



# **INDUSTRIAL HEMP CULTIVATION IN UTTARAKHAND: INDIA'S GREEN GOLD RUSH**

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Industrial hemp cultivation is rapidly gaining traction in India, and Uttarakhand stands at the forefront of this green revolution. As the first Indian state to legalize commercial hemp farming, Uttarakhand has laid the foundation for what could become a multi-billion-rupee industry. With the global industrial hemp market projected to reach USD 25.17 billion by 2030, and India's growing demand for sustainable raw materials, Uttarakhand has a strategic opportunity to become a key player in this space. The state's supportive policies, rich agro-climatic diversity, and increasing awareness among farmers have turned hemp into a game-changing crop.

## FAVOURABLE AGRO-CLIMATIC CONDITIONS

Uttarakhand's geography offers ideal conditions for cultivating industrial hemp. The crop flourishes in both temperate and subtropical climates, typically found in the state's mid to high-altitude zones.

- Altitude suitability: 800 to 2,500 meters above sea level
- Optimal rainfall: 500 mm to 700 mm annually
- Soil requirements: Well-drained loamy soil with pH between 6.0 and 7.5
- Temperature tolerance: Grows best in 15°C to 27°C

The Himalayan foothills act as a natural cradle for hemp growth, having supported wild hemp for centuries. These conditions not only ensure high yield but also improve the fiber quality and cannabinoid profile of the crop. On average, one acre of hemp can yield up to 2 to 3 tons of dry stalk and 300 to 500 kilograms of seeds, depending on the variety and cultivation practices.



# GOVERNMENT SUPPORT AND LEGAL FRAMEWORK

Uttarakhand made history in 2018 by becoming the first state in India to legalize the cultivation of industrial hemp for commercial use. The Uttarakhand Hemp Policy allows licensed farmers and companies to grow hemp varieties with THC content below 0.3%, aligning with international standards.

Key initiatives include:

- Formation of a Hemp Cultivation Licensing Authority under the Excise Department
- Partnerships with research institutions like CSIR-IHBT and local universities
- Encouragement for startups to enter the hemp sector through subsidies and incubation programs
- Provision of financial grants and soft loans for hemp processing units and cooperatives

In addition, the government is promoting cluster-based cultivation to optimize land use and streamline post-harvest processes.



# ECONOMIC AND ENVIRONMENTAL BENEFITS



Hemp is not just a crop—it's a multifunctional economic engine. It can be used in over 25,000 products, ranging from bio-composites and construction materials to textiles and nutritional supplements.

## Economic Advantages:

- **Net returns per acre:** ₹1.5 lakh to ₹3 lakh, depending on market and product use
- **Employment generation:** Each 100 acres of hemp cultivation can create at least 80–100 rural jobs
- **Export potential:** India's hemp industry has the potential to generate over ₹500 crore annually from exports in the coming years

## Environmental Advantages:

- **Low water footprint:** Requires nearly half the water compared to cotton
- **Carbon sequestration:** One hectare of hemp can absorb up to 15 tons of CO<sub>2</sub> annually
- **Soil remediation:** Through phytoremediation, hemp helps cleanse soil of heavy metals and toxins
- **Minimal pesticide use:** Hemp's natural resistance to pests reduces chemical dependence



# CHALLENGES AND ROAD AHEAD

While the potential is immense, several obstacles hinder large-scale adoption:

## **Key Challenges:**

- Limited processing infrastructure for decortication, fiber extraction, and cannabinoid separation
- Regulatory bottlenecks and unclear central policies regarding CBD and THC extraction
- Lack of awareness among farmers and hesitancy due to stigma around cannabis
- Inadequate market linkages and pricing uncertainties

## **Recommendations for Growth:**

- Establish dedicated industrial hemp parks with shared processing units
- Simplify licensing procedures and clarify CBD use guidelines
- Provide training programs for farmers and agripreneurs on hemp agronomy
- Encourage public-private partnerships (PPP) for R&D and export-focused production
- Create farmer cooperatives and link them with value chains, both domestic and international



# CONCLUSION

Uttarakhand has already taken bold steps in unlocking the immense value of industrial hemp. Its fertile land, proactive policies, and entrepreneurial spirit provide a strong foundation for a sustainable, high-growth industry. If supported by the right ecosystem—ranging from seed-to-shelf supply chains to global exports—the state can become a national leader and global exporter of hemp-based products. Embracing this opportunity can lead to rural revitalization, sustainable agriculture, and economic diversification, making Uttarakhand not just a pioneer, but a powerhouse in India's green economy.

