** Thrives in well-drained loams to sandy loams; tolerates salinity & moderate alkalinity (common in Punjab).
- **PQNK Practices:**
 - **No Deep Tillage:** Use surface scarification (e.g., chisel plough) to open soil without destroying its architecture and microbial networks.
 - **Bio-fertilization:** Apply well-composted farmyard manure (FYM) or vermicompost (2-3 tonnes/acre) inoculated with native microbe *jīvāmṛta*.
 - **Green Manuring:** Precede with a quick sunhemp or dhaincha crop, turned in to boost organic matter & nitrogen—nature’s fertilizer factory.

4. Seed Selection & Sowing with Biodiversity

- **Varieties:** Choose locally adapted, open-pollinated varieties (e.g., ‘Punjab Rhodes 1’) over hybrids to support seed sovereignty.
- **Sowing Method:** Broadcast or drill in rows (30-45 cm apart). Seed rate: 2-3 kg/acre.
- **PQNK Seed Treatment:** Soak seeds in cow dung-based microbial inoculants or *bījāmṛta* instead of chemical fungicides to boost germination & disease resistance.

- **Companion Planting:** Intercrop with legumes (e.g., cowpea for fodder) during establishment to fix nitrogen, suppress weeds, and provide balanced nutrition for livestock.

5. Regenerative Crop Management

- **Water:** Use drip irrigation with mulching to minimize evaporation. Schedule based on soil moisture sensing—respect the water table.
- **Weeds:** Manage through high-density planting, initial hand weeding, and allowing balanced weed diversity (some weeds as soil indicators & insectaries).
- **Pests/Diseases:** Rare in Rhodes grass. PQNK encourages beneficial insect habitats (flowering strips) and neem-based biopesticides only if needed.
- **Fertility:** Annual top-dressing with compost and foliar sprays of fermented plant extracts (e.g., from nettle, moringa) to nourish soil & plant.

6. Harvesting for Productivity & Soil Health

- **First Cut:** 60-75 days after sowing, at 30-40 cm height to maintain plant vigor.
- **Subsequent Cuts:** Every 4-6 weeks in peak season.
- **PQNK Rule:** Leave 10-15 cm stubble to protect crown, encourage regrowth, and feed soil microbes via root exudates.
- **Mulching:** Return crop residues (non-harvested parts) as surface mulch to recycle nutrients, conserve moisture, and build soil organic carbon.

7. Seed Multiplication at Farm Level (Seed Sovereignty)

- **PQNK Priority:** On-farm seed production to close the loop, enhance local adaptation, and ensure genetic purity.
- **Procedure:**
 1. **Isolate a Dedicated Plot:** Select a healthy, pest-free section. Do not graze or cut for fodder after initial establishment.
 2. **Let it Flower:** Rhodes grass produces seed heads 90-120 days after sowing. Allow flowering and maturation (seed heads turn pale brown).
 3. **Harvest Seed:** Cut seed heads manually, dry in shade on clean sheets, thresh gently to avoid damage.
 4. **Clean & Store:** Winnow to remove chaff. Store in cool, dry conditions in cloth bags or airtight containers with neem leaves to repel pests.
 5. **Community Seed Banks:** PQNK encourages farmer cooperatives to exchange and preserve diverse seed lines, strengthening regional resilience.

8. Economic & Ecosystem Benefits under PQNK

- **High-Yielding Fodder:** 80-100 tonnes green fodder/acre/year with multiple cuts, reducing external feed cost.
- **Soil Regeneration:** Deep roots break compaction, increase soil aeration & carbon sequestration.

- **Water Resilience:** Drought tolerance reduces irrigation demand, aligning with Punjab's depleting aquifer concerns.
- **Livestock Health:** Chemical-free, nutrient-rich fodder (10-12% crude protein) improves animal health and reduces veterinary costs.
- **Closed-Loop System:** On-farm seed multiplication eliminates input dependency, completing the regenerative cycle.

PQNK Conclusion: Rhodes grass is not merely a crop; under the Paedar Qudratti Nizam Kashatqari, it becomes a keystone species in a thriving farm organism. It provides high-quality fodder while actively healing the land, conserving water, and empowering the farmer with seed sovereignty. Its cultivation in Punjab is a step towards agricultural swaraj (self-rule), where farming sustains both the household and the ecosystem for generations.

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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