

# Garlic: A Potential Plant for Future Generation

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## ABSTRACT

Garlic is a plant in the Allium (onion) family. It is closely related to onions, shallots, and leeks. Each segment of a garlic bulb is called a clove. There are about 10–20 cloves in a single bulb. Garlic grows in many parts of the world like Netherlands, Germany, France, Spain, Italy, Egypt, China and North America. The market for garlic is strong in most areas at the moment, as most nations continue to demand the flavourful bulb. Most of the garlic supply to Europe is currently coming from China and Egypt, although France still shows a strong preference for home-grown crops. In North America, much of the supply comes from South America, whilst China produces its own garlic, and focuses on export rather than import. Getting the bulbs to and from other continents continues to be more expensive than usual, as high logistics prices show no sign of going down, and high energy prices in production countries are also driving up costs.

## INTRODUCTION

In India Madhya Pradesh produces (20,16000) tonnes and production share of (62.85 %) followed by Rajasthan (539000) tonnes and production share of (16.81%). The other garlic producing states are Uttar Pradesh, Gujarat, Tamil Nadu, Punjab, Assam, Orissa, Haryana, West Bengal, Maharashtra, Telangana, and Mizoram. Garlic in Tamil Nadu is produced in about 560 hectares of land in 2009-10 spread across Dindigul, Erode and Nilgiri and some other districts. The state produces about 3390 tonnes

of garlic with productivity of about 6054 kgs per hectare.

However, throughout ancient history, the main use of garlic was for its health and medicinal properties. Garlic and its secondary metabolites have shown excellent health-promoting and disease-preventing effects on many human common diseases, such as cancer, cardiovascular and metabolic disorders, blood pressure, and diabetes, through its antioxidant,

anti-inflammatory, and lipid-lowering properties.

Scientists now know that most of garlic's health benefits are caused by sulfur compounds formed when a garlic clove is chopped, crushed, or chewed. Perhaps the most well-known compound is allicin. However, allicin is an unstable compound that is only briefly present in fresh garlic after it's been cut or crushed. Other compounds that may play a role in garlic's health benefits include diallyl disulfide and s-allyl cysteine. The sulfur compounds from garlic enter your body from the digestive tract. They then travel all over your body, exerting strong biological effects.

The main uses of garlic is highly nutritious but has very few calories, help protect against illness, including the common cold, the active compounds in garlic can reduce blood pressure, it improves cholesterol levels, which may lower the risk of heart disease, garlic contains antioxidants that may help prevent Alzheimer's disease and dementia, it may help you live longer, Athletic performance might be improved with garlic supplements, Eating garlic may help detoxify heavy metals in the body, garlic may improve bone health and is easy to include in your diet and adds flavor

The main varieties cultivated in Kanthallur and Vattavada are Singapore and Mettupalayam. The two varieties are harvested in three months. A local variant Mala Poondu is known for its high medicinal value. However, Mala Poondu takes 6 months to give yield and so, farmers have shifted to the other two varieties. Despite the medicinal properties of Mala Poondu, it has no separate market. Farmers sell it in the open market along with the two other varieties, which have high oil content.

Kodaikanal's famed hill garlic (malaipoondu), which is a pungent, raindrop-shaped bulb, has earned the Geographical Indication (GI) tag, making it an agricultural product unique only to this southern hill station. The tag protects prohibits use of the name 'hill garlic' for other varieties. Kodaikanal Malai Poondu is known for its medicinal and preservative properties due to its antioxidant and antimicrobial

potential, which are attributed to the presence of higher amount of organosulfur compounds, phenols and flavonoids compared to other garlic varieties.

Uniqueness of this garlic is attributed to the soil condition, hill altitude and the climatic conditions (temperature, humidity, rainfall) prevailing in the regions of Kodaikanal, said the application adding: "Kodaikanal villagers totally depend on garlic for almost all common ailments like headache, asthma, tiredness, body pain, indigestion and other gastrointestinal problems, etc. Poondu Laegiyum, a medicinal paste prepared using garlic, is traditionally given to mothers after child birth. It is also given to kindle appetite and reduce weight. Poondurasam is a kind of soup prepared traditionally in the villages of Kodaikanal region using garlic for relieving body pains, digestive problems and for general body health.

As for its uniqueness, the application said: "Kodaikanal Hill Garlic is very peculiar than other varieties cultivated throughout India. The pungent taste and odor are very strong.

In India, garlic is planted as both kharif (June-July) and rabi (October-November) crop and it depends on the regions. It is planted as a rabi crop in Andhra Pradesh, Bihar, Haryana, Uttar Pradesh, Odisha, Punjab, Uttarakhand, Rajasthan, Bengal and hilly regions. It is both kharif and rabi crop in Tamil Nadu, Karnataka, Maharashtra, Gujarat, Madhya Pradesh and Chhattisgarh. But Kodaikanal Malai Poondu is cultivated as two crops: In September-October and in April-May. Other garlic varieties cannot tolerate extreme cold or hot climate conditions. But Kodaikanal Malai Poondu grows in cool climate between 11°C to 20°C. The climatic condition and soil make these garlic peculiar characteristics with abundant medicinal properties."

Horticultural Research Station, Kodaikanal, involved in improvement and providing an advanced training in production and post-harvest management of garlic in Poomparai, Poondi, Villpatti, Mannavanoor villages of Kodai Hills of Dindigul District under Government of India, Mission for Integrated Horticulture Development (MIDH) supported

by Arecanut and Spice Development Board, Kozhikode , Kerala. Through this training garlic growers enriched the knowledge on scientific cultivation of garlic and produce quality produce which get better price in the market besides area expansion in the Kodaikanal. HRS, Kodaikanal identified exclusively Kodai Hill Garlic and Vegetables Collective Farming Producer Company Limited, Kodaikanal for garlic promotion in marketing and value added products.

### CONCLUSION

There are wide scope for area expansion, commercial exploitation and utilization of hill garlic in Tamil Nadu. Upper Palani Hills traditionally packed with hill garlic in natural ecosystem under commercial cultivation. For sustainable production of garlic in the state, Tamil Nadu Agricultural University, Horticultural Research Station, Kodaikanal developed technological interventions, promotion of improved varieties and outreach programmes for the benefit of farmers and stakeholders.

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