GUIDE TO THE PRODUCTION OF GINGER

Extension Guide No. 7

Produced By

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INTRODUCTION

Ginger is native to South East Asia. It arrived Nigeria in 1927 and its cultivation started around Kwoi, Kubacha, Kafanchana and Kagoro of Southern Kaduna and around the neighbouring parts of Plateau and Nasarawa States. In recent times, ginger cultivation has been introduced into the South Eastern and South-Western agricultural zones of Nigeria.

The underground stem (rhizome) of the ginger plant is the ginger of commerce. Traditionally, ginger is used in Nigeria for both medicinal and culinary (kitchen) purposes. The household uses of ginger include: the preparation of puddings, soups, stew, pickles, as meat tenderizer and for seasoning foods and meat as a spice.

Ginger is also used in the flavouring of spirits and in the preparation of wine. It is used in making ginger beer and ice creams. In the soft drink industry, carbonated drinks like ginger ale and ginger fruit drinks are made from ginger. In the confectionery industry, it is used in making ginger biscuits, ginger cakes, ginger bread, cookies, rolls, sweets, chocolates, peppermints, caramel, candies, jams and marmalades. Ginger is used in the manufacture of perfumes, soaps and creams. It is also used in the pharmaceutical industries in the manufacture of drugs. Ginger oleoresin, a substance which has the pungency of ginger as well as being an essential oil is obtained from ginger by extraction.

SITE:

Ginger is a perennial herb which is treated as an annual crop under cultivation. Like yam, ginger should be the first crop in a rotation because of its high demand for nutrients. For ginger cultivation, select well drained sandy clay loamy soils rich in organic matter. Choose reasonably flat soils with minimum
risks of soil erosion. Avoid steep slopes and water logged areas.

CLIMATE:
Ginger requires abundant rainfall of above 1000 mm which is well distributed over 6 – 8 months of the field life of the crop. The crop will require supplementary irrigation in areas where the rainfall is less than 800mm. A temperature range of 25°C – 35°C is ideal for ginger growing.

VARIETIES:
Two varieties of ginger are grown in Nigeria. These are UG 1 – the yellow ginger (“Taffin Giwa” – Elephant foot,) and UG II – the black ginger (“Yatsun Biri” – Monkey finger). The yellow ginger by far out yields the black ginger but black ginger is more pungent than the yellow. Four improved varieties have recently been introduced from India by the National Root Crops Research Institute (NRCRI) and are being multiplied and made available to farmers. These are: Himashal Pradesh, Rio de Janeiro, Maran and Wynad Local.

LAND PREPARATION:
Ginger requires a good soil tilth for the production of well-shaped rhizomes. Ginger can be grown on beds, ridges or flats. Beds are preferred for rainfed ginger while ridges are recommended for irrigated ginger. The size of beds may be varied according to choice provided that enough space is left between the beds for easy run off of water. Incorporate cowdung or farm yard manure during land preparation if available.

PLANTING MATERIAL AND SEED RATE:
The crop is propagated vegetatively through rhizomes.
Cut seed rhizomes into small pieces each having at least 2 good "buds" or growing points and weighting 5 – 10 grams. Plant in shallow holes (4 – 5 cm deep) on the seed beds at distance of 20 cm x 20 cm apart. This will give a plant population of 250,000/ha and a seed rate of 2.5 – 5t/ha.

Ginger requires 7 to 8 months of field life. It is therefore necessary to plant early to enable the crop to complete its life cycle before the onset of dry season. Plant when the rains are steady. In the rainforest zone, ginger is planted March/April and April/May in the Savannah zone of Nigeria.

**MULCHING**

Mulching is very important in ginger production. Heavy mulching (5cm thick) with materials that will not decay within the first three months after planting is recommended. Assorted materials are available for mulching – dry grass, dry leaves, rice husk and sawdust. Dry grass with tough straw is the best and highly recommended mulching material. Mulch within 48 hours after planting.

**MANURING AND FERTILIZER:**

Ginger has a high nutrient demand from the soil. Apply organic manure such as green manure, cowdung, compost or farm yard manure at 25 – 30 tonnes/ha if available during land preparation.

Use of inorganic fertilizer – NPK 15.15.15 compound fertilizer at 300kg/ha applied between 6 – 8 weeks after planting is recommended. Top dress with 120kg Urea/ha 12 weeks after planting. If NPK Mg 12.12.17.2 is to be used, apply 400kg/ha at planting and top dress with 100kg Urea/ha 12 weeks after planting.
WEED CONTROL:
Weeds must be kept down within the first 8 – 16 weeks after planting. Weed ginger plots at least twice at 4 – 6 weeks (before fertilizer application and 8 – 12 weeks after planting). A third weeding may be necessary.
Where herbicides are available and convenient, the following herbicides are recommended:
  i. Primextra at 3.0 kg ai/ha
  ii. Gramuron at 4 kg ai/ha + Paraquat at 2.5kg ai/ha.
  iii. Fluometuron at 3.0 kg ai/ha + Paraquat at 2.5kg ai/ha
  iv. Oxadizon at 1.5 kg ai/ha
  v. Chlorothal dimethyl at 12k ai/ha.
  Application **must** be within 48 hours after planting and before mulching. When herbicides are used, hand weeding at 12 – 16 weeks after planting may be necessary.

PEST AND DISEASES:
Pests: The incidence of field pests of ginger is rare. So far only occurrences of shoot borers have been reported. Spraying with any general insecticide is recommended.
Diseases: When grown on fertile soils and using recommended practices, the occurrence of diseases is minimal. High humidity and low fertilizer however, favours the incidence of leaf spot disease. To prevent the disease, the following are recommended:
  i. Plant on fertile soils
  ii. Apply correct and balanced fertilizer
  iii. Avoid water logged areas
  iv. Practice good farm hygiene (weed early)
  v. Plant early.
  vi. Use correct spacing and recommended plant population
  vii. Mulch with recommended materials
viii. Spray with Dithan z-78 as soon as infection is observed.

**MIXED CROPPING:**
Avoid intercropping ginger with maize or relaying with legumes like Soya beans or cowpea. These will cause adverse yield depressions of ginger. Ginger may be intercropped with a low population (20,000/ha) of okra.

**HARVESTING:**
Harvest at 7 – 8 months of field life. Avoid too late harvesting (when the soil had dried up and caked up) nor yellowing of leaves, drying up, dying back and lodging of aerial stem. Harvesting can be done using garden fork. Lift the rhizomes, shake off the attached soil crush and manually detach the roots from the rhizomes.

**YIELD:**
The Yellow ginger – UG I (Tafin Giwa) is a higher yielder than the Black Ginger – UG II (Yatusn Biri) which is more pungent. The UG I has a yield potential of between 70 – 80 t/ha while the UG II has a yield potential of between 50 – 60 t/ha. Under improved management, yields of up to 50 t/ha are regarded as good Raton crops, however, do not give very good quality ginger.

**STORAGE:**
Most of the ginger rhizomes harvested are split and dried for trade. There is a gap of 4 – 5 months between the harvesting time and the next planting season. This calls for storage of seed ginger. This is achieved using the following methods:

i. Store in covered pit, making sure that the rhizomes are loosely packed up to a height of 10 – 15 cm.

ii. Store in baskets covered with moist sawdust
iii. Ginger can also be stored in sand beds in a well ventilated cool corner of a hut (room).

iv. Large quantities of ginger can also be stored in heaps under the tree shade and covered with dry grass. The heaps however, should be sorted periodically to remove rotted rhizomes.

v. Ginger could also be left unharvested in the field for storage. In such situation, cover the unharvested plots with a thick layer of dry grass to prevent drying up of the unharvested rhizomes.

PREPARING GINGER FOR THE MARKET:

Ginger get into the market in the following forms:

i. Fresh Ginger:- Ginger marketed raw (as vegetable) dried before marketing.

ii. Dried ginger:- This is ginger that has been sundried before marketing.
   a) Peeled (scrapped or uncoated) ginger:- This is ginger with the outerskin removed before drying.
   b) Unpeeled (coated) ginger: Ginger rhizomes washed and sundried with the skin.
   c) Black ginger:- Ginger rhizomes boiled for 10–15 minutes with or without peeling before sundrying.
   d) Split or sliced ginger:- Ginger cut into convenient slices washed and sundried. This is the most common form ginger is handled in Nigeria for export.

iii. Preserved ginger: Ginger rhizomes harvested before they are a fully mature, washed, cut into pieces and stored in brine until processed by controlled heat cooking in sugar syrup.

iv. Ground ginger:- Dried ginger, washed and ground into powder and sold as ginger powder.

v. Essential oil and Oleoresin:- Ginger oil when extracted
can be marketed as oil and oleoresin.

**MARKET OUTLETS FOR GINGER IN NIGERIA.**

The following flow chart represents the marketing channels for ginger in Nigeria.

![Flow chart showing market outlets for ginger in Nigeria](image)

SUMMARY:

- Select a well-drained sandy clay loamy soil rich in organic matter.
- Select reasonably flat areas to avoid erosion.
- Plant on well prepared soil
- Use recommended varieties, correct sett size and plant population.
- Avoid late planting
- Mulch with recommended materials
- Weed timely.
- Apply recommended fertilizer timely
- Control pests and diseases
- Avoid intercropping unless with recommended crop.
- Harvest when crop is mature.
- Store using any of the recommended methods.