

That's a very good and detailed question — you're clearly taking care of your arecanut palms thoughtfully. Let's go step by step

## 1. About Watering

Turning on sprinklers for **5 minutes every hour** during morning hours can **easily lead to overwatering**, especially if:

- Your soil retains moisture well (loamy or clay type).
- There is no strong wind or extreme dry heat to cause quick evaporation.

### Better watering approach:

- Arecanut palms like **uniform moisture**, not wet feet.
- For 3-year-old palms, **1–1.5 hours of sprinkler irrigation once daily (or once in 2 days)** is usually sufficient depending on soil type.
- Instead of hourly sprinkling, water **deeply and less frequently** — this promotes deeper root growth and avoids fungal root problems.

### Test tip:

Push your finger 3–4 inches into the soil near the base. If it feels damp, skip irrigation. If it's dry and crumbly, irrigate.

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## 2. About Fertigation / Nutrient Management

Goat dung manure is great for organic matter, but it's **low in Nitrogen (N), Phosphorus (P), and Potassium (K)** compared to what a growing arecanut palm needs.

For a **3-year-old arecanut**, the recommended nutrient dose (per palm per year) is roughly:

Nutrient	Quantity (g/palm/year)	Example Fertilizer
Nitrogen (N)	100–150 g	Urea
Phosphorus (P <sub>2</sub> O <sub>5</sub> )	40–60 g	Single Super Phosphate (SSP)
Potassium (K <sub>2</sub> O)	140–200 g	MOP (Muriate of Potash)
Magnesium (optional)	25–30 g	MgSO <sub>4</sub> (Magnesium Sulphate)

### Split this into 4 fertigation rounds:

- **Feb–Mar:** 25% dose
- **May–Jun:** 25% dose (before monsoon)
- **Sep–Oct:** 25% dose (after monsoon)
- **Dec–Jan:** 25% dose (cool season)

### 3. Suggested Fertigation Plan (per palm per application)

Dissolve in water and apply via drip or near root zone:

- **Urea:** 35–40 g
- **SSP:** 15 g (or 10 ml of liquid phosphorus fert if using fertigation tank)
- **MOP:** 50 g
- **MgSO<sub>4</sub>:** 10 g (optional but helpful for greener leaves)

You can mix in 10–20 L of water per palm for fertigation.

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### 4. Organic Supplements

You can continue using:

- Goat dung or FYM (2–3 kg/palm/year)
  - Trichoderma-enriched compost near the base (once in 6 months)
  - Neem cake (0.5–1 kg/palm/year) — improves soil health and pest resistance.
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### 5. For Heat Stress

Instead of hourly sprinklers, consider:

- **Mulching** around the base (dry leaves/coconut husk).
  - **Shade management** with intercrops (like banana, black pepper on arecanut).
  - Occasional misting during extreme hot spells (once or twice in the afternoon, not every hour).
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