



## SHORT REVIEW ARTICLE

### CANNABIS: THE FORGOTTEN SACRED PLANT OF INDIA

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#### ABSTRACT

The plant *Cannabis sativa* was cultivated in India since ancient times. Athurveda and Ayurveda hail the plant as sacred and medicinal. It was used as a source of fiber, food, oil and medicine and for recreation & spiritual purposes. Its cultivation and use dwindled since the British Government prohibited its use in 1930s. Delta-9-tetrahydrocannabinol (THC) is the most important component of its psychoactive substance. Natural receptors for THC are found throughout the human body called the 'endocannabinoid system'. There is a lot of excitement the world over in recent times about its potential as a therapeutic agent. The low THC industrial variety is also being cultivated for seed, oil and fiber in many countries. The non-toxic seed and oil of industrial hemp are highly nutritious. The plant is useful as bio-fuel, eco-friendly building material and phytoremediator. Indian government should also encourage and facilitate researchers of traditional medicine to explore the potential of this versatile native plant while the world benefits from it.

**KEYWORDS:** Cannabis, *Cannabis sativa*, cannabinoids Indian hemp, Ayurveda, endocannabinoid system, Pharmacology

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**INTRODUCTION:**

*Cannabis sativa* (*C. sativa*), also known as the Indian hemp, is a herbaceous annual which has been cultivated in India since ancient times. Atharva Veda hails the 'bhang' plant as one of the 'five sacred plants'.<sup>[1]</sup> It has been used over the ages, as a source of fiber, food, oil and medicine as well as for recreational, religious and spiritual purposes. The British Government of India prohibited consumption of cannabis resin (charas) in India in the 1930's. Since then the cultivation and use of *C. sativa* dwindled.<sup>[2]</sup>

Presently, the plant is popularly known only as a source of narcotics in various forms and names in India such as bhang, charas, ganja, marijuana, hashish, weed, grass etc. It is illegal to produce, manufacture, possess, sell, purchase, transport, use, consume, import, export any narcotic drug or psychotropic substance except for medical or scientific purposes under the Narcotic Drugs and Psychotropic Substances Act in India.<sup>[3]</sup> The maximum penalty for repeat offence can be as high as a death penalty. There are no clear guidelines and jurisdiction for obtaining the license for medical/scientific research. This has made research extremely difficult in most states of India.

Medicinal qualities of the plant and its narcotic principle have been long known traditionally in India. It was used as a house hold remedy and by Hakims and Vaidyas as appetizer, aphrodisiac, pain-reliever, antispasmodic, antidiarrheal as well as a diuretic.<sup>[2]</sup>

Many of the traditional uses need research for finding innovative remedies. For example, Ayurveda suggests use of the plant after careful 'purification' (boiling with cow milk) to reduce toxic effects. The usage of this plant as a potent analgesic is described in many ancient texts and traditional practices. The uses range from medicated milk to external fomentation and fumigation for pain relief (Gogte, 2000).<sup>[4]</sup>

There is renewed interest all over the world in this plant for its medicinal as well as other potential uses. As a result, many countries have decriminalized or legalized possession of narcotics for medical purpose and some have even legalized its use for recreational purposes.<sup>[5]</sup> Recent systematic and critical review from Israel about the effect of legalization of cannabis for therapeutic purposes concluded that it may not pose substantial threat to public health and safety.<sup>[6]</sup> Recent legalization of its use in other countries offers opportunity for fresh assessment of its social impact.

The sticky resin produced by the flowers and top leaves of the plant contains a number of psychoactive substances called cannabinoids of which delta-9-tetrahydrocannabinol (THC) is the most important. Receptors for THC were identified as part of an endocannabinoid system in the human body and their presence noted in various tissues ranging from brain to periphery. Anatomical, physiological and pharmacological studies have shown that the endocannabinoid system is widely distributed throughout the gut, with regional variation and organ-specific actions. It is involved in the regulation of food intake, nausea and emesis, gastric secretion and gastro protection, gastrointestinal motility, ion transport, visceral sensation, intestinal inflammation and cell proliferation in the gut.<sup>[7]</sup> Researchers of modern medicine have endorsed its potential as an antiemetic specially in cancer patients.<sup>[8]</sup> There is evidence of its effectiveness in the treatment of Crohn's disease.<sup>[9]</sup> Cannabis based medicine is approved for the treatment of pain and spasticity in multiple sclerosis in many countries.<sup>[10]</sup> Its potential role in the treatment of epilepsy and rheumatoid arthritis is also being explored.<sup>[11-12]</sup> Apart from the psychoactive substance though, the plant has many uses which are

being recognized all over the world. Efforts for research and cultivation of low THC variety of the specie called Industrial Hemp are increasingly being undertaken in many countries across the world. Industrial hemp (henceforth called as 'hemp') is a race of *C. sativa* with low levels of THC and higher levels of cannabidiol(CBD). CBD actually reduces the psychoactive effects of THC. Hence, CBD:THC ratio is important in determining the value of the drug. THC level of <0.3% cannot produce any psychoactive effects. Low THC cultivars are actively bred in Industrial hemp cultivation. The seed of industrial hemp does not contain THC. Methods of cultivation of hemp differ according to the desired use viz. fiber or seed.<sup>[13]</sup>

The seed of hemp holds some wonderful qualities and has great potential as a source of nutrition as well as traditional medicine for Indian population whose staple diet is mostly plant based. Whole hempseed has approximately 20-25% protein, 25-35% oil, 20-30% carbohydrates and 10-15% insoluble fiber apart from array of minerals such as phosphorous, potassium, magnesium, sulphur and calcium, iron, zinc, carotene and dietary fiber. It is rich in vitamins A, C and E. It has all 8 essential amino acids. It contains edestein, which is similar to albumin. The oil derived

from hemp seed is highly polyunsaturated and its potential uses range from fuel to raw material for soaps and cosmetics. The 3:1 ratio of linoleic and linolenic acid in hemp oil has been claimed to be optimal for human nutrition. In addition, it also contains Gamma-linolenic acid (GLA) and terpenes which may render anti-inflammatory, anti-allergic, and cytoprotective pharmacological properties. It also contains some other useful trace elements such as  $\beta$ -sitosterol and methyl salicylate. <sup>[14-15]</sup>

Hemp is a versatile plant and can produce number of high quality products e.g. fabrics and yarns, carpets, paper etc. It can be used in building materials as a composite, insulation, biodegradable plastics. The hemp boards made from the plant are lighter, stronger and biodegradable. The broken woody core of the plant, a by-product of fiber-making, can be used as animal bedding and animal-feed. It therefore has a potential for development of cottage industry. Hemp also has an advantage that it needs fewer pesticides, herbicides than alternative fiber crops like cotton. The Fiber/hemp seed crops do not require weed killer. It can also reduce soil nutrient loss and erosion and improve soil structure. <sup>[16]</sup> It has potential as a phytoremediator due to its strong and deep growing tap root system.

Various countries are revamping their national policies for supporting use of cannabis for therapeutic purposes. Indian medical fraternity should urge the Indian government to facilitate research to explore medical and nutritional potential of this versatile native plant.

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