

Ginger



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FARMING**
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Ginger

Ginger (*Zingiber officinale* Rosc.) is an important commercial crop grown for its aromatic rhizomes which is used both as a spice and a medicine. Ginger of commerce is the dried rhizome. It is marketed in different forms such as raw ginger, dry ginger, bleached dry ginger, ginger powder, ginger oil, ginger oleoresin, gingerale, ginger candy, ginger beer, brined ginger, ginger wine, ginger squash, ginger flakes etc. Ginger is the rhizome of *Zingiber officinale* Rosc., a herbaceous perennial belonging to Zingiberaceae, and is believed to be native of south-eastern Asia. It is propagated through rhizomes. The rhizomes put forth erect, leafy stems, 30-90 cm in height. The base of the leaves sheathe the stem. The leaves are dark green, 15-20 cm long, narrow, lanceolate and with a prominent midrib.

Climate and soil

Ginger grows in warm and humid climates. It is mainly cultivated in the tropics from sea level to an altitude of above 1500 MSL and it can be grown both under rainfed and irrigated conditions. For successful cultivation, ginger requires moderate rainfall at the sowing time till the rhizomes sprout, fairly heavy and well-distributed showers during the growing period, and dry weather for about a month before harvesting. Ginger thrives the best in well-drained soils like sandy or clay loam, red loam or lateritic loam. A friable loam rich in humus is ideal. However, being an exhaustive crop, it may not be desirable to grow ginger in the same site year after year. It thrives well under partial shade, though it is also grown on a large scale in open areas. Ginger can be cultivated organically as an inter or mixed crop provided all the other crops are grown following organic methods. It may be intercropped with shade-giving plants, e.g., banana, pigeon-pea, tree castor, and cluster bean (guar). Ginger is grown as a mixed crop, in coconut, young coffee, and orange plantations on the west coast. At higher altitudes in Himachal Pradesh, ginger is intercropped with tomato and chili.

The flowers are small, yellowish, speckled, each with a purple speckled lip and borne on a spike. When the plants are about 9 months old, the green leaves turn yellow

Cultivation Areas:

Ginger is cultivated in almost all states of India. The major ginger-growing states include Kerala, West Bengal, and the North Eastern Region. India accounts for about 30% of world ginger production, followed by China at 20%¹².

The northeast region of India is emerging as India's organic ginger hub, producing approximately 3 lakh tonnes of ginger annually from 47,641 hectares of land

Land preparation:

Plow the field twice then harrow to pulverize the soil. Incorporate fully decomposed FYM at 3-5 t/ha. For



raising rainfed crops, the land is divided into raised beds of 1 m width and of convenient length varying from 3 - 6 m and 15 cm height with a spacing of 30 cm between beds for drainage channel. On hill slopes, the beds are formed along the contours. Seed rate: 1200 – 1500 kg rhizomes free from pests and diseases are selected for planting 1 ha area.

Time of planting: Ginger can be planted from the start of April to May in the region. But the best time is the middle of April when there is sufficient moisture in the soil.

Method of planting: Ginger is propagated from small rhizomes known as bits. Bits of 4- 5 cm long weighing 25 – 30 gm are separated from the mother rhizomes for planting. A spacing of 30 cm X 25 cm is considered ideal for ginger. Rhizomes are planted at a depth of 4-5 cm in furrows and covered with soil.

Seed treatment: Seed treatment induces early germination and prevents seed-borne pathogens and pests. Before sowing, seed rhizomes should be dipped in cow urine for half an hour. Seed rhizomes

are also treated with Rupiya Soil Shakti @ 1 liter per 200 liter of water

Propagation and Seed Rate

At the time of planting, apply 25g of powdered neem cake and mix well with the soil in each pit. Ginger is planted in rows, 25 cm apart at distances of 20-25 cm within the row. In the case of the irrigated crop, ridges are made 40-45 cm apart and planting is done in shallow pits on top of the ridges at distances of 22-30 cm. Bits of seed rhizomes weighing 20-30 g each and having at least one bud are planted at the given spacing. While planting, seed rhizomes mixed with well-rotten cattle manure or compost mixed with Trichoderma (10 g of compost inoculated with Trichoderma) may be put in shallow pits and covered with a thin layer of soil and leveled.

Seed Rate

About 600 - 1000 kg of seed rhizomes are required to sow one acre of land. Higher seed rates are used for planting at higher altitudes. Sowing is done in April-May in South India and a little later in North India. Sowing by the middle of April in the south and by the first week of May in the north gives higher yields.

The irrigated crop is watered immediately after sowing. The beds of the rain-fed crop are covered with leaf mulch as protection against sun and heavy rains and for consequent enrichment of organic matter in the soil. In some areas, farmyard manure is used as mulch. Seeds of cluster bean, pigeon-pea, or castor are sown on irrigation channels on the corners of the raised beds for shade. The shoots emerge in 10-20 days. Fertilizer dose

Irrigation

Proper drainage channels are to be provided in the interrows to drain off stagnant water. Irrigation is given at varying intervals of 4 - 10 days as and when required

WEED CONTROL

On the third day after the plantation take a spray of Atrazine@4-5 gm/ltr on moist soil. To kill weeds that grow after the first spray of weedkiller, 12-15 days after plantation take a spray of Glyphosate@4-5 ml/Ltr water. After weedicide application, cover the field with green manure or paddy straw.

Earthing-up

Earthing-up operation is carried out to enhance root development. 50-60 days after planting take the first earthing operation and the next after 40 days.



Fertilizer Dose

N	100 kg/ha.
P	55 kg/ha
K	75 kg/ha.
Rupiya Earthwise	25 kg/ha

Apply N and K in four split doses before 120 days (at 30, 60, 90 & 120 days) after planting. Avoid high-intensity rainy period for fertilizer application. Fertilizer has to be covered by earthing up after each application.

To optimize yield and enhance crop quality, adhering to Rupiya expert-recommended agricultural practices is

Crop Protection

Diseases

1. **Bacterial Soft Rot:** This disease commonly affects plants with fleshy storage organs like ginger. It causes the rhizomes to become soft, watery, and foul-smelling. The rotting tissue is often discoloured and slimy. To manage this, ensure proper drainage and avoid waterlogged soils



2. **Bacterial Wilt (Ginger Blast):** Caused by *Ralstonia solanacearum*, bacterial wilt affects ginger plants. It leads to wilting, yellowing of leaves, and eventual plant death. Crop rotation and resistant varieties can help control it.



3. **Dry Rot:** Caused by *Fusarium* and *Pratylenchus* complex, dry rot affects ginger rhizomes. It results in decay, shriveling, and loss of quality. Proper soil preparation and avoiding contaminated planting material are essential.



4. **Colletotrichum Leaf Spot:** This fungal disease causes circular or irregular spots on



ginger leaves. The spots may have a reddish-brown border. Fungicides and good hygiene practices can help manage it.

5. **Ginger Leaf Spot (Phyllosticta Blight):** Caused by *Phyllosticta zingiberi*, this disease leads to small, dark brown spots on leaves. Infected leaves



may drop prematurely. Proper spacing, sanitation,

Microbial wilt

To control the disease, the tuber can be treated in streptomycin 200 ppm before sowing.

Insect

Stem borer

Stem borer causes the most damage in ginger. If the insect infested plants become yellow color of the leaves, stems drying.

To control pest, a low-level attack subjecting Peo - de - Janeiro may be used for cultivation. It should be control using prakkonite family of natural enemies or spray the pesticide recommended by the Rupiya Expert



Leaf roller

Leaf roller attacks the leaves and leaves are rolled, which are found in large numbers in the months of August and September. To control it, to spray the pesticides recommended by the Rupiya Experts



Tuber scales

Tuber scales attacks the tuber in the field and also in godowns. It attacks the plant severely, so the plant dries. In godown tuber scale buds dried and it reduces the germination capacity.

To control the tuber scales, thrips, and other sucking insects, spray Rupiya Recommended crop protection material.

Harvest

Ginger plant preparing for harvesting within eight months from the date of planting. Brown leaves are ready to be harvested at arrival points to the bottom-up dries. This condition should be harvested in order to extract the ginger oil. The leaves are harvested in the dry state by seed tuber used. Harvested ginger, removed from the dried leaves, roots, and tubers, unearthed by the adhering soil is removed, washed with water and dried in shade. The ginger used as vegetable and cooking, it should be harvested from the fifth month after sowing. This immature harvested ginger has less alkalinity and fiber.

Yield

Well-maintained crop average yield from 15 to 20 tons/ha of ginger rhizomes.

Post-harvest

Ginger - and sell it off as soon as ginger, washed, dried in shade and then stored for 2 days. If we keep the ginger in 55 cm heat and 65% of humidity, stored upto 6 months.

Dry ginger - used after drying.

Black Sin - the rhizomes are put in boiling water for 10-15 minutes, remove the skin and dried. It is available in black color is killing tubers.

Here are tips for successful ginger farming:

- **Variety Selection:** Choose the right ginger variety based on your climate, soil type, and market demand. Popular varieties include Yellow Ginger, White Ginger, Blue-Ring Ginger, and Black Ginger.
- **Climate and Soil:** Ginger thrives in warm and humid conditions. Ensure mildly acidic soil with a pH between 5.5-6.5. Use well-draining soil enriched with organic matter.
- **Soil Preparation:** Loosen the soil and incorporate organic amendments before planting. Create raised beds or mounds to improve drainage.
- **Planting Techniques:** Cut store-bought ginger rhizomes into pieces, each with 1 or 2 knobby buds. Plant them about 1-1.5 inches deep in a nutrient-rich potting mix.
- **Warmth and Sunlight:** Ginger prefers partial shade. Maintain a temperature around 68°F (20°C) and ensure direct sunlight exposure.
- **Watering and Fertilization:** Keep the soil consistently moist but not waterlogged. Apply liquid fertilizer every few weeks.
- **Weed Management:** Regularly remove weeds around ginger plants. Mulch the soil to suppress weed growth.
- **Harvesting:** Harvest ginger when the leaves turn yellow and dry up (usually after 8-10 months). Rinse and dry the rhizomes in the sun.
- *Remember, patience and care are essential for successful ginger cultivation. Happy farming!*

For more detailed information, you can explore resources like the Rupiya Crop Guide to Organic Ginger Farming on Rupiya.app 🌱

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GINGER FARMING WITH RUPIYA

Ginger Crop Production

Crop	Ginger
Area	1 Acre
Variety	Rupiya Suggested
Soil	sandy or clay loam, red loam or lateritic loam
Climate	warm and humid climates
Seed Rate	600 to 1000 kg per acre
Sowing time	April to May
Crop Duration	10 -12 months
Suggestion	Use drip irrigation for the better yield

Cost of Cultivation (1 Acre)

Details	Cost
Seed	56000
Input	44925
Drip	10000
Manpower	10000
Harvesting	4000
Rent	10000
Insurance	21600
Land Preparation	9000
Total	165525

Income from one acre

Particulars	Calculations
Total Cost of Cultivation	165525 Rs
Total production per QTL per acre	60 QTLs
Rate offered by Rupiya per QTL	9000 Rs
Total income from one acre	540000 Rs
Total profit	374475 Rs

Note: The above given figures are for educational purposes only actual figures may vary depending upon the climate, soil, variety of seed, season & agronomical practices.



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