

## Chinese Potato Production in India: Challenges and Strategies

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### Introduction

Chinese potato (*Plectranthus rotundifolius* (Poir.) Spreng., is one of the minor tuber crops that grows well in hot, humid subtropical and hot temperate climatic regions and are used as vegetables. It is cultivated in various regions including Sri Lanka, Malaysia, Indonesia, South Korea, China, India and parts of Africa. It belongs to Lamiaceae family and is native to tropical Africa. It is also called as Hausa potato, country potato or Coleus potato. In Africa, it is called as Hausa potato or Sudan potato. The Chinese potato is a lesser-known tuber crop but stands out for its nutritional richness, boasting high calorie content and essential nutrients. Its cultivation is reported in Asia particularly in Sri Lanka, South India and Java. The plant produces a bunch of dark brown aromatic tubers at the base and in the lower parts of the stem which are a key feature of the crop. The tubers have a dry matter content of 31-33% and starch content of 18-20% with a characteristic flavour due to essential oils (0.05-0.12%). Chinese potato tuber is used in curry preparation, particularly for its aromatic flavour and sweetness, and also can be baked or made into chips. In India, Chinese potato is cultivated as a monsoon crop and is grown both in irrigated and rainfed



Chinese Potato Plant

Chinese Potato Tuber

production system. Despite being smaller in size, the unique taste and aroma of Chinese potato have made them popular among both farmers and consumers in the country. Kerala and Tamil Nadu are the major Chinese potato producing states in India. In Tamil Nadu, the crop is cultivated under irrigated production system. While in Kerala, it is primarily cultivated in the paddy field after the harvest of the crop and in low lying lands. It is known as *Siru Kizhangu* in Tamil Nadu and *Koorka* in Kerala. In Kerala, it is grown primarily in the districts of Thrissur, Palakkad and Malappuram, while in Tamil Nadu, it is mainly grown in the districts of Tirunelveli, Tenkasi, Tuticorin and Virudhunagar. It has been estimated that this crop is cultivated in 2000 hectares in India.

**Table 1. Improved varieties of Chinese potato**

Varieties	Duration (Days)	Yield (t/ha)	Year of release	Characteristics	Developed by
CO 1	180-190	32	1991	It is a clonal selection from local type introduced from Tenkasi. Starch content 21.5%. Cooked tubers are tasty and have lesser soil odor.	TNAU, Coimbatore
Sree Dhara	150	25	1993	First variety of Chinese potato from CTCRI; tuber shape round (2-5 cm diameter); dark brown tuber skin colour; cream tuber flesh colour; tolerant to root knot nematode; suitable for Tamil Nadu and Kerala states	ICAR-CTCRI, Thiruvananthapuram
Nidhi	120-135	18-20	2001	Clonal selection from NBPGR accession CP 79; suitable for Kerala state	RARS, KAU, Pattambi, Palakkad
Suphala	120-140	16	2006	A tissue culture mutant derived from local cultivar, suited for year-round cultivation; suitable for Kerala state	KAU, Thrissur

## Improved varieties of Chinese potato

Sree Dhara variety released by Indian Council of Agricultural Research - Central Tuber Crops Research Institute (CTCRI) has gained popularity among farmers in Tamil Nadu and Kerala. Around 38% of the farmers adopted Sree Dhara variety in Tamil Nadu. High yield, disease resistance, good keeping quality, aroma, flavour, and desirable tuber shape make it a valuable choice for cultivation. In agricultural research, the development and release of new varieties are essential for improving crop productivity and meeting the demands of both farmers and consumers. The major varieties, along with their characteristics, which have been released by research institutes and state agricultural universities are given above.



Harvesting of Chinese potato

## Chinese potato cultivation

Chinese potato is cultivated in Kerala and Tamil Nadu during the monsoon season by irrigated and rainfed production methods. It is propagated from stem cuttings and grown in nurseries before transplanting. The planting season spans from July to September and the crop requires labour intensive care, including weeding, harvesting and grading. Root-knot nematode is an important pest and the infested plants exhibit serious swellings or galls in the roots resulting in suppressed roots, stunted growth and wilting. The crop matures in four to five months, with yields ranging from 15 to 32 tons per hectare. Chinese potato is a commercial crop in both states, with tubers used for edible consumption, seed purposes for next crop season and for sale in the market.

## Economics and marketing of Chinese potato

Chinese potato is grown in India in an area of 2000 hectares, producing about 30000 - 50000 tons

tubers annually. On an average, one kg of Chinese potato tubers is sold at ₹ 24 and the entire market for Chinese potato in India is worth ₹ 6720 lakhs. Chinese potato provides employment generation to the extent of 500-man days per hectare. Thus, the Chinese potato industry contributes to a total of 10 lakhs man days of employment. The cost of cultivation of Chinese potato for one hectare is estimated to be ₹ 1.5 to 2.0 lakhs. As Chinese potato tubers are sold in different size based on grading, the average price varies from ₹ 20 to 50 per kg of tubers depending on the demand in the market, tuber size, colour of the tubers, production time, festive season and consumer's preferences. One hectare can generate gross income between ₹2.8 and 7.0 lakhs. Chinese potatoes are sold in Kerala, Tamil Nadu, Maharashtra and are also exported to Gulf countries.



Manual grading of Chinese potato



Marketing of Chinese potato

## Chinese potato uses

The tubers can be used as a substitute to potato and are usually cooked in a curry and eaten with rice, but they can also be boiled, baked or fried similarly to

potato chips. The tubers are rich in minerals such as calcium and iron as well as vitamins like thiamine, riboflavin, niacin and ascorbic acid. Additionally, the leaves are reported to have medicinal properties including treating nasal congestion, sore throats, coughs and possessing antifungal and anti-inflammatory qualities. In Africa, the Hausa potato is sometimes used in the treatment of dysentery and in the treatment of certain eye disorders. In Southeast Asia, Chinese potato is often used in traditional medicine to treat a variety of ailments, including respiratory problems, digestive disorders, and skin conditions. Its high antioxidant content is believed to help boost immunity and protect against chronic diseases.

### Challenges and way forward

Chinese potato farmers face a number of challenges including incidence of pests and diseases viz., root knot nematode and leaf blight, low price for the produce due to market/season glut, high commission fees charged by commission agents,

inaccessibility to credit and crop insurance, difficulty in getting quality seed tubers, less yield due to heavy rainfall/water stagnation, lack of mechanization for harvesting and grading of tubers, shortage of labour during harvesting and grading and wild animals attack. To promote sustainable cultivation of Chinese potato in India, focus on research, farmer education, and sustainable practices. This includes investing in research, initiating breeding programs, providing farmer training, promoting organic farming and efficient water management, establishing market linkages, implementing policy reforms, developing infrastructure, fostering public-private partnerships, ensuring quality control and certification, promoting climate-resilient techniques, engaging local communities, strengthening research extension services, and maintaining a feedback mechanism for continuous improvement. Collaboration among stakeholders is key, and adapting strategies based on changing agricultural and market conditions is essential for long-term success.

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