# GROWING BABY GINGER

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Are you wondering if you can successfully grow ginger in the Mid Atlantic Yes you can.

Ginger in high tunnels in Georgetown and Newark, Baby ginger being weighed at harvest.

Scientific name - *Zingiber officinale* Roscoe

Family - Zingiberaceae

Plant type: Rhizomatous (produces an edible rhizome)

Height: 2 - 4 feet when shaded, 1.5 - 2.5 when not shaded.

Sunlight - Partial shade is best but will grow in full sun

Temperature: Warm to Hot (78 - 95 F)

Humidity: > 58 %

## General Information

Ginger is a warm season crop that natively grows and flourishes in tropical and sub-tropical rainforests. Ginger grows vigorously in warm and humid conditions. It is very sensitive to cold temperatures and is killed by frost. In temperate regions, it can be grown during the 6-month warm season window which spans from mid/end of spring to early/mid fall. Ginger can also be grown in a warm greenhouse and grows well in the greenhouse in the hot summer months

## Varieties

Successful cultivars grown in the US include Yellow Ginger, Chinese Ginger, Indian Ginger

## Cultivation time

Ginger requires a cultivation time of 8-12 months for mature ginger and half that time for immature/baby ginger. Based on the short warm season window prevalent in the mid-Atlantic region of the US, it allows for baby ginger production rather than mature ginger production.

## Cultivation requirements and preparations

During mid-winter, seedlings should be raised indoors (warm greenhouse or growth room), from healthy, disease-free mother rhizomes for two months to initiate seedling sprouting and tillering. Planting materials are commonly sourced from companies in Florida or Hawaii. We have been sourcing organic ginger from South America at reasonable prices. It can be sprouted in trays or 4" pots in standard growing media. In this sprouting period, it should be watered no more than every other day to avoid excess wetness. Fertilize once a month after 50% sprouting is noticed with a 20-20-20 or similar soluble fertilizer

Soil conditions - Well drained sandy loam soil, rich in Organic matter, pH 5.5 - 7, though ginger is adapted to a wide range of soils. Ginger grows in similar conditions as tomatoes and peppers.

Ginger is a heavy feeder and thrives in soils with high levels of organic matter. Prior to transplant add compost at 6-8 tons per acre of compost and incorporate into the soil. In heavier soils, construct raised beds to promote drainage. In sandier soils, pant in furrows and leave room to ridge up around plants during growth

Transplanting should be early during late spring by Late April/Early May for tunnels or late May for open fields; the tunnels warm up faster thus are capable of sustaining ginger growth and development. Plant in rows, or beds with enough walking space (3 ft wide alley). Beds can be 3 - 6 feet wide, and rows 1.5 feet wide in a group of 3 rows followed by an alley; layout can be modified depending on the amount of area available. We have also planted in the field in in double rows on black plastic mulch. Standard spacing is 10 in x 10 in. Transplant during the coolest part of the day (early morning/Late evenings

**Management and maintenance**

Ginger maintenance practices

1. Irrigation – for best yields maintain at 60-80 percent field capacity
2. Weeding – keep weed free by hand weeding, no herbicides are labeled for ginger
3. Fertilization – add lime, P, and K prior to planting. Fertilize with 40 lbs./a equivalent of nitrogen monthly (160 lbs. of N/a total_
4. Pest and disease control – thrips are a common problem in the greenhouse and may also need to be controlled in high tunnels. No other major insect or disease has been found to date in our production.
5. Earthing up – ridge up soil around the base of plants starting 30 days after planting
6. Shading – ginger will benefit from shading with 30% shade cloth over tunnels.

Earthing up (ridging up the soil to cover the root collar) maximizes rhizome quality by maintaining the reddish/yellowish color of the rhizomes. if not properly covered the rhizomes develop a strong greenish coloration which has less marketable aesthetic value.

Light frequent irrigation is necessary during establishment and then moisture should be maintained at 60-80% of field capacity thereafter.

Ginger requires fertile/nutrient-rich soils with good aeration/drainage (loose soils) to allow easy water and air infiltration, rhizome expansion, and continuous tillering. Frequent cultivation during daily/weekly maintenance can improve highly compacted soils to promote ginger growth but should not damage developing rhizomes.

Common insect pests and diseases

Thrips, weevils, mites, aphids, soft scales, beetles; bacterial wilt, fusarium wilt, soft rot, storage rot, dry rot, and leaf spot are found in ginger-producing regions. These are not problematic in areas that have not grown ginger before.

Integrated Pest Management

Start with clean fields free from weeds or previous crop residue to limit potential habitats for destructive insect pests and disease vectors. Widely spaced alleys create room for air circulation preventing moisture build-up which could promote diseases.

Ginger shares several major insect and mite pests and diseases with tomatoes and sweet peppers. Follow the rotation plan for Solanaceae crops.

Harvesting

Plants should be ready for harvest 4-5 months after transplanting in tunnels (*i.e.,* August - September) or 5 - 6 months after transplanting in the field (*i.e.,* September - October) depending on prevailing temperatures and other cultural practices. Using transplants, the production cycle can be shortened in high tunnels to allow for 2 crops.

Harvesting should be scheduled on the cool day of the week, or if need be, during early mornings on hot days. Uproot the entire plant by loosening up soil using a shovel, then grab the leaves to uproot the whole plant steadily. Place uprooted plants in a shaded area away from direct sunlight. Separate the pseudo stems and roots from the immature/baby rhizomes by cutting with a hand

pruner. The harvested baby ginger will be dominated by yellowish/pinkish color. Wash them and prior to marketing, storage, or consumption.

Greenhouse and hydroponic production

We have successfully grown ginger in the greenhouse in deep trays and hydroponically

**Investment returns and Marketing**

A return of 1:10 (initial weight to final yield) during the 4-6 months cultivation cycle is standard, < than 10 is sub-optimal and above 15 is a high yield. Yield varies depending on soils nutrition, irrigation, spacing, planting date, and type of propagation material used.

Raised health concerns and increased diversity of populations creates a continuous market for fresh ginger, most often consumers purchase ginger for its unique flavor and aroma. Storage of baby/immature ginger is shorter (3.5 months max) due to its high succulency compared to the matured counterparts (6 - 12 months). Baby/immature ginger is ideally refrigerated at 50$^{o}$F in an airtight environment (preferably inside Ziplock bags or vacuum sealed).

Yield per acre = 10 tons

Yield per square foot = 0.5 lbs.

Price of ginger depends on the use and further processing

- Fresh baby ginger: The going rate for baby ginger can vary widely at farmers' markets around the country — from $7 to $25 a pound, but even the lowest price is still higher than the price of mature ginger that sells for $4-6 a pound

The foliage of the ginger plant can also be sold as a fresh spice.

**Processing**

Excess fresh baby ginger has been processed by growers into pickles, sugared ginger, syrups or dried and ground into powdery forms.

**Uses of ginger**

1. Culinary purpose for its special flavor, aroma, and pungency
2. Medicinal purpose to relieve nausea, inflammation, colds, arthritis, migraines, and hypertension
3. Commercial food used for making ginger beer, ginger ale, ginger leathers, ginger candy, crystallized ginger, ginger powder, and ginger essential oils

In the Mid-Atlantic area, baby ginger is being grown on a small scale in Virginia, Delaware, New Jersey, California, Arizona, and Maryland. Mature ginger is being produced in Hawaii, Florida, Texas, and Louisiana

*Picture 1: Ginger plants at 4 months in a high tunnel ready for harvest.*

*Picture 4: Field production of ginger on raised beds for drainage.*

*Picture 3:Baby ginger at harvest before stems are removed*

*Picture 2: Harvested rhizomes of yellow baby ginger*