

Cherry Tomato: nutritional importance and cultivation

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Abstract: -

Cherry tomatoes (*Solanum lycopersicum* var. *cerasiforme*) are valued for their culinary versatility and ornamental appeal, making them a popular choice among chefs and home cooks. These vibrant fruits are not only visually appealing but also nutritionally rich, categorized as functional foods due to their impressive health benefits. A cup of cherry tomatoes provides essential nutrients, including vitamins A and C, omega fatty acids, and minerals like potassium and calcium. They can be cultivated in various environments, with higher yields and fruit quality observed in protected conditions. This overview highlights the significance of cherry tomatoes in both culinary and nutritional contexts.

Introduction

Cherry tomatoes, scientifically known as *Solanum lycopersicum* var. *cerasiforme*, have gained prominence as a high-value vegetable in both culinary and ornamental applications. Favored by chefs in upscale restaurants and hotels, their popularity is also rising among home cooks who appreciate their vibrant colors and nutritional benefits.

Not only do cherry tomatoes enhance the aesthetic appeal of dishes, but they also serve as a commercially valuable horticultural product with notable nutritional and pharmaceutical properties. With a range of shapes and colors including red, pink, yellow, green, and brown—cherry tomatoes are versatile ingredients that can be enjoyed fresh or preserved. Cultivation practices vary, with

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protected environments such as polyhouses or glasshouses yielding higher quality fruits. This introduction underscores the significance of cherry tomatoes in contemporary cuisine and their role in promoting healthy dietary choices.

Table1: Nutrition table for cherry tomatoes based on USDA data

Nutrient	Amount per 1 cup (149 g)
Calories	26.8
Protein	1.3 g
Total Fat	0.4 g
Saturated Fat	0.1 g
Omega-3 Fatty Acids	4.5 mg
Omega-6 Fatty Acids	119 mg
Carbohydrates	6.1 g
Dietary Fiber	1.8 g
Sugars	3.2 g
Vitamin A	1241 IU
Vitamin C	18.9 mg
Folic Acid	22.3 mcg
Potassium	353 mg
Phosphorus	35.8 mg
Calcium	14.9 mg

Varieties: Punjab Red Cherry, Punjab Sona Cherry, and Pusa Golden Cherry Tomato-2, Pusa Cherry Tomato-1, VL Cherry Tomato 1 (VT 95), Hybrid CTH 1

Cultivation

Soil and Climate

Tomatoes flourish in warm climates, with optimal fruit set and color development occurring at day and night temperatures between 20-25°C. They grow best in well-

drained, sandy loam soil that has a pH range of 6-7, which ensures nutrient availability and healthy root development. In controlled environments like polyhouses, tomatoes can be cultivated throughout the year, taking advantage of stable conditions. In naturally ventilated or low-cost polyhouse structures, the transplanting season generally starts in September, extending the growing period until May, allowing for an extended harvest season and continuous production of high-quality tomatoes.

Nursery Production

Cherry tomato seeds are small and delicate, requiring careful handling. It's best to use plug trays with cocopeat to minimize root damage during transplanting. Seeds can be treated with fungicides like Captan or Thiram to prevent damping off. For protection against cold, use polythene tunnels or polyhouses. If

not using plug trays, sow seeds on well-prepared 15 cm raised or flat beds enriched with FYM, neem cake, and superphosphate. Use 300-400 g of traditional seeds or 100-150 g of hybrid seeds per hectare, sowing them in shallow lines. Regular weed and pest management is essential for a healthy nursery.

Transplanting of Cherry Tomato Seedlings

When seedlings reach 4-5 true leaves (30-45 days after sowing), withhold irrigation for 2-3 days before transplanting. Lightly irrigate a few hours prior to protect the roots.

In hot, sunny conditions, transplant in the evening to reduce stress. Prepare the soil by thoroughly mixing in FYM and applying basal fertilizer. Depending on moisture retention and manpower, create ridges, raised beds, or keep the field flat. For open conditions, transplant seedlings at 90 cm between rows and 60 cm between vines; in protected environments, use 60 cm between rows and 45-60 cm between vines. Adjust spacing based on the specific variety's growth characteristics.

Manures and Fertilizer

For cherry tomatoes, apply 10 tonnes of farmyard manure (FYM) per hectare and conduct soil testing to assess nutrient needs. Incorporate 25-30 tonnes of well-decomposed FYM, 80 kg of phosphorus, and 90 kg of potash during land preparation. Apply 150 kg of nitrogen in split doses: one-third at transplanting and the rest as top dressings at 25-30 days, 50-60 days, and after the first harvest. During flowering, use a 0.5% solution of calcium and boron micronutrients. Incorporating biofertilizers like *Azospirillum* and *Phosphobacteria* can further enhance nutrient uptake.

Training, Pruning, and Trellising

Staking is essential for tomatoes in protected conditions and should be done 20-25 days after transplanting. Plants should be loosely tied to vertical stakes, which helps produce higher quality fruit. Remove side

branches early to maintain a single stem. Support plants with plastic wire or twine attached to overhead wires, which should be 8-10 feet above the ground. Use round plastic clips to secure the stems, leaving the top 15 cm of growth free. Regularly prune side shoots throughout the growing period, and remove lower leaves touching the ground after the first harvest to improve air circulation and reduce disease risk.

Harvesting

Tomato harvesting begins about 80-85 days after transplanting, with timing and ripeness levels adjusted based on the market destination. For local markets, cherry tomatoes should be harvested at the pink or light red stage to ensure freshness upon arrival. For more distant markets, fruits should be picked at the color break or turning stage to accommodate longer transportation times. Fully ripe tomatoes are best suited for local processing purposes due to their optimal flavor and quality. Harvesting should take place in the early morning to minimize heat buildup, maintain the calyx, and extend shelf life. Yield can vary depending on growing conditions and practices, but on average, cherry tomato production reaches 90 to 100 quintals per 1,000 m² of polyhouse space.

Plant Protection

Diseases/Pests	Symptoms	Management
Early Blight (<i>Alternaria solani</i>)	Dark spots with concentric rings on older leaves; surrounding leaf area turns yellow; affected leaves die prematurely, exposing fruits to sun scald.	<ul style="list-style-type: none"> ✓ Maintain field sanitation. ✓ Spray Blitox, Mancozeb, or Propineb at 3 g/L of water at the onset of symptoms.
Late Blight (<i>Phytophthora infestans</i>)	Gray, greasy, irregular spots on leaves; leaves turn dry and papery; similar spots develop on fruits; blackened areas on stems.	<ul style="list-style-type: none"> ✓ Remove all infected plant debris from fields. ✓ Spray Metalaxyl at 1 g/L of water at the onset of symptoms.
Wilt (<i>Verticillium/Fusarium</i> spp.)	Lower leaves yellow, often starting on one side; whole plant may yellow and wilt; discolored stem with dark brown streaks.	<ul style="list-style-type: none"> ✓ Practice crop rotation with cereal crops and apply lime. ✓ Apply Trichoderma with FYM. ✓ Treat seeds with Carbendazim at 2 g/kg or drench with Carbendazim at 1 g/L 15 DAT.
Tomato Fruit Borer (<i>Helicoverpa armigera</i>)	Young larvae feed on tender foliage; mature larvae create circular holes and consume fruit interior.	<ul style="list-style-type: none"> ✓ Spray 5% neem seed kernel extract for early-stage larvae. ✓ Apply Cypermethrin 10 EC at 2 ml/L during fruit development, with follow-up sprays every 10-15 days.
Cutworm (Variegated: <i>Peridroma sauci</i> , Black: <i>Agrotis ipsilon</i>)	Seedlings cut off in the nursery or shortly after transplanting.	<ul style="list-style-type: none"> ✓ Ensure field sanitation; flood fields to collect floating cutworms. ✓ Apply <i>Bacillus thuringiensis</i> to soil. ✓ Treat soil with Chlorpyrifos 1.5% D dust and broadcast with Carbofuran 3G or Cartap hydrochloride at 25-30 kg/ha.

Value-Added Products from Cherry Tomatoes

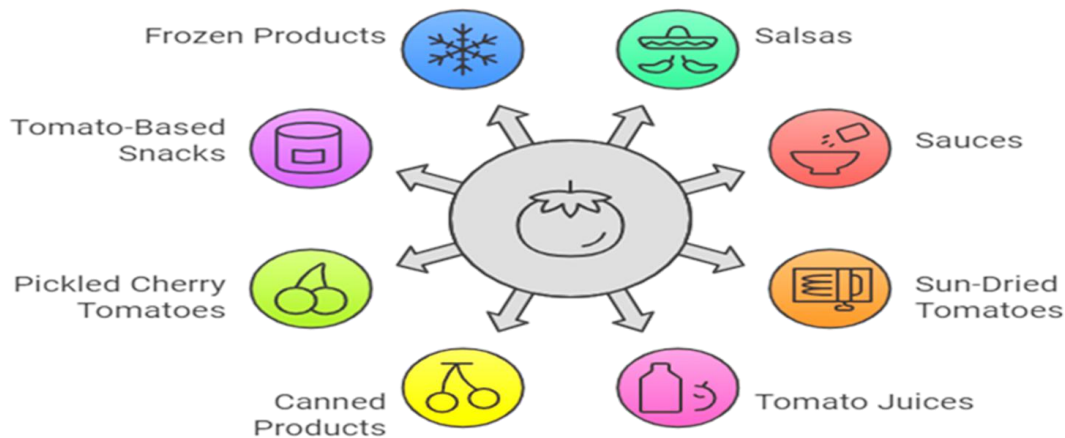


Fig1: Value-Added and Processed Products of Cherry Tomatoes



Fig 2: Different coloured cherry tomatoes

Conclusion

In conclusion, cherry tomatoes present a valuable opportunity for farmers to increase their income through both cultivation and value-added processing. By diversifying into products like sauces, salsas, and sun-dried tomatoes, farmers can access new markets and enhance profitability. Emphasizing quality and effective management practices will further boost yields and product appeal. Engaging in local and direct-to-consumer sales can maximize revenue potential. Ultimately, adopting sustainable practices will ensure long-term success and resilience in the agricultural sector, allowing farmers to thrive in a competitive marketplace.