



*califiagreen*

# Growing Cannabis in Your Backyard

**A Practical Guide to Getting Started**

# Topics we will cover

- History
- Legal issues
- Plant characteristics
- Seed characteristics
- Growing location
- Sun and water requirements
- When to plant and when to harvest
- Curing the crop

# Ancient History

Cannabis is thought to have originated in central Asia and was used in various ways as far back as 6000 BC.

The Spanish brought cannabis to South America in the 16<sup>th</sup> century; the British brought it to North America in the 17<sup>th</sup> century.

British colonists in Virginia were required by law to grow cannabis in the 17<sup>th</sup> century, for use in making paper, rope and cloth. It was a major crop until cotton took over. George Washington grew hemp cannabis!

In 1913, the first law criminalizing cultivation of cannabis was enacted in California, as a result of lobbying by the pharma giants of the day as a means to hamper competition.

The Mexican Revolution from 1910 to 1920 saw thousands of Mexicans legally emigrating to the United States, bringing with them the culture of smoking cannabis for fun.

# Cannabis, marijuana, Maryjane, reefer, grass, weed, locoweed, pot, hemp, bud, ganja, herb, ?

Prior to 1910, the word “cannabis” was used, most often in reference to medicines and remedies for common household ailments. In the early 1900s, pharmaceutical companies used to include cannabis and cannabis extracts in their medicines.

The decade between 1910 and 1920 saw over 890,000 Mexicans legally immigrate to the United States. With them came the idea of smoking the cannabis plant recreationally, and along came the use of the word “marijuana.”

The stigma associated with marijuana came from a racist ass named Harry Anslinger, who was the head of the Federal Bureau of Narcotics. In Anslinger’s testimony before Congress, he stated, “Marijuana is the most violence-causing drug in the history of mankind. Most marijuana smokers are Negroes, Hispanics, Filipinos and entertainers. Their satanic music, jazz and swing, result from marijuana usage.” It was this man’s efforts to associate the plant with what he saw as unwelcome immigrants that tainted the word “marijuana”.

# Legal issues

- Senate Bill 94 (SB 94) – Medicinal and Adult Use Cannabis Regulation and Safety Act (MAUCRSA) – makes it legal for adults 21 or older to possess, consume and cultivate cannabis in California.
- You can plant, harvest, dry, and process up to six cannabis plants in your private residence or on the grounds of your residence, in a locked space that is not visible to the public. (Locking the gate to your backyard will suffice.)
- You can give away up to one ounce (28.5 grams) of cannabis and up to eight grams of concentrated cannabis to a person 21 or older, but you cannot receive money or any form of compensation.
- If transporting cannabis, it must be in a closed container in the trunk of your car, similar to the laws regarding driving with an open container of alcohol.

# Where to buy seeds



Some local dispensaries carry seeds, although with a limited inventory. For example:

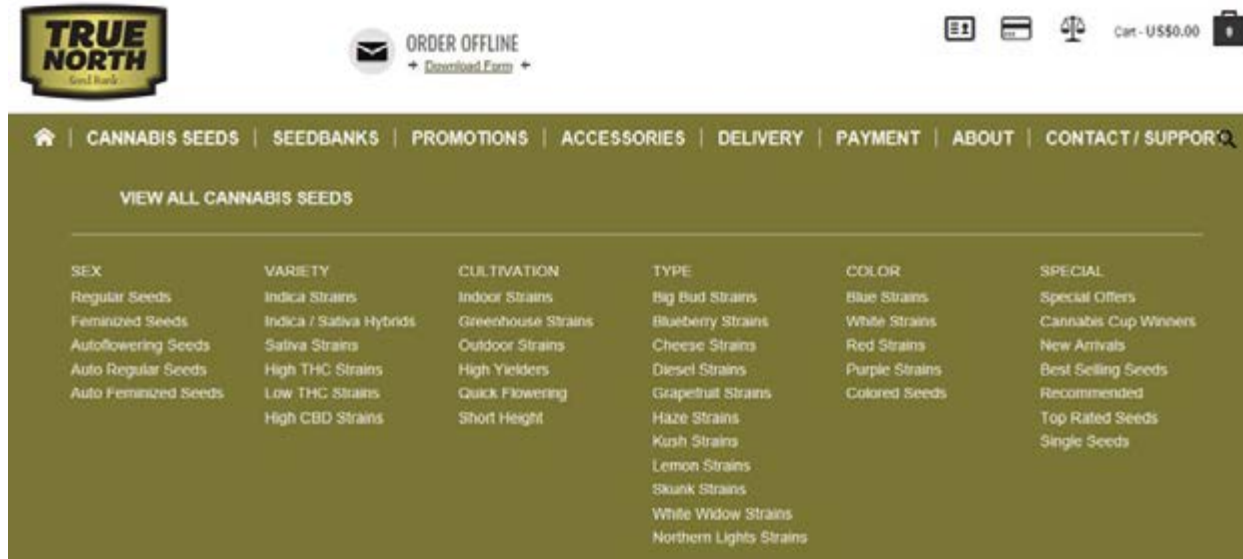


HOME MENU DEALS CBD EVENTS GOOD READS CONTACT US

	Truffla Tree Seeds	Each \$124
	Seed Humboldt Seed Co Bigfoot Glue	Each \$124
	Seed Humboldt Seed Co FEM 10 ct - Cookie Monster	Each \$124
	Seed Humboldt Seed Co FEM 10 ct - OG Kush	Each \$124
	Seed Humboldt Seed Co Mango Trees	Each \$124











Depending on your aversion to risk, seeds can be bought online. For example, True North Seed Bank in Canada has a fabulous website: <https://truenorthseedbank.com/>



Federal law prohibits getting your seeds from out-of-country sources (or any source). If you are concerned about your seeds not making it past ICE, look for California-grown seeds from local outlets. This may limit the selection of seeds.

### SHOPPING CART

	Product Name	Unit Price	Qty	Subtotal
	Silversurfer Haze FEM - 3 Seeds	US\$30.08	- 2 +	US\$60.16
	Double Chocolate FEM - 7 Seeds	US\$123.50	- 1 +	US\$123.50
	Afghan Kush x White Widow FEM - 7 Seeds	US\$55.11	- 1 +	US\$55.11
	Atomic Bomb FEMINIZED Seeds (Bomb Seeds)	US\$62.98	- 1 +	US\$62.98
	<b>Free Gift</b> Vape Pen Promotion	US\$0.00	1	US\$0.00
	Gold Rush FEM - 7 Seeds	US\$96.49	- 1 +	US\$96.49
	Blueberry FEM - 3 Seeds	US\$42.46	- 1 +	US\$42.46
	White Widow FEM (Canuk Seeds) - 1 Free Seed <b>Feminized Freebie</b> Free Seeds with Every Order CA\$400+	US\$0.00	1	US\$0.00
	Super Lemon Haze FEM (Canuk Seeds) - 1 Free			

# Seed Sex: What Are Regular, Feminized And Auto Flowering Cannabis Seeds?

- Standard cannabis seeds come from one male and one female parent, and can produce either male or female plants. It is virtually impossible to tell if a regular seed will turn out to be a male or a female later on. Of course, after you get to the flowering stage, it is much simpler to identify males and females. Males will produce oval pollen sacs, while females will produce a calyx shaped like a teardrop.
- If you want to breed cannabis and produce new seeds, then you need both male and female plants, which would require regular seeds. If you have no interest in breeding and you just want to have some outstanding bud, then feminized seeds are a better choice.
- Only female plants produce buds, and female plants produce considerably more THC, CBD and CBN than male plants. Look for “Feminized” seeds.



# Autoflowering cannabis seeds

- Cannabis strains that **autoflower** are generally shorter in height than photo-period plants, due to both genetics and a shorter growing season. A decrease in daylight hours and a change in season are not necessary for these plants to flower. Most standard cannabis plants start to flower at the end of summer as days start to get shorter and the amount of light drops. Plants recognize that they need to start maturing before the onset of winter. Autoflowering plants are different. They will enter the flowering stage even if they receive a full 24 hours of light.

# Autoflowering plants

- For autoflowering plants, it generally takes 10 weeks from start to finish. This type of seed can produce about 2 harvests throughout the span of a standard summer period.
- Autoflowering plants stay rather small, so you can plant quite a few for every square foot. That being said, the yield and quality are not up to par with seeds that flower regularly.
- With autoflowering seeds, you should provide the plant with growth formula for the initial 2 or 3 weeks. After that, you can switch to the flowering formula.

# Autoflower features

- Generally 12 to 40 inches tall
- Suitable for indoor or outdoor growth
- Starts flowering automatically after around 3 - 8 weeks
- From seed to harvest takes about 10 - 12 weeks



**AUTO Super Hash FEMINIZED Seeds**  
(Pyramid Seeds)



**AUTO Sweet Pure CBD Feminized**  
Seeds (Sweet Seeds)



**AUTO Tha Shiznit FEMINIZED Seeds**  
(Shortstuff Seeds)

# Non-autoflowering (photoperiod) strains

One of the most interesting characteristics of cannabis is its traditional dependence on **photoperiod** of light they receive (hours of light / hours of darkness per day). Non-autoflowering strains are susceptible to photoperiod changes so require determined hours of light (and darkness) to be able to flower:

- Growing phase: 18 hours of light - 6 hours of darkness
- Flowering phase 12 hours of light - 12 hours of darkness

Having said that, since we do not live in the far north, we do not get 18 hours of light. Follow the equinoxes: Plant in Spring, harvest in Fall

# Plant Types

- Cannabis **Indica** and Cannabis **Sativa** are the two major types of cannabis plants. Cannabis **Ruderalis** can also be grown, especially if you are after CBD without THC. They can be crossed to create hybrid strains.
- Indica plants typically grow short and wide. The high produced from smoking Indica bud is a strong physical body high that will make you sleepy or 'couch-locked' and provides a deep relaxation feeling.
- The most popular Indica strains currently include any Kush, Northern Lights, Blueberry and White Widow.

# Plant types

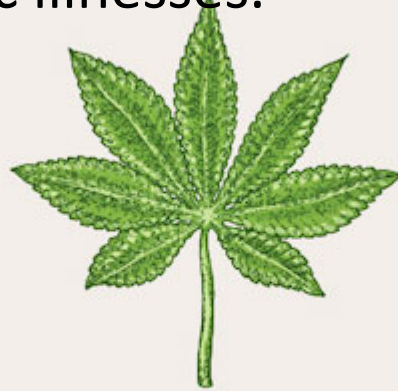
- Unlike Indica plants, Sativa plants grow tall and thin, with some strains reaching over 25 ft. in height. A Sativa high is known to be more energetic and uplifting.
- Sativa-dominant cannabis strains tend to have a more grassy type odor to the buds providing an uplifting, energetic and “cerebral” high. A sativa high is one filled with creativity and energy as being high on sativa can spark new ideas and creations. The most popular sativa strains include Jack Herer, Sour Diesel, Maui Wowie, and any Haze.

# Cannabis strains

- Cannabis strains range from pure sativas to pure indicas to pure ruderalis, and hybrid strains consisting of combinations (e.g., 30% indica – 70% sativa, 50% – 50% combinations, 80% indica – 20% ruderalis). Because each strain has very different medicinal benefits and effects, certain strains can be targeted to better treat specific illnesses.



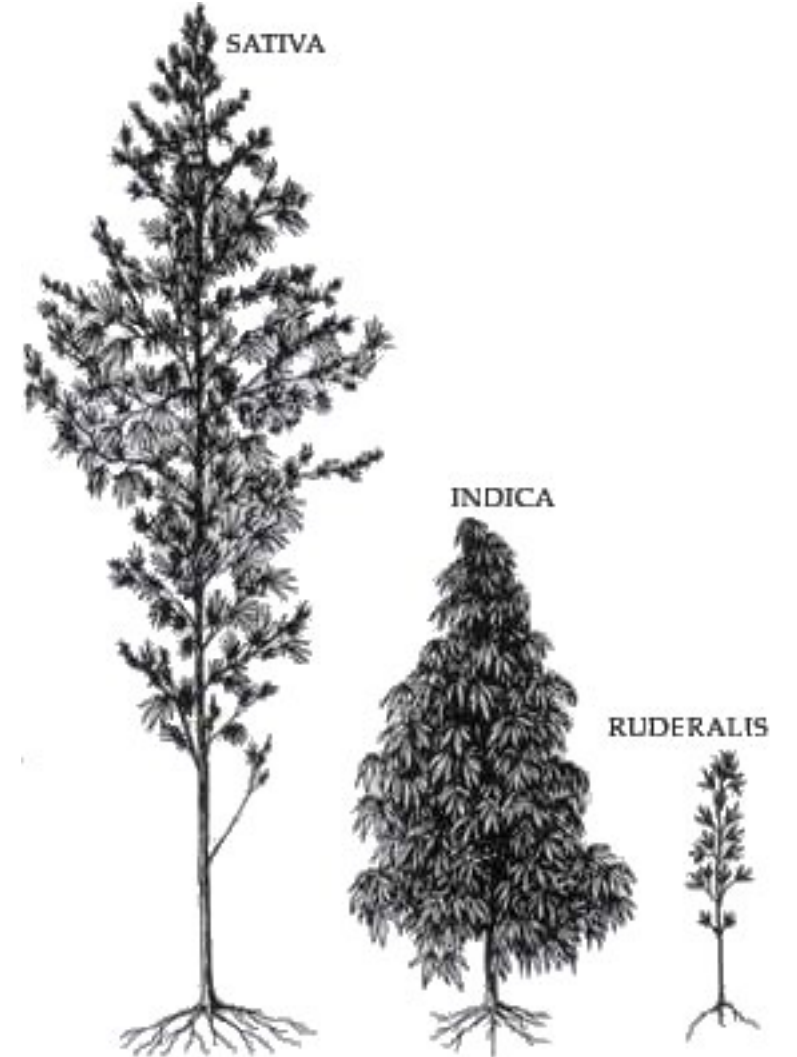
**Sativa**



**Indica**



**Ruderalis**





# Cannabis plant anatomy

- ROOTS
- COTYLEDON LEAVES
- FAN LEAVES
- FLOWER
- CALYXES
- PISTILS
- TRICHOMES





# FLOWER

Male  
flower



Female  
flower

A **cola** is simply the flowering top of the female cannabis plant. Of course, topping will give rise to multiple tops. Nevertheless, the main top buds are all considered colas. Buds and nuggets are simply cover-all terms for all flowers, that emerge from bud sites throughout the stems. Look for a white hair emerging from the leaf node in pre-flower to confirm a female cannabis plant.

**Male plants do not produce bud when they flower, which is usually a couple of weeks sooner than females.** The male cannabis plants will not necessarily be the largest, most vigorous plants in the garden either. Males produce stamens with anthers packed with pollen.

It is always wise to postpone jumping to conclusions until pre-flowers can be discerned. If the white hair is absent and a cluster of grapes begins to protrude, then a male is present.

# CALYXES



Buds are not just a tangled mess of leaves and gooey resin. Calyxes are the tiny clusters shaped like a tear drop, that constitutes a cannabis bud. Leaves will grow from between and around the calyxes. The elusive calyx is most visible to the naked eye in the later stages of flowering as buds begin to swell.

**Only non-pollinated flowers bloom abundantly.** Should the pistil get pollinated, then the calyx below becomes the ovary. This changes the function to seed incubator.

Some buds can be really hard with compact groupings of many tiny calyxes; others can have larger calyxes in a looser formation. Generally, indica influence is what gives most cannabis its tight appearance. Only heirloom landrace pure sativa strains produce a very airy wispy flower.

# PISTILS



Pistils are what are commonly known as the “hairs” on buds. **Pistils help you identify female plants in the cannabis garden.** Prior to flowering, females will display the odd pistil from leaf nodes to tip off the grower. During the flowering period, they will transition in color from white to orange/red as the bud ripens. These pistils are actually the female plant’s reproductive organs containing the ovules. The pistils are primarily outgrowths from calyxes and essentially serve to capture pollen. The female cannabis plant wants to be fertilized and so long as she is denied this during bloom, flower production will be her focus.



# TRICHOMES



Trichomes are the glistening resinous coat that covers cannabis buds. **Trichomes contain cannabinoids and terpenes, which have strong scents to keep insects away.** As flowering progresses, calyxes and surrounding sugar leaves will become covered in fields of tiny mushroom capped stalks. These heads will transition in color from clear to white to amber during blooming. These are the microscopic cannabinoid factories that give cannabis buds the effects we all know and love. Hashish, kief and all of your favorite concentrates are extracted trichomes.



# DANGER! POLLEN IN THE GARDEN

- All known strains of Cannabis are **wind-pollinated**.
- Male cannabis plants have stamen instead of pistils and they produce pollen sacs, that contain, you guessed it, pollen.
- There will be trouble in the garden if pollen gets into the pistils of flowering female cannabis plants. These anthers or pollen sacs will hang down and are usually green/yellowish in color. If a plant displays pollen sacs, it must go immediately or the rest of the crop will be seeded. Identify and remove males post-haste.
- **Only non-pollinated female plants produce Sinsemilla**, so unless you're a breeder, male plants are useless and must be removed before blooming.



# Cultivation timeline

- GERMINATION
- SEEDLING STAGE
- VEGETATIVE GROWTH
- FLOWERING



# GERMINATION / 1 to 7 days



- Usually, germination takes between 1-7 days before a **tap root** emerges.
- The paper towel method is a tried and trusted technique, but if you are a newbie or perhaps too heavy handed to gently remove little sprouts without damaging the tiny rootlets, then we recommend using a seed starter from Home Depot or Walmart.
- Sativa leaning strains tend to take a little longer to germinate often, 4-7 days. Some Indica strains and vigorous hybrids can take just a day or two. Outdoors in Spring time is naturally the time for seed sowing and cannabis is no different.

# SEEDLING STAGE / 2 weeks



Once your cannabis seeds have sprouted they are entering the seedling phase; this is not to be confused with vegetative growth, although 18-24 hours of light is common to both stages.

Even if you plan an outdoor crop it doesn't hurt to get your seedlings strong and healthy indoors before moving them into the wild. Cannabis seedlings can even thrive on a windowsill with decent sunlight.

Seedlings transition to vegetative growth usually between 10-15 days and begin to resemble tiny cannabis plants. Cannabis seeds must be encouraged to develop a vigorous healthy roots. Unless you are planting directly into final containers then small pots with lightly fertilized medium are recommended.



# VEGETATIVE GROWTH / 2 to 12 weeks



Vegetative growth is normally associated with a transplant at some point as plants outgrow the starter. Continued development of the root zone and robust branching are the top priorities for the grower.

Autoflower cultivators have even less time to play with than photoperiod growers as most autos will race into flowering after just 2-3 weeks of vegetative growth. It's for this reason that many auto growers plant their autoflowering seeds directly into the final container. The clock is ticking with autos from the moment of germination.

Photoperiod strains can be kept in vegetative growth indefinitely so long as 18+ hours of light and suitable conditions prevail. This is what allows indoor growers to keep mother plants for years and why outdoor growers plant in springtime.

This is the stage to pot up photoperiod plants into final containers, at least a couple weeks before switching to bloom or prior to Summer outdoors.

# Soil and pots



Cannabis plants need well-drained, slightly acidic soil rich with organic matter in order to thrive.

**Recipe 420** is a blend of premium aged fir bark, coir, sphagnum peat moss, pumice, earthworm castings, seabird guano, crab meal, and humic acids, enhanced with mycorrhizal fungi and beneficial soil bacteria. Walter Andersen's Nursery carries it.



A 5 gallon pot will work nicely.

# COMPANION PLANTS FOR CANNABIS THAT REPEL INSECTS

**Basil:** This herb is so well regarded, it is called the king of herbs. The sweet aroma of basil in the air acts as a **deterrent to aphids, asparagus beetles, mosquitoes, tomato hornworms and whitefly.**

**Dill:** Dill attracts allies like honeybees and hoverflies, ichneumonids and other beneficial wasps. **Swallowtail butterfly caterpillars will forgo your cannabis, as they prefer feasting on dill. Spider mites, the curse of the cannabis farmer, despise dill and will stay away in droves.** Dill is also an effective repellent for aphids, cabbage looper and squash bugs.

**Coriander:** As a front-line deterrent, **coriander repels aphids, potato beetles and the dreaded spider mite** and helps attract tachinid flies, hoverflies and a variety of parasitoid wasps that prey on bad bugs or their larvae.

**Marigold:** A companion planting staple, the powerful and pretty marigold repels beetles and leaf hoppers, Mexican beetle and objectionable nematodes. Its buoyant bloom attracts beneficial nectar-eating species.





## COMPANION PLANTS FOR CANNABIS THAT IMPROVE SOIL QUALITY

**Alfalfa** fixes nitrogen and accumulates iron, magnesium, potassium and phosphorous. The deep roots help break up the soil, increasing water penetration and retention and slowing evaporation. It grows quickly; trim and use as mulch around your plants.

**Cerastium** acts as a living mulch; the rapidly growing cerastium shades the soil and increases water penetration and retention. Trim often and use as mulch or compost.

**White & Red Clover** are very resilient and act as living mulch, encouraging soil friability. All the clovers fix nitrogen, which is released into the local neighboring plants as it decomposes.

**Chamomile** is very efficient at accumulating calcium, potassium and Sulphur; chamomile will release these nutrients back into the soil after it died.



# Fertilizing your plants

Cannabis plants require a large amount of food over their lifecycle. Use natural and organic fertilizers available at garden stores like blood meal, bone meal, fish meal, bat guano, and kelp meal. I use **organic tomato fertilizer with a 4-6-3 value**.

You can purchase nutrient solutions designed specifically for cannabis from your local grow shop or Amazon, but these are often expensive and can damage soil bacteria as they are generally composed of synthetic mineral salts and intended for indoor, soil-less growing.

Start fertilizing at the vegetative stage of the plant with nitrogen-rich fertilizer, which enables stems to be strong enough to hold the weight of heavy buds.

Switch to phosphorous-heavy fertilizer when the plant starts flowering.

**A warning about the use of pesticides, fungicides or harmful chemicals: Whatever you feed the cannabis plant, you wind up ingesting once the plant is harvested.**



Optimal NPK Values for Growing Cannabis			
Life Stage	N	P	K
Vegetative	High	Medium	High
Flowering	Low	Medium to High	High

# Watering your plants

- Over-watering is the most common mistake made by rookie growers. The rule of thumb is to water deeply, then wait until the top inch of soil is completely dry before watering again. Every other day usually works.
- Large, in-ground cannabis plants can use up to 10 gallons of water every day in warm weather. Be vigilant during a Santa Ana.
- Protect the roots of your plants from overheating during warm weather, as pots of soil can rapidly reach 90°F or more on a hot day. Use a thick layer of mulch to help keep the roots cool. Cold feet, warm head.

# FLOWERING / 6 to 20 weeks



Cannabis plants will first give you an indication of their sex in the early phase of bloom. Typically within the first two weeks of flowering females will develop pistils or “hairs” to confirm their femininity.

If you see anything resembling a cluster of grapes protruding from flowers or anywhere on the stem then you have a male cannabis plant.

Photoperiod strains are induced to bloom by the hours of light they receive. Outdoors, Mother Nature dictates the grower’s schedule and flowering will only commence in Summer/Autumn as the hours of daylight naturally diminish, making for a longer more gradual flowering period.

Autoflowering strains don’t follow the rules due to their Ruderalis genetics, so they will begin to bloom in about a month post-germination.



# Flowering

Flowering generally lasts 7-10 weeks for indica and hybrid photoperiod cannabis strains, while the sativa dominant strains can take 10-14 weeks to fully ripen.

Autos really only flower for 30-45 days with a much more sudden transition into flowering.

It's always best to evaluate if a cannabis plant is ready to harvest by taking a closer look at those resin dripping buds. Using an inexpensive scope to zoom in on those resin heads to make sure they are milky and amber rather than clear.

When your buds are blooming then the plant's interior area is shaded, reducing the plant's much-needed exposure to the sun. **When your plant starts to flower, be aggressive in pruning the big yellow and brown fan leaves** to reduce the chemical intervention of pesticides, fungicides, or other chemicals later on and to prevent powdery mildew and mold.





# Pests

Two insects seem to like cannabis. Grasshoppers will take bites out of the leaves. Sawfly (tiny wasps that live in the soil at the base of the plant) will lay eggs in the buds. When the larvae hatch, they eat the bud from the inside, leaving clumps of brown “rot” behind. If you see these brown spots, pry the bud open and remove the caterpillar.



# When to Harvest

Now covered abundantly in trichomes, pistils are shriveling back and changing color. Deep orange, mauve, brown or scarlet may emerge depending on species. The swollen resin sacks (trichomes) begin to change color in waves all over the plant. First, going from clear to milky then milky to amber. These signs mean it is time to harvest the results of your hard work.

**For higher THC content harvest when trichomes are 20-30% amber.**

For a broader cannabinoid profile, harvest when trichomes are 60-80% amber. Watch carefully as the differences here may only be twenty-four hours.

Once you confirm you've got a ripe cannabis crop on your hands it's time to break out the trimming scissors and get harvesting. After two weeks slow drying in paper bags or hung up, at room temp and approximately 50% relative humidity, you've got a stash ready to cure.



# Harvesting The Cannabis Plant

- There is no set way to harvest. Be brave and learn by doing.
- Some will wet trim, which is removing all the leaves while the plant is still standing then break the plant down further. Hang branches to dry or lay individual buds on a drying rack. Some will remove the large sugar leaves only, then harvest and hang the whole plant.
- There are no set rules except be careful when handling. You want to disturb the delicate trichomes as little as possible.







1) Wet trim – remove all the big leaves first.



2) Cut off all the colas and either dry as is, or use scissors to remove the small leaves.

**Hint: When harvesting your plants and trimming the buds, use rubbing alcohol to clean the resin off your hands afterward!**

# Drying And Curing Cannabis

- Dry your buds in a dark cool place with little humidity. Ideally, this process is very slow and should take a minimum of two weeks.
- Check things often for over drying or molds
- When dry, thin branches will easily snap. Thick branches will still be slightly flexible.
- The chlorophyll has degraded and the green of growth has been replaced with species dependent colors. Fawn, tan, a pale green or even deep blue and purple can emerge as the buds true dry colors develop.



# Drying

After one to two weeks, the stems should gently break when bent (instead of folding like they do when they're fresh) and the outside of the flower should be slightly crisp. When this happens, it's time for the next step: curing your bud. You'll do this by removing the bud from the larger stems (use this time to finish manicuring them if necessary) and placing them in sealable containers.





# Benefits to Properly Curing Cannabis

- Proper curing stops the degradation process before volatile compounds like terpenes and cannabinoids evaporate or transform into less favorable compounds.
- From the moment the crop is harvested it begins to degrade as enzymes and aerobic bacteria break down excess sugars and starches. Curing cannabis essentially forces the plant to use up those sugars, starches and excessive nutrients before they've had the chance to dry out and get stuck inside the plant.
- When freshly-harvested cannabis flowers are kept at the proper temperature and humidity, non-psychoactive cannabinoids will continue to transform into THCa, a precursor to psychoactive THC.
- The room should ideally be kept between 60 and 70 degrees Fahrenheit with a humidity level between 45 and 55 percent to help preserve the terpene content of the bud.

# Storing Cured Buds

- At this point loosely pack a well-sealed glass jar with your treasure. Open the top or "burp" the jar once a day for the first two weeks. This releases built up humidity that can mold your buds. Once the flowers are dry to the touch only burp the jar once a week. You don't want weeks of hard work to be wrecked by lack of attention.

## How Long Does Cannabis Take To Cure?

- You can cure for as long as you like. Remembering that the psychotropic compounds drop a water molecule when properly cured and become more psychoactive. This takes at least six weeks when cured under ideal conditions. The longer the cure the smoother the result. **Keep your jars in a dark cool place. THC breaks down into other cannabinoids over time when exposed to light.**





# 2019 Harvest

<u>All seeds planted March 20, 2019</u>						
Hybrid	Harvest Date	Final Height	Yield	Cost per seed	Cost per gram	Dominant strain
Sweet Tooth AUTO	6/12 <90 days	31"	28 grams	\$0	\$0	Indica
Blueberry	8/28	41"	59 grams	\$14.00	\$0.24	Indica
Afghan Kush x White Widow	9/19	41"	47 grams	\$7.85	\$0.17	Indica
Double Chocolate	10/19- 11/4/19	74"	66 grams	\$17.57	\$0.27	Sativa
Atomic Bomb	10/19- 11/27/19	74"	59 grams	\$12.60	\$0.21	Sativa
Super Lemon Haze	10/19- 11/27/19	50"	50 grams	\$0	\$0	Sativa
Silver Surfer Haze	12/12/19 9 mos!	92"	89 grams	\$10.00	\$0.11	Sativa

# Questions?

**Sunset** How to Grow Cannabis Outdoors

<https://www.sunset.com/garden/flowers-plants/how-to-grow-marijuana>



<https://www.growweedeasy.com/basics>



How to Grow Marijuana Outdoors: A Beginner's Guide

**bon appétit** A Beginner's Guide to Making Weed Butter

<https://www.bonappetit.com/story/a-beginners-guide-to-making-weed-butter>





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