

## GINGER: SINGLE NODE CUTTING TECHNOLOGY

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### Introduction

Ginger (*Zingiber officinale* Rosc.) belongs to the family Zingiberaceae, has been prized for its aroma flavour, pungency and medicinal properties since ancient times. Commonly used as a spice for over 2000 years and contains characteristic odour and flavour such as the pungent taste. Ginger is commercially available in various forms such as green ginger, dry ginger, ginger powder, ginger oil, ginger oleoresin and preserved ginger. In western countries, ginger is used in gingerbread, biscuits, cakes, puddings, soups, pickles, beer and wine. In Saudi Arabia, it is predominantly used for flavouring coffee. Development of suitable production technology to boost the crop yield is essential as the yield potential of the variety alone is not sufficient for increasing the yield (Yadav *et al.*, 2014). Seed rhizome size, plant spacing are the important aspects of production systems of ginger. It is well documented that rhizome sizes and plant spacing have significant influences on the growth and yield of ginger (Monnaf *et al.*, 2010). In ginger, planting material requirement is very high and it involves 40 per cent of its cost of the total cost of cultivation. Whole or split rhizomes with healthy buds is used for planting. Though transplanting in ginger is not conventional, it is found profitable. A transplanting technique in ginger by using single bud sprouts (about 5g) has been standardized to produce good quality planting material with reduced cost. The yield level of ginger transplants is on-par with conventional planting system. The technique involves raising transplants from single sprout seed rhizomes in the pro-tray and planted in the field after 30-40 days. The advantages of this technology are production of healthy planting materials and reduction in seed rhizome quantity and eventually reduced cost on seeds.

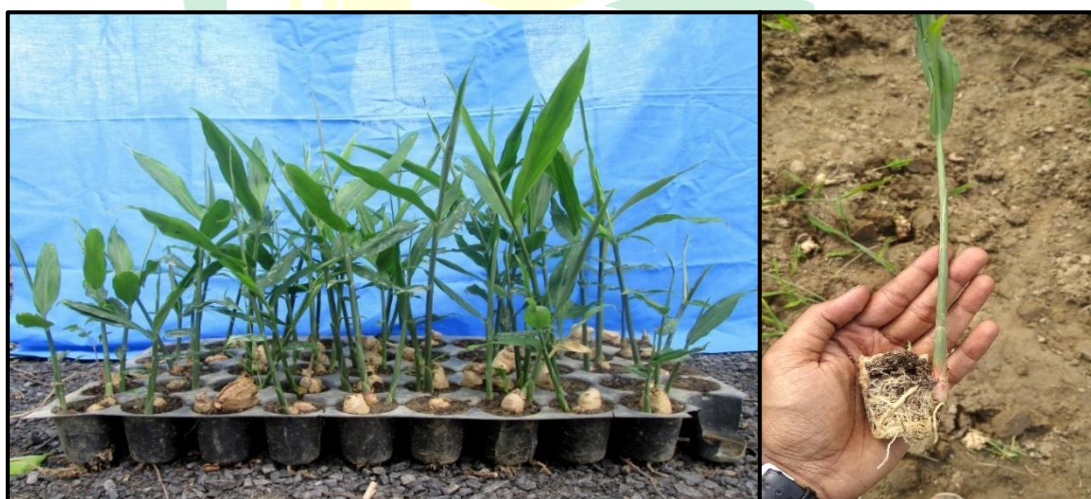
### Brief Review on Single Node Cutting of Ginger:

Ginger cultivation is both capital and labour intensive. Among the inputs, the cost of planting material is particularly important as it amounts for nearly 40-46 % (Jayachandran *et*

*al.*, 1980) of the overall production cost under good management practice. In India rhizome pieces weighing 20-25 g (AICRPS, 1992) are being utilized for planting.

A transplanting technique in ginger by using bud sprouts raised in pro-trays was standardised by Indian Institute of Spice Research, Kozhikode (IISR, 2014). The results of replicated trail with difference for fresh yield among single sprout transplanting and direct planting of 20-25 g seed rhizome. The advantage of this technology is production of healthy planting materials and reduction of seed rhizome quality and eventually reduced cost on seed.

Closer plant spacing or higher plant density produced significantly higher ginger yield than low density of plants. The higher fresh, dry and processed yield of ginger was mainly due to higher plant population per unit area although the growth and yield attributing characters (number and weight of mother, primary and secondary rhizomes) decreased in higher plant density. The possible reason for obtaining higher yield from closer spacing or higher plant densities is probably because more plants were accommodated per hectare. Although wider spacing had resulted in higher number as well as weight of mother, primary and secondary rhizomes per plant, apparently due to less plant competition, but higher plant population or density contributed more towards higher yield (Mahender *et al.*, 2015).



### Method of Planting

- Select healthy Ginger rhizomes for seed purpose
- Treat the selected rhizomes with mancozeb (0.3%) and quinalphos (0.075%) for 30 min and store in well ventilated place
- One month before planting, the seed rhizomes are cut into single buds with small pieces

- Treat the single bud sprouts (mancozeb 0.3%) for 30 min before planting
- Fill the pro-trays with nursery medium containing partially decomposed coir pith and vermicompost (75:25)
- Plant the ginger bud sprouts in pro-trays
- Maintain the pro-trays under shade net house
- Need irrigation with rose cane
- Seedlings will be ready within 30-40 days for transplanting

#### **Advantages in single bud rhizome method of planting**

- ✓ Less requirement of planting material
- ✓ Reduces cost of production ( less quantity of seed rhizome)
- ✓ Crop establishment is good
- ✓ Early rhizome development (starts from three months after planting)
- ✓ Production of quality planting material
- ✓ The transplants may be planted in raised beds as well as ridges and furrows

#### **REFERENCES**

- AICRPS (1992). *Annual Report*, (1992) All India Co-ordinate Research Project on Spices.
- IISR. (2014). *Research Highlights* 2013-14, Indian Institute of Spice Research, Kozhikode, Kerala pp.15.
- Jayachandran, B. K., Vijaygopal, P. D. and Sethumadhavan, P. (1980). Maturity studies on ginger (*Zingiber officinale* Rosc.) variety Rio-de-Janeiro. *Indian Arecanut Spices J.* **3**: 56-57.
- Mahender, B., Syam Sundar Reddy, P., Thanujasivaram, G., Balakrishna, M. and Prathap, B. (2015). Effect of seed rhizome size and plant spacing on growth, yield and quality of ginger (*Zingiber officinale*) under coconut cropping system. *Pl. Archives*, **15** (2): 769-74.
- Monnaf, M.A., Rahim, M.A., Hossain, M.M.A. and Alam, M.S. (2010). Effect of planting method and rhizome size on the growth and yield of ginger. *J. Agroforestry. Env.*, **4** (2): 73-76.
- Yadav, A. R., Nawale, R. N., Korake, G.N. and Khandekar, R.G. (2014). Effect of date of planting and spacing on growth, yield characteristics of ginger (*Zingiber officinale*) var. IISR Mahima. *J. Spices. Arom. Crops*, **22** (2): 209-214.