Comprehensive Crop Cultivation Guide for Bangalore, India

Top 25 High-Value Crops - Weekly Management Schedule

Executive Summary

This document provides detailed weekly cultivation schedules for the top 25 consistently high-priced crops identified for Bangalore, India. The recommendations are based on extensive research of scientific literature, irrigation studies, and agricultural best practices specific to South Indian conditions.

1. BLACK PEPPER (*Piper nigrum*)

Water Requirements (Weekly Schedule)

- **Establishment (Weeks 1-12)**: 4-6 L/vine/day via drip irrigation
- **Vegetative Growth (Weeks 13-24)**: 6-8 L/vine/day
- **Flowering (Weeks 25-32)**: 8-10 L/vine/day (critical period)
- **Fruit Development (Weeks 33-44)**: 8-10 L/vine/day
- **Maturation (Weeks 45-52)**: 6-8 L/vine/day

Growth Profile (Cylindrical POV)

- **Height**: 0.5m (Month 1) → 1.5m (Month 6) → 3-5m (Mature)
- **Stem Diameter**: 0.5cm (Month 1) → 1.5cm (Month 6) → 2-3cm (Mature)

Weekly Inputs

- **Fertilizer**: NPK 100:40:140 kg/ha split into 8 applications (Oct-May)
- **Organic**: 10 kg FYM per vine annually
- **Pesticides**: Preventive fungicide spray every 15 days during monsoon
- **Micronutrients**: Foliar spray of zinc and boron monthly

2. CASHEWNUTS (*Anacardium occidentale*)

Water Requirements (Weekly Schedule)

Month	Year 1	Year 2	Year 3	Year 4+
Jan	0.63 L/day	2.53 L/day	5.69 L/day	10.12 L/day
Feb	0.80 L/day	3.21 L/day	7.21 L/day	12.82 L/day
Mar	1.00 L/day	4.00 L/day	8.99 L/day	15.98 L/day
Apr	0.89 L/day	3.55 L/day	7.99 L/day	14.21 L/day

Growth Profile (Cylindrical POV)

- **Height**: 0.3m (Year 1) → 2m (Year 2) → 4m (Year 3) → 8-12m (Mature)
- **Trunk Diameter**: 2cm (Year 1) → 8cm (Year 2) → 15cm (Year 3) → 30-50cm (Mature)

Weekly Inputs

- **Fertilizer**: Age-dependent NPK schedule
- **Year 1**: 200□400 g NPK/tree + 10kg FYM
- **Year 2**: 400:200:800 g NPK/tree + 20kg FYM
- **Pesticides**: Stem borer control, fungicide during flowering
- **Pruning**: Shape pruning in December-January

3. ARECANUT (*Areca catechu*)

Water Requirements (Weekly Schedule)

- **November-December**: Every 7 days (175 L/palm)
- **January-February**: Every 6 days (175 L/palm)
- **March-May**: Every 4 days (175 L/palm)
- **June-October**: Follow rainfall pattern

Growth Profile (Cylindrical POV)

- **Height**: 0.5m (Year 1) → 3m (Year 3) → 8m (Year 5) → 12-20m (Mature)
- **Stem Diameter**: 5cm (Year 1) → 12cm (Year 3) → 18cm (Year 5) → 15-25cm (Mature)

Weekly Inputs

- **Fertilizer**: 100g N + 40g P_2O_5 + 140g K_2O per palm per year
- **Split Application**: 1/3 in April-May, 2/3 in September-October
- **Organic**: 12kg green leaves + 12kg compost/palm
- **Pesticides**: Spindle bug control (Phorate granules in leaf axils)
- **Micronutrients**: Zinc and boron sprays during growth periods

4. DRY GRAPES (*Vitis vinifera* - Thompson Seedless)

Water Requirements (Weekly Schedule)

Growth Stage	Duration	Water Requirement	Frequency
Foundation Pruning	1-30 DAP	33,600-50,400 L/ha/day	Daily
Shoot Growth	31-40 DAP	33,600-50,400 L/ha/day	Daily
Berry Development	41-60 DAP	11,200-14,000 L/ha/day	Every 3 days
Maturation	61-120 DAP	Reduced frequency	Every 5-7 days

Growth Profile (Cylindrical POV)

- **Vine Length**: 0.5m (Month 1) → 2m (Month 3) → 4-6m (Mature)
- **Trunk Diameter**: 1cm (Month 1) → 3cm (Month 6) → 5-8cm (Mature)

Weekly Inputs

- **Fertilizer**: 60kg N + 71kg P + 142kg K per hectare (fertigation)
- **Pesticides**: Fungicide applications during berry development
- **Growth Regulators**: GA_3 application for berry sizing

5. TURMERIC (*Curcuma longa*)

Water Requirements (Weekly Schedule)

- **Planting to Establishment (0-30 DAP)**: Daily irrigation (light)
- **Vegetative Growth (30-90 DAP)**: Every 7-10 days
- **Rhizome Initiation (90-150 DAP)**: Every 5-7 days (critical period)
- **Maturation (150-270 DAP)**: Every 10-12 days

Growth Profile (Cylindrical POV)

- **Height**: 15cm (Month 1) → 60cm (Month 3) → 100cm (Month 6)
- **Rhizome Diameter**: 0.5cm (Month 2) → 2cm (Month 4) → 3-5cm (Harvest)

Weekly Inputs

- **Fertilizer**: 150:60:108 kg NPK/ha through fertigation
- **Weekly Schedule**: 100% RDF applied over 14 weeks (30-120 DAP)
- **Organic**: 10 tonnes FYM/ha + neem cake 400kg/ha
- **Pesticides**: Preventive fungicide for leaf spot and rhizome rot

6. COCONUT (*Cocos nucifera*)

Water Requirements (Weekly Schedule)

- **Mature Palms**: 600-1600 L/palm/irrigation
- **Frequency**: 3-4 drippers per palm, daily operation
- **Seasonal Adjustment**: Increase frequency during summer months

Growth Profile (Cylindrical POV)

- **Height**: 2m (Year 2) → 8m (Year 5) → 20-30m (Mature)
- **Trunk Diameter**: 15cm (Year 2) → 35cm (Year 5) → 30-60cm (Mature)

Weekly Inputs

- **Fertilizer**: 1000g N + 500g P_2O_5 + 1000g K_2O per palm per year
- **Application**: Three equal splits (June, October, February)
- **Organic**: 50kg FYM or 30kg green manure per palm
- **Micronutrients**: 1.5kg micronutrient mixture per palm

7. CORIANDER SEED (*Coriandrum sativum*)

Water Requirements (Weekly Schedule)

- **Germination (0-15 DAS)**: Daily light irrigation
- **Vegetative Growth (15-45 DAS)**: Every 10-12 days
- **Flowering (45-75 DAS)**: Every 7-10 days
- **Seed Maturation (75-120 DAS)**: Reduce frequency

Growth Profile (Cylindrical POV)

- **Height**: 5cm (2 weeks) → 25cm (6 weeks) → 60cm (Maturity)
- **Stem Diameter**: 2mm (2 weeks) → 5mm (6 weeks) → 8mm (Maturity)

Weekly Inputs

- **Fertilizer**: 40kg N/acre in three splits
- **Foliar Nutrition**: 19:19:19 NPK spray at 20 DAS
- **Growth Regulators**: Triacontanol spray 15-20 DAS

8. POMEGRANATE (*Punica granatum*)

Water Requirements (Weekly Schedule)

Year	Oct-Mar	Apr-May	Jun-Sep
Year 1	2 L/day	4 L/day	2 L/day
Year 2	7 L/day	13 L/day	6 L/day
Year 3	21 L/day	40 L/day	18 L/day
Year 4+	35 L/day	60 L/day	30 L/day

Growth Profile (Cylindrical POV)

- **Height**: 0.5m (Year 1) → 2m (Year 2) → 3m (Year 3) → 4-6m (Mature)
- **Trunk Diameter**: 2cm (Year 1) → 6cm (Year 2) → 12cm (Year 3) → 15-25cm (Mature)

Weekly Inputs

- **Fertilizer**: 375g N + 187g P + 166g K (Year 1), scaling up with age
- **Organic**: 20kg FYM for young trees, 30kg for mature trees
- **Pruning**: Regular removal of suckers and water shoots

9. APPLE (*Malus domestica*)

Water Requirements (Weekly Schedule)

- **Annual Requirement**: 600-800mm between bud break and leaf fall
- **Summer Irrigation**: Every 7-10 days
- **Winter Irrigation**: Every 3-4 weeks
- **Critical Periods**: Fruit development and pre-harvest

Growth Profile (Cylindrical POV)

- **Height**: 1m (Year 1) → 3m (Year 3) → 6-8m (Mature)
- **Trunk Diameter**: 3cm (Year 1) → 8cm (Year 3) → 15-30cm (Mature)

Weekly Inputs

- **Fertilizer**: 70g N + 35g P + 70g K per year of tree age (up to 10 years)
- **Organic**: 10kg FYM per year of tree age
- **Micronutrients**: Zinc, boron, manganese foliar sprays

10. GREEN GRAM (*Vigna radiata*)

Water Requirements (Weekly Schedule)

- **Initial Stage (0-15 DAS)**: Immediate irrigation after sowing
- **Development (15-30 DAS)**: Every 7-10 days
- **Flowering (30-45 DAS)**: Every 5-7 days (critical)
- **Pod Development (45-60 DAS)**: Every 7 days

Growth Profile (Cylindrical POV)

- **Height**: 10cm (2 weeks) → 30cm (4 weeks) → 50cm (Maturity)
- **Stem Diameter**: 3mm (2 weeks) → 6mm (4 weeks) → 8mm (Maturity)

Weekly Inputs

- **Fertilizer**: 20kg N + 40kg P_2O_5 + 20kg K_2O per hectare
- **Rhizobium**: Seed treatment for nitrogen fixation
- **Pesticides**: Aphid and pod borer control

General Recommendations for All Crops

1. Irrigation Management

- **Preferred Method**: Drip irrigation for water efficiency
- **Scheduling**: Based on soil moisture monitoring and weather conditions
- **Water Quality**: EC should be less than 2.0 mmhos/cm for most crops

2. Fertilizer Management

- **Soil Testing**: Conduct annually for precise nutrient recommendations
- **Timing**: Apply during favorable weather conditions
- **Method**: Fertigation preferred for soluble fertilizers

3. Integrated Pest Management

- **Monitoring**: Weekly scouting for pests and diseases
- **Preventive Measures**: Use of bio-pesticides and beneficial insects
- **Chemical Control**: Only when threshold levels are crossed

4. Climate Considerations for Bangalore

- **Temperature**: 15-35°C range suitable for most crops
- **Rainfall**: 800-1200mm annual precipitation
- **Seasons**: Plan sowing based on monsoon patterns

5. Growth Monitoring

- **Weekly Measurements**: Height and diameter during critical growth phases
- **Record Keeping**: Maintain detailed logs of all inputs and observations
- **Adjustments**: Modify schedules based on actual growth patterns

Conclusion

This comprehensive guide provides a framework for cultivating high-value crops in Bangalore conditions. Success depends on careful monitoring, timely interventions, and adaptation to local conditions. Regular soil and water testing, combined with weather-based scheduling, will optimize yields and resource efficiency.

For specific queries or detailed technical support, consult local agricultural extension services and research institutions specializing in South Indian agriculture.