Available online at
http://currentagriculturetrends.vitalbiotech.org/

ISSN (E): 2583 – 1933

Curr. Agri.Tren.:e- Newsletter, (2023) *2*(10), 21-23

Current Agriculture Trends: e-Newsletter

Article ID: 237

CASSAVA (TAPIOCA)

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Article History
Received: 12. 10.2023
Revised: 19. 10.2023
Accepted: 25. 10.2023

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INTRODUCTION

Manihot esculenta Crantz, sometimes known as cassava, is a perennial woody plant. It is currently grown in Andhra Pradesh but is still mostly grown in Kerala and Tamil Nadu. Karnataka and the rugged northeastern regions.It is a monoecious plant that produces several little apical staminate blooms and a few large basal pistillate flowers on the same racemose inflorescence.

Uses- 1 m long and 3–5 cm thick cassava tubers are used in cooking. Chapatis are made with flour made from cassava tubers. Due of its abundance of starch, it is used to make sago and paper. Vitamin C (25–30 mg/100 g), vitamin B (0.05 mg), vitamin B2 (0.91 mg), and nicotinic acid (0.3 mg/100 g) are all present in significant amounts in cassava tubers. On a dry weight basis, cassava leaves have a protein content of 26-39%. long and 3–5 cm thick cassava tubers are used in cooking. Chapatis are made with flour made from cassava tubers. Due of its abundance of starch, it is used to make sago and paper. Vitamin C (25–30 mg/100 g), vitamin B (0.05 mg), vitamin B2 (0.91 mg), and nicotinic acid (0.3 mg/100 g) are all present in significant amounts in cassava tubers. On a dry weight basis, cassava leaves have a protein content of 26-39%.

Varieties

Co-1

Co-2

Sree Visakham

Sree Sahya

Sree Prakash

Sree Harsha

Sree Jaya

Sree Vijaya

Climate- The cultivation of cassava is successful in both tropical and subtropical environments. A typical yearly temperature below 20°C is detrimental, while 25–30°C is ideal. It is advantageous to have 1,000–3,000 mm of annual rainfall.

Soil and Field Preparation- Various types of soils can be used to cultivate cassava. The optimum conditions are medium-fertile soils with sufficient drainage, nevertheless. Three to four ploughings (10 to 20 cm deep), followed by planking, are needed to prepare the soil and make the field loose, friable, and weed-free.

Planting Material and Planting-Cassava is commercially propagated by stem cuttings, commonly referred to as stakes or setts. Only breeding programs employ real seeds to propagate cassava.When harvesting, mature stems that are strong, robust, and mature are chosen. They are kept in a shaded area to grow the crop the next year. It is preferable to maintain the leaves and stems in an upright orientation. The dry base and sprouting top of the stored stems are removed before being cut into 15-20 cm long stakes with 5-7 nodes. The stakes' thickness should be between 1.5 and 2.0 cm.

Planting- The start of the rainy season is the ideal time to plant. Cassava is often planted using the ridge method of planting.

Distance –The spacing is determined by the types' patterns of plant growth. For branching type varieties, the ideal spacing is 90 × 90 cm, whereas for non-branching type varieties, it is 75 x 75 cm. Planting should be done vertically rather than horizontally or obliquely. The 20 cm long stakes are vertically positioned and buried to a depth of 5 cm. It's crucial to Irrigate immediately after planting.

Manure and Fertilizers-Apply 150–200 q of well-rotted FYM or compost, 150 kg of N, 100 kg of P2O, and 150 kg of K/Oha. Provide the entire amount of phosphatic fertilizers as a base. N and K fertilizers should be used in two separate doses, half as a base application and the other half one to two months after planting.

Irrigation-Cassava is typically grown as a rain-fed crop because to its low irrigation needs and resistance to drought. However, in order to produce a high yield, the ideal moisture level needs to be kept by providing water on a regular basis. For improved plant establishment, watering is required right after planting, followed by two more frequent irrigations spaced 3-5 days apart. Depending on the amount and distribution of rainfall after the start of the monsoon, the crop should be irrigated as needed.

Inter-Culture and Weed Control-At the beginning of crop growth, weed control is crucial. It only takes a couple of gentle rakings to keep the weeds in check. At one and two months following planting, earthening should be done after raking. To effectively control weeds in cassava, pre-emergence soil application of Diuron + Alachlor is followed by one manual weeding.

Harvesting -Weed control throughout the early stages of crop growth is essential. Just a few light rakings can keep the weeds under control. Raking should be followed by earthening one and two months after planting. Pre-emergence soil application of Diuron + Alachlor is followed by one manual weeding to successfully suppress weeds in cassava.

Yield -About 250–300 q tubers are produced by the cassava crop grown on a one hectare of land.

Plant protection

Insect -

Mealy bug (Pseudococcus filamentosus)-The nymphs and adults consume the leaves, petioles, and stem while also secreting a compound resembling honey dew that causes sooty mold. Plants that are impacted dry up. Control. Dimethoate 30 EC @ 1.5–2.0 ml/litre water should be sprayed on the crop.

Stem borer (Pterolophia melanura, Sybra praeusta)-By eating, the newly hatched grubs tunnel into the pit. The standing crop dies when the stem breaks at the base. In storage, the bug also attacks between March and April, which causes the stems to dry up.

Control-Before planting, add or Phorate 10 G @ 20–25 kg/ha to the soil. Spray the crop with Spinosad 45 SC or Dimethoate 30 EC at 1.5–2 ml or 0.5–0.6 ml/litre of water, respectively.

Termite (Odontotermus albus)-They kill the setts by attacking the bark of the planted ones. Control. Apply chlorpyrifos at a rate of 4 liters per hectare together with watering.

Cockchafer grub (Leucopholis coneophora)-Although it is a coconut insect, it also targets cassava when the two crops are grown together. It consumes roots for food. The infected plants become drab, wilt, and eventually dry.

Control-i. Deep ploughing should be done to expose the grubs.

ii. Soil application of Phorate 10 G (25-30 kg/ha) should be done before planting.

Thrip (Retithrips syriacus)-Nymphs and adults both eat the underside and top of leaves. The damaged leaves become dry, rotten, and pallid. Control. Spray Thiomethoxam 70 WS or Imidacloprid 17.8 SL at 0.5–0.6 ml/litre of water.

Root knot nematode (Meloidogyne incognita, M. javanica, M. arenaria) On the roots of diseased plants, knots grow. Root weight, stalk weight, and stalk height are all significantly decreased during storage.

Control

i. Give deep summer ploughing.

ii. Follow crop rotation with resistant crops.

iii. Grow resistant/tolerant varieties.

iv. Apply Neem cake @ 25 q/ha in soil.

Root lesion nematode (Pratylenchus brachyurus, P. sefaensis)-It results in sores on the roots, which eventually decay. Plants that are affected are stunted and lose their leaves and twigs, and there is no tuber growth.

Control

i. Adopt long term crop rotation. ii. Give deep summer ploughing.

ii. Locate the resistant/tolerant varieties.

Disease

Fungal Disease

Brown leaf spot (Cercospora henningsii)-In locations with a lot of rainfall, it is a dangerous fungal illness. Premature leaf fall and severe yield loss are its defining traits.

Control. Spray the crop with 0.1% Bavistin.

Bacterial Disease-Bacterial blight of cassava (Xanthomonas manihotis)Leaf spots, blight, withering, gum exudation, and plant vascular necrosis are some of the symptoms of the illness.

Control-Grow resistant varieties.

Select healthy and disease free planting material.

Viral Disease

Cassava Mosaic Disease (CMD)-The chlorotic specks appear on the leaves, which turn bright yellow and finally cover the whole leaf lamina. It is transmitted through white fly (Bemisia tabaci).

Control. Spray either Dimethoate 30 EC @ 1.5-2 ml or Imidacloprid 17.8 SL @ 0.5-0.6 ml/litre water.

Conclusion –Cassava has a high nutritional value and a high production per hectare, including Chapatis are made with flour made from cassava tubers. Due of its abundance of starch, it is used to make sago and paper. Vitamin C (25–30 mg/100 g), vitamin B (0.05 mg), vitamin B2 (0.91 mg), and nicotinic acid (0.3 mg/100 g) are all present in significant amounts in cassava tubers. On a dry weight basis, cassava leaves have a protein content of 26-39%.

BOOK REFERENCES

Vishnu Swarup. 2006. Vegetable science and technology in India. Kalyani publication.

Thamburaj, S. 2013. Vegetables, tuber crops and spices. Indian

B.R.Choudhary.2014.Vegetables . Kalyani publication.