

Triphala in Ayurveda and Forestry: A Holistic Perspective

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Abstract

Triphala, a well-known Ayurvedic formulation, is a combination of three medicinal fruits with important therapeutic qualities: Amla (*Phyllanthus emblica*), Baheda (*Terminalia bellirica*), and Harad (*Terminalia chebula*). For ages, triphala has been used in traditional medicine for its immune-boosting, detoxifying, and rejuvenating properties. In order to promote overall well-being, it is essential for maintaining a balance between the three doshas i.e. Pitta, Kapha, and Vata. Modern research also supports its antioxidant, antibacterial, and anti-inflammatory properties. Apart from human health benefits the trees that produce Triphala have ecological significant. They are vital to sustainable forestry and agroforestry systems because they support soil stabilization, carbon sequestration, and biodiversity preservation. The cultivation of these species helps to sustain rural livelihoods while preventing deforestation and encourages environmental sustainability. The growing demand for natural remedies and increased health consciousness are driving growth in the global triphala market, which was estimated to be worth USD 1.18 billion in 2023. Triphala serves as a model for economic viability, ecological resilience and sustainable health by fusing traditional Ayurvedic knowledge with contemporary conservation initiatives.

Keywords: Ayurveda, Triphala, Ecological, Market

Introduction

For centuries nature has been considered humanity's greatest healer providing remedy that sustain health promote longevity. Among the many natural remedies used in traditional medicine triphala is particularly valued in Ayurveda. Triphala, which means "three fruits" in Sanskrit, is a potent combination of Amla (*Phyllanthus emblica*), Baheda (*Terminalia bellirica*), and Harad (*Terminalia chebula*) all of which have significant medicinal advantages. Triphala is a holistic health solution that detoxifies, revitalizes, and rebalances the body. It is based on the idea of holistic treatment.

Ayurveda, the ancient Indian system of medicine places a strong emphasis on the relationship

between nature, health, and wellbeing. An excellent formulation in this tradition is triphala, which is well known for its capacity to balance the three doshas – Pitta, Kapha, and Vata—that are thought to regulate mental and physical processes. Triphala is an essential component of both preventive and therapeutic healthcare since it increases immunity, improves digestion and vision. Its usefulness in modern wellness practices is further cemented by the modern scientific validation of its wide variety of medical qualities, which include its usage as an adaptogenic agent, antibacterial, anti-inflammatory, and antioxidant.

While triphala's health advantages are well known, its importance goes beyond human health to include the larger natural landscape. In addition, therapeutic significance the trees that yield the three triphala fruits are essential to biodiversity preservation and sustainable forestry. Amla, Baheda and Harad are indigenous to the Indian subcontinent and play crucial roles in maintaining soil fertility, preventing deforestation, and supporting wildlife. These trees are intrinsic to agroforestry practices which promote ecological balance and rural livelihood through their cultivation. By encouraging sustainable harvesting and conservation efforts, communities can ensure the continued availability of these valuable medicinal resources while preserving the environment. Additionally, the demand for natural medicines and growing health consciousness are driving the triphala market's upward trajectory globally. The market was valued at USD 1.18 billion in 2023 and is expected to develop significantly over the next several years, providing farmers and other forestry stakeholders with possibilities to capitalize on the industry's economic potential.

As the global interest in sustainable living and traditional medicine it is important to explore the intricate relationship between Ayurveda and forestry. This article delves the dual relevance of triphala looking at its ecological value in forestry as well as its significant effects on human health in Ayurveda. By understanding the holistic perspective of Triphala, we can see how traditional wisdom and modern conservation efforts intersect with each other to create

a sustainable approach to biodiversity, health, and environmental preservation.

Composition

Triphala is made from two words tri + phala which means three fruits. It gets its name from the three herbal mixtures that are created from the three dried fruits to namely - Indian gooseberry (*Phyllanthus emblica* Linn.), Baheda (*Terminalia bellerica* Roxb.), Harad (*Terminalia chebula* Retz.). This composition has been reported to be rich in various antioxidants like ascorbic, ellagic, bellericanin, gallic, as well as chebulinic acids and several classes of flavonoids (Kaur *et al.*, 2005).

Charactersitics of Triphala Tree

Trees that contribute to Triphala formulation have distinct characteristics that make them ecologically and economically valuable.

Amla (*Phyllanthus emblica* Linn.)

- **Common Name:** Indian Gooseberry
- **Habitat:** Adaptable to a range of soil types including marginal and degraded soils, it thrives in tropical and subtropical areas.
- **Growth Form:** Medium-sized deciduous tree, reaching upto 8–18 meters in height.
- **Leaves:** Small, simple and patterned like tamarind leaves with feathers.
- **Flowers and Fruits:** Produces tiny, greenish-yellow blooms; the spherical, pale green fruits are very nutrient-dense and high in vitamin C.
- **Resilience:** tolerant to both alkaline and saline soils and resistant to drought.
- **Uses:** Wood is used for small-scale carpentry and firewood, while fruits are highly valued in Ayurveda, nutritional supplements, and cosmetics.

Behada (*Terminalia bellerica* Roxb.)

- **Common Name:** Beleric Myrobalan
- **Habitat:** Found in tropical and subtropical forests, often in well-drained soils.
- **Growth Form:** Large deciduous tree, growing up to 20–30 meters in height.
- **Leaves:** Broad and simple, clustered at the ends of branches.
- **Resilience:** Tolerant of diverse soil conditions; suitable for degraded and eroded lands.

- **Flowers and Fruits:** Flowers are small and yellowish; fruits are oval, grayish, and hard-shelled.
- **Uses:** Fruits are used in traditional medicine and dye production; wood serves as timber and fuel.

Harad (*Terminalia chebula* Retz.)

- **Common Name:** Chebulic Myrobalan
- **Habitat:** Found in dry deciduous forests, prefers well-drained soils but tolerates wide range of conditions.
- **Growth Form:** Medium to large deciduous tree, reaching upto 15–30 meters in height.
- **Leaves:** Elliptical, alternately arranged, and dark green.
- **Flowers and Fruits:** Flowers are small, yellowish-white; fruits are oblong, green when unripe, turning yellowish-brown when mature.
- **Resilience:** Drought-tolerant; grows well in poor and rocky soils.
- **Uses:** Fruits are highly valued in Ayurveda for their therapeutic properties; wood is used for fuel and construction.

Formulation



Terminalia chebula Retz. *Terminalia bellerica* Roxb. *Phyllanthus emblica* Linn.

Triphala combines the medicinal benefits of all the three components viz. Amla, Baheda, Harad in the ratio 4:2:1 (Chouhan, 2013). Fruits are cleaned and dried properly either by sun drying or using a dehydrator and make sure they are dry. Take out the seeds from the fruits if they have any. Grind each type of dried fruit separately into a fine powder using grinder. For a finer texture sieve the powder using 80-mesh sieve. Measure the equal amount of each powder and combine them thoroughly in a clean and dry bowl then kept in air tight containers in cool and dry place.

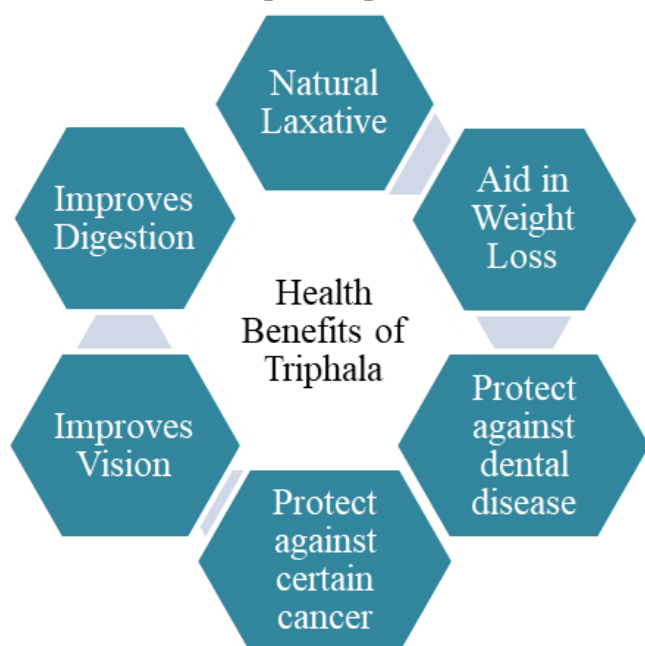
Ecological Benefits of Triphala Species in Forestry

- **Soil Fertility and Stabilization:** The leaf litter from Triphala-producing trees enriches the soil with organic matter by improving fertility and nutrient cycling. Deep roots of these species help to stabilize soil, reduce erosion, and improve water infiltration.
- **Carbon Sequestration:** Triphala producing trees contribute to carbon storage and mitigating climate change impacts. Their incorporation into forestry systems enhances the capacity of land to act as a carbon sink.
- **Biodiversity Enhancement:** The fruits and foliage of these trees support various fauna and increase biodiversity within landscapes.

Economic Benefits of Triphala Species in Forestry

- **Economic Value of Fruits:** Triphala fruits are widely used in Ayurvedic medicine, cosmetics, and pharmaceuticals, offering farmers an additional income stream.
- **Sustainable Livelihoods:** The cultivation and processing of Triphala benefits rural communities by creating job opportunities in harvesting, processing, and distribution.

Health Benefits of Triphala Species



Cultural and Medicinal Significance:

Triphala has long been used in Ayurvedic medicine due to its healing properties, by integrating triphala species into forestry allows for the

preservation of cultural legacy while bringing contemporary methods into line with traditional wisdom.

Market Dynamics

Triphala market refers to the global production, distribution and consumption of triphala. This powder has been used for many centuries for its incredible health benefits. The global Triphala extracts market size was evaluated at USD 1.18 billion in 2023 and is predicted to reach USD by 2031 with a CAGR of 6.1% between 2024 and 2031.

Key drivers

Rising Health Consciousness: Growing awareness of health and wellness among consumers is driving the need for natural remedies. Triphala, recognized for its detoxifying and rejuvenating attributes, thereby increasing the market visibility.

Expanding Distribution Channels: Product accessibility has been improved by e-commerce platforms.

Conclusion

Triphala, a traditional Ayurvedic formulation composed of three medicinal fruits—*Phyllanthus embillica* Linn., *Terminalia bellirica* Roxb., and *Terminalia chebula* Retz. — holds considerable potential when integrated into agroforestry systems. Trees used in triphala have deep-rooting systems, which help stabilize soil, reduce erosion, and improve nutrient cycling in agroforestry systems. These trees boost the fertility and health of the soil by enriching it with organic matter from their leaf litter and fruit. The economic value of triphala is tremendous. These fruits are highly valued in the cosmetic industries and pharmaceutical offering farmers an additional income source. By integrating triphala species into agroforestry systems offers a promising approach for sustainable land use, environmental resilience, economic viability, and also cultural significance.

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