

There's Cannabis Sativa, Indica, and Ruderalis...

# Proposing a new Classification: 'Cannabis Indoor'

By DJ Short

Most of the lines of cannabis offered today to medical users—and to cultivators, as seeds or clones—are hybrids. There are very few pure landrace varieties available, and the few that are tend to be of lower quality/desirability when grown indoors. There seem to be more indica-leaning varieties than sativa, as the indica lines tend to be easier (and quicker) to “coax” into producing marketable qualities.

Which characteristics determine the difference between sativa and indica? Many look to leaf shape/structure as an indicator, but I have witnessed some wide-leaved sativa and some narrow-leaved indica. There may be some relation between the number of leaflets (or leaf-blades or “fingers”) per leaf and sativa/indica makeup, with sativa having more blades per leaf, especially in the late vegetative stage of growth. Sativa generally tends to be taller, indica shorter, again with exceptions to the rule.

The only consistent indicator I have found to distinguish true sativa and indica is flowering time, with sativa taking longer. The true, landrace tropical sativa would sometimes take up to 20 weeks to finish indoors under a long-night light cycle while the average indica flower time is approximately eight weeks.

The only other indicator in my opinion is resin type, with sativa having more open oils and resin on the leaf/calyx surface. Tackiness is indicative of potency, but also of other potentially desirable characteristics. Stickiness tends to suggest open resin and oils at the surface, or easily ruptured gland heads. There appear to be secretory hairs that pump non-encapsulated liquid to the leaf surface. This phenomenon is more common among the more sativa-leaning lines and may well prove to be a desirable quality.

It has been suggested that the glandular stalked trichome, with oils and resin produced by secretory cells and encapsulated within a membrane at the tip of the trichome ‘stalk,’ were bred for hashish production outside of the tropics. In tropical regions to which sativas are native, the main form of hashish extraction is hand rubbing—a technique that makes open oils and resin desirable. Outside of the tropics, where indicas prevail, the main form of hashish extraction is some form of sieving where membrane-encapsulated oils and resins are advantageous.

Hand rubbing is usually done with live plants whereas sieving involves harvested and usually dried material (except for some forms of ice-water extraction that produce pure resin from fresh frozen flowers and/or trim).

Note that there is a difference between plants developed for high quality hash and high quality bud production. Generally speaking, many gland heads packed with the proper oils are desired for hashish production (indica), whereas more open oils saturating the flower/leaf surface seem to be a desirable indicator for the sativa-leaning plants.



CANNABIS GROWING IN THE HIMALAYAN MOUNTAINS is exposed to ultraviolet light unfiltered by the atmosphere. UV light seems to “coax” changes in phenotype. Photo was made by Arne Huckleheim outside the village of Kalopani. In background is the peak of Mt. Dhaulagiri (elevation 26,795 feet).

Ruderalis

‘Ruderalis,’ in my opinion, was a phenomenon coaxed via selective breeding in the early 1980s. Breeders who appreciated the short flowering time of the indica may have over-selected for that one trait, resulting in plants that tend to possess little medicinal value.

I’ve yet to sample anything of interest that took less than seven weeks in flower to finish indoor, or anything harvested before mid-September at or near 45 degrees North.

There is a variety labeled ‘Ruderalis’ that exists north of 50 degrees latitude. There is also rumor of intrepid voyagers who trekked through Russia to retrieve the legendary ‘by-the-side-of-the-road’ hemp seeds. I hope not, as the same thing could be found in Minnesota or Manitoba. At any rate, the famed ‘ruderalis’ is generally useless in its pure form medicinally. Certain specific/unique cannabinoid profiles may be found via some form of ruderalis hybrid and rigorous testing.

High UV light seems to have an effect on resin type and might possibly even influence plant type. One aspect of the true tropics (the area between latitude 23 degrees North and 23 degrees South) is direct overhead sunlight twice per year. Couple the lack of atmospheric filtration with high elevation and the result is maximum UV light. Cannabis grown outside the tropics in Nepal and Kashmir also gets high UV exposure because of the height of the Himalayas. High UV light systems are available for the indoor horticulture market.

Another aspect to consider regarding manipulating indoor grow environments is that of light timing. The light cycle of a tropical sativa would be approximately 13 hours of light and 11 hours of dark for the vegetative stage and approximately 11 hours of light with 13 hours of dark for the flower cycle. I expect such a light regimen—especially 13-hours-on/11-off during the vegetative phase—would encourage lengthier growth times. Such a light regimen, coupled with high UV light sources, may encourage truer sativa-leaning phenotype from the indoor grow environment.

*Plants acclimate to the indoor environment after several generations of breeding within it.*

Some in the industry use the term ‘genetic bottlenecking’ to describe varieties that have been overly inbred. Such ‘bottlenecking,’ would occur only after many, many generations in the wild. In my opinion, what is actually occurring is that plants acclimate to the indoor environment after several generations of breeding within it.

My varieties all originate from landrace, true breeding stock that tend to hold their uniqueness over several generations of breeding indoors. This remains true through about the seventh to ninth generation removed from the original progeny (P1s).

By the tenth generation, all of the progeny tend to become relatively generic, pretty much the same, and in my opinion have acclimated to the indoor environment. This is why so many of the various hybrids available today are so similar to one another in overall effect and desirability. They have become a new subspecies, or varietal, that I think should be designated “Cannabis Indoor.”



PHOTO BY STEVE BAKER

## Environmental Triggers

**Genotype** refers to the genetic makeup of an organism, its genetic code, the specific order of the ‘G’s’ and ‘T’s’ and ‘A’s’ and ‘C’s’ of its DNA.

**Phenotype** refers to the actual physical expressions witnessed in an organism, which are often influenced by environmental factors or “triggers.”

An example I like to use involves the purpling of leaves and flowers on some plants brought on by cooling temperature. In order to witness the phenomenon, the plant must possess the genotype (genetic makeup) for cool-temperature purpling and the plant must be exposed to lowered temperatures (the environmental trigger).

It does not appear to be a specific cold temperature per se that causes the plant to purple. The phenomenon is brought on by a certain difference or range between day and night temperatures. That is, the plant does not react specifically to the actual temperature, it reacts to the difference between day and night temperatures, usually at least a 20 degree Fahrenheit differential.

The key point is that phenotypic expressions are induced by environmental triggers. There are many phenotypic expressions yet to be coaxed from the genus *Cannabis*, especially from our thus far limited indoor environment. But there are many areas we may begin to explore.

Perhaps the most obvious factors involve the timing and frequency of exposure to light. Light timing refers to the schedules of ‘day/night’ that we utilize in our grow rooms. Most cultivators now expose plants in their vegetative stage to light for 18-hours-on/6-hours-off, then switch to 12-hours-on/12-hours-off when the plants begin to flower.

I was advised by some old-timers in the mid-‘80’s to reduce the amount of light provided during flowering to 11-and-a-half -hours-on and 12-and-a-half-hours off. I have since had extremely good luck using 11-hours-on/13-hours-off during flowering. Plants take on nutrient during the day hours and translate that into fiber production at night. Therefore this 11-on/13-off lighting strategy tends to increase production while at the same time saving some electricity. Also, light is one of the main components that degrades or breaks down active cannabinoids.

Another ‘trigger’ we have available to manipulate is that of light frequency, or light ‘temperature,’ also referred to as ‘Kelvin’ rating (color). We are discovering that high ultraviolet radiation inspires production of various cannabinoids. There are bulbs and light systems available now that offer high UV output, and new products are constantly being introduced. These systems need to be tested and the results analyzed in order to get a better grasp of the relationship between these phenomenon. To which end there is no substitute for adequate data collection, analysis and research.

—DJ Short

Although we may be able to manipulate our indoor environment to some extent with advancing technology, no indoor environment will ever rival the highland tropical environment for triggers capable of coaxing interesting phenotypes. That is, there is no substitute for the great outdoors, especially the upland tropical environment, for producing truly unique, desirable, quality herb.

Finally, aspects of effect need to be considered regarding indica, sativa and indoor hybrids. Generally speaking, sativa tends

to be described as ‘uplifting,’ ‘stimulating,’ ‘bright,’ etc. whereas indica tends to be more “down,” “sedating,” “narcotic,” “sleepy,” etc. But there are exceptions and combinations of both.

There is nothing short of long-term testing to determine the many and often subtle effects of quality cannabis. Consideration needs to be given to quality hashish production using domestically produced plants. I believe that this is where domestic quality and desirability will best shine. Happy hunting!