Ginger/Adrak

**Botanical Name:** Zingiber Officinale  
**Family:** Zingiberaceae

**Features:** Perennial tropical monocotyledonous herb useful part- irregular shaped and sized underground section-rhizome.

**Varieties:**
- Dry ginger- Karakkal, Nadia, Naran, Wynad, Manantody, Valluvanad, Ernad, Kuruppampadi.
- Green ginger- Rio-de-janerio, China, Wynad local, Tafengiya.
- High volatile oil- Sleeva local, Narasapatlam, Ernad, Chernad, Himacahal Pradesh.
- High oleoresin- Ernad, Chernad, China, Kuruppampadi, Rio-de-janerio.
- Low Fiber content- Jamaica, Bankok, China

**Area Wise Commonly Cultivated Varieties**
- Assam- Thingpui, Jorhat, Nadia, Thinladium, Maran
- West Bengal- Burdwan
- Kerala- Wynad local, Wynad, Manantody, Ernad, Thodupuzha, Kuruppampadi.
- Karnataka- Karakkal
- Andhra Pradesh- Narasapatlam.

**Suitable Climate:** Requires warm and humid climate, cold temperature effects

**Ideal Soil Type:** Can be grown in varied types of soils but light to medium soils with good drainage is favorable pH 6-7 prefers acidic soils
Land Preparation:-
- Good tilth
- Raised bed
- Provision of drainage

Fertilizer Requirement:- Manuring and basal fertilization depending on soil analysis.
Apply 10-15 tones of FYM or take green manure crop in previous season

Chemical Fertilization:-

<table>
<thead>
<tr>
<th>N</th>
<th>P</th>
<th>K</th>
<th>Mg</th>
<th>Ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>80</td>
<td>150</td>
<td>10</td>
<td>10</td>
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</tbody>
</table>

Basal Chemical Fertilization:-

<table>
<thead>
<tr>
<th>Kgs</th>
<th>Nutrient Kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single super phosphate</td>
<td>200</td>
</tr>
<tr>
<td>DAP</td>
<td>50</td>
</tr>
<tr>
<td>Muriate of Potash</td>
<td>50</td>
</tr>
<tr>
<td>Micro Nutrients</td>
<td>20</td>
</tr>
<tr>
<td>Magnesium Sulphate</td>
<td>50</td>
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</tbody>
</table>

Drip Fertigation:-
After emergence on daily basis till 100 days.
- N = 0.8 kgs per day
- K2O = 0.8 kgs per day
- P2O5 = 0.050 kgs per day
After 100 days upto 150 days.
- N = 0.8 kgs per day
- K2O = 1.2 kgs per day
- P2O5 = 0.025 kgs per day
Observe cover-in within five months.

Top dressing fertilizer:-
While earthing up
- DAP = 50 kgs
- Ammonium Sulphate = 50 kgs
- Sulphate of potash = 50 kgs
- Micro Nutrients = 10 kgs
In case of top dressing reduce fertilizer in fertigation

Seed Rate:- 800 to 1200 kgs per acre

Seed Treatment:-
- Washing
- Drying
- Emmisan
- Agallol 0.25%
- Dithane 0.30%
- Malathion 0.1%

**Seed Dimension:**
- 30–40 gms each
- 2 active buds
- Placement
- Spacing

**Depth of Plantation:**

(Image Shown above is a thumbnail of actual image - click to enlarge)

**Earthing Up:**

**Rotation/Inter Cropping:**
GROWTH AND DEVELOPMENT

- Germination

Vegetative Growth:-
**Drainage:**
For heavy soils dig additional 4 inches wide and 2 inches deep soil and earth it up before heavy rains
**Weed Control:**
- Paraquat 5ml/ltr
- Diuron 2kgs/Acre after planting
- Diuron 2kgs/Acre before emergence
- Atrazine 200 to 250 gms/acre after sowing
- Goal 80 ml/acre
- Manual Weeding

**Irrigation:**
- Irrigation For Germination
- Duration
- Interval
- Big Irrigation
- Stopping for Curing
Diseases:-

1. Soft Rot or Rhizome Rot (Fungal, Phythium, Fusarium)
   **Symptoms**
   - Appears during rainy season, Crop ht. 0.5-0.6m.
   - Leaves starts yellowing & die
   - Collar region becomes watery & soft
   - Soft rot also extends to the rhizome
   **Prevention:** Seed rhizome treatment

   **Control:**
   - Ridomil drench @ 0.01% after 3 months
   - Ridomil seed treat 0.25%

2. Anthracnose leaf spot (*Colletotrichum capsici*)
   **Symptoms:** Yellow spots on leaves
   **Prevention:**
   **Control:**

3. Leaf spot (*Phyllosticta zingiberi*)
   **Symptoms:**
   - Oval to irregular spots
   - Later spots becomes papery
   - Black, dot like pycnidia
   **Prevention:**
   **Treatment** – Bordeaux/copper and M-45

4. Thread Blight (*Pellicularia spp.*)
   **Symptoms:** Irregular water soaked spots on stems & leaf sheaths.
   **Prevention:**
   **Treatment:**- Management Bordeaux
Pests

1. **Shoot Borer** (*Dichocrosis punctiferalis*)
   *Damage to Crop:* Caterpillar bores central shoot which turns yellow & dry

2. **Leaf folder** (*Udaspes folus*)
   *Damage to Crop:* Green coloured feeds from inside

3. **Thrips** (*Thrips tabaci*)
   *Damage to Crop:*

4. **Scale insect** (*Aspidiotus hartii*)
   *Damage to Crop:* Crop as well as rhizome
   Patchy germination

5. **Spice beetle** (*Stegobium paniceum*)
   *Damage to Crop:*

6. **Storage pest**
   *Damage to Crop:*

   **Treatment:** Heat treat 54 – 640°C for 6 hours

**Harvesting**

- **Green ginger** – 180 – 200 days
  - After this increase in crude fibre and decrease in protein & fats
- **Dry ginger**
  - Harvest at 245 – 255 days > 260 days increased fibre
  - Decrease volatile oils
- **Yield**
  - 16 tons/acre
  - Range – 6 to 12 tons/Acre
- **Cold storage**
  - Fungicide/Plant growth inhibitor
  - Polythene
  - 2 – 5°C – 90% Rh – 120 Days
  - 21-30°C – 60 – 90% Rh – 70 Days
Bleaching

- One day soak – 1 kg slakedlime / 120 ltr water
  - Sun dried
  - Rub with gunny
- Than also sulphur dioxide fumes
  - 3.2 kg. Sulphur 1000 kg. Rhizome for 12 hours
- harvest avoid inzury
  - Heaps - Fermentation
  - Peeling – Reduce fibre excess– ruptures oleoresin cells
  - Drying – lose 60 – 70% wt.
  - Moisture – 7-12%

Packing

- Gunny – 63.5 kg.
- U.S.A. Double gunny bags
- Arab > 75 kg.