

PHYTOCONSTITUENTS AND MEDICINAL IMPORTANCE OF *CANNABIS SATIVA*

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ABSTRACT

Cannabis sativa has been reported that it is a widely spread species all over the world. It has been receiving more attention due to its therapeutic potential. Popularly, it is also known as marijuana. The phytoconstituents and characteristics of *Cannabis sativa*, stem, leaves and seeds were provided with more information in feed materials for its utilization and nourishment. Positive biological activities and pharmacological aspects provided from *Cannabis sativa*. *Cannabis* played a key role as a medicinal plant in the lives of tribal people mostly living in the Himalaya, providing products for both food as well as their medicinal purposes. The role of *cannabis* for treating several medicinal conditions increased day by day. The present paper is reviewed on phytoconstituents and medicinal importance of *Cannabis sativa* which is mainly aimed at researching the state of the art, and enhancing the knowledge of this versatile plant. *Cannabis sativa* is from the *Cannabaceae* family, which is mostly able to live in temperate as well as tropical regions. It is the most commonly used psycho-active drug all over the world and the only one most popular illegal drug. This review mainly analyzes the botanical, descriptional and diversity along with the medicinal importance of marijuana among the human being which is found throughout the worldwide.

Keywords: *Cannabis sativa*; medicinal marijuana; hemp fibers; phytochemicals and medicinal plant

INTRODUCTION

Cannabis sativa or hemp is a plant having herbaceous type of flowering, belonging to the family *Cannabaceae*. It is a very common plant which is used as marijuana. Hemp is a medicinal plant and has several different types of medicinal importance, and such plants also known as fiber plants. *Cannabis* plants have a great role in the source of food, seed oils as well as religious and spirituals. It is an evergreen plant mostly seen all over the world. This plant has a great role in various types of medicinal importance, also having a very long history as it is a medicinal plant. *Cannabis* is also having a lot of ailment healing properties. In the present Scenario the demand of this plant increases due to its medicinal properties [1]. Medicinal plants play a great role in our life. *Cannabis sativa* has a great role in human health and is also beneficial in our life as well. There are many different types of utilizations for hemp essential oil which are mostly known. There are several products of *Cannabis* aroma such as and buds of the hemp plant which is commonly known as marijuana.

36 *Cannabis sativa* has been used for hemp fibers, seeds, oils, medical purposes and is found
37 to be a recreational drug.

38 Two essential hemp oils having components such as limonene and alpha-pinene also have
39 a repellent effect against several insects [2]. The type of bacteriostatic activity of hemp
40 essential oil has also been reported. Although first trials of hemp essential oil used against
41 potato late blight or *Phytophthora Infestans* were not promising Krebs 1996, cannabinoid
42 antifungal activity cannot be discounted [3]. Marijuana mostly used all over the world as
43 medicinal plants. There are several health benefits of hemp such as pain, inflammatory as
44 well as chronic diseases. Some evidence also suggests that more use of marijuana
45 increased risk of social anxiety. It also suggests cannabinoids which are more effective
46 against vomiting as well as nausea commonly caused by chemotherapy [4]. It is also found
47 that smoked marijuana helpful to alleviate these types of symptoms. Medical marijuana
48 mostly useful in the United state for several pain controls. This is helpful for weight loss
49 because it regulates insulin while managing caloric intake efficiently.

50 One of the major medicinal importance in cannabis as it helps to fight against cancer and
51 diabetes as well. In the present scenario the greatest area of hemp is the production area
52 reported in China, Canada also production is found in South Korea. Canada is now the
53 world's largest grown area of hemp, it is seed hemp not a fiber hemp. The various aspects
54 related to use of hemp biomass is more extensively linked to a wide variety of
55 phytochemicals. *Cannabis* products are mainly determined by designation of raw material,
56 cultivation and harvest time. It also has great importance in economic value used as a
57 source of industrial fibers, food, seed oil and medicines etc. Cannabinoids mostly represent
58 studied groups of compounds due to their wide range of effects in humans as well as
59 pharmaceutical activities [5,6].

60

61 Scientific Classification of *Cannabis sativa* [6]

62 kingdom: Plantae

63 Class: Magnoliopsida

64 Order: Rosales

65 Family: Cannabaceae

66 Genus: *Cannabis*

67 Species: *Cannabis sativa*

68

69 **PHYTOCONSTITUENTS OF CANNABIS SATIVA**

70 *Cannabis* is a composite herbal medicinal plant containing different classes of secondary
71 metabolites which include at least 120 terpenoids (61 monoterpenes, 52 sesquiterpenoids
72 and 5 triterpenoids and some other terpenoids), 104 cannabinoids, 11 steroids and 26
73 flavonoids among other 545 identified compounds [7-14]. Largest group of phytochemicals
74 formed from terpenes in which more than 100 molecules identified in *cannabis* [15].
75 Terpenes are liable for flavor and order of the various strains produced by *cannabis*.
76 Monoterpenes and sesquiterpenoids have been detected in the root, leaves and flowers of
77 *cannabis*, in which secretory glandular hairs as the main known production site [16, 30].
78 Monoterpene mainly include D-limonene, Terpinolene and linalool. Triterpenes have been
79 detected in hemp roots, hemp fibers and hemp seeds, oils. Cannabinoids along with
80 terpenes have been used as chemotaxonomic makers in versatile *cannabis* as these are
81 mainly considered as physiologically active and secondary metabolites [17-20]. About 26
82 flavonoids have been identified, mainly belonging to the flavone and flavonol sub classes.
83 Recently, some interesting amounts of lignans were found in the hydrophilic extract from the
84 hemp seed [21].

85

86 **MEDICINAL IMPORTANCE OF CANNABIS SATIVA**

87 Medicinal *Cannabis* is reported mainly to help the patients suffering from severe pain such
88 as chronic pain. It can be used to manage weight loss, nausea and also helpful to treat

89 glaucoma. *Cannabis sativa* is also helpful to slow and stop cancer cells from spreading,
90 marijuana works to slow down the activity of tumor growth in the brain, breast and in lungs
91 also [22]. It is helpful to decrease anxiety and stress levels in human beings, and improve
92 the smokers mood and stimulate the appetite. The most common use of medicinal marijuana
93 through chemotherapy. The patients of cancer going through chemo commonly suffer from
94 severe pains, nausea, vomiting etc. The patients of cancer can lead to further various types
95 of health complications. Marijuana protects the brain after a stroke also reducing the size of
96 the area which was affected by the stroke. *Cannabis sativa* is mainly helpful to treat
97 inflammatory bowel diseases, patients suffering from inflammatory disease could benefit
98 from marijuana use. It also helps eliminate nightmares [23-24].
99 Various health benefits from hemp seed as it lowers the cholesterol level, also helpful to
100 lower the blood pressure. Medicinal *Cannabis* is grown worldwide under field conditions
101 whereas these fields are grown of *cannabis* for industrial purposes. *Cannabis sativa* reduces
102 the side effect linked to hepatitis C and it also increases the effectiveness of treatment. The
103 other medical conditions for which patients are given *cannabis* in different forms and
104 concentration are muscle spasms, seizures also in HIV and AIDS. *Cannabis* plants having
105 unique medicinal properties are used in the treatment and control of severe disease and in
106 particular chronic diseases [25-26]. Medicinal plants should have bushy growth with a large
107 number of shoots, leaves and inflorescence. Marijuana is known to have anti-inflammatory
108 properties, treating inflammatory bowel conditions such as Crohn's disease. Principal uses
109 of this hemp plant such as mainly pain-killer, sleep-inducer and reliever of the nausea
110 caused by chemotherapy [27-30]. As a long history of regular usage of *cannabis* as a
111 medicinal plant it also reduces the pressure in the eye to relieve the glaucoma symptoms.
112 The active principle of *cannabis* is located in the whole body of the plant, mainly the part of
113 blooming buds [31]. On the other hand, seed and fruit have low concentration but the part of
114 blooming and leaves have higher concentration in *cannabis*.

115

116 **ECONOMIC IMPORTANCE OF CANNABIS SATIVA**

117 China and Canada are the main producers of hemp, mainly oil exporter from seed of this
118 plant. *Cannabis sativa* is a great source of food products, seed oil, industrial fiber etc. It is
119 the versatile plant species which is present all over the world, having a major role in
120 religious, spiritual moods also in recreational value [20, 22]. *Cannabis sativa* is an eco-
121 friendly crop which specifically does not require any pesticide treatment. The medicinal
122 marijuana also generates high environmental values as well as economic values. The role of
123 industrial hemp is mainly for seeds and fiber, whereas medicinal marijuana mainly cultivated
124 for its leaves and flowers. Moreover, the utilization of this hemp plant creates its high
125 economic value. From textiles to cosmetics and building materials, medicinal treatment,
126 hygiene products all of them produced from hemp. Industrial hemp plays a key resource in
127 economic value. *Cannabis sativa* also delivers a great role in the environmental benefits by
128 increasing the value of soil, also lowering greenhouse gas emission [31].

129

130 **CONCLUSION**

131 *Cannabis sativa* is a versatile plant which can provide high biomass quantities in a very short
132 time. Hemp stem is used as a source of wood and fiber for the construction purposes as well
133 as automotive industries. Its seed, leaves and flowers played a key role as a source of
134 bioactive components. *Cannabis sativa* or marijuana have various positive biological
135 activities and pharmacological activities. It also concluded that marijuana and its constituents
136 cannabinol (CBD) and tetrahydrocannabinol (THC) offers a wide range of variety options to
137 study. Cannabinoids may aid the treatment and various controls of common diseases such
138 as anxiety, reduce stress, boost appetite and immunity etc. It was possible to consolidate the
139 knowledge on the bases of medicinal importance and various benefits to human health of
140 *cannabis sativa*. In India, marijuana or hemp is used commonly as preparation for bhang
141 (seeds and leaves), ganja (flowers) and also some Indian drinks such as bhang thandai and

142 bhang lassi made from bhang. It is one of the most common and legal uses of marijuana or
143 *Cannabis sativa*. In Uttarakhand, marijuana or hemp may be used as a source of raising the
144 economic value in rural areas by cultivation on a large scale.

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