


Cannabis sativa

<i>Cannabis sativa</i>	
	
Scientific classification	
Kingdom:	Plantae
Subkingdom:	Viridaeplantae
Superdivision:	Streptophyta
Division:	Tracheophyta
Subdivision:	Spermatophyta
Class:	Magnoliopsida
Superorder:	Rosanae
Order:	Rosales
Family:	Cannabaceae
Genus:	<i>Cannabis</i>
Species:	<i>Cannabis sativa</i>
Subspecies	
<i>C. sativa</i> ssp. <i>sativa</i>	
<i>C. sativa</i> ssp. <i>indica</i>	

Cannabis sativa is an annual herbaceous plant in the *Cannabis* genus, a species of the Cannabaceae family. People have cultivated cannabis sativa throughout recorded history as a source of industrial fibre, seed oil, food, recreation, religious and spiritual moods, and medicine. Each part of the plant is harvested differently, depending on the purpose of its use.

Common uses

Main articles: Industrial and personal uses of *Cannabis*, Cannabis (drug) and Hemp

Its seeds are chiefly used to make hempseed oil which can be used for cooking, lamps, lacquers, or paints. They can also be used as caged-bird feed, as they provide a moderate source of nutrients for most birds. The flowers (and to a lesser extent the leaves, stems, and seeds) contain psychoactive chemical compounds known as cannabinoids that are consumed for recreational, medicinal, and spiritual purposes. When so used, preparations of flowers (marijuana) and leaves and preparations derived from resinous extract (e.g. hashish) are consumed by smoking, vaporizing and oral ingestion. Historically, tinctures, teas, and ointments have also been common preparations.

Plant physiology

Main articles: Cannabis and Cannabis cultivation

The flowers of the female plant are arranged in racemes and can produce hundreds of seeds. Male plants shed their pollen and die several weeks prior to seed ripening on the female plants. Although genetic factors dispose a plant to become male or female, environmental factors including the diurnal light cycle can alter sexual expression. Wikipedia: Citation needed Naturally occurring monoecious plants, with both male and female parts, are either sterile or fertile but artificially induced "hermaphrodites" (a commonly used misnomer) can have fully functional reproductive organs. "Feminized" seed sold by many commercial seed suppliers are derived from artificially "hermaphroditic" females that lack the male gene, or by treating the seeds with hormones or silver thiosulfate. In the case of production related to recreational use of Cannabis, the process of "cloning" provides the grower with DNA identical female plants eliminating the need of seeds for the growing process.

A *Cannabis* plant in the vegetative growth phase of its life requires more than 12–13 hours of light per day to stay vegetative. Flowering usually occurs when darkness equals at least 12 hours per day. The flowering cycle can last anywhere between nine to fifteen weeks, depending on the strain and environmental conditions.

In soil, the optimum pH for the plant is 6.3 to 6.8. In hydroponic growing, the nutrient solution is best at 5.2 to 5.8, making *Cannabis* well-suited to hydroponics because this pH range is hostile to most bacteria and fungi.

Cultivars

Broadly, there are three main Cultivar Groups of cannabis that are cultivated today:

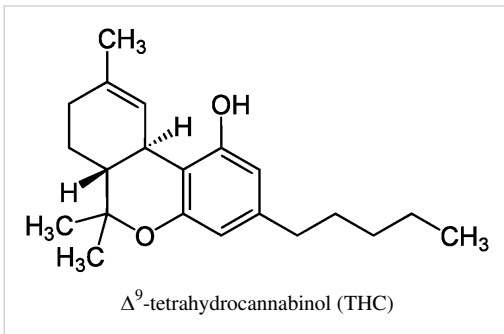
- Cultivars primarily cultivated for their fiber, characterized by long stems and little branching.
- Cultivars grown for seed which can be eaten entirely raw or from which hemp oil is extracted.
- Cultivars grown for medicinal or recreational purposes. A nominal if not legal distinction is often made between industrial hemp, with concentrations of psychoactive compounds far too low to be useful for that purpose, and marijuana.



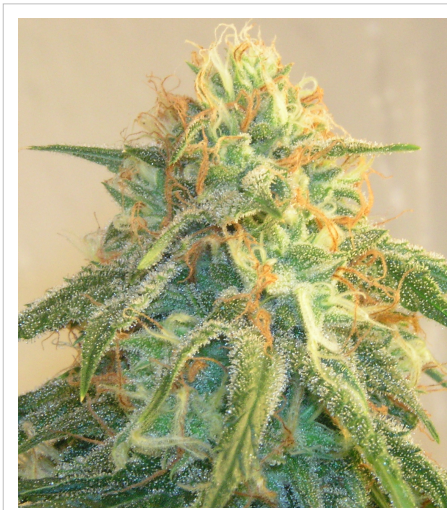
A sack made from hemp fiber

Pharmacology

Main article: Cannabis (drug)



Although the main psychoactive constituent of *Cannabis* is tetrahydrocannabinol (THC), the plant is known to contain about sixty cannabinoids; however, most of these "minor" cannabinoids are only produced in trace amounts. Wikipedia:Citation needed Besides THC, another cannabinoid produced in high concentrations by some plants is cannabidiol (CBD), which is not psychoactive but has recently been shown to block the effect of THC in the nervous system.^[1] Differences in the chemical composition of *Cannabis* varieties may produce different effects in humans. Synthetic THC, called dronabinol, does not contain CBD, CBN, or other cannabinoids, which is one reason why its pharmacological effects may differ significantly from those of natural *Cannabis* preparations.



The flower of a hybrid *Cannabis indica* plant

Chemical constituents

Cannabis chemical constituents including about 100 compounds responsible for its characteristic aroma. These are mainly volatile terpenes and sesquiterpenes.

- Tetrahydrocannabinol (THC)
- Cannabidiol (CBD)
- α -Pinene
- Myrcene
- Linalool
- Limonene
- Trans- β -ocimene
- α -Terpinolene
- Trans-caryophyllene
- α -Humulene, contributes to the characteristic aroma of *Cannabis sativa*
- Caryophyllene-oxide, with which some hashish detection dogs are trained^[2]

Difference between *C. indica* and *C. sativa*

Cannabis sativa has a higher level of THC compared to CBD, while *Cannabis indica* has a higher level of CBD compared to THC. Wikipedia:Disputed statement *Cannabis* strains with relatively high CBD:THC ratios are less likely to induce anxiety than vice versa. This may be due to CBD's antagonistic effects at

the cannabinoid receptors, compared to THC's partial agonist effect. CBD is also a 5-HT_{1A} receptor (serotonin) agonist, which may also contribute to an anxiolytic-content effect. This likely means the high concentrations of CBD found in *Cannabis indica* mitigate the anxiogenic effect of THC significantly. The effects of *sativa* are well known




for its cerebral high, hence used daytime as medical cannabis, while *indica* is well known for its sedative effects and preferred night time as medical cannabis. *Indica* plants are normally shorter and stockier plants than *sativas*. They have wide, deeply serrated leaves and a compact and dense flower cluster. The effects of *indicas* are predominantly physical and sedative.

References

- [1] West, D. P. Ph.D. 1998. Hemp and Marijuana: Myths & Realities (<http://www.gametec.com/hemp/hempandmj.html>). North American Industrial Hemp Council. Retrieved on 23 April 2007
- [2] Essential Oils (<http://www.bojensen.net/EssentialOilsEng/EssentialOils13A/EssentialOils13A.htm>)

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-  Data related to Cannabis sativa at Wikispecies

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