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What Are the Differences between Cannabis Indica and Cannabis Sativa, and How Do They Vary in Their Potential Medical Utility?

General Reference (not clearly pro or con)

The Golden State Collective (GSC) Cannabis Laboratories wrote the following in a blog entry titled "Cannabis Sativa and Indica Compared," posted online Dec. 6, 2011:

"Despite the huge variety of marijuana available these days, almost all of them (over 99%) are ultimately derived from only two cannabis family species. These two essential species are known as Cannabis sativa and Cannabis indica and they differ fundamentally in their chemical composition, physiological aesthetic, and medical application...

The Indica and Sativa subspecies differ in their medicinal properties. Sativa strains produce more of a euphoric high, lifting the consumer's mood and therapeutically relieving stress. Indica strains relax muscle and work as general analgesics, also helping with sleep. A cancer patient hoping to relieve the pain from chemotherapy would benefit greatly from the effects of an Indica plant bud, whereas an individual dealing with depression would better benefit from a Sativa plant bud...

The active chemicals responsible for the medicinal effects of marijuana are collectively called cannabinoids. This group includes THC, CBD, and CBN. Sativa's cannabinoid profile is dominated by high THC levels and low or no CBD levels. Indica's chemical profile shows a more balanced mix, with moderate THC levels and higher levels of CBD."

Jeffrey S. Yablan, Former Senior Researcher at ProCon.org, wrote the following for ProCon.org on Feb. 26, 2007:

"The plant species *Cannabis sativa* L. has two main sub-species, *Cannabis indica* and *Cannabis sativa*. Hybrids and cross-breeds of these sub-species produce varieties (also referred to as strains) that carry some characteristics of each parent.

Indica dominant strains are higher in Cannabidiol (CBD), sativa dominant strains are higher in the THC cannabinoid. Indica dominant strains are short dense plants, with broad leaves and often grow a darker green. Sativa dominant strains are tall, thin plants, with much narrower leaves and grow a lighter green in color. Hybrids will vary in their composition of THC, CBD and other cannabinoids, and are often referred to based upon the dominant cannabinoid ratio inherited from their lineage; indica, mostly indica, indica /sativa, mostly sativa, or pure sativa.

Cultivators and distributors often give some of these varieties more personal names (see partial list of cannabis strain names 🚬), such as Acapulco Gold, Panama Red, Northern Lights, Orange Patty, and others."



Cannabis indica



Cannabis sativa

Biological Classifications of Marijuana
per the U.S. Dept. of Agriculture, Feb. 15, 2007

Category	Latin Name	Common Name
Kingdom	Plantae	Plants
Subkingdom	Tracheobionta	Vascular plants
Superdivision	Spermatophyta	Seed plants
Division	Magnoliophyta	Flowering plants
Class	Magnoliopsida	Dicotyledons
Subclass	Hamamelididae	None
Order	Urticales	None

Family	Cannabaceae	Hemp family
Genus	Cannabis L.	hemp
Species	Cannabis sativa L.	marijuana
Subspecies	Cannabis sativa L. ssp. sativa	marijuana / sativa
Subspecies	Cannabis sativa L. ssp.indica	marijuana / indica
Variety	Cannabis sativa L. ssp. sativa var. spontanea	marijuana

Feb. 26, 2007 - Jeffrey S. Yablan ★

The National Organization for Reform of Marijuana Laws (NORML) stated on the Orange Country Chapter's website in an article titled "Medical Marijuana Strains" (accessed Jan. 23, 2007):

"There are really only two sides of the marijuana family we are talking about here. Indicas and Sativas. Sativas are just about the opposite of indicas. They are tall, thin plants, with much narrower leaves and grow a lighter green in color. They grow very quickly and can reach heights of 20 feet in a single season. They originally come from Colombia, Mexico, Thailand and Southeast Asia. Once flowering has begun, they can take anywhere from 10 to 16 weeks to fully mature. Flavors range from earthy to sweet and fruity. The effects of a Sativa is cerebral, up and energetic.

Indicas originally come from the hash producing countries of the world like Afghanistan, Morocco, and Tibet. They are short dense plants, with broad leaves and often grow a darker green. After flowering starts they will be mature in 6 to 8 weeks. The buds will be thick and dense, with flavors and aromas ranging from pungent skunk to sweet and fruity. The smoke from an Indica is generally a body type effect, relaxing and laid back. Indica's higher CBD than THC equals a much heavier, sleepy type of high. Indica plants have a heavy, stony high that is relaxing and can help different medical problems.

Combining different indicas, different sativas or a combination thereof creates hybrids. The resulting hybrid strains will grow, mature and smoke in relationship to the indica/sativa percentages they end up containing."

Jan. 23, 2007 - National Organization for the Reform of Marijuana Laws (NORML) ★

The Canadian AIDS Society stated in its publication titled "Cannabis and HIV-AIDS" on the website of the Canadian Public Health Society (accessed Feb. 15, 2007):

"There are hundreds of varieties or 'strains' of cannabis. Two main types of cannabis are of interest for people who seek its medicinal properties: cannabis sativa and cannabis indica.

The different strains of cannabis contain different blends of cannabinoids. Many people report experiencing different medicinal effects from different strains. There is not much research into the medicinal effects of different strains. Most people rely on word of mouth and trial and error to choose a strain that works for them.

Your best bet is to try one to see how it works for your symptoms."

Feb. 15, 2007 - Canadian AIDS Society ★

David Bearman, MD, told ProCon.org in a Feb. 22, 2007 email:

"This area [comparing cannabis strains] is one where I have purposely shied away from researching very deeply, in part because of limited data, part the complexity of looking at the chemical components of various cannabis strains and because there seems to be others much more on top of this than I. I am more interested in the composition of various strains than comparing sativa to indica...

No doubt many growers and dispensary workers have opinions. While they have some word of mouth knowledge my guess is that, at best, they are hunches."

Feb. 22, 2007 - David L. Bearman, MD ★★★★★

Valerie Corral, Executive Director of Wo/Men's Alliance for Medical Marijuana (WAMM), et al., stated in an unpublished study titled "Differential Effects of Medical Marijuana Based on Strain and Route of Administration: a Three-Year Observational Study," (PDF) available on WAMM's website (accessed on Jan. 23, 2007):

"Standardized rating forms provided 1,892 records that were statistically analyzed. Results demonstrated that in the case of nausea and spasm, changes in symptom expression are definitely affected by method of cannabis administration. However, while Cannabis indica strains increased energy and appetite, it is useful to note that in treating nausea in HIV/AIDS and orthopedic diagnosis groups, Cannabis sativa and C. indica strains proved equivalent.

Marijuana, whether Cannabis sativa or Cannabis indica, produces its medical and other effects by virtue of the concentration and balance of various active ingredients, especially the cannabinoids, which are unique to marijuana, but including also a wide range of terpenoids and flavonoids. Terpenoids are cannabis constituents that provide the characteristic strong odor of marijuana and hashish. Flavonoids are any of the flavone derivatives. The concentration and relative proportions of these ingredients depend on the plant's genetic structure and applied hybridization techniques, and as such, allow for a substantially varied outcome.

Little is known about how differences in constituent profiles translate into differences in therapeutic effectiveness. A range of differentiable effects has been ascribed to THC (tetrahydrocannabinol is the primary psychoactive component of marijuana) and CBD (cannabidiol, a compound related to THC) when

administered in purified form. Studies are lacking on the differential clinical effects produced when varying 'menus' of constituents are taken together...

Results from a drug detection laboratory indicated that *C. sativa* measured: THC 23.7%, CBD <0.1% and CBN <0.1%. Results indicated that *C. indica* strains measured THC 19.6%, CBD <0.2% and CBN <0.5%. Cannabis potency testing results by ElSohly Labs of the same sample of *C. sativa* after storage for eight months yielded a value of THC 17.6%...

Results indicate that cannabis was uniformly effective in relieving symptoms across a wide range of diagnostic categories. No differences were observed in the extent to which symptoms were relieved based on diagnosis, except that patients with HIV/AIDS experienced more relief of nausea than patients with primary orthopedic diagnoses...

C. indica appeared to be superior to *C. sativa* and 'other' in improving energy and appetite [Table 9]; otherwise, no differences in strain effects were observed...

These findings support that few differences were noted by patients between *C. sativa* and *C. indica* strains and between ingestion vs. inhaled routes of administration. This is likely due to modest observed differences in cannabinoid content in the supplied strains. We hope that a reliable and accessible means of analysis will become available in the near future."

Jan. 23, 2007 - Valerie Corral ★
