



Chekurmanis-The Multivitamin Green of the 21st Century

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INTRODUCTION

Origin and distribution

Chekkurmanis originated from hot and humid lowland forest of Borneo. The Indo-Burma region is considered its primary centre of origin. It was introduced to India in the 1950s and then found in cultivated and wild state in Sri Lanka, Southern China and throughout Southeast Asia. In India, it is found in Sikkim, Himalayas, Khasi, Abor and Arka hills at 1200 m elevation and in western Ghats of Kerala from Wayanad northwards at altitudes of 300 to 1200 m. It grows wild in the evergreen forests of western Ghat and southern parts of Kerala.

Botany and floral biology

Chekkurmanis is a slow-growing glabrous perennial shrub with 2-3.5 m height (Fig 1). Usually, the plants bear monoecious, minute, pedicelled and more or less intensely red-coloured flowers in clusters. The inflorescence is an axillary fascicle, dense unbranched and first producing one or two female flowers, afterwards several male ones. The crop is highly cross pollinated and entomophilous, the reason for cross pollination being monoecious, along with the protogynous nature of the flower.

Uses and Foods Prepared from Chekkurmanis

The leaves, tender shoots, and fruits are used either as raw or as cooked vegetable. Cooked leaves are acidic and are used in soup preparation in Java. A sweetmeat is also prepared from the fruits.

In Indonesia, the leaves are reported to be used for giving light green colour in pastry and fermented rice. Leaves are used in sandwiches, salads, curries, meat, rice & curry dishes, scrambled eggs, omelets, pickles, casseroles, stir fries and as a garnish.

To cook it with crab meat, minced pork or dried shrimp tomato.

Chekkurmanis leaves are used for preparing cutlet in southern part of India.

The leaves and succulent young tips of the plant reportedly possess a pleasant taste, similar to fresh garden peas and slightly nutty and these are normally eaten like tropical asparagus, raw in the form of either salads or steamed in Kerala and Karnataka.

Medicinal properties

The chekkurmanis possesses several medicinal properties and it is useful for women after child birth to stimulate milk production and recovery of the womb.

In traditional medicine, a decoction of root is used against fever and other urinary ailments. The juice of leaves is used against eye troubles.

It has huge potential for areas of the tropics where vitamin A deficiency is a problem, especially among malnourished children.

It can overcome many nutritional disorders. It is an excellent source of vitamin A, B, C, carotenoids and phytochemicals, which act as an antioxidant.

It used as an effective medicinal herb in the treatment of diabetes, cancer, inflammation, microbial infection, cholesterol and allergy due to its antioxidant effect.

Climate requirements

The crop is extensively grown in hot and humid climatic situations. It can be grown at lower elevations of 500 m above mean sea level though it is found growing at higher elevations, up to 1,200 m above mean sea level. Chekkurmanis is moderately drought-tolerant, it is not an appropriate choice for an area with an extended dry season of 7-8 months.

Soil requirements

The chekkurmanis can be grown on a wide range of soils. However, the growth and yield are greater when it is cultivated in organic matter-rich, well-drained sandy loam or semi-laterite soils with fairly good drainage facilities.

Sowing/Planting time

The cuttings are usually planted in shallow furrows at least 15 days earlier than the onset of monsoon during, i.e., April-May or May-June.

Propagation methods

Chekkurmanis is propagated by direct seeding or by using 6-12 months-old herbaceous stem cuttings. Both the seeds and the cuttings are short-lived; thus, both should be planted as soon as possible after collection.

Direct seeding: This method is also preferred when plenty of seed is available but labour is limited. Seeds are viable for only 3-4 months when kept in dry and cool places. Even when the seeds are viable, the germination will probably be 50% at best. Seed should be collected just as the seedpods begin to crack. Germination will be higher if the seed coat is pulled off just prior to planting. Although the seeds germinate in 2-4 weeks, they continue to germinate up to 5 months. Plants propagated by this method take more time to flower than planting by stem cuttings.

Planting by cuttings: Propagating the crop through soft wood and semi-hard wood cuttings is much easier and more common since the crop raised through seeds requires more time to flourish. The cuttings of 20-30 cm length are taken from healthy mature branches with five or six nodes and planted under shade in polybags of 15×10 cm size containing a mixture of manure and garden soil. Before planting the cuttings, all the side branches and leaves from the cuttings are removed, and the bottom end of the cuttings should be within 3 cm of a node. The cuttings are usually planted at a line-to-line distance of 60 cm and plant-to-plant distance of 10-15 cm, keeping a depth 12-18 cm, with a single node exposed to the atmosphere for sprouting. It takes 20-25 days for rooting. After rooting, the plants are gradually exposed to full sunlight to make them hard.

Nutritional requirement

If the crop is raised in pits of 30 cm³ size, 5 kg of well-decomposed farmyard manure is added in addition to 25 g each of urea,

superphosphate and muriate of potash. Application of 30 g of 7:10:5 NPK mixture per plant supplemented with 1% urea spray after each clipping enhances the leaf yield significantly.

Irrigation requirement

Although chekkurmanis is a drought-resistant crop, irrigation during summer increases the number of cuttings. After every clipping, it is essential to apply irrigation regularly during rainless periods so that the new growth may emerge.

Intercultural operations

Chekkurmanis possesses medicinal properties, hence, weeds do not pose much problem in this crop, even though removal of weeds periodically in the early stages of the crop is essential to reduce competition with the crop for nutrients, light, moisture and space, resulting in better growth of the crop.

Pruning

Pruning of chekkurmanis plant is usually undesirable since it increases the cost of cultivation, but this operation is essential for effective cultivation because if the plant is left unpruned, it grows so tall that it falls over to the ground. Chekkurmanis should be pruned to maintain a height of the shrub of about one metre (Fig 2). Pruning stimulates growth of new shoots and encourages constant production of new foliage.

Use of plant growth regulators

In chekkurmanis, the growth substances are mainly used to induce roots in cuttings. It is observed that dipping the bottom end of cuttings in 50 ppm solution of IAA or IBA hastens rooting in cuttings.

Harvesting

Chekkurmanis crop becomes ready for clipping succulent leaves 3-4 months after planting and when the plants attain a height of 60-90 cm. The subsequent clippings are done at fortnight intervals. Plants are usually trimmed to a height of 1-1.5 metre to facilitate easy harvest and to give a pleasant look to the garden.

Yield

The average yield of chekkurmanis varies from 300 to 500 q/ha. A single plant gives a

yield of fresh green biomass about 1-3 kg per plant per year.

Insect pest and diseases

Chekkurmanis is not so seriously damaged by insect-pests and diseases but some insects like aphids, scales, Chinese rose beetle and slugs sometimes do considerable damage to the crop.

Aphids (*Aphis malvae*)

These are tiny sucking-type green-colour insects that attack tender growing leaves. They suck cell sap from the tender foliage due to which the plant growth is restricted. Plants become weak and the quality of leaves is reduced; as a result they become unfit for consumption after infestation.

Control

Cut and destroy all the infested leaves during the early stage of an attack.

Neem oil spray (2-3 ml/L), release of ladybird beetles

Spray Malathion 50 EC at 0.1% or Metasystox 25 EC at 0.025%.

Chinese rose beetle (*Adoretus sinicus*)

The Chinese rose beetle feeds at night and attacks the leaves. The adult rose beetle is reddish brown and about 1.25 cm long. Beetles come out at dusk and feed for a couple of hours before retreating to the leafy humus at the base of nearby plants.

Control

Chinese rose beetle is attracted to dim light and repelled by bright light so a flashlight is provided in the field.

Pick the beetles by hand for few weeks and drop them into soapy water.

Snails (*Bensonina monticola*) and Slugs (*Anabenus schlagintweiti*)

These pests feed on the leaves and tender parts of the crops and damage the growing tip of plants. Slugs that girdle the stems and kill the plant can be a problem in rainy season.

Control

Use poison bait of metaldehyde and bran (1:25) in 12 litres of water to trap the insects.

Alum solution @ 2% also acts as a repellent to snails and slugs.

Diseases

Chekkurmanis is not attacked by any pathogen to cause seivour disease.

CONCLUSIONS

Chekurmanis is an emerging nutrient-dense leafy vegetable with immense potential for sustainable nutrition and livelihood security in the 21st century. Its perennial nature, high biomass production, and adaptability to diverse agro-climatic conditions make it suitable for kitchen gardens, homesteads, and commercial cultivation. Standardized production technology-including quality

planting material, proper spacing, balanced nutrient management, regular pruning, and eco-friendly pest management-ensures continuous leaf harvest and higher yield. Being rich in vitamins, minerals, and antioxidants, chekurmanis contributes significantly to nutritional security. With increasing awareness about functional foods and multivitamin greens, promoting scientific cultivation practices can enhance productivity, quality, and income, positioning chekurmanis as a sustainable “Multivitamin Green” for future agriculture and health.