

# The Ultimate Cannabis



## Indoor Cultivation and Usage Guide

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Before the introduction, here is a little food-for-thought for any cannabis skeptics – those who have heard the prohibitionist lies long enough to actually believe them...

Peanut allergies result in over 100 deaths annually.  
The annual number of deaths from marijuana is zero.



**MARIJUANA**  
SAFER THAN PEANUTS

**NATURE**

SHOULD NEVER  
BE ILLEGAL



## Introductions Are In Order

Maybe you or a loved one is in need of medicine... maybe you enjoy sharing good grass with friends on occasion... maybe you believe in freedom and don't want draconian laws telling you what plants you can or cannot grow... for whatever reason, you want to grow marijuana. So you start looking for information about this and find yourself inundated with books, videos, blogs, forums and more telling you everything under the sun about growing. The problem is that there is just so much information, most of which is unnecessary, conflicting or questionable at best.

Wouldn't it be nice if you had a very knowledgeable friend tell you exactly what you need to know? Well you're in luck! I have a few decades worth of cannabis experience and I'm going to help you. Why? Because I appreciate the help others have given me, and I believe in passing it on. But my motivation is also much broader... as a young person, I was influenced by hippy culture in a very positive way. Today I have a great appreciation for the hippy rejection of racism, materialism, corporate/ government greed, environmental destruction and war; as well as the hippy promotion of **peace, love and weed**. These three things have the potential to dramatically improve our world. My hope is that teaching others to grow and use weed will help them to better utilize all three as catalysts for change to make the world a better place!



Now you may be thinking: That's all well and good, but what is it that makes this old hippie's guide the "ultimate"? The answer is that it achieves five very specific goals for growing weed:

1. Grow as safely as possible – avoid persecution from unjust laws
2. Grow as easily as possible – avoid spending excessive time
3. Grow as cheaply as possible – avoid spending excessive money
4. Grow as high quality as possible – avoid disappointment
5. Grow as compassionately as possible – avoid negativity

There are certainly many other good ways to grow cannabis besides what I outline here. But few achieve all the same goals. This guide is an excellent foundation of concise and reliable information for the indoor non-commercial grower. It provides a broad cultural understanding, and instructions on how to process and consume home-grown cannabis for medical and other applications. I give straight talk on the issue of a cannabis habit and how to avoid it – something rarely discussed by proponents. I even cover topics like cannabis etiquette and sex. Finally, I address the subject of compassion with both growing and life in general, as there is a desperate need for much more of that in our world. I'm not content with just helping you grow cannabis... I believe you should also grow as a person.

To get started on our journey, the first thing any good cannabis grower needs is a knowledge base that includes the historical background and future potential of this wonderful plant. This transforms you from just a grower into an *informed* grower. Believe it or not, it will help you and your plants tremendously with the psychic energy you bring into the growing process. So that is where we begin...

# Chapter 1 – The Truth About Marijuana

Marijuana is many things to many people. This should not be surprising since the relationship between mankind and this herbaceous plant extends back to literally the dawn of civilization. However, most people are surprised to learn that marijuana is *not* the ominous threat they've been led to believe through drug war propaganda. Then why is it portrayed so negatively by the U.S. Drug Enforcement Administration and others? Good question! The time has come for an understanding based on education – to rise *above the ignorance*. So let's examine the historical context behind marijuana prohibition and learn some facts about the plant known as marijuana...



The name “marijuana” is a Mexican slang word. The actual Spanish word for the plant is “canamo.” Prior to the mid-1930’s, marijuana was known throughout the world as “hemp” or “cannabis.” Cannabis is the plant’s botanical name and has ancient origins in the Hebrew language. Solid evidence of Hebrew cannabis usage was established in 1936 by Mr. Sula Benet, an etymologist from the Institute of Anthropological Sciences in Warsaw. The word “cannabis” was generally thought to be of Scythian origin, but Mr. Benet showed that it has a much earlier origin in Semitic languages like Hebrew, and that it actually appears several times throughout the Old Testament. Mr. Benet explained that “in the original Hebrew text of the Old

Testament there are references to hemp, both as incense, which was an integral part of religious celebration, and as an intoxicant.” As one of the ingredients for the anointing oil, it would have been used to anoint Abraham, all the priests, and even Jesus. Mr. Benet demonstrated that the word for cannabis is “kaneh-bosm,” also rendered in traditional Hebrew as “kaneh” or “kannabus.” The root “kan” in this construction means “reed” or “hemp”, while “bosm” means “aromatic.” This word appears five times in the Old Testament; in Exodus 30:22-30, Song of Songs 4:8-14, Isaiah 43:23-24, Jeremiah 6:20 and Ezekiel 27:19. The word kaneh-bosm is sometimes mistranslated as calamus, a common marsh plant with little monetary value that does not have the qualities or value ascribed to kaneh-bosm. In many Bible translations, it is simply called “fragrant cane” or “sweet cane.”

Here are some more historical facts about hemp (*with references*), which are generally verifiable in the Encyclopedia Britannica – which was printed on hemp paper for 150 years:

- The oldest known records of hemp farming go back 5000 years in China, although hemp industrialization likely extends back to ancient Egypt. Medical cannabis was described in print in a Chinese book of medicine, “Herbal,” in the 2nd century B.C.
- The first Bibles, maps, charts, Betsy Ross's flag, the first drafts of the Declaration of Independence and the Constitution were made from hemp; *U.S. Government Archives*.
- Founding fathers George Washington, Thomas Jefferson and others grew hemp. Jefferson smuggled hemp seeds from China to France and then to America; *Washington and Jefferson Diaries*.
- It was legal to pay taxes with hemp in America from 1631 until the early 1800's; LA Times, Aug. 12, 1981. In fact, refusing to grow hemp in America during the 17th and



18th Centuries was against the law! You could be jailed in Virginia for refusing to grow hemp from 1763 to 1769; G. M. Herdon, *Hemp in Colonial Virginia*.

- The first crop grown in many states was hemp. HEMPstead, Long Island; HEMPstead County, Arkansas; HEMPstead, Texas; HEMPhill, North Carolina; HEMPfield, Pennsylvania, among others, were named after cannabis growing regions, or after family names derived from growing hemp; *State Archives*
- In 1916, the U.S. Government predicted that by the 1940's all paper would come from hemp and that no more trees would need to be cut down since one acre of hemp equals four and a half acres of trees; *U.S. Department of Agriculture*.
- An article entitled 'The Most Profitable and Desirable Crop that Can be Grown' stated that if hemp was cultivated using 20th Century technology, it would be the single largest agricultural crop in the U.S. and the world; Feb, 1938, *Mechanical Engineering Magazine*.
- Paints and varnishes were made from hemp seed oil until 1937. America used 58,000 tons of hemp seeds for paint products in 1935; *Sherman Williams Paint Company testimony before Congress against the 1937 Marijuana Tax Act, which outlawed hemp in the U.S.*
- Henry Ford built a car to run on hemp gasoline and the car itself was constructed of plastic made with hemp. On his large estate, Ford was photographed among his hemp fields. The car, "grown from the soil," had hempen plastic panels whose impact strength was "10 times stronger than steel" and resisted denting though it was one-third lighter than steel; Dec 1941, *Popular Mechanics*.

The following quote is from the U.S. Department of Agriculture's film titled 'Hemp for Victory.' The U.S. government denied it and tried to hide its existence for years, since it encouraged patriotic American farmers in 1942 to grow hemp for the war effort. Now "re-discovered", it can even be watched on YouTube:

*"... (When) Grecian temples were new; hemp was already old in the service of mankind. For thousands of years, this plant had been grown for cordage and cloth in China and elsewhere in the East. For centuries prior to about 1850, all the ships that sailed the western seas were rigged with hempen rope and sails... Now with Philippine and East Indian sources of hemp in the hands of the Japanese... American hemp must meet the needs of our Army and Navy as well as of our industries... the Navy's rapidly dwindling reserves. When that is gone, American hemp will go on duty again... hemp for countless naval uses both on ship and shore. Just as in the days when Old Ironsides sailed the seas victorious with her hempen shrouds and hempen sails. Hemp for victory!"*

Hemp cultivation and production actually benefit the environment. USDA Bulletin #404 concluded that hemp produces 4 times as much pulp with at least 4 to 7 times less pollution. From Popular Mechanics, Feb. 1938:

*"It has a short growing season... it can be grown in any state... The long roots penetrate*

*and break the soil to leave it in perfect condition for the next year's crop. The dense shock of leaves, 8 to 12 feet above the ground, chokes out weeds... hemp, this new crop can add immeasurably to American agriculture and industry."*

With so many positive historical examples of cannabis usage, what disrupted the course of history and caused the interwoven relationship of Americans and the hemp plant to unravel?

## AMERICAN MARIJUANA HISTORY

One of America's founding principles is the protection of individual rights... probably the most basic of which is the right to nature and to your own body. So why is a plant that is used by millions of people a major target for law enforcement? Conspiracy theories abound regarding various groups who profited from cannabis prohibition in 1937, such as the Hearst-controlled paper industry that did not want competition from hemp. While that is very likely a factor, the real driving force behind cannabis prohibition then and now is that anti-marijuana laws provide a political tool to persecute millions of people defined by race as well as cultural and political affiliation.

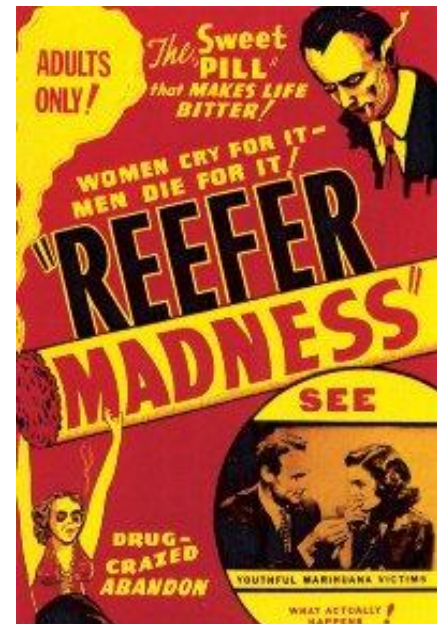


Cannabis was grown commercially in the U.S. since the 1700's. However, recreational cannabis usage was not a strong cultural factor until much later with the arrival of Africans and Hispanics. Marijuana prohibition provided racial activists the perfect opportunity to persecute those "undesirable" minorities. Furthermore, the repeal of alcohol prohibition threatened the employment of thousands of prohibitionists and law enforcement personnel. Cannabis prohibition provided these large and powerful groups with ongoing job security and helped fund new prisons. But the concept of using marijuana laws against minorities was not original to U.S. lawmakers. The same tactic had already proven effective in many other countries. Twentieth-century cannabis prohibition first reared its ugly head in South Africa, where white minorities ruled black majorities and sought more control by outlawing "dagga" in 1911. The British outlawed "ganja" in Jamaica in 1913 to exert more influence over that colony. Canada's pot law was enacted in 1923 from the efforts of Emily F. Murphy – a blatantly racist judge who wrote anti-marijuana rants under the pseudonym "Janey Canuck." Similar laws followed in Great Britain and New Zealand. In each instance, these laws were not based on any medical or scientific facts, but lawmaker's prejudices against the racial groups that marijuana laws helped persecute and control.

Marijuana prohibition in the U.S. began partly as an add-on to laws restricting opiates and cocaine to prescription-only usage, especially in Southern and Western regions where blacks and Mexican immigrants were using it. The LA Times claimed in 1914 that "sinister legends of murder, suicide and disaster" surround the plant. The city of El Paso outlawed marijuana in 1915, two years after a Mexican thug, "allegedly crazed by habitual marijuana use," killed a police officer. By the time alcohol prohibition was repealed in 1933, thirty states had some form of marijuana law. The campaign against marijuana intensified after the repeal of alcohol prohibition. "I wish I could show you what a small marihuana cigarette can do to one of our degenerate Spanish-speaking residents," a Colorado newspaper editor wrote in 1936. "The fatal marihuana cigarette must be recognized as a deadly drug, and American children must be protected against it."

In a country willing to outlaw alcohol, enacting anti-marijuana laws was an easy political move. Both marijuana and alcohol prohibition were part puritanical fanaticism, part racist and part anti-immigrant. Bishop James Cannon of the Anti-Saloon League in 1928 denounced Italians, Poles and Russian Jews as “the kind of dirty people that you find today on the sidewalks of New York,” while in 1923, Imogen Oakley of the General Federation of Women's Clubs described the Irish, Germans, and others as “insoluble lumps of unassimilated and unassimilable peoples... 'wet' by heredity and habit.” In the South, the motivation was anti-black. Georgia prohibitionist A.J. McKelway wrote in 1907, “The disenfranchisement of Negroes is the heart of the movement in Georgia and throughout the South for the Prohibition of the liquor traffic.” Alcohol had been the most pervasive recreational drug in the Western world for millennia. This gave prohibitionists plenty of ammo to demonize “whiskey-sodden Micks, wine-soaked Wops, beer-swilling Krauts and liquor-selling Jews.” But at least those groups were not dark-skinned like the Mexicans and African-Americans who were the primary users of cannabis at that time. Instead of calling it hemp or cannabis, an obscure Mexican slang word: “marihuana”, was pushed into the American consciousness along with racial denunciations in headline stories that shocked the nation. Films like 'Marihuana: Assassin of Youth' (1935), 'Marihuana: The Devil's Weed' (1936) and 'Reefer Madness' (1936), financed by a church group, promoted the message of “the new drug menace... destroying the youth of America in alarmingly increasing numbers.”

Reefer Madness is now viewed as an unintentional comedy by modern audiences, and it even premiered as an off-Broadway musical satire in 2001. However, people in the 1930's were naive to the point of ignorance and did not often challenge or question authority. The public masses were like sheep, waiting to be led by the few in power. If the news was in print or other media, most believed it had to be true... especially the unfamiliar and frightening topic of marijuana. Unfortunately, that still applies to many people today.



The charge against marijuana was led by Harry Anslinger, head of the Federal Bureau of Narcotics, and previously the Federal Assistant Alcohol Prohibition Commissioner. “If the hideous monster Frankenstein came face to face with the monster marihuana, he would drop dead of fright,” he thundered in 1937. His racial claim was that white girls would be ruined once they'd experienced the lurid pleasures of having a black man's marijuana joint in their mouths. “Colored students at the University of Minnesota partying with female (white) students smoking and getting their sympathy with stories of racial persecution, result: pregnancy.”

In 1937, The Prohibitive Marihuana Tax Law (the bill that outlawed cannabis) was brought before the House Ways and Means Committee before enough information was available to counter its deceitful claims. American Medical Association representative Dr. James Woodward testified before the committee that the AMA had not denounced the law sooner because they had just discovered that “marihuana” was actually cannabis – the medicine found in numerous healing products of that century. Very few people realized that the “deadly menace” they had been reading about on the front pages was actually cannabis. So when Congress passed the Marihuana Tax Act, this tremendous natural resource was suddenly illegal. Congress only agreed to prohibit cannabis because of a prejudiced lie. Anslinger convinced them that 50% of all violent crimes in the U.S. were committed by Spaniards, Mexican-Americans, Latin-

Americans, Filipinos, African-Americans and Greeks... and these crimes could be traced directly to marijuana. "I believe in some cases one cigarette might develop a homicidal mania," he testified in a hearing on the bill, also stating that "marijuana is the most violence-causing drug in the history of mankind." Later in the 1950's, under the "McCarthyism" threat of Communism, Anslinger claimed the exact opposite to incite fear – stating that marijuana will pacify soldiers so much they will not want to fight. Neither position represents the truth. An Associated Press report on June 22, 1971 illustrates how cannabis inhibits neither bravery nor compassion:

*A Congressional Medal of Honor winner says he was "stoned" on cannabis the night he fought off two waves of Vietcong soldiers and won America's highest military honor... It was April 1, 1970, when Mr. [Peter] Lemon, an Army Specialist 4, used his rifle, machine gun and hand grenades to smash a large attack on his position. He fought the enemy single-handed and dragged a wounded comrade to the rear before collapsing from exhaustion and three wounds. At a medical center, he refused treatment until more seriously injured men had been cared for. The dispatch quoted the injured hero as explaining: "It was the only time I ever went into combat stoned. You get really alert when you're stoned..."*

When the youth counterculture emerged in the 1960s, its embrace of drugs forced lawmakers to deal with a sudden demographic change: marijuana was no longer confined to Hispanics and blacks. The sons and daughters of the white middle class were also "taking-up" in significant and increasing numbers. Many of the young "hippies" also embraced the Hindu religion and customs. Cannabis has been used as part of religious celebrations in India for several millenniums and still is today. But the Nixon-era escalation of the war on drugs used marijuana as a legal pretext to attack the '60s counterculture and ethnic groups. Richard Nixon's White House tapes captured him in 1971 growling that "every one of the bastards that are out for legalizing marijuana is Jewish." The most successful propaganda of President Nixon – who founded the DEA – and other fanatical politicians, was lumping youthful cultural-political rebellion with black militance and ghetto heroin addiction. Cannabis prohibition is a remnant of that dark political era of our nation's history and even today continues to be used to persecute various groups of all races to further cultural and political agendas. As recently as July 2010, the U.S. government used the "drug war" as a political excuse to station 46 warships and over 7,000 troops in Costa Rica – an incredible amount of firepower over some grass.



## THE WORLD'S MOST USEFUL PLANT

Today we struggle with pollution, toxins and chemicals causing countless health and environmental problems. At the same time, our most valuable natural resource – hemp – is illegal. Below are just a few of hemp's numerous natural benefits. It is easy to see that many large industries, from logging and petroleum to cotton and pharmaceuticals, profit from cannabis prohibition.

### HEMP PAPER

Hemp produces 4.5 times more pulp per acre than trees and has a higher quality fiber than wood. Hemp is low in lignin, which means that hemp can be pulped using fewer chemicals than wood. Hemp paper does not turn yellow, is very durable and can be recycled more times. Washington State University produced hemp fiberboard that was found to be twice as strong as



wood-based fiberboard. The hemp plant grows quickly to maturity in one short season, where trees take several years.

#### HEMP PLASTIC

Hempen plastics are biodegradable. They decompose without harming the environment. Petroleum-based plastics, those most common today, ruin nature since they do not readily decompose. The process to produce the vast array of natural hempen plastics will not damage rivers with the toxic runoffs of petrochemical production. Hemp products are stronger, safer and completely natural – benefiting the environment right now and in the future.

#### HEMP CLOTHING

Extremely strong and durable, hemp clothing can be handed down for generations. Textile products made from hemp are generally better, cheaper, more durable, and ecologically safer. Cotton has a huge environmental impact, as it requires roughly half of the agricultural chemicals used on all U.S. crops. Hemp on the other hand grows well without herbicides, fungicides, or pesticides. Hemp bast fibers are longer, stronger, more absorbent (4x more than cotton), more mildew-resistant, and more insulative than cotton. This means that hemp fabrics keep you warmer in winter and cooler in summer than cotton fabrics.

#### HEMP FOOD

The hemp seed contains 35% protein, which is more than meat, dairy, fish or poultry. Hemp seeds are longer lasting and more digestible than soybeans. Hemp seeds contain all ten essential amino acids in the correct proportions required by humans, including gamma linoleic acid (GLA), a rare nutrient found in mother's milk. They are also high in dietary fiber and vitamins B, C and E. Hemp seed oil is one of the richest sources of polyunsaturated fatty acids found in nature. Hemp seeds are a *complete* source of nutrition – a “super food.”

#### HEMP MEDICINE

For over 4,000 years, cannabis has been one of the most widely used medicinal herbs. The Atharvaveda, written around the 2<sup>nd</sup> millennium BC, says it “lowered fevers, fostered sleep, relieved dysentery and cured sundry other ills... stimulated the appetite, prolonged life, quickened the mind and improved judgment.” The American Pharmacopoeia prescribed cannabis for more than 100 separate illnesses or diseases. No less than 80 state and national health care organizations – including the American Public Health Association, American Academy of Family Physicians, American Nurses Association, Leukemia & Lymphoma Society and The New England Journal of Medicine – support immediate, legal patient access to medical cannabis. This support is based upon thousands of patient reports and scores of medical studies.

The primary active ingredient of cannabis: delta-9-tetrahydrocannabinol (THC) was isolated in 1965 by Israeli scientists. Research from 1966-1976 concluded that cannabis is the medicine of choice for glaucoma, epilepsy, muscular spasms, tumor reduction, nausea control in cancer chemotherapy, epilepsy, emphysema, depression, and anorexia nervosa. An excellent dilator of the bronchi and bronchioles of the lungs, cannabis is an herbal alternative treatment for asthma sufferers, including associated chest pains, shallowness of breath, headaches, etc. (Marijuana Pulmonary Research, Tashkin, UCLA, 1969-1983). Scientists at the Scripps Research Institute discovered in 2006 that THC in cannabis inhibits the primary marker of Alzheimer's disease, and will “treat both the symptoms and progression of the disease” and may even prevent the onset of the disease. FDA-approved medications for Alzheimer's such as Aricept and Cognex are *considerably* less effective than cannabis at even *twice* their prescribed concentration. The chemical beta-caryophyllene contained in cannabis is proven to treat pain, inflammation,

atherosclerosis (hardening of the arteries) and osteoporosis (Gertsch, Proceedings of the National Academy of Sciences, June 2008).

Dr. Manuel Guzman won the 2005 Nobel Prize in Physiology and Medicine for his work with cannabis at the Department of Biochemistry and Molecular Biology I, Complutense University in Madrid, Spain. He established the therapeutic value of cannabinoids (the active components of marijuana) in the treatment of melanoma skin cancer, pancreatic cancer, breast cancer, leukemia, brain cancer and virtually all cancerous tumors. Cannabinoids kill cancer cells without harming surrounding healthy cells by blocking vascular endothelial growth factors that provide blood to cancer cells. Furthermore, the neuroprotection provided by cannabis makes it a potential cancer-preventing supplement.

Cannabis is living medicine... a priceless gift to humanity. "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth" (Genesis 1:29, *King James Bible*).

### THE WAR ON CANNABIS... AND ON REASON

No other plant can feed, clothe, heal, build, and provide for our world like cannabis. Yet this fact is suppressed by the DEA and other groups that portray cannabis negatively. Millions of dollars are funneled into the *Partnership for a Drug-Free America* and similar organizations to propagate the demonization of marijuana through advertising to brainwash the public. Much of their funding actually comes from alcohol and pharmaceutical companies (as stated on their own financial records) – because they fear increased cannabis usage will decrease their sales. But it's interesting to see how the public's growing knowledge of cannabis has forced the prohibition message to change over the years. They once decried cannabis as evil, but now struggle to perpetuate their myths as more and more people question their unfounded claims.



Around 125,000 people die each year from drinking alcohol (not including its involvement in 50% of all highway deaths and 65% of all murders). Similarly, more than 350,000 deaths each year are attributed to nicotine from tobacco smoking. Even legal medications contribute over 25,000 deaths each year (not including prescription errors). By comparison, it is virtually impossible to overdose on cannabis. In 1997, the New England Journal of Medicine stated that a dosage of 1500 pounds (680 kg) of Cannabis would have to be consumed within 15 minutes to reach the LD<sub>50</sub> (median lethal dose). In all of human history, the number of deaths from cannabis is ZERO! That's right, our society has unwittingly outlawed a safe product: cannabis; but condones the use of the true killers: alcohol and tobacco. As Bob Marley said: "Herb is the healing of a nation, alcohol is the destruction." Bing Crosby also summed it up well when he said: "I never heard of anyone beating on their wife or kids after smoking pot."

Cannabis is not a hallucinogen. Neither is it a narcotic or depressant – such as alcohol – that impairs motor skills and judgment. Cannabis is psychoactive, simply meaning it affects the mental process. Another substance in this same category is caffeine. Consider that the next time you're drinking coffee, tea or soda. The three primary effects of cannabis are: euphoria, relaxation, and change in perception. Other positive effects of cannabis include: mood lift, laughter, stress reduction, increased sensory awareness, enhanced creativity, pain relief and reduced nausea. Negative side-effects include many of the same as excess caffeine, and can

include anxiety, racing heart, impaired concentration, paranoia or panic, dry mouth, blood-shot eyes, difficulty with short-term memory and other temporary responses – typically resulting from over-consumption. None of the side effects last beyond the effective period (typically two to three hours) and may be reduced or eliminated by practicing moderation. Studies in the U.S. and UK show cannabis to have a negligible effect on actual driving performance (UK Dept. of Environment, Transport and the Regions Road Safety Division Report, 2000 and U.S. DOT Nat'l Highway Traffic Safety Administration Report, 1993).

The different varieties of cannabis plants produce different responses. Sativa varieties create a clear, energetic, cerebral “high”, while Indica varieties tend toward a heavier, physically “stoned” feeling. Mixed varieties range between the two. Some phenotypes have even been bred to exhibit a wide range of scents and flavors. The genetics for commercial cannabis were hybridized in the 1960’s and 70’s, just like most other crops. There is nothing in cannabis today that wasn’t in it decades ago. Some of the modern improved strains may have higher potency, but this only means that less is consumed for equal effect.

A “drug” is anything that alters normal bodily function. When classifying drugs, there are physically addictive and harmful “hard” drugs like alcohol, tobacco and cocaine; then there are milder “soft” drugs like aspirin, caffeine and cannabis. Arguably the mildest of those are cannabis and caffeine since aspirin can be easily overdosed. The fact is that virtually every person uses some type of “drug” and moralizes their own personal drug preferences. It is possible for some cannabis users to develop a psychological addiction, similar to caffeine addiction – hence the importance of moderation. But extensive research has proven that cannabis is not physically addictive or a “gateway” to hard drugs (Institute of Medicine’s Division of Neuroscience and Behavioral Health, 1999 and RAND Corporation, 2002).



The human brain produces its own cannabinoids which perform numerous functions in multiple areas of the body including: appetite, pain sensation, mood and memory (Nov 2004, *Scientific American*). One such cannabinoid the body makes is anandamide. The name originates from the Sanskrit word “ananda” – which translates as “bliss”. Marijuana cannabinoids bind to anandamide receptors similar to the way caffeine binds to adenosine receptors. A study published in 1999 by Johns Hopkins University examined the effects on the cognition of 1,318 participants over a 15 year period. Researchers reported “no significant differences in cognitive decline between heavy users, light users, and nonusers of cannabis” noting the “absence of long-term residual effects...” Also, cannabis smoke does not increase the risk of lung cancer for even the heaviest smokers, despite containing more carcinogens, due to the amazing anti-tumor properties of THC. Harvard University researchers demonstrated that THC cuts common lung cancer tumor growth in half and reduces its ability to spread (American Association for Cancer Research, 2007). However, cannabis does not have to be smoked. It can be vaporized cleanly at low heat with a vaporizer – eliminating combustion and smoke.

Evidence of cannabis smoking by our ancestors can be found as far back as the Neolithic Age, as indicated by charred cannabis seeds found in a ritual brazier at an ancient burial site in present day Romania (Richard Rudgley, 1999, *The Lost Civilizations of the Stone Age*). Also, a cannabis stash was discovered in 2008 in an ancient Chinese tomb dating back 2,700 years. In ancient Germanic culture, cannabis was associated with the Norse love goddess, Freya. Cannabis is part of our cultural, spiritual, and physiological heritage, and was well-integrated into our most stable and long-surviving cultures. So if you want to know the long-term effects of cannabis usage... just look in the mirror! Cannabis has been utilized over millennia throughout the world for everything from medicine to spiritual sacrament to aphrodisiac.

Despite being illegal, cannabis is the leading cash crop in the U.S. – exceeding the value of corn and wheat combined (Jon Gettman, *The Bulletin of Cannabis Reform*, No. 2, Dec 2006). Nearly half of all Americans, 47 percent, have ignored harsh laws and used cannabis at least once according to a Time/CNN poll in October 2002. Also, cannabis usage is distributed throughout the lower, middle and upper classes. Many professional athletes and Olympic medalists openly admit to using cannabis. Yet every year, over 750,000 Americans are arrested for simple marijuana possession – far more than the total number arrested for all violent crimes combined; including murder, rape, robbery and aggravated assault. Many believe that the prosecution of passive marijuana offenders is largely responsible for the early release of violent criminals. The United States has 5% of the world's population, but 25% of the world's prisoners. This is outrageous! Cannabis prohibition creates criminals out of people who harm no one, and makes a joke of our legal system. Cannabis is arguably the very best that nature has to offer mankind, and it is illegal. When nature is illegal – freedom is a lie.



World acclaimed economist Milton Friedman led a group of more than 500 economists from around the U.S. in 2005 to publicly endorse a Harvard University economist's report on the costs of marijuana prohibition and the potential revenue gains from the U.S. government instead legalizing it and taxing its sale. The report concluded that ending marijuana prohibition would save \$7.7 billion in combined state and federal spending, while taxation would yield up to \$6.2 billion a year. The combined effect of legalization and taxation would provide almost a \$14 billion annual boost to the U.S. budget. Friedman stated, "There is no logical basis for the prohibition of marijuana. \$7.7 billion is a lot of money, but that is one of the lesser evils. Our failure to successfully enforce these laws is responsible for the deaths of thousands of people in Colombia. I haven't even included the harm to young people. It's absolutely disgraceful to think of picking up a 22-year-old for smoking pot. More disgraceful is the denial of marijuana for medical purposes."

Cannabis is currently classified as a Schedule I drug by the U.S. Drug Enforcement Administration, defined as highly addictive, easily overdosed and no medical benefit – along with PCP, meth and heroine. This is obviously incongruous with truth or reason and is offensive to any intelligent observer. The DEA has yet to repudiate the 1988 finding of its own administrative law judge, Francis Young, who concluded after extensive testimony that: "marijuana in its natural form is one of the safest therapeutically active substances known to man."



Americans should not be restricted from growing or using the cannabis plant. President Jimmy Carter told Congress in 1977 that: "Penalties against drug use should not be more damaging to an individual than the use of the drug itself. Nowhere is this clearer than in the laws against the possession of marijuana in private for personal use." Despite DEA propaganda, many people are now realizing the truth about the "kind" herb. Cannabis has the potential to greatly enhance our lives through industry, environment, health and many other areas. Cannabis prohibition is based upon the prejudices and lies of a previous generation and the ignorance of many people today. Prohibition must be repealed. The truth will no longer be suppressed; cannabis prohibition causes far more damage than the cannabis plant ever has... and this, by definition, makes that law *unjust*.

*"One has not only a legal, but a moral responsibility to obey just laws. Conversely, one has a moral responsibility to disobey unjust laws."* – Martin Luther King, Jr.

*"If a law is unjust, man is not only right to disobey it, but he is obliged to do so."*  
– Thomas Jefferson

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## CANNABIS QUOTES

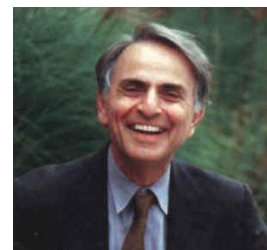
Here are a few famous (and infamous) quotes about marijuana by well-known public figures:

*"I now have absolute proof that smoking even one marijuana cigarette is equal in brain damage to being on Bikini Island during an H-bomb blast."*  
– Ronald Regan (pictured)      Really Ronnie?... REALLY?



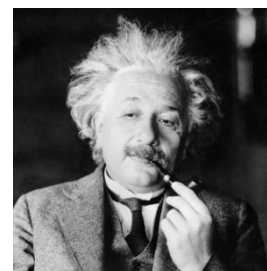
*"The American Medical Association knows of no evidence that marijuana is a dangerous drug."* – Dr. William Woodward, in the Marijuana Tax Act hearings

*"Casual drug users should be taken out and shot."* – Daryl Gates, LAPD Chief from '78 to '92 and founder of the DARE (Drug Abuse Resistance Education) program... and obviously lacking compassion to a sad degree



*"The illegality of cannabis is outrageous, an impediment to full utilization of a drug which helps produce the serenity and insight, sensitivity and fellowship so desperately needed in this increasingly mad and dangerous world."* – Carl Sagan (pictured)

*"Make the most you can of the Indian hemp seed and sow it everywhere."*  
– George Washington

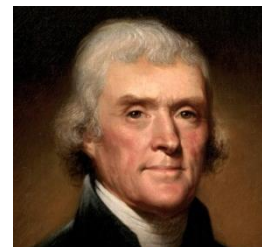


*"The prestige of government has undoubtedly been lowered considerably by the prohibition law. For nothing is more destructive of respect for the government and the law of the land than passing laws which cannot be enforced. It is an open secret that the dangerous increase of crime in this country is closely connected with this."* – Albert Einstein (pictured), regarding marijuana prohibition

*"It was the only good thing about that war."* – Franklin Pierce, in a letter to his family where he references smoking hemp with his troops in 1847 during the Mexican-American War

*"Hemp is of first necessity to the wealth and protection of the country."*

– Thomas Jefferson (pictured)



*"Why use up the forests which were centuries in the making and the mines which required ages to lay down, if we can get the equivalent of forest and mineral products in the annual growth of the hemp fields?"*

– Henry Ford

*"Why is marijuana against the law? It grows naturally upon our planet. Doesn't the idea of making nature against the law seem to you a bit... unnatural?"* – Bill Hicks



*"I think people need to be educated to the fact that marijuana is not a drug. Marijuana is an herb and a flower. God put it here. If He put it here and He wants it to grow, what gives the government the right to say that God is wrong?"* – Willie Nelson (pictured)



*"There are a lot of prominent people, I'm not going to mention any names, Harrison Ford, Ted Turner, who smoke a lot of pot and need to stand up! I'm not going to mention any names, I would never do that."* – Bill Maher

*"Booze is the real culprit in our society. Booze is traffic accidents, booze is wife beating. In my life I've seen many doctors and psychiatrists, and all of them have told me that I'm better off with pot than with booze."*

– Rodney Dangerfield (pictured)



*"Well, as I understand it, the main supporters (of cannabis prohibition) are beer companies and pharmaceutical companies. I'd like them to show me the dead bodies from marijuana. But they can't because there aren't any."* – Jack Herer (pictured)

*"The first thing you realize is that you can't touch some of the biggest drug dealers in the world because they're protected by the CIA or they're protected by the state department. Everyone from Carlos Salinas de Gortari of Mexico to the contras in Nicaragua to the Mujahedin in Afghanistan. Those of us who work overseas realize this whole thing is a Three-card Monte game, that it's a lie."* – Michael Levine, former DEA agent and described by 60 Minutes as "America's top undercover cop for over 25 years"

*"If the words 'life, liberty and the pursuit of happiness' don't include the right to experiment with your own consciousness, then the Declaration of Independence isn't worth the hemp it was written on."* – Terence McKenna

As you can see, you are in very good company with regard to cannabis. Many of the most intelligent, successful and compassionate people recognize the numerous benefits of cannabis. This amazing plant is certainly worthy of our respect and reverence. Next we will look at several aspects of cannabis botany that will help you to be a successful grower...

## **Chapter 2 – Botanical Basics**

Cannabis is an annual, dioecious, flowering herb. “Annual” means it survives for only one growing season, and then for propagation relies on seeds to sprout the following spring. “Dioecious” (pronounced dee-o-a-shus) means that cannabis has both male and female plants, instead of having both male and female reproductive parts on the same plant (called monoecious). The male plants produce pollen and the female plants, if they are pollinated, produce seeds. “Flowering” of course means that both male and female plants have flowers for reproduction.

The dioecious nature of cannabis is very important for growing. This is because male plants don’t really produce an appreciable amount of THC. So unless you want to produce seeds, most growers remove the male plants since the only thing they are really good for is making pollen. Also, growers typically remove the males because an unpollinated female will produce more THC than one that has been pollinated and is now using part of its energy to produce seeds. Unpollinated female cannabis is sometimes called “sin-simella,” which is a Spanish term meaning “without seed” and typically refers to strong weed. However, if you decide to produce seeds, or if you just make a mistake and your females get pollinated, don’t worry... your cannabis will still have plenty of THC. Then as a bonus, you will also have seeds for your next grow. A single good-sized female plant can produce hundreds of seeds. Also, a single male plant can pollinate dozens, if not hundreds of female plants.

### **FOUR THINGS CANNABIS PLANTS NEED TO GROW**

1. Warmth – The optimal temperature range for cannabis is from 75 to 86°F (24 to 30°C). Temperatures above 90°F (32°C) and below 60°F (15°C) can decrease THC potency and slow growth, though some strains of cannabis are better suited for temperature extremes. Sativa varieties are better adapted to high heat, while indica varieties are better adapted to cold.

2. Light – Cannabis uses chlorophyll to absorb light energy. It is also photosensitive, meaning that it will begin to flower when the day length reaches a ratio of 12 hours light to 12 hours dark, as in the autumn. Controlling the light cycle is a tremendous advantage of indoor growing.

3. Water – Most tap water works very well for growing cannabis. However, sometimes plants can be damaged by the chlorine used in water treatment. So it is recommended that you let tap water sit in an open container for at least an hour in order to allow the chlorine to evaporate out of the water before using it on your plants.

4. Nutrients – Cannabis grows best with a full spectrum of nutrients. Different stages of the plant’s life cycle will utilize different percentages of these nutrients. The early growth stage requires more nitrogen, while the later flowering stage requires more phosphorous. However, providing a constant supply of the full spectrum is all that is really necessary. Just for reference, the nutrient requirements of cannabis are very similar to that of the tomato plant.

### **SIX BASIC STAGES IN CANNABIS LIFE-CYCLE**

1. Germination – The initial stage of growth occurs when a seed has enough moisture and warmth to germinate. It can take anywhere from 12 hours to 9 days for the embryo to crack open and produce a root. The root fixes itself into the soil and pushes the newborn seedling up and out the soil surface. Then two embryonic leaves open outwards to receive sunlight, pushing

the empty seed shell away from the seedling. This first pair of small leaves with rounded ends are called cotyledon leaves. The plant is extremely fragile during this stage.

2. Seedling – The second pair of leaves to emerge has the typical pointed tips and serrated edges associated with cannabis, as do all subsequent pairs. This stage lasts 1 to 4 weeks.

3. Vegetative – Throughout the spring and summer months, the plant grows at the rate which it can absorb nutrients and light energy. It is normal for some of the lower leaves to drop off. The plant produces a thicker stem, thicker branches and more fingers on the leaves. As the plant size increases, the number of leaflets on each leaf will increase in number from three, five, seven, to as many as thirteen. The sex of a plant cannot readily be determined until flowering, however, most female plants are shorter and branchier with more leaves at the top.

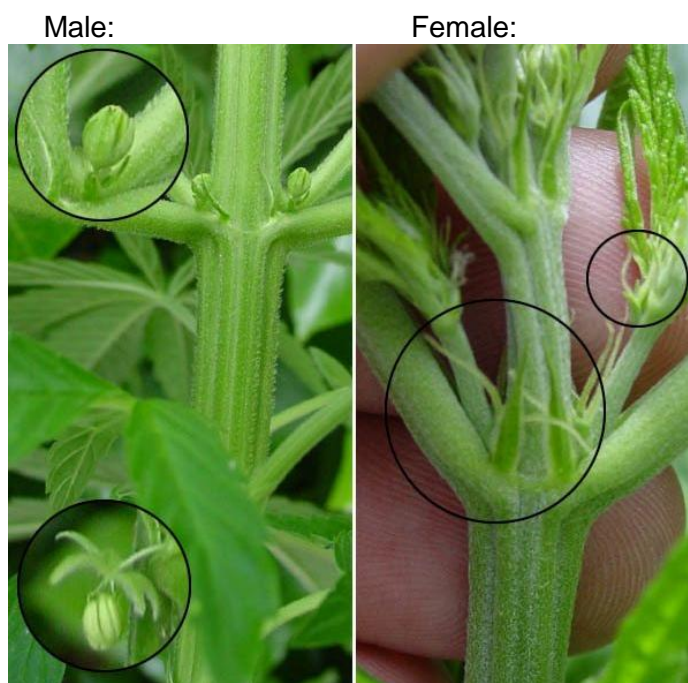
4. Pre-Flowering – In autumn, the days shorten so there is a 12-hour light/dark cycle. This is when the plant begins producing more nodes – the intersection of branches and stems. These nodes are where the plant grows calyxes, the tiny buds that will later form either male or female flowers. This stage lasts 10 to 14 days and during this time, the plant stretches upward and may double or more in size. That is why pre-flowering is sometimes called “the stretch”.

5. Flowering – During this stage, which can last anywhere from 6 to 22 weeks, the plant begins to fill-out. The male calyxes form little clusters of pollen sacks called stamens that look like tiny clusters of grapes. While the female calyxes extend a pair of hairs, called pistils or stigmas. The plants will show their sex within the first two weeks of flowering. Prior to this stage, there is no easy way to determine if the plant will be male or female.

6. Seed Production – The male pollen sacks eventually open and drop white, powdery pollen. This is carried by even the minutest air currents to the female flowers and inside each pollinated female calyx, a seed will form. The female pistils change color from white/cream to orange/brown during this time, until the 1/8-inch seed is fully ripe and bursts out of the calyx, falling to the ground to start the process anew. Note that even if not pollinated, the pistils will still change color.

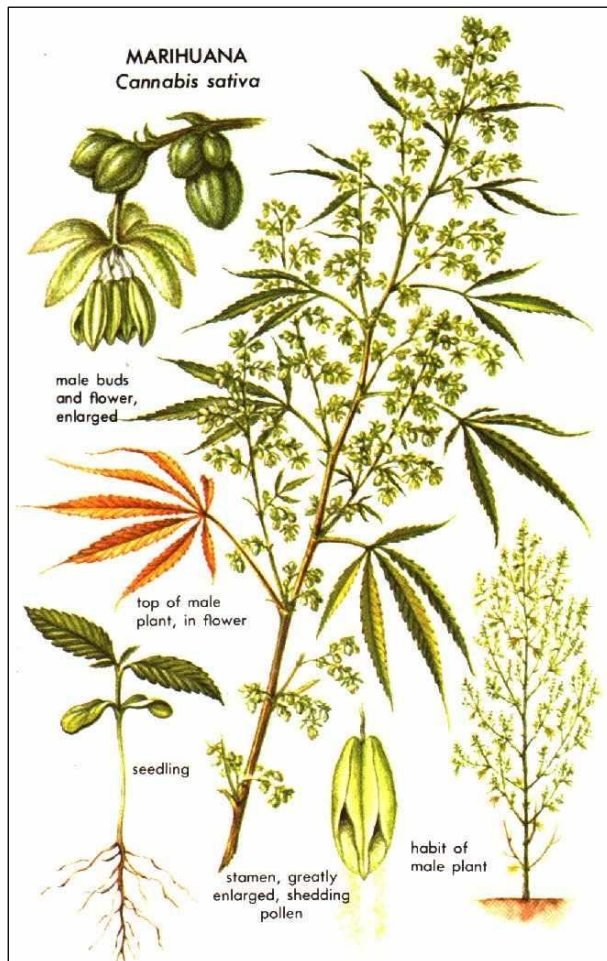
## SEXING CANNABIS PLANTS

Determining whether a cannabis plant is male or female is referred to as “sexing.” As mentioned above, this is only readily possible well into the flowering stage. It is at the intersection of branch and stem, called a “node”, where the calyxes form and develop into either male or female flowers. These are indicated in the images here and on the next page. Do not be in a hurry to remove the males, give them time to develop far enough so that you are absolutely certain of their sex. That pair of little white hairs, indicating a female, is one of the greatest sights you will see as a grower.

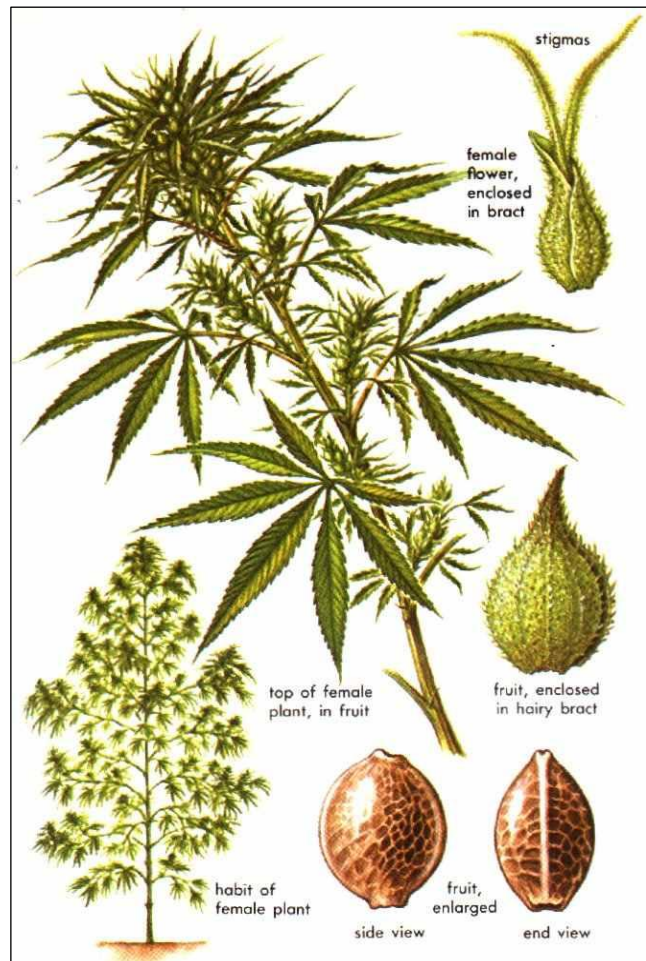




Male:

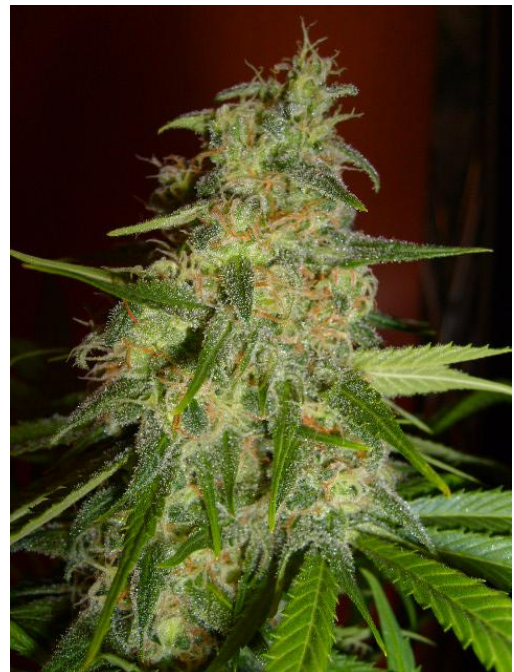


Female:



## TRICHOMES

The buds and small leaves are the parts of the plant that produce the most “trichomes” – tiny glandular outgrowths of resin which cover the surface of these parts, giving them the appearance of being frosted with sugar, as in this image. If you look at the trichomes under a magnifying lens, you will see that they actually resemble a microscopic mushroom (top image next page). New trichomes are clear. But as the plant matures, they become cloudy or milky in appearance. Toward the end of the plant’s life, they turn amber in color. The trichomes are the only part of the plant that contain THC, along with other cannabinoids, terpenoids and various compounds. It is worth noting that the level of THC a plant can produce is genetic. However, the quantity of THC can be increased with good growing techniques. In other words, the percentage of THC may be relatively low, but a lot of

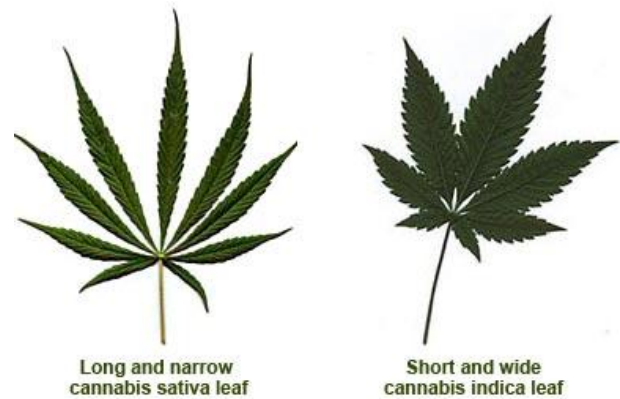


this low-percentage THC on a plant will make high-quality grass. Scientists tell us the function of trichomes is to help protect sensitive areas of the plant from frost, insects, herbivores and diseases... which is true. But there is much more to the story when you consider how cannabis and humans obviously have a symbiotic relationship. THC is a way for the plant (Mother Nature) to communicate with us.



## VARIETIES

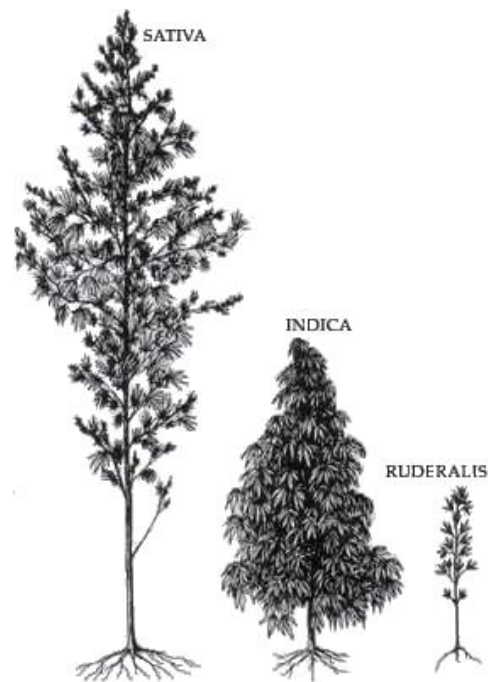
There are basically three varieties of cannabis: sativa, indica and ruderalis. All three have medicinal applications. This is due to the presence of THC and other cannabinoids, such as CBD. Both THC and CBD have the same molecular formula, just connected in a different order. THC produces the “high” and CBD gives the THC a more sedative effect. So the ratio between those two cannabinoids is what largely determines the type of effect experienced.



Sativas developed between the equator and the 50<sup>th</sup> parallel in areas like Colombia, Jamaica, Thailand, Nigeria and Sumatra. They grow 5 to 15 feet tall and due to the high ratio of THC to CBD, produce a cerebral “high” – sometimes called a “head high” – that is much more clear and active. My personal favorite!

Indicas developed around the 30<sup>th</sup> parallel in the Hindu Kush region of the Himalayan foothills in countries like Afghanistan, Pakistan, India and Nepal. They are shorter, usually under 5 feet, and due to a higher ratio of CBD to THC, produce a “stoned” feeling – sometimes called a “body high” – that is more heavy and contemplative. It may also be referred to as “couch-lock” since it can make a person feel like they are “locked” onto the couch where they are sitting.

Ruderalis comes from Russia. It is a small plant, growing to only about one foot in height. It is low in THC, but high in CBD. The notable thing about ruderalis is that it automatically flowers at a certain stage of growth, regardless of day length, called “auto-flowering”. So this variety is occasionally used to produce fast maturing and automatically flowering strains by crossing it with other varieties.



Most modern cannabis strains are a combination of sativa and indica. Ruderalis is rarely used. As a side note, there are also varieties of cannabis bred for industrial uses, typically called “industrial hemp.” These industrial types do not produce THC in any appreciable amount, so while great for things like fabric and food, they have no medical or other personal applications.



## Chapter 3 – The Growing Sanctuary

Now that you know the basics of cannabis botany, we will apply that knowledge to building an indoor growing sanctuary. This is where you will have the most control over your plants, helping them to achieve their maximum potential; and also where you and your plants will be the most protected. We will begin our planning with this critical subject...

### SECURITY

Indoor growing provides protection from insects, herbivores, inclement weather and all kinds of risks that can damage your plants outdoors. However, none of those are the greatest concern. The chief benefit to indoor growing is protection from unjust laws. Outdoor cannabis is too easily discovered. Even if you live out in the country, police use planes, helicopters and even satellite images to pinpoint cannabis plots. It is simply not worth the risk.

Indoor growing is very secure. It is estimated that only 1% of indoor cannabis growers ever get into trouble with the law. That is a very comforting statistic. Even if you are suspected of growing, the only way for law enforcement to gain access to your home is if they have a search warrant, or if you invite them in. So once you are growing, in the very unlikely scenario that the police knock at your door and ask to enter, do NOT let them in without a search warrant. If they start asking about marijuana, the best thing to do is simply close your door and lock it. Otherwise they could falsely claim that they saw or smelled something that implicated you – giving them the right to enter. The law does not give them access without a warrant or probable cause, and if they have a warrant, they often don't bother knocking. I highly recommend that everyone, especially cannabis growers, learn their rights for dealing with law enforcement. There are many excellent resources for this on the internet.

Of the 1% of indoor cannabis growers who get into trouble with the law, the vast majority of them make the mistake of revealing to other people that they are growing. So the first thing to do before growing cannabis is make commitment to *NEVER TELL ANYONE YOU GROW CANNABIS*. This is rule #1. Following on the tail of that rule is a second that is equally important. Just like peace and love, cannabis should only be given freely, never sold. Selling cannabis draws attention and invites problems, so *NEVER SELL CANNABIS*. This is rule #2. If you share your home-grown weed with friends, don't tell them where you got it, and don't offer to sell any. They will just be glad that you are sharing. If they do ask you where you got it or if they can buy some, then make-up something that allows you to follow these rules. Even though you may think a friend is trustworthy... they may slip... they may misjudge someone else they think is trustworthy... they may be coerced by law enforcement into divulging the information... literally anything can happen. But if you follow the rules, then you won't have that problem. Your spouse must also be committed to following the rules. It is in the spirit of rules one and two that I have set an example by writing this guide anonymously and providing it freely.



If all this talk about security is making you wonder what other mistakes can get you into trouble, you are already thinking like a good grower! The answer is that there are seven major mistakes, which I address with a total of seven security rules. Like the first two you have already learned, the following are all numbered. Beyond these, just keep in mind that a good grower does not leave anything to chance. No need to be paranoid, but definitely a need to be alert and smart!

## GROWING SPACE

The minimum amount of space for growing that I consider practical, or at least reasonable, is about 18" long x 24" wide x 48" tall. Growing can be accomplished with less space, but any increase in size is greatly beneficial. Some growers have a spare closet to dedicate to growing, but there are many other options. Two of the best, which are also very discreet, are an old armoire or non-working refrigerator. Both of these provide adequate space, but like the closet will need modification. There are four requirements for any good indoor growing space:

1. Light Proof – Since we use the photosensitive nature of cannabis to precisely control its flowering, we must have the ability to make the grow area completely dark... the same as a photography dark room. A way to test this is to place yourself into the growing space, close the door and wait a few minutes for your eyes to adjust to the darkness. If you can see your hand in front of your face, there is too much light. It should be perfectly dark. The growing space should also not emit any light or glow from the outside. Sealing out light is achieved by masking the edges of the door with weather-stripping and/or thick plastic, such as panda film and Mylar tape. The reason I like panda film is that one side is white and the other side is black. So the white side can face the interior and help reflect light back to the plants. Even though we don't want light to enter the space from the outside, we do want everything within that space to be reflective to help maximize our light for growing. The best reflective surfaces are either pure white or reflective Mylar. Do not use glass mirrors in your growing space because they actually absorb much of the light spectrum that plants need to grow.

2. Fresh Air – Just like you, plants need a fresh supply of air. So if your growing space is in a closet that does not have an air vent, you will need to cut a hole in the ceiling and attach a tube that vents air from the attic, outside or your HVAC system. You will also need a return air tube that vents into the attic or outside and includes a small in-line duct fan that plugs into a standard outlet. If your grow space is some type of enclosure (i.e. armoire or old refrigerator), you will need intake and return vents in the back. Place the intake vent near the bottom and the return air with the fan near the top where heat accumulates. These should have flexible ducting attached to them that is bent behind the unit in a way that is hidden from view and prevents light from entering or exiting the space. In addition to fresh air, the air vents also provide temperature control. Once we start running a light inside the grow space, it will heat-up very quickly. So a very important function of the fresh air venting is heat removal. Monitor the interior temperature with a small wall thermometer. If your grow space is in an attic or garage that is not temperature controlled, this limits your growing season to the colder months of the year. That is not a problem, since one or two crops per year will provide plenty of grass for most people's needs.

3. Electricity – The growing space must have access to electricity since we need to power the grow light, vent fan and other small devices. One outlet is plenty, but you will need a grounded power strip that has surge protection and will accommodate at least four to five plugs. Something that must be mentioned here is that you will have both electricity and water inside your growing area... and these things DO NOT mix. So it is very important that you keep the plugs up off the floor where they are less likely to get splashed with water in case you accidentally spill some while watering the plants. There have been more than a few growers who got busted because they had a house fire – either originating in the grow area or somewhere else in the home – and the fire department discovered the cannabis, then reported it to police. So good electrical practices will protect you from fire... and the law. This is rule #3.

4. Secure – Any indoor grow space must be protected with some type of lock. If it is a closet, then simply change-out the door handle to one that locks with a key. If it is in a cabinet, armoire



or refrigerator, then use a latch with a small padlock attached to it. The importance of a lock should be obvious... if you have a visitor who gets curious... if there is a medical emergency and rescue workers enter... if anything happens beyond your control, then there is something that prevents others from gaining easy access to your growing sanctuary. This is rule #4. You also need to have prepared a good explanation to tell anyone who questions why it is locked.

## LIGHTING

The grow light is probably the most expensive piece of equipment you will purchase for indoor growing. In the old days, the choices for grow lights were: large fluorescent, metal halide (MH) or high pressure sodium (HPS). These are the same types of lights used to illuminate large warehouses and gymnasiums. It is difficult to produce enough light with fluorescents, so most growers used MH or HPS lights. The problem with them is that they produce a TREMENDOUS amount of heat and use a LOT of electricity.

Today, there is much better technology: LED grow lights. These produce a fraction of the heat and use a fraction of the electricity compared to any other type of grow light. They are also much smaller and last several times longer. A 90-watt LED grow light like the one pictured here is perfect for any grow space up to a size of around 10 square feet. It even exceeds the luminous output of a 400-watt MH or HPS. The cost an LED grow light is currently around \$200 to \$300, which is actually about the same amount you would spend for a comparable MH or HPS set-up with bulb, ballast and reflector. However, the LED grow light will easily pay for itself through reduced electricity and longer life span. The high heat generated by MH and HPS lights can result in a fire hazard, and will certainly burn any plant that grows too close. Also, police in some areas have used infra-red heat detecting equipment to identify homes that are venting a large heat plume from high-heat grow lights. Police have even worked with power companies to determine whether high electricity usage may be patterned for running grow lights. All these issues are easily avoided by using an LED grow light. This is rule #5.



You will need a sturdy eye-bolt in the ceiling of the grow area and a small hanging chain so you can easily move the light to the proper height. You will also need an electric timer to adjust the length of time that the light runs throughout a 24-hour period. You may also want a regular light (like a reading lamp) inside the growing sanctuary since the intense red/blue color of the LED grow light will make it difficult to see colors clearly. So a reading lamp will help you to see better when you are working on your plants. Just be absolutely certain to turn the reading lamp off when you are done it so that it doesn't generate extra heat or disrupt the light schedule during the flowering stage – very important!

## HYDROPONICS

The most efficient way to grow indoors is hydroponically, which simply means without soil. Many growers believe that plants grow faster in hydroponics than in soil... and I agree. Studies indicate that hydro is as much as 1/4 faster than soil growing. With hydroponics, we are able to provide everything the plant needs at the optimum levels. Also, once we have set-up the hydroponic system, it is much easier to maintain than soil growing. A hydro system can even be left alone for several days in the event that the grower is traveling or just busy. Plus you don't have to haul messy soil inside your home. Hydroponic growing is great!

There are many types of hydro systems. The type that we will use is the simplest; it is called a Deep Water Culture (DWC) system. But most growers refer to it as a “bubbler”. Here’s how it works: a plastic container with a lid is filled with water. This reservoir can be anything such as a 5-gallon bucket or a 12-gallon Tupperware container like the one pictured. The advantage of a Tupperware container is that it can accommodate many plants – all using the same water/nutrient reservoir for simplicity and efficiency. The reservoir must be opaque, not clear, so that light cannot reach the water and start to grow algae, which will consume nutrients needed by the plants. A hose from a small aquarium air pump feeds into the container to provide constant oxygenation of the water through bubbling. Without a constant supply of air bubbling through the water, the plants would soon die. The end of the hose may be attached to some type of diffuser, as in an aquarium, but that is not necessary. A simpler solution is to just allow the air to free-flow from the end of the air tube, keeping the end submerged by attaching a rock or other type of inert weight to it with a string or plastic zip-tie.



The lid of the container has round holes cut in it that are sized for 3.75” plastic net pots to set in them with only the top lip of the net pot holding it there. The net pots are filled with hydroton grow rocks as in the picture. These are ceramic pebbles that help hold the plant in place and can be reused indefinitely. Finally, the plant itself is sprouted in a 1.5” rockwool cube that is nestled within the grow rocks as in the picture, and can be reused as well. Rockwool is an inert material that provides a great growing medium for the seedling since it holds moisture exceptionally well. Rinse it very thoroughly before using. Liquid hydroponic nutrients are regularly added into the reservoir throughout the growing process, along with water as needed. A 12-gallon reservoir like the one pictured above works well with a total of six net pots. However, I recommend growing only four or five plants since it is just as easy to grow the same amount of weed with four or five larger plants instead of six slightly smaller plants. In that spare 6<sup>th</sup> hole, you should keep a net pot filled only with grow rocks so that light does not shine into the tank. You will find that the spare hole without a plant is very convenient for adding water and nutrients so that it doesn’t require lifting the lid from the reservoir. That will make the maintenance process much easier and greatly reduce spills or damage to the plants.

One more very important factor with hydroponics is the pH of the water – how alkaline or acidic it is. Cannabis plants prefer a pH level of 5 to 6 and anything outside that range can result in nutrient lock-out where the plant suffers from deficiency. If your plants have any kind of spotting or discoloration, then pH is the first thing to check. The two main ways of determining pH are test strips and electric testers. Test strips are the cheapest. There are also inexpensive additives that will raise or lower the pH level... that is what I use. But I have heard about some growers adjusting pH by lowering it with citric acid such as lemon juice, and raising it with baking soda. Most tap water is slightly basic, and needs to be lowered. Also, everything you add to the water, such as nutrients, will change the pH. Take it very slow when adjusting pH so that you don’t over-correct and cause more problems.

## NUTRIENTS

There are many types of hydroponic nutrients. Even different types for vegetative and flowering growth stages since those different stages utilize different percentages of nutrients. But since I like simplicity... so I use a one-part, full-spectrum nutrient all the way through the entire growing process and I get great results. Synthetic nutrients work fine, but many growers prefer organic-sourced nutrients. If discussing hydroponics at a nursery, you can always tell them you are growing tomatoes, since they have basically the same nutrient requirements.

When adding nutrients to hydroponics, do not use very much – especially with young plants. Almost every grower burns their plants at some time. That is because the temptation is great to add more nutrients, thinking this will help the plants grow better/faster. Nothing could be further from the truth. The plants can only absorb nutrients at a certain rate. So any extra you give them will literally burn them. When I say “burn” – I mean that the roots will wither



and the leaves will become brown and crispy, as in this image. Here's how to avoid nutrient burns: Let's say that your nutrient package says to add 2 tablespoons per gallon. That is the highest recommended rate for fully mature plants. But this rate can be overstated significantly. Furthermore, new seedlings barely need 1/10<sup>th</sup> of that rate. As they grow, you can increase the nutrients very gradually once a week or so – giving them time to adjust after each new feeding. But even fully mature plants often grow great with only half the recommended rate. As long as the plants look strong, healthy and dark green, don't worry about a shortage of nutrients. Some other products I use along with a full-spectrum liquid nutrient are liquid bio-stimulants such as Superthrive and Vitazyme. I think they work very well for providing additional growth factors. I also like to use a liquid root activator made from pecan shells to help stimulate root growth. Finally, I use liquid silica to improve stress resistance and strengthen cell walls. Be certain that everything you use is approved for use on plants for human consumption.

## ODOR CONTROL

Cannabis plants produce a strong smell that is very distinctive, often similar to skunk odor. The smell may be stronger at different stages of growth, but it is almost always there. Not everyone is able to identify it, so if someone does smell it and they ask you about it, you can always attribute it to something like a cleaning product, new paint or anything else with a strong smell. You can also mask the smell of cannabis to some degree with scented candles, incense and air freshener. However, there are many people who can identify the smell, especially police, so it is best to control odor at the source. This is rule #6. Here are two methods that I recommend:

Charcoal Filters are air filters that attach to the return air vent and trap odor particles in the charcoal. A filter will need to be replaced periodically, but the advantage of charcoal filters is that they can be used for air that is vented into a living space. This is my preferred method.

Ozone Generators are electronic devices that generate ozone, which is three oxygen molecules bound together. Ozone is produced in our atmosphere by lightning, and accounts for the peculiar odor after a lightning storm. The ozone binds to the odor molecules produced by the cannabis, effectively neutralizing them. The disadvantage of ozone is that even in low

concentrations, it is hazardous to the upper respiratory tract over a period of time. So an ozone generator should never be used on air vented into a living space – it must be vented outside. Also, a good ozone generator is fairly expensive.

It is also helpful to know that some varieties of cannabis produce much less odor than others. In fact, some varieties produce very little odor or even an odor that is not at all like typical “skunky” cannabis. So picking a low-odor variety is another way to help reduce this risk. That leads us to the variety selection process...

## SEEDS

It is easy to obtain seeds from one of the many reputable seed companies online. This is a very safe process, and here's how it works... go online and pick the seeds you want to order. They typically come in a package of 10 seeds that cost anywhere from \$20 to \$100, depending on the strain. Print out the order form, fill it out with your selection and your mailing address, then enclose concealed cash. Do not send coins, just include an extra dollar to cover any difference. If you are in the U.S. it may take several weeks to receive your package since the seed companies are in Europe. Different companies use different methods of “stealth packaging” to hide the seeds from inspectors by placing them inside another random product. The process works great!



Now you are probably thinking: “what if a mail inspector actually manages to find the seeds in my package, won't they call the cops on me?” Actually, no. The reason is that there is no way to prove that you ordered the seeds. You could always say that someone else framed you by having the seeds delivered to your address, and there is no way to prove differently. So in the extremely rare instance that seeds are discovered, the mail inspector disposes of them and includes a form letter in the package which tells the receiver that an illegal product was confiscated from the package. The good news is that if you contact the seller and are very nice about it, they may send you another shipment packaged differently in order to keep you as a customer. Most seed companies have excellent customer service. I will also mention that seed companies do accept credit cards, and I'm certain that many people order that way with no problems at all. I've never heard of anyone being busted by tracing their credit card seed transaction. However, that form of payment is obviously not as secure as sending cash.

Seed companies typically carry around 20 to 50 strains, along with descriptions to help you choose. The primary decision is whether to get a variety that is mostly sativa, mostly indica or an even mix. Also keep in mind what was mentioned about low-odor strains. But considering that all commercial strains are carefully bred to meet growers' high expectations, you are very likely to be pleased with your choice. Something else that some seed companies sell is “feminized” seeds. These are produced when plant breeders use a variety of techniques to stress the plants and force them to produce mostly female seeds. It is primarily for commercial growers who are willing to pay a premium for females... the price is often quadrupled or more for feminized seeds. In addition to not being a compassionate growing process, feminized seeds are much more likely to develop into “hermaphrodites” – plants with both male and female flowers. Hermies are very undesirable because they are self-pollinating. For these reasons, I recommend never using feminized seed. Regular seeds typically have a 50/50 split of males and females. So out of 4 to 6 plants, there will typically be at least 2 to 3 females. Even if you remove the males, that just leaves more room for the females to grow. They will easily fill that extra space without any problem. So save your money and get the regular seeds.



## LIST OF GROWING EQUIPMENT AND SECURITY RULES

The cost of building an indoor growing sanctuary will probably be around \$400 to \$600 at 2013 prices and can be purchased online or from a local hydroponic supplier. The good news is that your investment should last for a very long time. Any trash generated by growing should be disposed in a way that cannot be linked to you. In other words, don't just throw grow equipment boxes – and certainly not any plant material – in with trash that also includes junk mail or anything with your name and/or address on it. Bag your grow trash all by itself, or better yet double-bag it so it is not as easy to tell what it is, and toss it in a dumpster away from your home. Be aware that many areas today are under video surveillance. So don't drive your car up to a business dumpster and toss your growing trash because your license plate could be traced. Proper trash disposal is rule #7. Now here are the lists for your convenience...

### Growing Equipment:

1. Panda film and Mylar tape
2. In-line duct fan (pictured) and ducting
3. Charcoal air filter
4. LED grow light, hanging chain and hook
5. Reading lamp (pictured)
6. Electric timer (pictured)
7. Power strip
8. Wall thermometer
9. Net pots (3.75 inch, minimum qty 6)
10. Rockwool cubes (small)
11. Hydroton grow rocks (1 bag)
12. Hydroponic nutrients (full-spectrum, one-part)
13. Tupperware container (the 12-gallon size works well for 6 plants)
14. Aquarium air pumps (they are cheap, so get 2 in case one fails)
15. pH test strips and pH adjusting products
16. Cannabis seeds



### Security Rules:

1. Never tell anyone you grow cannabis
2. Never sell cannabis
3. Use good electrical practices
4. Lock the growing sanctuary when not in use
5. Minimize heat and electricity with an LED grow light
6. Control odors at the source
7. Dispose of trash properly and discreetly



## FINAL TEST

Once you have assembled the growing sanctuary, it needs to be tested. Fill the reservoir with water, start the air pump, the vent fan, the grow light, and leave it all running for a day. Then check the temperature inside the sanctuary. If the temp does not stay below 90°F (32°C), you have a problem and may need to pump cool air from your home HVAC system or even use a small, portable air-conditioner. If your grow box is in an uncontrolled environment like a garage or attic, then you can simply grow during the colder months to reduce heat. Finally, before starting to grow, thoroughly sanitize everything in the sanctuary. Then keep it as clean as possible during the entire growing process so things like insects, fungus and mold do not have a place to harbor.

## Chapter 4 – From Seed to Weed

Now that your sanctuary is complete, you are ready to start growing. The beginning of this process is the most fraught with difficulties. The problem with many seed-starting methods is that they germinate the seeds in one medium and then transfer the seedlings to another medium for growing. This handling is very prone to damaging young plants, and any damage at this stage is likely to be terminal. Here is a process that is much safer...

### SEED GERMINATION

Start by taking five of your ten seeds, assuming you want to grow four to five plants, and place them in a small glass of water. Even if you wanted ten plants, you should not germinate all of them at once just in case a problem occurs with the first batch. Now place the glass with seeds in a warm place, like on top of a water heater or even in your grow room with the light on so that it stays warm. At first the seeds will float, but after several hours, you will be able to poke them down into the water with your finger and they should stay submerged. If not, then wait a few more hours and try again. If a seed will not sink within 24 hours, it is not viable and should be discarded. Do not soak the seeds more than 24 hours, or they will likely drown.

Once the seeds have sunk, they are ready to transfer into the rockwool cubes which are nestled deep into the grow rocks inside the net pots. The reservoir should already be filled with enough water so that the water level reaches the bottom of the rockwool cubes, and the air pump running. Also, keep the grow light on so that it maintains a nice warm temperature – minimum 75°F (24°C) or higher. Plant the seeds at a depth no deeper than 3/8 inch (1 cm). If possible, plant the seed so that the pointed end is directed down, since that is the end from which the root will emerge. Make sure to press the rockwool around the seed so that it is in full contact with the surrounding medium. Also, this is the time to start your growing journal. It is very important to keep a record of what happens so that you know exactly what has transpired at any given time. Otherwise, it becomes difficult to track of what nutrients have been added when, and other miscellaneous details.

Now make sure that the rockwool stays moist for the next several days – which should not be a problem since it will wick water up from the reservoir. Resist the temptation to check on the seeds by digging into the rockwool to look at them. Doing so will almost certainly damage the extremely fragile root that is emerging. Within the next several days, the seedlings will sprout up from the rockwool. If a seedling has not emerged after eight or nine days, then you can carefully check on it.

Once the seedlings emerge, the top of the plant will probably still be covered with the split-open seed, which will soon drop away from the growing leaves. However, there can be a couple of problems at this stage. One problem is when the plant has difficulty splitting the inner membrane of the seed hull, so the leaves stay trapped within. Just wait a couple of days and it should break-out on its own. Trying to help the plant at this stage is very likely to damage it irreparably. If you do decide that you must help it, you must be extremely careful. Another problem that can occur at this stage is when the seedling becomes disoriented, so the pointed white tip of the root emerges instead of the leaves. If this happens, very softly spread the rockwool open, and as gently as possible turn the



seedling right side up, carefully pressing the rockwool around the root so that only the very tip of the seed end is showing. It is difficult to express just how fragile the plant is at this stage... so be very slow and gentle.

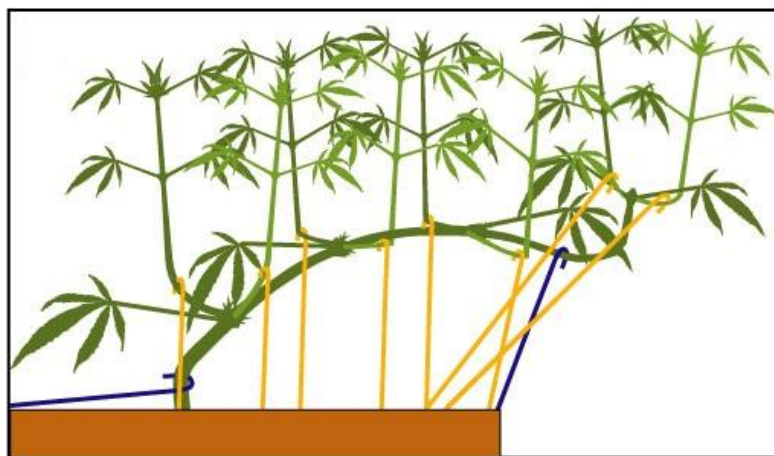
You should position the LED grow light about 8 inches above the plant tops, and maintain this distance throughout the entire growing process. Also, start using the electric timer so that the light runs on a schedule of 22.5 hours on and 1.5 hours off. Some growers leave the light on 24 hours during the seedling and growth stages, but the plants need some rest – just like you need sleep. So your plants will grow better and happier if they have a small break in the light schedule.

Speaking of happy plants, I also recommend that you talk to your plants to encourage them. I assure you that they understand the positive vibrations you are sending them and will respond by growing much better for you. If you would like more proof of that, I highly recommend the book: *The Secret Life of Plants* by Peter Tompkins and Christopher Bird. After reading it, you will never look at any plant the same way again. There is no doubt that plants are conscious living beings.

Wait until the second or third pair of leaves emerge before adding  $1/10^{\text{th}}$  the recommended rate of nutrients. Then very gradually increase that rate by waiting several days between each feeding. If you add too much at once, you will see spotting on the lowest set of leaves, or worse. The biggest mistake you can make with nutrients is adding too much at one time. As long as your plants look vibrant green and healthy, don't worry about a lack of nutrients. Just keep on schedule and let them grow at their own pace. Good growing takes patience.

## LOW STRESS TRAINING

When the plants reach around 6 inches in height, you can begin training them using a technique called Low Stress Training (LST). This involves gently bending the plant and securing it in that bent position with string or wire to reduce the height and allow light to reach more areas of the plant. By training the plant to grow in a bent or even circular pattern, instead of straight up, you accomplish two things: First, you maximize your vertical growing space. Second, the lower branches of the plant receive more light, which causes those growth tips to become more dominant. So instead of one large meristem (dominant central stem or “cola”) on top of the plant, now the plants will have several. This greatly increases their production. The image here gives an example of how the ties work. A word of caution: any time you bend the plant, be very careful not to go too far. It is quite easy to snap a branch or stem. If this happens and the stem is split open, smear a little honey over the wound. This will help it to heal faster. Also, use a small stick and a strip of cloth secured with tape to splint the stem so it stays straight. It should heal just fine within several days and you can resume LST.



I will now briefly mention two plant training techniques that I do NOT recommend:

Topping is the process of removing the top of the meristem, to transfer apical dominance (the tendency for the apex to grow more rapidly than the rest of the plant) to the shoots emanating from the two nodes immediately beneath the pruning cut. This process can be repeated on one or both of the two new meristems with the same results when they become dominant. The reason I do not recommend this method is that it damages the plant. Any damage requires energy for recovery. It is much easier to use LST with the same results and without damage.

Pinching, also called super-cropping, involves literally pinching the stem below the apical meristem with your fingers to intentionally damage vascular and structural cells there without completely breaking the stem. This causes the plant to re-route energy into the lower branches while the meristem heals. It obviously has the same drawback as topping.

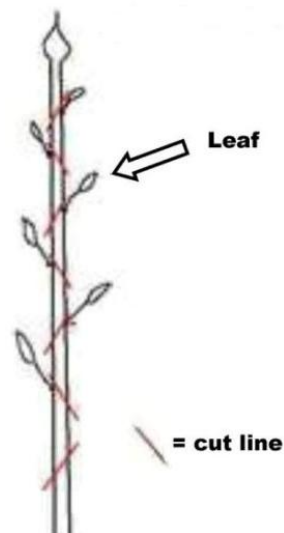
LST is superior to both topping and pinching because it achieves multiple dominant colas (meristems) without any plant damage. LST is far more efficient and compassionate. Any time you take the opportunity to be compassionate, it will absolutely benefit you... along with all life.

Something else you will hear about indoor growers doing is adding carbon dioxide (CO<sub>2</sub>) to the grow room with a CO<sub>2</sub> tank or some other method. This is because plants need CO<sub>2</sub> like people need oxygen. So adding CO<sub>2</sub> can possibly increase growth and yield to some degree. That may be beneficial to commercial growers... but I am so pleased with my results, doing something like adding CO<sub>2</sub> would be a waste of time, money and energy.

As your plants begin to grow larger, they will consume more water. Some growers completely drain the reservoir to change the water at various points through the grow cycle. In my experience, this has not been necessary. So I never change the water, I only add more water when the level reaches about the midway point. After adding more water, I then add the appropriate amount of nutrients to the main reservoir and check the pH. This has always given great results and is much simpler than changing-out the water.

## CLONING

It is during the growth cycle, when the plants are at least 12" tall, that a branch may be cut from a plant to start a new plant without seed. These cuttings are called "clones" because they are a genetic clone of the plant from which they were cut. Don't worry, the cut with the razor is quick, painless and the plant will know that your intentions are good, so it won't stress. Cloning cannabis is not difficult, and can save a grower from having to start the next grow from seed. Some growers keep a "mother" plant from which they harvest clones for a long time by never allowing the mother plant to enter the flowering cycle. It does not work well to cut clones during the flowering cycle. Also, it is easier to clone with varieties that are predominantly sativa instead of indica. Cloning is also a way to determine the sex of a plant in advance of flowering. If the clone is grown to a size that can be forced to flower and determine its sex, then you know the mother plant is the same sex.



Here is a good cloning method: Select a single woody branch with several leaf nodes from the lower part of the plant. Use rubbing alcohol to sterilize your hands, a razor blade and a cutting block. With a 45-degree cut, remove the branch from the mother plant and immediately dip the



cut tip into cool water to prevent the capillary action of the branch from drawing air, which could cause problems. Divide the branch by making a succession of cuts through the nodes at angles in-line with each leaf node (see image). You will end up with a bunch of short stems with a 45 degree cut at the top and the bottom, and a leaf and growing tip near the upper edge of each top cut. Holding the cutting by the leaf stem (petiole), scrape away some of the outer layer of the stem tissue to expose some phloem – the white tissue underneath – on the end to root. Dip the scraped stem into cloning gel or rooting hormone, also dab a bit on the top cut. Avoid getting any on the growing tip. Make a small hole in a wet cube of rockwool and insert the stem into the hole so that the leaf is standing up. Lightly close the rockwool around the stem, so that they are in good contact. Keep the clones humid by covering them with a transparent plastic or glass dome. The plant and inside of the dome must be made constantly wet by regularly spraying them with water mist. Direct sunlight or grow light is too strong for new clones; the best light is on a window sill without direct light, or under a fluorescent desk lamp. The clones should form new roots in about a week. If you can remove the humidity dome for a couple of hours without them wilting, they have enough root to support themselves. If they start to wilt, continue misting and using the dome. Once the clones are rooted, stop misting them, or it could actually damage them. Start working with the new clones just like you did the new seedlings.



If you do not have any cloning gel or rooting hormone, you can instead select small branches with at least two leaf nodes on them to cut and place in a cup of water. The leaves should be small so as not to require much energy (see image). All the same sterilization, scraping and humidity dome procedures are the same. The cup should be opaque so that light does not shine on the root area. Rooting is slower with this method, so will take a couple of weeks or more.

## FLOWERING

Once the plants are at least 12" tall, they will start growing much faster. In fact, you need to monitor them so as not to let them get out of control. Let's say you have 32" of vertical space between the top of the reservoir and the bottom of the grow light at the highest level it can be suspended. In this instance, I would not let the plants grow much beyond 16" before starting the 12/12 flowering light cycle. The reason is that when you switch the plants into flowering, they are going to quickly double in size. You can manage this to some degree with LST. But you do not want the plants to get so large that they become unmanageable. The yield will be much better if plants are appropriately sized for their growing space by starting the flowering cycle at the proper time.

This technique of switching the plants to flowering at a relatively early stage is sometimes called "Sea of Green" (SOG) because the plants are all at about the same height. The strategy is to have lots of small plants harvested in a short time-frame, rather than just a few large plants that take much longer to harvest. Another method of limiting the height is called "Screen of Green" (ScrOG) and uses a metal wire screen with squares anywhere from 3" to 6" in size mounted horizontally above the plants at the desired maximum height to help limit the vertical growth. Some growers like it, and you may too, but I found it cumbersome. Once again, I prefer LST.

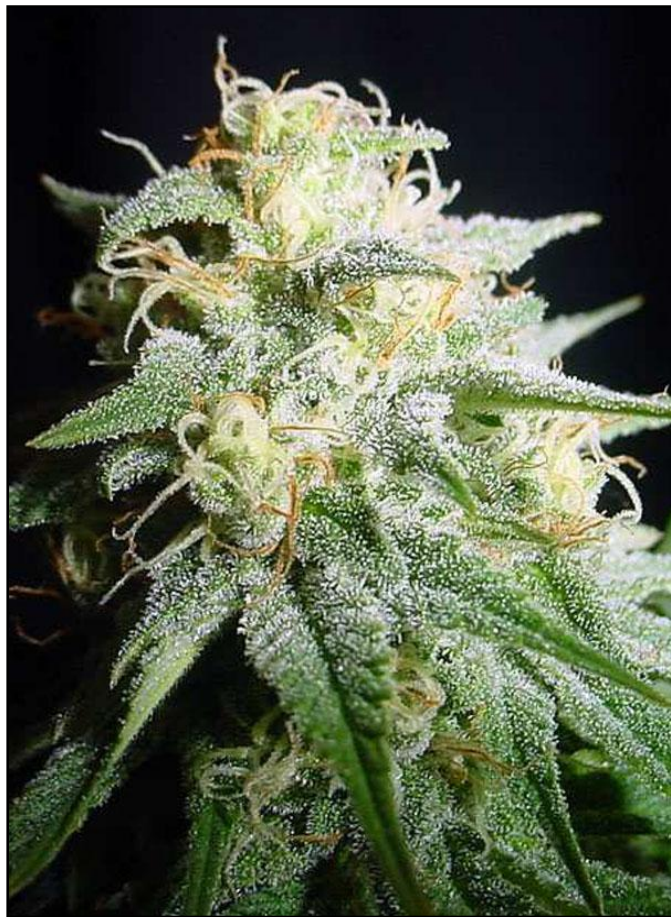
When switching to the flowering light cycle, it does not matter what time of day the grow light is on or off, just make sure that the light period is convenient for the time of day you typically check on your plants. You should never open the growing sanctuary during the dark period because this will disrupt the light cycle and slow the flowering process. Once the plants are in the dark, let them stay in the dark until the light comes on again... twelve hours light and twelve hours dark. I will mention again, that the dark period must be completely dark. So for instance, if the power strip you are using has a lighted power switch, as many of them do, this needs to be covered with something to keep it from illuminating the area during the dark period.

Something else to consider if you have the resources and are very industrious, is that you can make separate spaces for each lighting schedule: one space for vegetative growth, and a separate space for flowering. This technique is used by commercial growers to allow for a constant flow of plants from the growing space into the flowering space since those stages are roughly equal in length – an average of about two months each.

Once the plants have are switched into the 12/12 flowering cycle, they will begin showing their sex over the next two weeks as their calyxes develop. Refer to the images of male and female plants in Chapter 2 so that you know how to tell the difference. If you are not producing seeds, then wait until you are absolutely certain of their sex, and then remove the males by cutting them at their base. If growing in the same reservoir, there is no need to remove the male's roots from the reservoir since their roots will be completely entangled with the female roots and could damage them if you try to pull them apart.

If you are going to produce seed, then remove all the males except the best looking one. In a few days, the male's flowers will begin to open and deposit pollen. If you allow the male to persist in pollen production, the copious volume it yields will astound you. I recommend allowing only 1/4 to 1/2 of the male flowers to open, give it a little shake to disperse the pollen, and then remove the male. This will pollinate plenty of female

flowers, but it is also likely that some female flowers will remain unpollinated for a good balance of both seed and THC production. You can even cover the top of the female plant(s) with paper bags when you shake and remove the male, to help prevent the female's main cola from being pollinated. Then the majority of seed production will be on her lower limbs. At this point, your female plant (pollinated or not) will increase flowering and really fill-out. The image here shows an example of a female plant covered in sugary trichomes. You will also notice that some of her pistils are beginning to change color from white to orange. Whether pollinated or not, both the pistils and trichomes can be used as indicators of when to harvest...



The Pistil Method of determining when to harvest is my preferred method. It is demonstrated in this top image. The advantage of this method is that you do not need a magnifying lens, as the pistils are clearly visible. The recommended harvest time is when about 2/3 of the pistils (identified as stigmas in the image) have turned an orange color, but before they begin to turn brown. So the plant in the image on the previous page obviously needs to mature further before it is harvested.

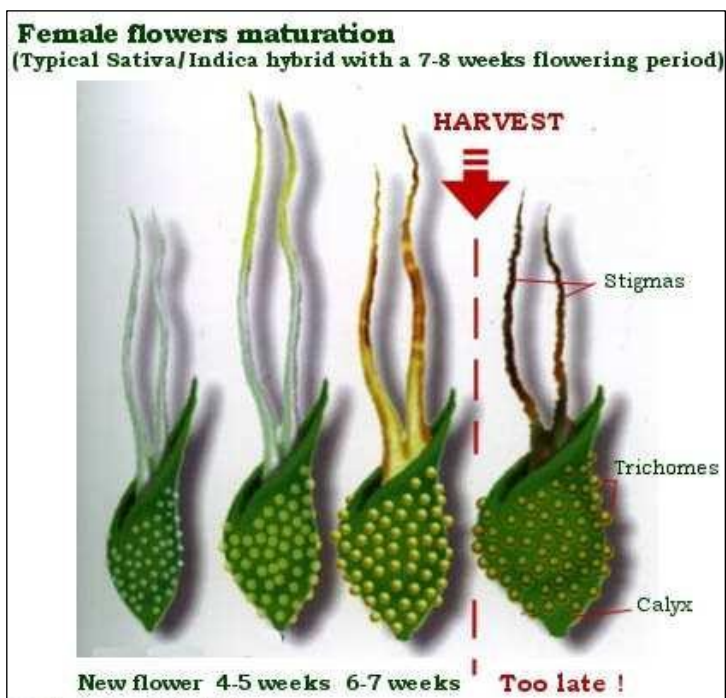
The Trichome Method of determining when to harvest is demonstrated in the bottom image. The drawback to this method is that you need a fairly strong magnifying lens to see the trichomes very well. They start out clear, but eventually become cloudy and finally amber. This influences the ratio of THC to CBD, which in turn influences the effect of head or body high.

When preparing for harvest, some growers contend that pre-harvest “flushing” – giving the plants only pure water without any nutrients for the last 7 to 14 days of flowering – improves taste. This is not true. In fact, it has been proven that flushing places the plants under terrible stress and can substantially decrease both yield and potency due to the resulting nutrient deficiency. The best way to improve taste is with proper drying and curing. Flushing is not effective or compassionate, and should not be practiced by any cannabis grower.

## HARVESTING, DRYING AND CURING

Continue the water/nutrient schedule until about 2/3 of the plant is at the proper stage for harvesting, and then

harvest the entire plant all at once by cutting the plant at its base. This is a good time to also honor the plant by thanking it for the harvest. When you handle the plant, you will notice that the resinous trichomes make it very sticky. Keep in mind that when you feel this stickiness, you are





damaging those trichomes and potentially reducing their potency. That is why you should handle the plants as little and as gently as possible.

Use sharp scissors to remove the large fan leaves so that you have access to all the trichome-covered buds and small leaves. Trim all the buds away from the branches and stem so that you are left with lots of beautiful buds. The smallest leaves and stems will also be covered with THC-containing trichomes. The medium-sized leaves and branches can be used to make hash. The large fan leaves can be kept in your refrigerator for use in salads or juicing.

The freshly trimmed buds (also called nuggets or “nugs”) now need to be dried and cured. The temperature during this process should be maintained around 75°F (24°C) with ideally around 50-60% humidity. Also, the drying/curing area should be dark, since light will degrade the trichomes. To dry them, place the buds in an open container such as a cardboard box in an area with good air circulation. You can use a fan, if needed. Keep the buds spread out so that air can circulate freely all around them. If they are stacked or if the humidity is too high, they can develop mold. If any of the buds get moldy, do NOT use them – dispose of them immediately.

After the buds have dried for 12 to 24 hours, then you can place them in a closed jar and let them “cure” for 6 hours. Curing basically slows drying and allows the metabolic process to continue. This reduces chlorophyll, starches and nitrates to improve aroma, taste and even potency – slightly increasing THC. After curing, remove the buds from the jar to dry another 12 to 24 hours. Repeat the drying/curing process as many times as needed until the small stems are dry enough to snap completely apart. If the prospect of mold concerns you due to high humidity or other factor, you can skip the curing process and still get very good results. Once drying is complete, the buds should be placed into an air-tight storage container (“stash jar”) to help preserve them. Both glass and plastic containers work fine, though glass is superior to plastic for storage because plastic has a static charge that attracts trichomes. Over several months at room temperature, the potency of THC will decrease in any storage container. But long-term storage can be achieved by placing the stash jar into a freezer. The image here shows what the buds will look like once they have dried.



If seeds were produced, most will fall out on their own during drying, those that do not can be removed from the calyxes with a small knife after the drying process. Place the seeds into a sealable plastic bag, removing as much air as possible. Then place that bag into an air-tight container such as a plastic jar and store it in the refrigerator – not the freezer. This double-containment of the seeds will help keep humidity from ruining them. Some type of desiccant or even dry rice in the jar is also helpful for reducing moisture.

The length of time to go from seed to harvest can vary greatly by plant variety and other factors, though it typically takes about 4 months using the method described here. After you’ve been through the process once, your grow journal will be a valuable resource. Congratulations – you are officially a cannabis grower! Now comes the time you’ve been waiting for...



## Chapter 5 – The Fruits of Your Labor

Ahhh... smell the aroma of those beautiful buds! You took good care of your plants, and now they are going to take good care of you. The primary use for home-grown cannabis is *medicine*. All varieties of cannabis have medicinal application. One variety may address a certain illness a little better than another for a given individual, but all of them provide the health benefits mentioned in Chapter 1. Cannabis may even be used as a preventative for many illnesses. The benefits may be gained through any method of intake. However, smoking is arguably the least desirable since in addition to the beneficial cannabinoids, smoke also contains carcinogens generated by the combustion process. The good news is that there are many ways to consume cannabis that do not involve combustion. Here are the primary consumption methods:



### JUICING

Cannabis leaves that are juiced or eaten raw will not get you high. However, medical doctors have been amazed by the healing properties of cannabis juice. One famous patient case was that of Kristen Peskuski, who cured an array of autoimmune conditions, including interstitial cystitis and lupus, by using cannabis juice. It is simple to run the cannabis leaves through a vegetable juicer. Fruits and vegetables can be juiced along with the cannabis to improve the flavor. The leaves can also be stored in a refrigerator and added to salads. Bon appétit!

### VAPORIZING

This is the process of heating the bud material until the trichomes vaporize into a mist. It is accomplished at a relatively low temperature, similar to baking, so combustion is avoided. Many vaporizers use an electronic heating element, but some also work with a flame and some type of divider to provide heat without burning. There are home-use vaporizers of various sizes/shapes (see image), and pocket-sized portable vaporizers which are very discreet. Vaping produces virtually no smell since there is no combustion. Also, vaporizers are extremely efficient – converting at least 46% of the THC as opposed to only 25% with smoking – and therefore use much less cannabis. Literally a pinch of good grass easily accommodates one person. I will mention here that with any method of inhalation, vaping or smoking, it is not necessary to inhale a large volume and hold for a long time, as is popularized in the movies. A long, slow breath that does not strain your lungs works just as well or even better.



### OIL

Cannabis oil is recommended by grower Rick Simpson through his website called *Phoenix Tears*, which is dedicated to curing cancer and other illnesses. He has treated well over 5000 patients, and says that one pound of dry cannabis will yield 55 to 60 grams of high grade cannabis oil, and will cure most serious cancers. The extraction process uses a solvent such as naphtha (also called benzene, which is sold as paint thinner) or ether. He recommends against using butane due to the volatility and lower quality finished product. His recipe is as follows: In a very well-ventilated area with no exposure to flames, sparks or any kind of hot element – start

with very dry cannabis in a clean bucket. Add enough solvent to thoroughly wet the cannabis, stirring and crushing with a clean stick such as a one-inch dowel. Gradually add more solvent, until the plant matter is completely immersed, continuing to mix with the stick for about three minutes. Then slowly pour the solvent mix into another clean container, leaving the starting plant matter in the original container to be washed a second time. Add more solvent to the first container until it is again immersed, mixing for another three minutes. Then pour the solvent into the second container, along with the first solvent wash. A third wash will not yield enough oil to be of benefit. Then pour the solvent into small-mouthed containers such as a water container using a large funnel and a filter such as a coffee filter to remove any plant matter. Use an inexpensive large rice cooker with an open top and high/low heat setting to boil the solvent from the oil. Use a fan to blow away the boiling solvent fumes. Fill the cooker 3/4 to the top and use the high setting. As the level drops, add more solvent/oil mix until there is none remaining. When the cooker reduces the last time, and there is about two inches of solvent/oil remaining, add 10 to 12 drops of water. This allows the oil to boil-off more readily. When there is very little remaining, it is good to wear gloves and swirl the liquid until the cooker automatically reduces from high to low heat. As the last of the solvent is boiled away, you will hear a cracking sound from the remaining oil, and you will see bubbling and maybe a little steam. Don't worry, this is just the water you added. Remove the inner pot from the cooker and pour the oil into a steel cup. This cup can be placed on a coffee warmer to evaporate anything remaining in the oil. When there is no bubbling, remove from heat and allow it to cool a little bit. Then using plastic syringes with no needles, draw the warm oil into the syringes and allow it to cool. In a short time, the oil will become thick. It may even be difficult to squeeze from the syringes without warming the syringe under hot water. As you can see in this image, the oil looks like black grease. Note that cannabis oil is not at all the same as the hemp seed oil which is sold by grocery stores and contains no THC.



The initial recommended dosage of cannabis oil for curing cancer is the same volume as a piece of short-grained rice, ingested orally three times per day. After four days double that amount, then continue doubling every four days until the dosage is 1/3 gram per dose. Continue this dosage until cured. This schedule is just intended to help avoid getting high if a person is concerned about that, but there is no problem increasing the rate sooner. Once the person is cured, it is recommended they continue on a maintenance dose of about 1 gram per month for good health. There are many documented cases of people using Rick Simpson's cannabis oil recipe to cure cancers and other serious illnesses.

## TINCTURE

Cannabis tincture can be prepared in a glass container, do not use plastic or metal, by filling it almost full with finely-chopped cannabis. Then use an alcohol such as vodka, brandy, gin or rum that is ideally at least 80 proof (40% alcohol) to fill the container completely so the herb is totally submerged. Higher proof alcohol is even better. Cover with a tight lid and let it macerate for two to six weeks, or as long as you like, shaking it periodically. You can strain it before using.

## TEA

Cannabis tea is another method of consumption, but since the cannabinoids need fat to bind with, the tea must include some butter. Boil the water first and pour it over the cannabis and add

one teaspoon of butter. Let it steep for longer than you would for common black tea; approximately an hour and a half. The effects are similar to eating it.

Another cannabis drink called “bhang” is a very important part of the culture in India – so important that cannabis is legal there and always will be. Bhang is made by mixing cannabis, milk, ghee (clarified butter), and various spices, then heating. It is used in Hindu religious celebrations, and associated with the “auspicious” Lord Shiva.

## COOKING

Most people have heard of pot brownies (see image), but cannabis can be used in virtually any food. As mentioned, the cannabinoids need to be dissolved with heat into some type of fat (oil or butter) to be digested. That is why eating raw cannabis buds will not typically get you high. Most recipes call for “canna-butter.” Here is one canna-butter recipe:

Add 1 stick of butter and 2 cups water into a crock pot at 300°F. Next add about 1/4 cup finely chopped cannabis. Cook for 3 hours, stirring occasionally, then reduce heat to 150°F and cook for 1 more hour, stirring occasionally. This yields a dark green, oily liquid. Pour the liquid through a triple-layer of cheesecloth into a tapered cup to separate the plant matter. Gently squeeze the cheesecloth, but not too much or it will make the canna-butter taste bitter



and will not increase potency. Set the cup in the refrigerator for a couple of hours and the canna-butter will separate and harden at the top of the cup. Then holding over a sink, turn the cup upside down to remove the canna-butter. The tapered sides help it come out easier. Rinse the green slime from the bottom of the canna-butter since that is what contributes 90% of any bad taste. The canna-butter can then be used normally in any recipe that calls for butter.

A word of caution with regard to eating (or drinking) cannabis – not only is it very difficult to regulate dosage, but the effects of eating cannabis are markedly different and more potent than smoking since the cannabinoids are metabolized thorough the digestive system instead of the respiratory system. So many of the worst experiences reported with cannabis are the result of eating it. What often happens is that the person eats a brownie, does not feel anything, so they eat another, then another, then thirty minutes to an hour or more later they suddenly realize that they are getting extremely high – and anxious! This leads us to a very important subject...

## SAFETY

It is very important to know without a doubt that cannabis cannot physically or mentally harm a person with any consumption method, even in extremely large amounts. However, that does not mean that consuming a heroic dosage is not mentally taxing... because it certainly can be! Just remember that if someone consumes too much weed and becomes “freaked-out”, it is only a matter of time (two or three hours) until their body processes enough cannabinoids that everything goes back to normal, or is at least to a more manageable level. It can happen to anyone. If it ever happens to you or a friend, here is my advice:



First – DON'T PANIC! Focus on breathing and relaxing. Second – remind the person, even if that person is you, that the effect is only temporary and will end soon. Be calm and positive. Other actions that may help are familiar things like washing your face, brushing your teeth, drinking some water and going outside for some fresh air. Soothing music can also be helpful, such as Bob Marley's song *Three Little Birds*. Cannabis is occasionally called the "teaching herb", and sometimes the lessons are difficult. The experience may be telling you something about yourself. So try to learn from it.

To give you an idea of just how intense over-consumption can be... there was a national news story in 2007 about a Michigan police officer who confiscated some marijuana in a bust and then took it home where he and his wife made brownies with it. They apparently ingested far too much, and not knowing any better, became so paranoid that they believed they were dying. The officer called 911, confessing what he had done and asking for an ambulance since he was certain they were about to die. Of course they did not die, but the incident was reported to the police department, costing the officer his job and subjecting him to public ridicule. Talk about "instant karma" for taking someone else's pot! This story contains several lessons: First, don't take what doesn't belong to you... be a respectful and compassionate person. Second, the key for cannabis enjoyment is moderation... start with a small amount until you know the potency and your personal tolerance. Third, be smart so that if you do have a "bad trip", at least you will not become irrational and do something you will later regret. A bad trip is not fun, but it can happen to anyone. Keep in mind that everything happens for a reason, and learn from it.

## SMOKING

Though not as healthy as other intake methods, it is enjoyable to just have a good smoke on occasion to "feed your head" – especially with friends. Be sure to remove any seeds or large stems from the plant material before smoking so that it burns better.

The most popular method of smoking grass is with a "joint" (aka spliff, fatty, doobie) which is finely-ground cannabis rolled in cigarette paper. Some people use a grinder to prepare the bud. Many others, like myself, prefer the "hands-on" approach of just using their fingers to break the buds into tiny bits. To roll a joint, first place a "roach" at one end of the rolling paper. The roach is an approximately



1-inch wide by 2.5-inch piece of paper rolled into one end of the joint – similar to a filter in a cigarette (see image). The roach allows you to use all the cannabis without burning down to your lips – ouch! Then distribute the cannabis over the rest of the rolling paper... evenly for a long thin joint, or more heavily toward the end for a more conical shape. Now for the tricky part – holding the paper in both hands, use your thumbs to begin rolling the edge closest to you, packing the cannabis into the joint shape as you go. There is an art to this, and no substitute for practice. When all that remains is the trailing edge, lick it and press it down to seal the joint, then twist the end so it won't spill out. The advantage of a joint is its portability, ease of use, and that it doesn't require any paraphernalia other than rolling papers and a lighter. So if you are traveling and decide to take some herb with you, joints allow you to travel light. Also, if you are confronted by police, it is easy to just eat whatever herb you brought with you and immediately dispel of any evidence. Many people even travel on airlines with a few joints inside a non-metallic container tucked safely in their pocket without any problems.



The next most popular method of smoking is with a water pipe or bong (see image). The girl in the image is also using hemp wick for lighting instead of inhaling butane from a lighter – nice! Smoking through water cools the smoke for a more comfortable experience, and even removes some carcinogens. The water captures some THC, but not much. Most pipes have a small hole in the side called a “carburetor”. The carb is covered with a fingertip when first drawing, then released to intake fresh air and clear-out the last bit of smoke at the end of the breath. You can do the same with a bong by just lifting-out the bowl. The biggest challenge with a pipe or bong is cleaning it afterwards. The best method I know is to use isopropyl alcohol and Epson salt, then shake it vigorously. Repeat as necessary, and rinse with hot water – though not too hot at first, or it could crack the glass. There are many styles of pipes, chillums, hookahs, spoons, dugouts, etc. to facilitate smoking. Another method of smoking, used primarily in inner-cities, is called a “blunt” – which is a cigar that is cut open lengthways, emptied out, filled with marijuana and re-sealed. Since the wrapper is made from tobacco leaf, it is still smoking tobacco (yuck). But to make it even worse, cigar tobacco is not meant to be inhaled deeply due to the way it is cured, making it extremely harsh on the lungs. No thanks!



## HASHISH

The practice of using hashish, also called “hash”, dates back to at least 3000 BC. Hash is simply the pure resin from the plant. In ancient times, it was collected by rubbing cannabis plants between the hands so that the sticky trichomes adhered to them, then rubbing the hands together to form the resin into a ball or small cake. This method was wasteful, but it was also easy. Another ancient hash-making method involved naked maidens running through large cannabis fields to collect the resin on their bodies, which was then rubbed-off along with the girls’ sweat – contributing to the sexual potency of the hashish. This is certainly my preferred hash-making method!



Another hash story you may occasionally hear is that the word “hashish” was the origin of the word “assassin.” The origin is true, but the use of hashish in the story is not. Marco Polo claimed that in late ninth-century Persia, Hassan-i-Sabbah used a narcotic drug to make young men unconscious, then carry them to his castle’s amazing inner garden in Alamut. Upon awakening, they found themselves surrounded by beautiful naked maidens (those naked maidens really get around!) in what they believed to be paradise. Later they were again made unconscious with the narcotic and taken away. Upon awakening the second time, they were told that if they fought for Hassan-i-Sabbah and died in battle, they would be whisked-away to dwell forever in the

paradise they had experienced. The ruse apparently worked very well in building an army of highly-motivated assassins. However, it is not possible that the drug used was cannabis (hashish), as it is simply not a narcotic. The originators of the word obviously did not know the difference between hashish and narcotics... but the name stuck.

Modern methods of hash-making use ice water and agitation to dislodge the trichomes. Ice water makes the trichomes brittle, causing them to snap-off easily. Since trichomes are heavier than water, they sink while plant matter floats. Hash-making typically uses the trimmed-off plant parts called “skuff”. These parts don’t have as many trichomes as the buds, but what they do have can be extracted and concentrated very well. Here are two good hash making methods:

Blender Extraction requires a blender, ice cubes, a reusable metal coffee filter or silk screening, a large glass jar and paper coffee filters. Fill the blender about half-way with skuff, cover with cold water and add a tray of ice cubes. Blend for about one minute. It will become green and frothy. Pour this mix through the metal coffee filter into the glass jar. Run more cold water through the filter to make sure you haven’t missed any trichomes. Once the jar is full, place it in the fridge to settle for 30 minutes. You should see a white or blonde colored substance settling on the bottom of the container – these are the trichomes. Carefully, without disturbing the trichomes, pour-off about two-thirds of the green water. If you have more skuff to process, do it now and filter into the container you just drained. Return to the fridge, allow it to settle and pour-off again. When all the skuff is processed, add a few ice cubes and let it settle one last time. Pour the final mix through a paper coffee filter to capture the trichomes. Drain well, blot with a towel to remove excess moisture, and let it dry for at least 12 hours. Be sure that the hash is completely dry to avoid any mold problems later. Never smoke moldy hash – dispose of it.

Mesh Bag Extraction requires some hash bags, ice cubes, a very clean bucket (3 or 5 gallon) and a hand blender. Arrange the bags from smallest mesh to largest inside the empty bucket. The last bag will be your “work bag” with a screen size between 200 and 250 microns. Now place the skuff into the bucket and add several ice cube trays and cold water. Use the hand mixer to blend continuously for 15 minutes to one hour. Mixing longer produces a higher yield that is slightly less potent. It will become green and frothy. Take periodic breaks to let the mixture settle. If the ice has melted, add more so the water stays cold. After mixing, allow it to settle for 30 minutes. Then slowly lift out the work bag and squeeze-out the water. Set aside the work bag with the green matter for a second rinse after carefully pouring-off some of the water. Now you have a bucket full of green water containing everything smaller than 220 microns, including the trichomes. Slowly lift out each bag in succession and be sure to give them time to drain. If using a 25 micron bag, it will drain very slowly. Each mesh will have different grades of trichomes that have slightly different effects. Squeeze-out the excess water from each bag after it is drained. The hash will be a brownish sludge at the bottom of each bag. Scrape it with a spoon to collect. Blot the hash with a towel to remove excess moisture, and let it dry for at least 12 hours. Never smoke moldy hash – dispose of it.



Both extraction methods produce something that resembles sticky sand and is easily pressed into a hash ball or cake (see image). Hash is very easy to conceal and can be smoked in many ways. A tiny amount can be crumbled into a joint or pipe, or it can be heated on the tip of a wire

or knife and the smoke inhaled through a straw. Hashish can also be vaporized. Being so concentrated, it only takes a crumb of hash to get the job done... so be very conservative with it.

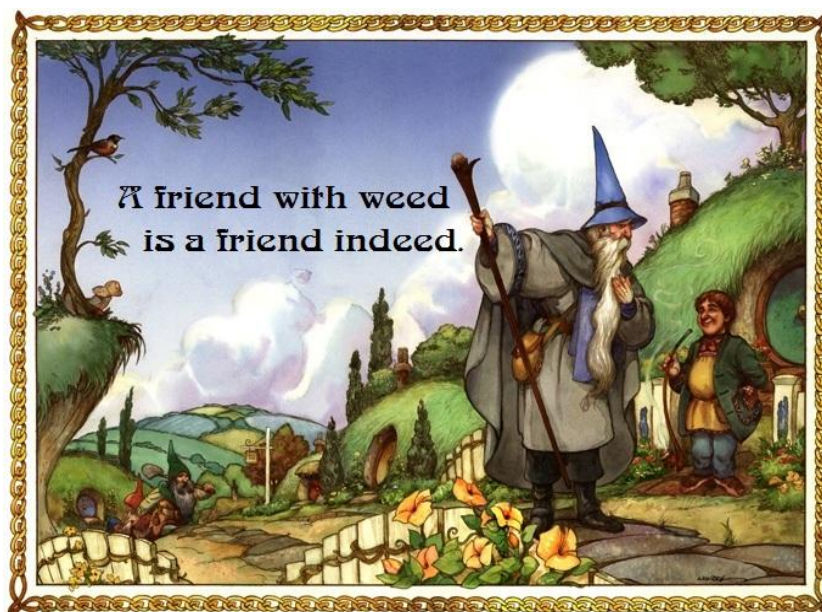
## DRUG TESTING

Technology and laws change too rapidly for much of anything I write about testing to stay relevant very long. Cannabis metabolites are detectable in the body anywhere from 3 to 45 days or more depending on the rate of metabolism, body fat percentage and a myriad of other factors. The most common tests involve saliva or urine samples, but blood and hair can also be tested – though hair testing is rare since it is more expensive. Apart from simply refusing, there are many ways (and of course products) to thwart drug tests. For instance, both Advil (ibuprofen) and Aleve (naproxen) can result in false positive marijuana tests, so may be used on the pre-screen questionnaire as alibis. But the best solution, since most testing is workplace related, is to just find work that doesn't require it – problem solved!

## ETIQUETTE

One beautiful thing about cannabis is the way it brings people together. An almost tribal atmosphere is created as the chosen few gather to partake in burning the sacrificial plant. As with any gathering, courtesy is appreciated – especially with the kind herb. Some suggestions...

- The person who rolls the joint or packs the bowl takes the first hit, even if someone else brought the weed, but whoever brought the weed definitely goes second in that instance.
- Never complain about the quality of someone else's weed – especially while smoking. If you don't like it, then don't smoke it.
- Find something to compliment – especially good weed. If someone rolls a nice joint, complement their rolling skills. If they have a nice bong, tell them. Everyone appreciates compliments!



- Dry your lips prior to hitting a joint or a pipe so you don't coat it with saliva. In Jamaica – the land of ganja smoking, it is customary after taking a hit to wipe the mouth-piece of the pipe on your cheek out of courtesy before passing it.



- When lighting the bowl of a bong or pipe, use the technique called “cornering” – which is lighting just 1/4 of the bowl from the edge, instead of catching the entire bowl on fire. This conserves herb and allows more people to enjoy the bowl before it is “cashed”.
- If you take the last hit from a bowl, don’t just pass it along to the next person as if there were still another hit. Tell them, “Here it is, but I think it’s cashed-out.”
- Take no more than two hits before passing. Hence the phrase: “puff – puff – pass”
- Do not “Bogart” a joint. This expression was made famous by a song about weed since Humphrey Bogart was a famous actor who often had a burning cigarette dangling from the corner of his mouth, seemingly never smoking it. So once you have taken your two hits, don’t just sit there holding the joint while it burns to the good of no one... pass it!
- If joining a group that is already passing some herb, do not greedily jump-in so that you are the very next person to get a hit.
- Maintain a relaxed atmosphere. Everyone will enjoy their high much more if they are not stressed-out because someone brought hyper or negative energy into the group.
- If you offer weed to someone and they turn you down, do NOT be offended and do NOT try to pressure them into partaking – be respectful of their decision.
- Always remember to thank the person who brought weed for sharing, and try to reciprocate in the future.

Etiquette and house rules vary, so these guidelines are not all universal. If you are not sure about something, just ask. But a good rule is always the “golden” one – be considerate and treat others the way you would like to be treated!

## 420

Most everyone has heard about 420 (pronounced “four-twenty”), but plenty of people have not. It is the universal term for cannabis consumption. The term originated among a group of teenagers in San Rafael, California in 1971. Calling themselves the “Waldos”, because their chosen hang-out spot was a wall outside the school. The group first used the term “420” in connection to a plan in the fall of 1971 to search for an abandoned cannabis crop that they had heard about.

The Waldos designated the Louis Pasteur statue on the grounds of San Rafael High School as their meeting place at 4:20 p.m. and referred to this plan with the phrase “420 Louis”. Multiple failed attempts to find the crop eventually shortened the phrase to simply “420”, which ultimately evolved into a codeword for pot-smoking in general. Stephen Hager, Editor Emeritus for *High Times Magazine*, attributes the early spread of the phrase to Grateful Dead followers, who were also linked to San Rafael.





Today you see 420 in lots of different places. There are roommate advertisements with the phrase “420 friendly” to indicate they are cool with cannabis... and 420 is proudly displayed on T-shirts and other products. The date of April 20<sup>th</sup> (4/20) has become a worldwide counterculture holiday when people gather to share cannabis and celebrate life. Now that you’re aware of it, you’ll notice it everywhere. Is it 4:20 yet? It must be 4:20 somewhere... Happy 420!

## SEX

Cannabis has a very long history of association with sex – both being gifts of nature. As mentioned in Chapter 1, cannabis was connected with the Norse love goddess, Freya. The harvesting of cannabis was part of an erotic high festival in which it was believed that Freya lived as a fertile force in the plant's feminine flowers, and by ingesting them, one became influenced by this divine power.

Sexual arousal and the high of cannabis both produce similar physiological responses such as elevated heart rate, heightened sensitivity, relaxation, changes in blood flow and respiration, and altered state of consciousness. Sex and cannabis both provide euphoric peak experiences, unity of body and mind, as well as psychic healing. The neuroreceptor for THC is the same as the body’s own hormone anandamide – the translation of which literally means “bliss”.



Cannabis has been used as an aphrodisiac for thousands of years. An esoteric Hindu-Buddhist tradition known as Tantra utilizes cannabis within sexual rituals. These yogic-like practices were designed to help transcend egocentric consciousness. However, cannabis has ironically also been used to decrease sexual desire, as the effects of cannabis are largely determined by personality, physiology, intention and environment. So if you consume cannabis with a good loving vibe, that is typically what you experience through it. Sharing that energy with another person seems to augment the effect... especially when passing a hit mouth-to-mouth by “shot-gunning” (see image).



When using cannabis for sex, very often less is more. Ingesting a large amount of cannabis can lead to introspection, which is not always conducive to sex. But a moderate amount opens the sexual energy channels and heightens sensations.

## A Fond Farewell

I have enjoyed sharing my cannabis knowledge with you, and I enjoy the thought of you using it for the good of yourself and others. If we were stranded on an island, and could only have one type of plant growing there with us, the obvious choice would be cannabis. With it, we would have a source of complete nutrition, we would be able to make fabrics and rope, and we would have excellent medicine. This one plant could meet virtually all of our survival needs. The fact is that we are stranded on an island... it is called "Earth".



At the same time I extol the many virtues of cannabis, I am also compelled to strongly caution against over-usage. As with all enjoyable things, frequent usage can easily develop into a habit over time. The problem with a cannabis habit is the way it can inhibit personal growth and delay or ruin life-goals. Do not allow anything to have that degree of influence over you. Though it is exponentially easier to stop using cannabis than substances like tobacco or alcohol, it is far better to self-moderate from the start. Just how often cannabis can be used without developing a habit varies greatly. This is illustrated by the amount of time that cannabis metabolites stay in the body, which as mentioned can range anywhere from 3 to 45 days or more. But even this is not an indicator of resistance to habit-forming since the mind plays a much greater role. So only you can truly decide the frequency of cannabis usage appropriate for you. But I will share my experience, which is that weekly usage is too frequent for most people, and too easily becomes a habit. The preventative health benefits of cannabis are still gained from monthly usage. The obvious exception is when treating an illness, and in that instance cannabis may be used on an as-needed basis until the problem is resolved. If cannabis ever does become habitual for you, just stop for a few months until any craving is gone and then discipline yourself to moderate better.

If cannabis is used with the highest intentions and good moderation, then rewards will follow. Whether partaking of herb or not, here are some universal suggestions to help you clear any negative karma, grow tremendously as a person and make the most of life:

- Interact with everything in a peaceful and compassionate way.
- Seek harmony with all people, all things and in all situations.
- Forgive everyone for all the wrongs they have committed.
- Forgive yourself for all the mistakes that you have made.
- Find the good in all circumstances and speak only in a positive way.
- Allow only love to guide you.

I leave you now with some passages from the book *Cannabis Spirituality* by hippy guru Stephen Gaskin, a couple of song quotes that seem appropriate and possibly prophetic... and a blessing:

*"Cannabis opens you up and leaves you compassionate. People really need to get compassionate if we're going to make it on this planet."* *Cannabis Spirituality* p. 40

*"Cannabis can be the focus for a free-lance, ad hoc spiritual meeting. A group of people, partaking of the good herb together, not perhaps even thinking of anything spiritual, can find*



themselves coming together in communion. This is not a communion of words but a communion of minds and spirits and souls.” Cannabis Spirituality p. 59

“One of the things about grass that is neat is that if you get a little meditative, it gives you a sense of perspective on yourself. You see yourself as one person among a whole world population rather than as an absolute personal ego. This tends to make it easier for your friends to stand you.” Cannabis Spirituality p. 75

“Your immune system can be damaged, according to published medical reports, by psychic events like feeling betrayed or having an anger fit or being the recipient of an anger fit. There are also psychic factors that can enhance your immune system, like good loving.”... “That’s one of the most important uses of grass. It crosses the line between medical and spiritual; it’s good for your health and it’s good for your soul.” Cannabis Spirituality p. 77

*“In my thoughts I have seen rings of smoke through the trees, and the voices of those who stand looking... and its whispered that soon, if we all call the tune, then the piper will lead us to reason... and a new day will dawn for those who stand long, and the forests will echo with laughter.” Robert Plant - Stairway to Heaven*

*“I dreamed I saw the bombers riding shotgun in the sky... they were turning into butterflies above our nation. We are stardust, billion-year-old carbon... we are golden, caught in the devil’s bargain... and we’ve got to get ourselves back to the garden.” Joni Mitchell - Woodstock*

*I wish you all the best... Peace, Love and Weed!*

