

An Overview of *Solanum torvum*

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Introduction

- ☐ **Botanical Name:** *Solanum torvum*
- ☐ **Common Names:** Turkey Berry, Devil's Fig, *Solanum torvum* Swartz
- ☐ **Family:** Solanaceae (Nightshade Family)



The Solanaceae family includes the bushy, upright, and spiky perennial plant known as turkey berry (*Solanum torvum*). Seed or branch cuttings from bushes with good yields are used to propagate it. The popular traditional vegetable, the turkey berry, is difficult to grow unlike other vegetables. It can tolerate light shade and grows best in direct sunlight, but it cannot endure under a closed forest canopy. In tropical and subtropical regions, it is a significant medicinal plant that is widely used in folk medicine and as food worldwide. Worldwide, the turkey berry plant is utilized for culinary and medicinal reasons in all sections of the plant, including the roots, stems, leaves, and fruit.

Scientific classification

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Eudicots
- Clade: Asterids
- Order: Solanales
- Family: Solanaceae
- Genus: *Solanum*
- Species: *S. torvum*

Description

- ☐ **Stem:** Green or purple, soft, fine hairs, 2-3 meters tall.
- ☐ **Leaves:** Dark green, elliptical, 10-20 cm long, wavy margins, pointed tips.
- ☐ **Flowers:** Small, white or purple, 1-2 cm diameter, 5 petals, clustered.
- ☐ **Fruits:** Small, round, 1-2 cm diameter, green/yellowish-green, turning red/purple when ripe.
- ☐ **Seeds:** Small, yellowish, 2-3 mm long, numerous, embedded in fruit pulp.

Growth Habits

- ☐ Fast-growing, can become invasive.
- ☐ Tolerates various soils and environments.
- ☐ Full sun to partial shade.

Distribution

- ☐ Native to Central and South America Naturalized in Africa, Asia, Pacific Islands, and other regions.

Vegetable grafting

Solanum torvum (Turkey berry) is a popular rootstock for vegetable grafting, particularly for:

1. Tomatoes
2. Peppers
3. Eggplants

Benefits of using *Solanum torvum* as a rootstock

1. Disease resistance: *Solanum torvum* is resistant to several diseases, including:

- ☐ Fusarium wilt
- ☐ Verticillium wilt
- ☐ Root-knot nematodes

2. Vigor and yield: *Solanum torvum* rootstock can increase plant vigor and yield, especially in challenging environmental conditions.

3. Drought tolerance: *Solanum torvum* has a deep taproot, making it more drought-tolerant than other rootstocks.

4. Nutrient uptake: *Solanum torvum* is efficient at absorbing nutrients, promoting healthy plant growth.

Grafting techniques for *Solanum torvum*

- ☐ **Splice grafting:** A simple and widely used technique.
- ☐ **Whip and tongue grafting:** Suitable for larger stem diameters.
- ☐ **Cleft grafting:** Used for thicker stem diameters and more vigorous scions.

Precautions and considerations

- ☐ **Compatibility:** Ensure the scion and rootstock are compatible to avoid graft incompatibility.

- ☐ **Timing:** Grafting should be done when the scion and rootstock are actively growing.

- ☐ **Post-grafting care:** Provide optimal conditions for healing and establishment.

By using *Solanum torvum* as a rootstock, growers can improve the resilience and productivity of their vegetable crops, especially in challenging environmental conditions

Uses

- ☐ **Culinary uses:** The fruits are edible and used in traditional medicine, cooking, and as a food source in various cultures.

- ☐ **Traditional uses:** The plant has been used in traditional medicine for various purposes, including treating fever, rheumatism, and digestive issues.

Medicinal properties

1. **Antibacterial and Antifungal Properties:** Extracts from *Solanum torvum* have been found to have antimicrobial effects against a range of bacterial and fungal pathogens. This is useful in treating infections and preventing microbial growth.

2. **Anti-inflammatory Effects:** The plant exhibits anti-inflammatory properties, which help in reducing swelling, pain, and inflammation in conditions like arthritis.

3. **Antioxidant Activity:** *Solanum torvum* is rich in antioxidants that help in neutralizing free radicals, thereby protecting the body from oxidative stress, which can lead to chronic diseases like cancer and heart disease.

4. Anti-hypertensive (Blood Pressure Regulation): Traditionally, the leaves and fruits of *Solanum torvum* have been used to lower high blood pressure. The plant is believed to help in improving heart health and maintaining vascular stability.
5. Diabetes Management: Some studies suggest that *Solanum torvum* can help in controlling blood sugar levels, making it useful in managing diabetes by improving insulin sensitivity.
6. Hepatoprotective (Liver Protection): The plant is known for its protective effects on the liver, helping to reduce liver damage and supporting liver function in conditions like hepatitis.
7. Digestive Health: The fruit is used in treating indigestion and stomach disorders. It can also act as a natural remedy for ulcers and improve overall gut health.
8. Boosting Immunity: The various bioactive compounds in *Solanum torvum* help in enhancing the immune system, making the body more resistant to infections and diseases.
9. Treatment of Respiratory Issues: *Solanum torvum* is used traditionally in treating respiratory conditions like coughs, asthma, and bronchitis due to its ability to soothe the respiratory tract.
10. Anticancer Potential: Early research suggests that certain compounds in *Solanum torvum* may have anticancer properties, although more studies are needed to confirm this.

Conclusion

An important plant with several uses, including culinary, medicinal, agricultural, and ecological, is *Solanum torvum*. Due to its benefits and flexibility, it is a promising species for additional study, cultivation, and sustainable use.

References

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