

1 PHYTOCONSTITUENTS AND MEDICINAL IMPORTANCE OF CANNABIS SATIVA

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3

4 ABSTRACT

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

20

21 **KEYWORDS:** *Cannabis sativa*; medicinal marijuana; hemp fibers; phytochemicals and
22 medicinal plant.

23

24 INTRODUCTION

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

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

38 According to McPartland in 1997, two essential hemp oil having components such as limonene
39 and alpha-pinene also have a repellent effect against several insects [2]. This type of
40 bacteriostatic activity of hemp essential oil has also been reported. Although first trials of hemp
41 essential oil used against potato late blight or Phytophthora infestans were not promising Krebs
42 1996, cannabinoid antifungal activity cannot be discounted [3]. Marijuana mostly used all over
43 the world as medicinal plants. There are several health benefits of hemp such as pain,
44 inflammatory as well as chronic diseases. Some evidence also suggests that more use of
45 marijuana increased risk of social anxiety. Evidence also suggests cannabinoids which are more
46 effective against vomiting as well as nausea commonly caused by chemotherapy [4]. It is also
47 found 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 because
49 it regulates insulin while managing caloric intake efficiently.

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

59

60 Scientific Classification of *Cannabis sativa* [6]

61 kingdom: Plantae

62 Class: Magnoliopsida

63 Order: Rosales

64 Family: Cannabaceae

65 Genus: *Cannabis*

66 Species: *Cannabis sativa*

67

68 **PHYTOCONSTITUENTS OF *CANNABIS SATIVA***

69 *Cannabis* is a composite herbal medicinal plant containing different classes of secondary
70 metabolites which include at least 120 terpenoids (61 monoterpenes, 52 sesquiterpenoids and 5
71 triterpenoids), 104 cannabinoids, 11 steroids and 26 flavonoids among other 545 identified

72 compounds [7-14]. Largest group of phytochemicals formed from terpenes in which more than
73 100 molecules identified in *cannabis* [15]. Terpenes are liable for flavor and order of the various
74 strains produced by *cannabis*. Monoterpenes and sesquiterpenoids have been detected in the root,
75 leaves and flowers of *cannabis*, in which secretory glandular hairs as the main known production
76 site [16, 30]. Monoterpene mainly include D-limonene, Terpinolene and linalool. Triterpenes
77 have been detected in hemp roots, hemp fibers and hemp seeds, oils. Cannabinoids along with
78 terpenes have been used as chemotaxonomic makers in versatile *cannabis* as these are mainly
79 considered as physiologically activity and secondary metabolites [17-20]. About 20 flavonoids
80 have been identified, mainly belonging to the flavone and flavonol sub classes. Recently, some
81 interesting amounts of lignans were found in the hydrophilic extract from the hemp seed [21].

82

83 **MEDICINAL IMPORTANCE OF *CANNABIS SATIVA***

84 Medicinal marijuana is reported mainly to help the patients suffering from severe pain such as
85 chronic pain. Marijuana can be used to manage weight loss, nausea and also helpful to treat
86 glaucoma. *Cannabis sativa* is also helpful to slow and stop cancer cells from spreading,
87 marijuana works to slow down the activity of tumor growth in the brain, breast and in lungs also
88 [22]. It is helpful to decrease anxiety and stress levels in human beings, and improve the smokers
89 mood and stimulate the appetite. The most common use of medicinal marijuana through
90 chemotherapy. The patients of cancer going through chemo commonly suffer from severe pains,
91 nausea, vomiting etc. The patients of cancer can lead to further various types of health
92 complications. Marijuana protects the brain after a stroke also reducing the size of area which
93 were affected by the stroke. *Cannabis sativa* mainly helpful to treat inflammatory bowel
94 diseases, patients suffering from inflammatory disease could benefit from marijuana use. It also
95 helps eliminate nightmares [23-24].

96 Various health benefits from hemp seed as it lower the cholesterol level, also helpful to lower the
97 blood pressure. Medicinal marijuana is grown worldwide under field conditions whereas these
98 fields are grown of *cannabis* for industrial purposes. *Cannabis sativa* reduces the side effect
99 linked to hepatitis C and it also increases the effectiveness of treatment. The other medical
100 conditions for which patients are given *cannabis* in different forms and concentration are muscle
101 spasms, seizures also in HIV and AIDS. *Cannabis* plants having unique medicinal properties are
102 used in the treatment and control of severe disease and in particular chronic diseases [25-26].
103 Medicinal plants should have bushy growth with a large number of shoots, leaves and
104 inflorescence. Marijuana is known to have anti-inflammatory properties, treating inflammatory
105 bowel conditions such as Crohn's disease. Principal uses of this hemp plant such as mainly pain-
106 killer, sleep-inducer and reliever of the nausea caused by chemotherapy [27-30]. As a long
107 history of regular usage of *cannabis* as a medicinal plant it also reduces the pressure in the eye to
108 relieve the glaucoma symptoms. The active principle of *cannabis* located in the whole body of

109 the plant, mainly the part of blooming buds [31]. On the other hand, seed and fruit have low
110 concentration but the part of blooming and leaves have higher concentration in *cannabis*.

111

112 **ECONOMIC IMPORTANCE OF *CANNABIS SATIVA***

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

125

126 **CONCLUSION**

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

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