

PHYTOCONSTITUENTS AND MEDICINAL IMPORTANCE OF *CANNABIS SATIVA*

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*. Marijuana 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 moraceae 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, descriptive 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 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 products are and buds of the hemp plant

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

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

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

Scientific Classification of *Cannabis sativa* [6]

kingdom: Plantae

Class: Magnoliopsida

Order: Rosales

Family: Cannabaceae

Genus: *Cannabis*

Species: *Cannabis sativa*

PHYTOCONSTITUENTS OF *CANNABIS SATIVA*

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

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

MEDICINAL IMPORTANCE OF *CANNABIS SATIVA*

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

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

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

ECONOMIC IMPORTANCE OF *CANNABIS SATIVA*

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

CONCLUSION

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

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