

“From Fodder to Furniture: The Versatility of *Albizia Lebbeck*”

Anuvarna K^{1*}, Pradyumna Deshmukh² & Varsha Shekhawat³

¹ College of Forestry, Vellanikkara, KAU, Thrissur- 680654, Kerala, India

² College of Forestry, Dr. BSKKV, Dapoli-415712, Maharashtra, India

³ College of Horticulture & Forestry, RLBCAU, Jhansi- 284003, Uttar Pradesh, India

Corresponding Author: anuvarna57@gmail.com

Manuscript No: KN-V3-07/002

Introduction

Albizia lebbeck, also known as the Siris tree, is a fast-growing, nitrogen-fixing species that thrives in tropical and subtropical regions around the globe. Renowned for its remarkable versatility, this tree offers a wide array of benefits, making it an invaluable resource for farmers and local communities. Commonly found across Asia, Africa, and parts of Central America, *Albizia lebbeck* is highly regarded for its contribution to sustainable agricultural practices. Beyond its role as livestock fodder, its uses span timber production, furniture crafting, soil enrichment, and biodiversity support, making it an essential asset in both environmental and agricultural settings.

This tree’s ability to enhance soil fertility through nitrogen fixation is just one of the many reasons it is integrated into sustainable farming systems. Its rapid growth and broad range of applications—from providing timber to promoting ecological health—have cemented its importance in rural communities and agricultural landscapes worldwide. With its multifaceted benefits, *Albizia lebbeck* continues to play a crucial role in improving soil quality, supporting local ecosystems, and benefiting both agriculture and human health.

1. Fodder and Livestock Nutrition

One of the most well-known uses of *Albizia lebbeck* is as high-quality fodder for livestock. The tree’s leaves, pods, and even bark are rich in essential nutrients, including proteins, vitamins, and minerals, making it a valuable addition to livestock diets. The leaves and seeds of *Albizia lebbeck* are rich in protein, while the pods serve as an important source of micronutrients, providing significant nutritional benefits for cattle, goats, and sheep. Moreover, the tree’s fast growth and drought tolerance make it an excellent feed resource during dry spells when other fodder is scarce. The tree’s ability to thrive in poor soil conditions also means it can be used in areas where traditional crops struggle.

2. Timber Production

In addition to serving as fodder, *Albizia lebbeck* is also a source of timber. The wood of this tree ranges from light to moderately heavy, depending on factors like growth conditions and tree size. Generally, it is considered light compared to other species, making it suitable for a variety of uses such as construction, packaging, and fuelwood. The wood dries efficiently, is easy to work with and polish, and is well-suited for interior moulding, parquet, panelling, turnery, and general construction. It is also used in the manufacturing of agricultural tools and mine props.

One of the most significant uses of *Albizia lebbeck* wood is in the furniture industry. Its smooth texture, durability, and appealing grain make it a popular choice for crafting fine furniture, including chairs, tables, cabinets, and decorative pieces. The wood’s natural resistance to decay and insects further enhances its value as a durable and low-maintenance material for furniture.

3. Traditional Medicinal uses

A. lebbeck is highly effective and has been utilized in numerous countries throughout Africa, Asia, and Australia for the prevention of various health issues such as coughs, lung ailments, haemorrhoids, bronchitis, scabies, abdominal tumours, and eye disorders. This plant is strongly recommended in several respected medicinal systems, including Ayurveda, Siddha, and Unani medicine. The plant *A. lebbeck* has been used in various countries across Africa, Asia, and Australia to prevent a range of health issues, including scabies, lung ailments, haemorrhoids, bronchitis, abdominal tumours, coughs, and eye disorders. It is recommended in several medicinal systems, including Ayurveda, Siddha, and Unani medicine.

All parts of the plant *A. lebbeck*— including the roots, leaves, flowers, bark, and seeds— are used in Indian traditional medicine for treating a variety of health ailments. These ailments include allergies, asthma, bronchitis, arthritis, fractures, gingivitis, gum inflammation, toothaches, haemorrhages, leprosy, leukoderma, malaria, night blindness, scorpion stings, snakebites, and syphilis. Among these parts, the bark is the most commonly used, accounting for 33.33% of usage, followed by leaves, flowers, and seeds at 16.67%. Roots constitute 9.52% of usage, and root bark, stems, and pods make up 2.38%. *A. lebbeck* possesses several therapeutic values, including astringent, pectoral, rejuvenating, and tonic properties.

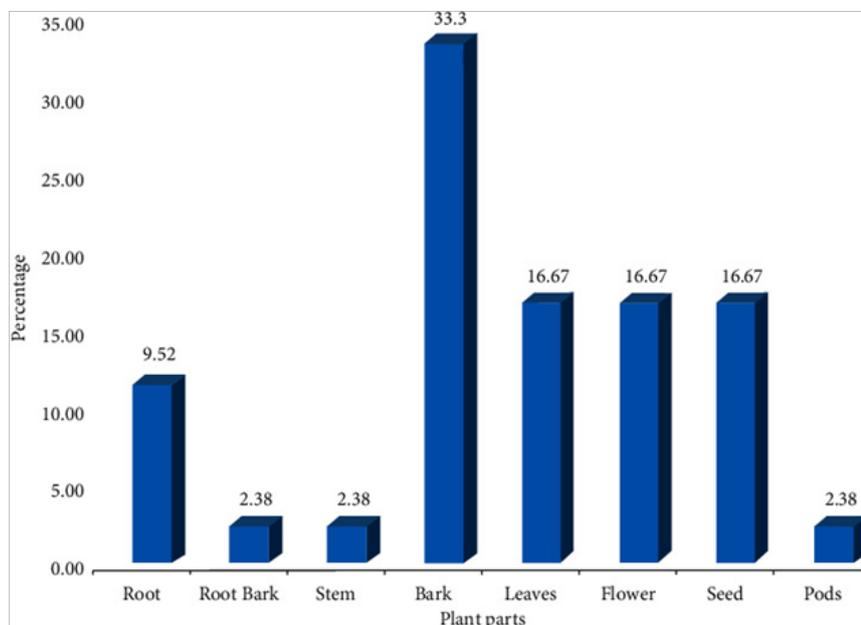


Figure 1: Parts usage (%) of *A. lebbeck* reported for various ethnomedicinal uses.

4. Environmental Role in Farming

In addition to its uses in fodder and timber, *Albizia lebbeck* plays an essential environmental role, particularly in agroforestry systems. As a leguminous tree, it naturally fixes nitrogen in the soil, enriching the soil's fertility and reducing the need for chemical fertilizers. This makes it a valuable component of integrated farming systems, where it can help improve soil quality and crop yields over time. Furthermore, the tree's dense canopy helps prevent soil erosion, especially in areas prone to heavy rainfall. Its ability to provide shade and shelter for other plants and animals also contributes to biodiversity conservation, making it a key player in maintaining ecosystem health.

4. Economic Benefits and Income Diversification

For farmers, *Albizia lebbeck* offers a way to diversify their income streams. Beyond selling timber and using the tree for livestock feed, farmers can also benefit from non-timber products, such as gum, which can be harvested from the tree for use in various industries. The fast-growing nature of the tree means that

farmers can start harvesting timber and fodder relatively quickly, providing a steady source of income. Additionally, the integration of *Albizia lebbbeck* into farming systems can reduce the need for purchased feed and fertilizers, leading to cost savings and more self-sufficient farming operations.

5. Other Uses and Applications

In addition to its main uses, *Albizia lebbbeck* has several other applications. Its vibrant, fragrant flowers are occasionally utilized in ornamental gardening. The tree produces large, fluffy, and often bright white or pink flowers, which are not only visually appealing but also attract pollinators such as bees and butterflies. These flowers, with their unique appearance and pleasant scent, are used in landscaping to enhance the beauty of gardens and parks. Additionally, its dense canopy provides shade, making it suitable for planting in urban spaces to reduce heat and improve air quality. Furthermore, the tree is recognized for offering shelter to wildlife, playing a key role in habitat conservation, especially in regions affected by land degradation. *Albizia lebbbeck* is particularly useful in reforestation and afforestation projects where native vegetation may be sparse or where biodiversity restoration is a goal. By creating a more favourable environment for other species, *Albizia lebbbeck* aids in the rehabilitation of ecosystems that have been impacted by human activities or environmental stressors.

Conclusion

Albizia lebbbeck is a versatile tree with numerous applications across agriculture, industry, and environmental conservation. It provides high-quality fodder for livestock and valuable timber, while its nitrogen-fixing properties enhance soil fertility, boosting crop productivity and long-term soil health. Environmentally, it supports biodiversity, aids in habitat conservation, and helps restore ecosystems, especially in areas affected by land degradation. Its rapid growth and deep root system also prevent soil erosion. Economically, *Albizia lebbbeck* offers multiple income streams for farmers through timber sales and livestock feed. Its wide range of uses, including medicinal benefits, enhances local livelihoods, making it a vital community resource. In agroforestry systems, it balances agricultural productivity with ecological preservation, demonstrating the power of sustainable farming. Ultimately, *Albizia* plays a crucial role in promoting both sustainable livelihoods and environmental resilience, making it key to a sustainable future for agriculture and ecosystems.

References

- Balkrishna, A., Chauhan, M., Dabas, A., & Arya, V. (2022). *A Comprehensive Insight into the Phytochemical, Pharmacological Potential, and Traditional Medicinal Uses of Albizia lebbbeck (L.) Benth. Evidence-Based Complementary and Alternative Medicine: ECAM*, 2022, 5359669.
- Hassan, L. G., Umar, K. J., & Atiku, I. (2007). *Nutritional Evaluation of Albizia lebbbeck (L.) Pods as. Am. J. Food Technol*, 2(5), 435-439.
- Orwa C, Mutua A, Kindt R, Jamnadass R, Simons A. 2009. *Agroforestry Database: a tree reference and selection guide version 4.0. World Agroforestry Centre, Kenya.*