

THE **GROWOLOGY** SCHOOL



GROWOLOGY WORKBOOK

Chapter 1: History of Marijuana

Once a source of quality materials and powerful medicine, cannabis still has the stigma of illegal and dangerous drugs. Let's look at the history of this illustrious plant.

There aren't many folks who haven't heard or tried cannabis. It usually resonates as a dangerous and illegal substance with a high risk of abuse, a view contrary to the true potential of marijuana and its effect on human life throughout history. In the last ten years the reputation of this plant has been changing little by little, thanks to increased awareness about its true potential.

Cannabis is believed to have been among the first plant species cultivated by man, who discovered its many applications thousands of years ago. The variety of its uses is impressive – from building material to numerous therapeutic applications. If we take into account its enormous potential, it is not surprising that marijuana is known throughout the world, what is surprising is the infamous reputation that it gained in recent times.

Where to Grow: Room, Tent, or Grow Box?

You need to decide on the location of your garden. A spare bedroom is ideal, but an area set aside in your basement or attic could also work. Closets and storage areas are easily converted into small gardens, but you may want to consider a growing tent or grow box. Tents can be set up quickly and come down just as fast, making them a stealthy choice-bear in mind that there are ambiguities in the laws around growing medical marijuana. Secrecy is of utmost importance if you want to avoid any trouble from police, as well as thieves. In addition to the security factor, if you're willing to spend a bit more money you can buy a grow box that allows you to control virtually everything inside with precision. You can monitor ventilation, lighting, and feeding schedules, as well as every other environmental factor, and most look like simple storage units or large toolboxes.

The most affordable way to get started is to purchase a grow tent. These are light-tight units that one person can assemble and take apart. Make sure you choose a tent with sturdy metal supports for your lighting system, and that it is equipped with holes for intake and outtake fans, as well as flood protection in case of any spills.

A grow box is the simplest solution-they provide everything you need in one package- but any box worth having is likely going to set you back at least twice the cost of a complete tent installation. It also locks you in to a certain size and setup, which can cause frustration if you decide you want to expand or upgrade.

Lighting Your Indoor Grow

Indoor pot cultivation requires some form of artificial lighting. Even a sunny windowsill doesn't provide the amount of sustained light necessary to produce a decent yield of dense cannabis flowers. To determine the type and size of the lighting system that's best for you, two major factors must be considered: the size of the space you're lighting and your ability to control the temperature and humidity in that environment. The lighting systems that produce the largest harvests tend to also generate the most heat. Without the ability to control the temperature, your grow space will become too hot for your plants, resulting in catastrophe. No matter which system you choose, you'll need a quality timer to turn the light on and off every day at the right intervals.

Fluorescents

Fluorescent tubes and CFL (compact fluorescent light) units work decently for growers on a budget, and since they can be kept close to the plants without fear of burning them, they can be handy in small grow spaces.

Tubular fluorescents come in a variety of lengths and widths; look for T5 models. High output (HO) fluores emit twice as much light as the regular kind, but they also use a lot more electricity.

You can coax nice buds out of plants using fluorescents, but you're unlikely to get the yields that a HID system (see overleaf) can produce.

LED

Advancements in LED (light-emitting diode) technology look very promising, and testing results show that their future is bright. LEDs are extremely efficient, so they drastically reduce power consumption and heat, creating usable lumens without the typical drawback of other light systems.

As LEDs continue to improve in performance and come down in price, they become more desirable as grow lighting. Still, at this point I recommend them only for use during vegetative growth, or as supplemental lighting to a main HID lighting system.

HID

The ultimate lighting system is a high-intensity discharge (HID) light system, either metal halide (MH) or high-pressure sodium (HPS), consisting of an electrical ballast, a bulb, and the reflector housing. Ceramic metal halides (CMH) are the newest grow lights on the scene and have shown much promise in reducing electrical costs and heat produced.

HID lights are most indoor growers' lighting of choice for good reason. A variety of wattages—from 150 watts through 250, 400, and 600 watts, to the mighty 1,000-watt lights—make HID's versatile as well as unmatched in their ability to deliver the essential lumens needed for plants to thrive inside. A mixture of

MH and HPS lights is the ideal, but prevailing wisdom is that MH lights are better for stacking nodes during the vegetative stage of growth, while HPS lights more closely mimic the golden red glow of fall sunshine, so these are the best choice during the flowering stage.

The downside to HID's is that they do produce a lot of heat, meaning you will need to find some way of cooling your space, and you should be careful not to burn your crops.

The Setup

Using HID's, a minimum of 50 watts per square foot (6,000 lumens per square foot) is necessary to maximize growth rates without creating too much heat. Avoid overkill: put 1,000-watt lights in a cupboard and you're giving yourself the unnecessary headache of a lot of hot air to get rid of. Whichever lighting system you opt for, you're aiming for 6,000 lumens minimum.

Remember that you're looking to direct as much light as possible onto your plants. Use the best reflectors you can afford to maximize the light shining on your plants and hang lights as close as possible to the plants without burning them to avoid lanky, stretched plants.

Avoid Light Leaks

Before putting any plants into your space get inside with the lights off during the daytime. If you can see any light from outside penetrating through cracks or holes in your space, seal them and try again. Light leaks during the dark cycle of your flowering stage will confuse your plants into staying in the vegetative stage, re-vegging, or even turning into hermaphrodites. Ensure that your dark period will truly all of these calamities from occurring.

How High Should I Hang My Light

A general rule is around one foot away, but this varies depending on the light of your choice. 1,000-watt HPS lights should be roughly 18 inches from canopy level, while a bank of fluorescent lights can be 3-4 inches from the growing shoots. Too close and you burn your plants; too far away and they stretch due to lack of light. Testing the heat at canopy level on the back of your hand gives a decent guide. You'll need to adjust the distance (either by raising the lights or lowering the plants) as the plants grow, so factor this into your grow room design.



Chapter 2

Shopping List

Growing cannabis at home may not turn as easy as people may think it is. Although the final product may cost just a few bucks in the black market, it's sad to say that this inflated cost is not even close to the actual cost of growing this plant. Therefore, to maximize profits when growing and selling cannabis, this section will review some of the fundamental factors you'll need to consider before starting off.

Seeds

The best cannabis seeds to consider when growing marijuana are those sold by approved seed companies. Research on the best strains which are capable of performing well in your grow room. Unless you're planning on breeding your cannabis, always buy feminized seeds as they're the ones that produce the required amounts of THC.

Grow Tent

The size of your tent or grow area is one of the key factors you'll need to consider when growing marijuana for the first time. Depending with the quantity of your strains, you may either set up a small or a large grow tent. Since some species of the cannabis may end up being tall or broad depending with the lighting, temperatures and fertilizers used, your grow room should have either of these measurements; 1m(H)x0.75 (W)x1m (L) or 3ft(H)x 3ft(W)x 5ft (L).

Lights

The amount of light exposed to your marijuana directly impacts the amount of THC you'll harvest. In the past, marijuana farmers relied on High Intensity Discharge lights such as Metal Halide systems and High-Pressure Sodium lights to grow marijuana on its different growth cycles. However, due to their high wattage and increasingly hot characteristics, these lights consume a lot of electricity and require a grower to install carbon filters and extraction fans for perfect air conditioning. Due to this reason, marijuana growers have been forced to advance to the latest LED lights which are energy efficient, durable and easy to operate.

Odor Control

A cannabis plant doesn't produce any odor until it gets to the flowering stage. At such point—depending with the location of your grow room/tent as well as the number of strains you're growing—you may either decide to install a carbon filter or an air extraction unit. However, in case you're growing small strains for your own personal use, consider purchasing an Ona Block Pro. Depending with the amount of smell in your room, opening the lid of the container for some time will neutralize the cannabis odor in your room.

Getting Started

Now that you're aware of what cannabis is and what it can do for you, the next step is getting prepared to produce your own stash. Just like any other hobby, determining your goals for growing marijuana takes precedence over everything else.

Planning

When you're sticking to a general plan, it's best to lay out your personal goals. Begin by asking yourself a few personal questions about your relationship with cannabis.

- What do I want to do with my pot plant?
- How often do I want to harvest my buds?
- Do I want to sell?
- For how many people am I preparing cannabis for?

These questions will help you paint a better picture of what you want to do. These questions will determine the amount of seeds, equipment, lighting fixtures, and space that you should allot for your pot plants.

Another thing to consider is how you're going to consume your cannabis. Will you vaporize it? Smoke?

Knowing Your Limitations

It is important to have control on your consumption and yield. Because your pot will become an accessible resource if you plant it yourself, you might become tempted to increase your daily consumption. This may be either a good or bad idea, depending on your self-discipline.

If you know your limitations when it comes to consuming cannabis, you can control the amount of weed you produce personally so that you have enough to tide yourself over with have a little to spare for sudden cravings.

If you end up with too much surplus, you could end up wanting to consume everything in a short period, which can lead to addiction and other medical concerns. You don't want to overdose simply because of the fact that you have too much stash at home.

The beginner with cannabis should only be able to consume a full gram in one sitting. That should be more than enough to get you buzzed and satisfied. For that kind of consumption, one pot plant should do the trick. With the right seed, it can yield more than enough to last you a few weeks.

As a beginner, taking care of one pot is also a good start. Once you get the hang of taking care of one pot, then adding more pots as necessary, becomes a more realistic approach than just starting with a large amount of pots with zero experience.

Choosing the Indoor Approach

Regardless of the legality and acceptability of growing marijuana in your locality, it's always a better option to grow your herbs indoors. This is especially true for beginners who are also looking to understand their plants better.

Control

If you have grown cannabis outdoors, your plants are subject to the unpredictable twists and turns of Mother Nature. You will find yourself on the lookout for rain, sleet, and hail that might damage your precious product.

On top of that, your pot plants are also subject to nature's schedule. It is important to take note that growing cannabis is being able to increase your yield. To do so, you have to allow your flowering plants to absorb as much nutrients as possible before it blooms. When it blooms, whatever is on the stalk is what you get.

To get the most stalk, most experts try to delay the blooming process by increasing the amount of daylight the plant gets, fooling the plant into a state of nutrient absorption and delaying blossoming.

You cannot do that if you grow your cannabis outdoors. That means you harvest, whether you're happy with the buds or not.

Quality

In line with control, you get a better product when you're able to dictate the terms in which your pot plants grow. Because you have better control over the various elements that affect the growth of your cannabis, you can turn the tides into your favor by ensuring the plant gets more than its fair share.

You can use aerated soil so that the roots breathe better. You can provide supplemental vitamins and other additives to help increase yield. This means you dictate what kind of flowers you harvest, depending on how well you take care of them.

This is also where variety comes in. With the freedom to manipulate the elements such as lighting and fertilizer, you can cultivate different kinds of cannabis products that have different flavors and effects. There are certainly more avenues to explore when cultivating indoors.

Security

Because you're within the confines of your property, your only concern is the smell of your product. This is especially true in places wherein marijuana for personal use is still deemed as illegal.

Placing the law aside, cultivating within your home also secures your product from the would-be thieves that could just waltz right up to your garden and snag your whole harvest for free. That could be damaging to you especially if you're planning to market your own product within your social circles.

The Downside

Of course, if growing indoors has its advantages, then it also has its fair share of challenges. The biggest of these challenges is the absence of a natural ecosystem to care for the plant.

Being a flowering, cannabis is prey to mites and other parasites that are attracted to this certain kind of flowering plant. When grown in the wild, Mother Nature provides natural guardians for these plants such as wasps, bees, and other elements. When you grow your cannabis indoors, these natural forms of protection disappear, and you find yourself battling against the elements to keep your pot plant healthy before it can yield.

There are also claims that cannabis grown with natural light has a crispness that artificial light fails to replicate. With many tastes, variants, and consumers out there in the market, this crispness can be considered a matter of personal preference as both indoor and outdoor products both have high-quality.

Timing

Since you'll be planting indoors, you won't have to worry about the season and the weather. Whether it's right in the middle of summer or bordering into winter, you can grow your pot plant as long as you have the proper equipment and seeds.

Do not be afraid of starting late in the year with your new hobby. As long as you can take care of the plant, it will yield and provide you with a personal source of cannabis.

Despite that, you will still have to rely on your calendar when it comes to planning your harvest. Upon planting your seeds, give them about six weeks to absorb nutrients and bulk up. After that, you're sure of a bountiful harvest when the plant starts to bear flowers.

You'll be looking at around for to five months before your first batch becomes ready for curing and consumption. It's a laborious wait but the reward is worth the trouble.



Chapter 3

Ordering Seeds

Whether you're an experienced cannabis farmer or if you're not ordering the best seeds is paramount. With the right seeds, the rate of germination will be exceptionally high, and you'll not experience many complications during growth. While some farmers will opt to purchase cheap seeds, wise farmers will suggest buying high quality seeds which will deliver higher yields in the long run.

There are some important factors you need to keep in mind when ordering marijuana seeds. Firstly, you need to recognize where exactly you're planning to grow your seeds. Some people may prefer outdoor farming while others may prefer growing the plants indoors.

There are other things you need to keep in mind when ordering your cannabis seeds. What's the estimate flowering period? What's the THC content of the marijuana once it's fully grown? And is it auto-flowering? Since this guide is aimed at enlightening those new farmers who want to know more about the life cycle of the marijuana, we will review some of the best marijuana seeds available in the market.

Before we commence, let me point out that marijuana seeds can be ordered either online or from trusted outlet stores. Note that, depending with your needs, you can opt to order female seeds which will produce more buds and deliver greater results than a mix of male and female seeds.

With that being said, let's review some of the best marijuana seeds available in the market.

- **Purple Kush** – Purple Kush seeds are very easy to grow both indoors and outdoors. The final plant has high THC levels of 25% and is among the strongest marijuana with the fastest effects in the world when consumed. In the world of medicine, the Purple Kush is an effective treatment for depression, muscle spasms, insomnia and anxiety.
- **Girl Scout Cookies** – The seeds of the GSC are easy to find online and can grow in almost any climate throughout the world. The final plant has a THC of 22% and the flavor produced during consumption resembles that of cookies. In the world of medicine, this particular plant can cure stress, pain, nausea and depression.
- **White Widow** – If you ask any cannabis farmer out there, they'll tell you that the White Widow seeds are among the best in the market. The reason why they're referred to as White Widow is due to their white trichome crystals that develop at the final flowering stage of their cycle. The final plant has a magnificent 26% THC level which makes this plant the best for professional smokers and not beginners.

Harvest Time

When is my marijuana plant ready for harvest? This is one of the burning questions most cannabis farmers ask themselves immediately after their plants reach the flowering stage. As one of the most anticipated moments in the life of a marijuana plant, harvest time varies depending with the type of strains and the environment (indoors or outdoors).

There are various ways farmers can determine whether the cannabis plant is ready for harvest. One way is to look at the calyxes. During the final stages, these calyxes swell and ripen producing a layer of glass like resin on the surface. Another method you can use to determine harvest time for a cannabis plant is checking the ration of red to white on the pistils. Let's review these methods more broadly to give you more information on how to precisely identify when your marijuana is ready for harvest.

The Pistil Method

During the flowering stage, the pistils on the buds of your marijuana plant are mostly sticky and white. These signs mean that your plant is not yet ready for harvest and needs more time. When using a

magnifying glass, you'll notice that most pistils are white and just a few are red/brown. When the plant is ready for harvest, about 70% of the pistils will turn red/brown meaning they've achieved their highest THC levels. Note that, if you delay harvesting the plants, the strong effect of THC will convert to a more relaxing CBN.

However, the pistil method is not 100% reliable as some strains may not reveal maturity just by observing the color of the pistils. In such an occasion, the next method will be much more reliable.

Trichome method

This method is the most precise and involves checking the cannabis resin/trichome using a magnifying glass. Trichome is a sticky frosty substance that appears on the surface of the leaves and buds. When ready for harvest, the resin looks like small mushrooms with a ball at the top. The small balls contain THC and at this time, the marijuana plant is ready for harvest.

Steps in Marijuana Cultivation

Cultivation in general can be quite intimidating if it is your first time. The good thing is that you can master this skill given some time and practice. Aside from honing your gardening skills, you get the chance to reap the fruits of your hard work.

It will take months before you can harvest your own marijuana produce. there is also the possibility that you might not reap anything at all. But that is okay. You can simply start again.

Marijuana cultivation requires time, effort and commitment. It seems hard at first but learning it and harvesting your produce later on will make it fun and worthwhile. Additionally, you will have a better view on gardening as a whole.

There are different ways to grow marijuana and you have to consider a couple of things along the way. But, below are key steps applicable to all techniques of marijuana cultivation.

Step 1: Determine your specific purpose for planting

Personal consumption is probably your main reason. You have to state though whether it is for medication, recreation or both. Determine the number of users as well. Decide the number of plants you want to grow based on your purpose for planting.

Step 2: Comply with the applicable laws, rules and regulations about planting marijuana in your place.

Search online and visit government websites concerning the cultivation and use of marijuana in your state or country. Read applicable laws and take note of the requirements and limitations. Talk to your landlord or building manager if you live in an apartment or condominium. Meet the basic legal requirements (such as license or permit) before you even start planting. Always keep in mind the limitations as well. If the law says you can only plant up to 10 marijuana plants, then you should only 10 or less. Also, be on the lookout for the recommended techniques and designs. In some state laws,

marijuana cultivation should only be done in an enclosed and secured area to keep minors away.

Step 3: Choose whether to grow your marijuana plants outdoors or indoors

You should first know what is allowed or recommended in your area before deciding which one to apply. Each technique has its fair share of advantages and disadvantages. You will know more about the best application of each technique in the next chapters. Outdoor cultivation and indoor cultivation with soil as a medium remain the most suitable for first-time growers. Once you have mastered one of both of the said methods, you can try out hydroponic gardening which is becoming more popular recently, not just for marijuana cultivation but for growing other crops.

Step 4: Prepare your garden or grow room.

As usual, refer to the recommended designs or the garden requirements if there are any. You have to consider three things for your garden: location, growing medium, and plant needs. Pick the most suitable place in your garden or in your home for your marijuana garden or grow room. As a beginner, soil is the best planting medium you can use, but there are many other growing mediums out there. For your plant needs, you have to focus on lights, water and nutrients. For indoor marijuana cultivation, you may also need to control temperature, humidity, smell and many other aspects.

Step 5: Select your seeds.

Seed selection is one of the most enjoyable parts of marijuana cultivation. There are only three species under the genus *Cannabis*, but you can also choose from many hybrids that marijuana enthusiasts developed in the previous years. The strains come in fun, mysterious and interesting names. It can get pretty confusing as the names of the strains may be totally unrelated to their advantageous properties.

Before you buy seeds, search for the different strains online. You need to consider different things when it comes to seed selection. As a beginner, you have to research which strains are easy to cultivate and highly resilient. Additionally, get to know the best strains for your medical condition if you are planning to grow marijuana for treatment. You should also weigh on the suitability of strains for outdoor or indoor cultivation. It pays to know the quantity and quality of their expected yields as well.

After choosing the strains you want to buy, it is time to look for a supplier. You can buy from a physical or online store. You may also refer to the individual breeders. Always verify the legitimacy of your supplier to guarantee that you are purchasing the right strain for your planting goals.

Step 6: Germinate your seeds.

Germination is the process of allowing your seeds to sprout. It will take a few days to a week. There are various methods to do so. Each method requires a different set of materials. There are also conditions that you need to meet to make sure that seed germination takes place. In some methods, you might need to transplant and that calls for additional guidelines you have to follow.

Step 7: Take care of your plants. This involves:

- Providing light, water, and nutrients
- Training your Plants
- Preventing and managing possible plant problems and pest infection

Proper plant care differs for each growing phase. Marijuana plants undergo four growing phases, and these are seedling phase, vegetative phase, pre-flowering phase, and flowering phase. Aside from these phases, proper plant care is also different between outdoor and indoor cultivation. This step will take the most time. It is bound to be the most difficult as well.

Step 8: Harvest your produce.

The best part of growing a plant is being able to harvest and use the fruits of your labor, or in the case of marijuana, the flowers. You do not need a big laboratory or a degree to prepare your own natural remedy out of marijuana. There are basic preparations you can try.

The above-mentioned steps are just an overview of the actual cultivation process. More detailed guidelines are provided in the next chapters. Now that you are familiar with the steps, you can proceed with choosing your seeds.



Chapter 4

Plant Health

High Intensity Discharge Lights (HID)

There are different lights you can use during the growing process of the cannabis plant. However, every type of lighting you introduce to your plants must suit a particular growth stage as this will impact your cannabis strains at the final stage. Some of the best lights that perform perfectly well in the growth cycle of the cannabis are the High Intensity Discharge lights. These lights are relatively cheaper as compared to LED lights and are the best to consider throughout the life cycle of the marijuana. There are three types of HID lights in the market which include the High-Pressure Sodium (HPS), the Metal Halide (MH) and the Mercury Vapor (MV) lights.

Metal Halide Systems (MH)

Majority of the Metal Halide lights produce light in a blue spectrum which is paramount during the vegetative stage. This is because the lights tend to replicate the natural sunlight during the summer seasons. These lights encourage healthy growth of your cannabis especially the stem, the leaves and the branches leading to short and bushy strains. Although MH lights are among the best-known lights for indoor marijuana growth, it's not recommended to use them throughout the life cycle.

High Pressure Sodium Systems (HPS)

When your marijuana achieves the flowering stage, growers are recommended to switch to the HPS lights. This is because HPS lights emit yellow, orange and red-light spectrums which triggers the productive stage of the marijuana growth. The reason why HPS lights are used in the flowering and not vegetative stage is because they deliver skinny and tall strains unlike the MH lights which deliver short and bush cannabis plants. One drawback with the HPS lights is that they create more heat which consumes a lot of electricity. You also need to have an air conditioner and a fan for uniform air circulation throughout the grow room.

Fluorescent Lights

Coated with phosphor and filled with a mixture of different gases, fluorescent lights can be used in the growth cycle of the cannabis plant. These lights come in a range of different sizes (from 6-96 inches) and wattage (from 4-214 watts). Fluorescent lights are known for releasing low amounts of heat in a grow room and therefore you'll need to place them close enough to the plants for perfect results. One advantage with these lights is that they're cheap and they consume less power. On the other hand, due to their low light intensity, your plants will produce less buds/flowers in the final stage leading to lower yields. Therefore, for perfect results, most farmers opt to replace them with HID lights or the expensive T5 fluorescent lights.

LED Grow Lights

In the past, cannabis farmers used MH and HPS lights for indoor use during the vegetative and flowering stages of the cannabis life cycle. Although these lights work perfectly well, they have been facing a major drawback of high-power consumption. In addition to this, these bulbs lose their effectiveness quite fast reducing the amount of light and consequently forcing the marijuana strains to work extra hard to get sufficient light.

To solve this problem, farmers have turned to the use of LED lights which have proved to work well than both MH and HPS lights. LED lights come in a variety of options that can be used in different stages of the cannabis growth cycle. In case of the vegetative cycle, you only need to purchase LED that emits blue lights while in the flowering stage; you'll need to get those with red/orange lights. The best thing about LED lights is that they consume 60-90% less power than HID lights.

Choosing Seeds

Here's probably one of the more exciting parts of growing your cannabis; choosing what seeds to plant. Although you're just talking about one species, marijuana has taken such a huge leap in variety when it comes to flavors, growth mechanics, and even gender control.

Although plenty of seeds are self-explanatory, it's important to know what's in the market before placing in an order for some seeds.

If you're a consumer starting with zero background knowledge on seeds, it's easy to become confused by the many terms and types for seeds out in the market right now. If you live in an area where marijuana is legal, you'll see that the competition is very stiff, and every distributor is aiming to come up with the most unique product.

But how can you get more unique than a bunch of buds?

Sativa VS Indica

It was mentioned earlier that the genus cannabis is divided further into sub-species that have mild differences. Two of the more common sub-species are cannabis sativa and cannabis Indica. While both strains are ideal for smoking, vaporizing, and ingesting, their mild differences could throw you off.

The main difference between the two strains lies within their effects on the body. If you're looking to get more relaxation from your product, then you're going to want to get your hands-on cannabis sativa seeds.

On the other hand, a more euphoric and energizing sensation comes from cannabis Indica. These strains have a higher amount of CBD compared to their THC count. Sativa, on the other hand, has more THC. This is the reason behind their differences.

Auto-flowering Seeds

As the name implies, these seeds begin flowering after a certain time, depending on where you get them. Whatever it is that you've done in between the germination stage and the flowering stage, that's all you're reaping.

These seeds are great for beginners in the sense that you know when to expect your harvest. You can also give yourself a timeline on which you can make predictable results. You won't have to see what happens with your pot plant with these seeds because flowers will bloom regardless of the amount of sunlight and nutrients you give them.

On top of that, these seeds produce smaller plants that are easier to manage. They consume less space and allow you to grow batches in different stages of growth next to each other.

If you want your first batch to be a successful one in the sense that you end up with something to consume, your best bet is to go with an auto-flowering seed strain.

Feminized

Male cannabis seeds do not produce flowers that are rich in THC and CBD, making them useless for the consumer. Thus, enthusiasts all around the world struggle with the notion of identifying the gender of their plants and getting rid of the male specimens in their population.

When it comes to the reproductive cycle of plants, it's almost impossible to ensure that 100% of your seeds will all be feminine. Despite that, you can come statistically close to this margin with the right breeding methods.

Thanks to many years of research and experimenting done by many seedbanks around the world, you no longer have to worry about weeding out most of the seeds you buy. You can actually buy seed batches that are already feminized by default. This is done by chemically treating the seeds to produce mostly female plants.

Most feminized packages can guarantee up to 95% female populations if you plant the entire batch. If you're a first-time grower that is looking for a good yield, you will want to look for feminized batches.

Despite that, male seeds also have a purpose, especially for those in the business of distributing cannabis. To make seeds of your own, you will be needing male plants to pollinate your females and create buds that have seeds.

In those cases, you're going to want to have a regular batch of seeds that haven't been modified to be predominately female. This is why you have to be thankful even if your batch of females still produce males. You're probably going to want them to start a new batch once you have consumed your first harvest.

Since cannabis can also become hermaphrodites (have male and female parts), you will still have to inspect all the flowers on your pot plant to make sure that you only have female flowers. If you miss a male flower by any chance, it will pollinate the other female flowers in your batch, ruining your harvest.

Other Classifications

If you're looking for seeds online, you've probably seen some common names popping up on multiple sales portals:

- Super Skunk
- AK47
- Afghan Skunk
- Bubble Gum
- Afghan Kush

While these names sound like fancy brand names to attract your attention, they are actually smaller, more specialized strains of cannabis that have specific effects.

There are some strains that help energize you while giving you less down-times to help you get on with your day. There are other strains that allow you to ease into your evenings easily.

There are also strains that have particular flavors along with the smoke when they're prepared. Others also give off certain scents that some consumers are very particular with.

This is where seed selection becomes interesting. Here, you're opened to the possibility of finding something more specific to your preferences as a consumer. You can begin by duplicating the kind of

product with which you're familiar. The best way to that is to ask your dealer what kind of cannabis you're buying. There's a good chance the name of the package is the same name as the seeds you want.

When you've successfully grown your first pot plant or batch of plants, you can start experimenting with other varieties. Mixing seed batches and cross-pollinating breeds will give you more customization.

Seeds Versus Clones

Another interesting aspect of growing cannabis is the possibility of raising a whole plant from the branches of another plants. These are known as clones.

Since cannabis is considered as a weed, certain parts of the plant that are left alone in ideal conditions will also grow roots and become a full plant in its own regard, just like any other weed when left alone. This is why you can also opt to grow clone instead of a seed.

The only advantage you'll have with growing clones is that you won't have to nourish any seeds so that they germinate. It's already been done. What you're doing is you're taking an amputated part of the plant and helping it regenerate.

Once the clone has developed roots of its own, the differences in growing disappear as you already have another new plant that will sprout flowers for you.



Growing your Mind-Blown Marijuana Outdoors

If you remember correctly, one of the biggest advantages of growing outdoors is that Mother Nature provides most of what you need for growing. This includes sunlight, nutrients ventilation, and even water if the weather is just right. This makes it rather affordable to grow outdoors, however, there are still several things to keep in mind. This chapter will discuss choosing the right location, how to get quality soil outdoors, and how to test your water and nutrient quality.

Choosing the Right Location

When you grow marijuana outdoors, it is exposed to many risks. To keep things such as pests, prying eyes, and the law away from your plants, it is important to choose the right location for growing your crop.

#1: Amount of Sunlight

The first thing that you should consider is sunlight. Even the plants requiring low levels of sunlight will need a minimum of 5-6 hours of direct sunlight every day. The best way to achieve this is to plant in an area that receives direct sunlight from the hours of 10 a.m. to 4 p.m. Any sunlight that is received in addition to this will just help your plant grow larger more quickly. You should also avoid planting near trees, hills, and buildings if you are worried about them blocking sun during some the most critical hours.

#2: Level of Discreetness

Even if you are growing your marijuana legally, you may not want everyone to know about it. Some people still look down on marijuana use and others may try to take some of your crop for their own. You should remember that some marijuana plants can get quite tall when grown outside, even growing 15 feet or higher. Try to plant your cannabis in a fenced area or surround it with trees or tall shrubs.

You also do not have to always plant in in-ground locations. If you do not have an area that is good to plant outdoors, consider placing a small plant in the window of your home or outside on a roof balcony. If you are worried about being seen, you can easily place a few potted trees nearby to hide your plants from prying eyes.

#3: Access to water

If you are worried about being caught with your marijuana crop for any reason, the best thing that you can do is plant away from your home. This could be a discreet location that nobody visits in your local woods or a nearby field that you have access to. Something to consider if you choose a remote location, however, is access to water. There are good odds that you will find yourself making a long trek with a lot of water if you plant in an area that is too remote and doesn't have any nearby lakes or rivers that you can borrow from.

#4: Exposure to the Elements

People are not the only thing that you must worry about when you plant your marijuana crop outside. Proximity to deer, rabbits, and other wildlife may find your crop tasty to munch on, while being planted at the bottom of a slightly downhill location can leave your plants susceptible to water damage or drowning. Consider the various elements that may exist in your area and then consider way to protect your crop. If you are at risk from downhill water damage, then move to a higher location. Additionally, if deer and other munching animals are a problem, consider a growing cage or surrounding your plants with a fence to keep these kinds of pests away. For information on dealing with common pests, check out Chapter 13 on troubleshooting your grow.

#5: Temperature

If the temperature gets too hot or too cold a few days out of the month, your cannabis crop may not be as bountiful, but it can still thrive. If you are worried about hot temperatures, be sure to plant away from bricks or concrete that will trap heat and radiate it into your plant. You should also avoid planting near surfaces like pools or ponds that will reflect the sun.

Ideally, cannabis should be kept in weather between 55 degrees and 86 degrees. If you are worried about your plants getting too cold at night, plant them near a brick wall or other surface that may have absorbed heat throughout the day. You should also consider the dampness or humidity in your area, because an area that is too wet without a good drainage system can cause mildew or mold to grow on your plants and can also cause disease.

#6: Wind Exposure

The right amount of wind provides good ventilation and can even cool your crop if you plant in a dry climate. It also increases water consumption, though, so be sure to give your plant plenty of water. If you are worried about too much wind, plant some windbreakers like shrubs or use a fence or decorative wall to protect your plants.

#7: The Strain That You Are Growing

The cannabis works like any other living organism – it must be able to adapt to the growing conditions of the area that it lives in to survive. Ideally, all the needs stemming from its original lineage will be met so that it can thrive and produce the best yield. You should heavily consider the climate of your specific area and what types of marijuana have been cultivated from climates similar to yours. You will find that some strains can grow in almost any environment, while those like Tropical Sativa can only be grown in the climate they are already adapted to.

Preparing the Soil in Your Garden

When you grow outside, Mother Nature provides soil that is often rich with nutrients for your cannabis to grow in. However, the nutrient levels and minerals in the soil are not always the perfect levels for growing marijuana. This section will teach you what you need to know to get the perfect soil for marijuana.

Balance of Soil Components

There are three different things that make up what we know as soil: sand, clay, silt. When growing marijuana, having the perfect balance of these will give you proper drainage and ventilation for your crop to grow.

First, you need to understand the properties of each soil element. Then you can make changes to the soil, so it is the right climate for cannabis to grow. These changes should be made about a month before you are ready to grow, especially if you are using materials that are going to breakdown and absorb nutrients into the soil.

Sandy soils provide great ventilation and drainage, because the sand does not clump together. Unfortunately, everything runs through sand – including nutrients. This becomes increasingly true in rainy environments or if you find yourself watering your plant frequently (which you should). If your soil is too sandy, dig out large holes in the area where you plant to have your garden and fill them with coco coir (made of the husk from a coconut), peat moss, and compost. These will add plenty of nutrients to your soil, as well as bind the soil together enough that there is good airflow and water drainage, but nutrients are still absorbed.

Soils that are rich in clay are very heavy, which is one of the reasons that they do not hold oxygen to provide good ventilation and that they drain slowly. To improve soils that are heavy in clay, place decomposed organic matter like manure, worm castings, and compost and mix it in with the soil. This provides plenty of nutrients and will also break the soil up well enough that there is adequate drainage and ventilation.

Silty soil is by far the most ideal growing medium for marijuana crop. Silty soil can often be found in prehistoric lake bottoms and riverbeds. It is full of nutrients, holds moisture but also provides a good amount of drainage, and warms quickly to keep your plant's roots toasty on cold nights. This can be identified by its dark, rich color and crumbly texture.

Why pH is Important

The importance of the pH of your plant comes from the way that it absorbs nutrients. Each of the individual nutrients that a plant may need can only be absorbed at a certain level. When the pH is out of balance, your cannabis plant may not be absorbing one of the key nutrients that it needs. The result of this could be stunted growth, leaf discoloration, or any other symptoms that represent a nutrient deficiency.

For cannabis, the ideal pH for growing in soil is between 6.0 and 7.0. Marijuana grows best in slightly acidic soil. You can find this information out by sending out a sample of your garden soil for testing or by purchasing the equipment to test your pH yourself at home.

Consider Testing Your Soil

By far one of the easiest methods of figuring out the composition of your soil, as well as its pH balance and the nutrients that are in it is to send it away to be tested by a soil testing company. In addition to this useful information, you will find out if there are any contaminants like lead, pesticides, and other dangerous substances in your soils that may be leached into your marijuana plant. The report will usually be summarized with recommended nutrients to add to your soil. This gives you the option of either supplementing the individual nutrients that are missing or adding a fertilizer or nutrient solution that contains everything that your plants need.

If you find out that your soil is out of range on either the alkaline or acidic end before you plant, you can add things to the soil to raise or lower the acidity. You want to add a very small amount of the below materials to your soil at a time. You must adjust the pH slowly to get it in range, so start at least a week before you are ready to plant your cannabis. After you have added the small amount and mixed it through the soil, water it and wait at least a full 24 hours before checking it again.

If your soil needs to be more alkaline (if the pH is too low), you can add things like crushed marble, crushed oyster shells, hardwood ash, dolomite lime, or bone meal.

If your soil needs to be more acidic (if the pH is too high), you can add things like wood chips, peat moss, cottonseed meal, sawdust, or leaf mold.

Adding Physical Support for Your Plants

Your plant will benefit in a few different ways from a stake or growing cage. A metal or wooden stake (or even a section of lattice board) will provide your cannabis with support to grow upwards. Additionally, when you face harsh winds or heavy water droplets, they will not weigh your cannabis plant down. A cage works very in the same way, however, it will give added protection by keeping out bunnies, deer, and other animals that may want to make your marijuana plants their next meal.

Additional Considerations for Growing in Outdoor Containers

You are not limited to planting your cannabis crop in the ground if you grow outdoors. Alternatively, you can plant in a bucket, pot, or other type of planting container. Then, these can either be planted directly in the ground with your plant or kept on a patio, in the woods, or anywhere else that you choose.

One of the major advantages of planting in an outdoor container is that you can transport your plant wherever you need to. This means that you can quickly move your grow operation if someone catches wind of your activities or you can bring your plants inside on nights where it gets too cold (and days where it gets too hot). The major disadvantage, however, is that you will not necessarily have as large of a yield as you typically expect from outdoor marijuana. This is because the size of your plant is limited to the size of the root system that can grow in your pot.

If you do choose to grow in an outdoor container, you can pick up special potting soil or amend the soil in your yard and put it in the pot. You can even collect soil from another outdoor area if you know that it is high quality (such as silty soil from your local riverbed). You will want to remember to choose a container with adequate drainage and plenty of airflow. For some containers, you will need to drill your

own holes for aeration and be sure to choose a good soil. You can use perlite beads to improve aeration and drainage through your soil. You may also want to add rocks in a layer at the bottom of your planting container and put the soil on top of it.

Watering Outdoor Plants in Containers

You will likely need to water outdoor plants in containers more frequently than those planted in the ground. Depending on the heat in your area, you may need to water every day or more frequently. For potted plants, you want to thoroughly saturate the soil. Instead of watering on a regular schedule, pay close attention to the top one inch of soil. When it is completely dry, you will add more water to your plant and saturate the soil once again.

Once your soil has been prepared and you have all the things for your outdoor setup, you are ready to move on to the next step. If you know that you want to grow your plants outside, you skip Chapters 5 and 6 as they apply directly to indoor setup.

Seed Selection to Seed Germination

Seed selection in marijuana cultivation is a lot more complex than you think. Some books are solely dedicated for that subject alone. As a beginner and an individual grower, you do not have to scour such books now. If you become interested with experimenting and breeding different marijuana seeds, you might want to invest in a book that offers detailed information about them. For the meantime, you simply have to focus on the best seeds for beginners.

In this chapter, you will know about the basics of seed selection and the methods of seed germination. However, you have to remember that you need to prepare your garden first before doing your seed hunt. Your garden and the materials should be ready so you can focus on the seed germination later on. Get to know the ways to prepare your garden in the next chapters.

Types/Species

Cannabis is a member of the Cannabaceae family, which also includes plants that are used as ornaments. There are three classifications/species of cannabis, but there are also hybrids. The three main species are as follows:

- Cannabis Indica – This one is native to Central Asia. This one is ideal for indoor cultivation as it usually does not go beyond 4 feet. Body relaxation is among the noteworthy health benefits from this species.
- Cannabis Sativa – This species is native to Southeast Asia. Outdoor cultivation is the most suitable technique for this species because it tends to grow beyond 4 feet. Mood improvement is one of the notable medical benefits from this species.

- Cannabis Ruderalis – This species is native to Eastern Europe. It grows in the wild which makes it practically a low-maintenance plant. However, it has low tetrahydrocannabinol or THC (the main cannabinoid in cannabis) content and it cannot be used for smoking. Because of this, its seeds are rarely sold to individual growers.
- Hybrids – You can get these from seed banks and individual breeders. These are the best option if you want to get the benefits from two different Cannabis species. Even strains from C. ruderalis plants may be sought for hybrids because even though they are less therapeutic than other species, they tend to be highly resilient.

Females versus Males

Marijuana plants are made of females and males. The basic difference between the two is their flowers. The flowers from male marijuana plants have no value to individual growers who simply want the plants for medication and relaxation. You should only let males develop if you want to reap seeds for future cultivations, for breeding strains, or for sale.

However, the gender of a marijuana seed is not predetermined like that of humans or animals. Each seed is assumed to be 50% female and 50% male. If you stumble upon charts detailing the physical differences of female and male marijuana seeds, they are most likely to be false.

Right now, feminized seeds are your best bet at getting the useful marijuana flowers. These seeds are specifically bred to be 99% females. But there is a remaining 1% chance that they can turn into hermaphrodites or develop male-like features. This means they will not provide the flowers you are expecting. To prevent this from happening, make sure your marijuana plants are never subjected to stressful conditions.

Additionally, you need to be on the lookout for the early sign of male marijuana plants even if you used feminized seeds. The surest way to find out whether the seeds are male, or female is to wait for their flowers to bloom. However, you cannot afford to do that as the male buds have pollens and these may pollinate or fertilize the female buds, causing the latter to form seeds and rendering them unusable for treatment or relaxation.

The right way to manage a possible male marijuana plant is to wait until it goes to the pre-flowering phase. This comes after the vegetative phase or around the sixth week of the plant since germination. The vegetative phase can be likened to childhood while pre-flowering is to puberty. In the former, the plant just gets thicker stems, develops more and bigger leaves, and grows taller. In the pre-flowering phase, it develops buds, which are attached to its main stem, near the meeting point of the leaves and stem. For females, the buds have two or more white hairs, which are referred as pistils. For males, the buds have the so-called balls which are actually pollen sacs. Remove the plant with the spherical buds early on to prevent the pollen sacs from bursting and spreading their contents to female marijuana plants.

Auto-Flowering Seeds

When you shop for marijuana seeds, you will encounter the term auto-flowering seeds. These are worth considering if you are going to cultivate multiple plants or if you just want to harvest the flowers sooner.

It takes 14 hours of light for a regular marijuana seed to grow and a 12-hour light cycle for it to flower. In contrast, a marijuana plant from an auto-flowering seed may flower even without 12 hours of darkness like that for regular marijuana plants. As long as there is at least 12 hours of light each day, the plant may flower. You do not need to adjust the lighting or separate the seedling, vegetating and flowering plants. You do not have to wait long for it to produce flowers as well. You can enjoy your harvest after 2 to 3 months.

Best Strains for Beginners

Some Marijuana strains are relatively easy to grow and resilient. These are the recommended options for beginners. Strains that flower fast and produce a high yield require utmost care and attention to grow. Many of these are unable to tolerate high-stress conditions, and so they might not make good choices for first-time growers who are bound to commit mistakes as part of the learning process. You can experiment with high-yielding, auto-flowering, highly potent and other more beneficial strains later on, but for now, focus on strains you might be able to grow even with your limited gardening skills.

Best strains for beginners are as follows:

- Blue Cheese – Known for its buds that are stickier than normal ones. This strain is suitable for indoor gardening because it can grow well in tight spaces under LED lights. It also has a high resistance against mold and other plant problems. It can withstand overwatering and under-watering, too.
- Jack Herer – Named after a pioneer in marijuana legalization. This one thrives whether cultivated outdoors or indoors. It also has a compact size that makes it an ideal choice for growers who want to keep their planting venture discreet.
- Northern Light – Notable for being less smelly as compared to most strains. This is perfect for aspiring growers living in apartments, condominiums or any other buildings where the proximity and presence of marijuana plants may irritate neighbors. Plants from this strain can also withstand less than ideal temperatures and excessive watering.
- Skunk – Regarded as one of the classics. It may be grown on soil or soil-less growing mediums (in the case of hydroponics). It can grow even when given less attention. Unlike other strains, it does not stretch much when it develops flowers.
- White Widow – One of the all-time favorites out there. It is unclear how this strain came to be, but most of the leading seed banks today offer this. It is much loved for its potency, clean taste, energizing high, and hardiness as a plant. It can be grown indoors or outdoors, even in places such as Scandinavia and UK where the climate is not ideal for the regular marijuana plant.

These are just recommendations. You can still ditch these if you find another resilient and low-maintenance strain marijuana.

Possible Sources of Seeds

You have three possible sources of marijuana seeds: physical stores, online stores and individual breeders. Physical stores that offer these seeds are still quite rare in many parts of the world. Hence, buying from online stores and individual breeders are more sensible.

Online stores (or seed banks as they are called in the cannabis community) are well-known for the numerous strains they offer. They offer original strains along with their respective versions of the classics. Compared to individual breeders, online seed banks are more reliable when providing auto-flowering and feminized seeds. They give tips on how to grow them as well. Below are the steps in buying marijuana seeds online.

- Make a list of reliable seed banks by visiting forums, reading reviews and asking marijuana growers amongst your friends.
- Get to know the delivery methods that they employ. Look for problems that previous buyers might encountered. These problems may include blockage in borders or confiscation by authorities.
- Simplify your list by removing seed banks that do not cater to your area.
- Go to the websites of the seed banks on your list
- Check their available strains. See if they have the ones recommended for beginners. Some top seed banks offer more variants of the said strains which could be their own in-house breeders or from their reliable partners.
- Before you place an order, look at the payment options along with their discounts you can avail. The three main options are cash, credit cards and online payment systems like PayPal. Some let you pay using bitcoins. PayPal gives the best online consumer protection, but they do not allow transactions involving marijuana seeds and products on their system. Pay using cash or credit card with discretion. If you have issues with this, you may send an email or message your prospective provider on their website about other payment options.
- Once you have settled your issues with payment option, you may now proceed to placing an order. Indicate the number of seeds you want to buy. Provide your delivery information and pay using your preferred option. Wait for the confirmation of your order. Take note of the expected delivery date.
- Wait until your seeds get delivered. If your order did not arrive on the expected delivery date, contact the seed bank. Strict border controls might have something to do with this. In any case, a reputable seed bank will try to replace it.

If the idea of buying marijuana seeds online scares you, you can always go for local individual breeders. You can refer to your friends who use and grow marijuana for recommendations. The advantages of buying seeds from a local supplier are being able to meet up with him and see the seeds before payment. There is no need for you to enter a personal information online. The downside is that the number of strains you can choose from is quite limited, but at least you are assured that you can get seeds right away.

Seed Inspection

Once the seeds you ordered online arrive or if you grab the chance to see them before buying them, try to get rid of unhealthy ones as they are not likely to germinate. First, you have to separate the healthy

seeds. A healthy marijuana seed has a shape of a teardrop, about 3/16th inch long and about 1/8th inch wide. Its shell is brown with some darker stripes. In contrast, unhealthy seeds are tiny, soft, whitish, yellowish, or greenish.

Ideally, healthy seeds should grow into strong plants. However, veteran growers know that the quality of the seed has less to do with the future health of the plants. As long as the seeds are able to germinate, then everything is fine. The way you care for your plants is a more important factor in ensuring their good health.

Seed Germination

Seed germination is a simple and fun chore, but it is also easy to make mistakes in this task. You have to be gentle as the seeds are vulnerable. You should also learn how to wait patiently. Do not go checking on them every minute or every hour after leaving them to sprout. Depending on the germinating conditions and method used, they can sprout within 2 to 7 days. You should do this on springtime so your plants can take advantage of more summer days later on. You can choose one from the four germination methods below:

Method 1: Starter Cube

Marijuana seeds do not come cheap, so you do not want to waste any of yours. For beginners like you using starter cubes to germinate your seeds is highly recommended. The success rate of this method is the highest of the bunch. Below are the steps to germinate using starter cubes:

- Buy a pack of starter cubes that is ideal for your growing technique. (Some are not suitable for hydroponic cultivation so shop wisely.)
- Prepare the starter cubes as instructed in the packaging. Some require getting soaked in water while others may be used without any special preparation at all.
- After that, place each seed in its own starter cube. There is already a precut hole in each cube. All you have to do is put the seed in the hole. Close the hole by pinching it gently.
- Water as directed in the packaging of the starter cubes.

Your seeds are likely to sprout after one to three days in this method. The next step is to transplant your seedlings in a bigger container. Or, you may plant the entire starter cube directly on your main growing medium. Just make sure the starter cubes you use are biodegradable.

Keep in mind to transplant with the tiny white taproot facing downwards. The growing medium should be moist as well. These apply to all seedlings regardless of the germination methods employed.

Method 2: Glass of Water

Seed germination using a glass of water is cheaper than using starter cubes. Another good thing about this method is that I can wake up old seeds make them viable for planting again. Below are the steps to germinate using a glass of water.

- Get a small, transparent drinking glass and fill it with slightly warm water.
- Soak your seeds in the glass of water for 24 to 32 hours.

- Prepare your growing medium while you wait.

Viable seeds will float and sink afterwards. Each of these seeds will have tiny white taproot. Transplant them if it has been 24 hours since you soak them. Do not soak them beyond 32 hours as they might drown and not germinate at all. If some do not germinate, try using other germination methods.

Method 3: Paper Towel

Using paper towel is another low-cost germination method. However, this can get a little risky. Always remember to be gentle and let your seeds sprout in peace. Below are the steps to germinate using a paper towel:

- Get a piece of paper towel and two plates. Place the piece of paper towel in one of the plates. Wet the half of the paper towel.
- Put the seeds on the moistened part of the paper towel and then fold it. Cover it with the other plate. This keeps the moisture inside. Without it, the seeds will dry and die.
- Check for sprouts every 12 hours. Prepare your growing medium as you wait.

It may take one to four days before the seeds sprout. Older seeds may take longer than that. Before you transplant a seedling, create a hole (about 1 inch deep) in your growing medium.

Method 4: Main Growing Medium

The three methods above involve transplanting seedling, but you do not have to do that if you germinate your seeds directly on your main growing medium. With this method, you will not end up shocking and hurting your seedlings as you transplant them. However, the germination rate for this method is not as good as the others. There is also the possibility that the seeds might get stepped on and crushed when left to sprout outdoors. If you still want to take the risk, below are the steps to germinate using your main growing medium:

- Prepare your growing medium. It is either soil or soil-less (such as coco coir). It may be potted or not.
- Your seeds need warmth to germinate. You can fulfill this need by placing a heating pad or installing a light near your growing medium
- Moisten your growing medium and create holes as many as your seeds and about 1 inch deep.
- Place one seed in each hole for outdoor germination, the seeds should be about 3 to 5 feet away from each other. For indoor germination, one seed per pot is enough.
- Keep growing the medium moist but not too wet as the seeds might drown.
- Allow your seeds to grow.

If it has been 10 days since you planted the seeds and no taproots have come out, it is safe to assume that they have already died. That makes the germination attempt a waste of time and money. To help ensure that few of your seeds survive and become seedling, employ two or more germination methods.

Sexing Male or Female

Since only female plants produce the resin-covered flowers we desire, males and hermaphrodites must be spotted and eliminated as soon as possible to avoid filling up your buds with seeds.

Determining Plant Sex

The buds we consume are the dried flowers of the unpollinated female cannabis plant. Males are useless to anyone but breeders, who collect the pollen from male flowers in order to pollinate female flowers to produce seeds. You may one day want to experiment with creating your own strain, but right now, let's stick to the basics. Generally, for personal pot production, only females should be grown, and male plants should be discarded as soon as they're discovered to prevent the seeding of your crop.

Is it possible to determine the plant's sex while it's still in seed form? Unless the seeds come from suppliers who specifically breed feminized seeds, this isn't possible. Plants must be grown out to determine whether they're males or females. A close look at your plants as they begin the flowering process will reveal their sex.

The flowering process for both males and females begins when plants are exposed complete darkness for 12 or more continuous hours per day. Indoors, the photoperiod is controlled by the grower, who sets the timer for a 12-hour-on/12-hour-off daily lighting schedule; outdoors, the sun's diminishing rays in early fall trigger cannabis to bloom. Flowers will begin to indicate themselves about a week or two into the flowering cycle. Indica's, show sex sooner than saliva's, so be patient with the longer-flowering varieties. Males tend to stretch and grow taller than females, so if you notice this behavior you might want to keep a particular eye on those plants – but alone it isn't a reliable factor for determining plant gender.

Hermaphrodites

Beware the dreaded plant that shows signs of both sexes. These must be discovered and destroyed to avoid filling your flowers with seeds.

When a plant shows both male and female flowers, it's considered a hermaphrodite and should be immediately removed from the garden. Whether you find a use for them, or toss them a compost pile, get rid of them as soon as you discover them. There are some unstable sativas that will show male flowers late into flowering. The yellow male "bananas" that pop out from almost fully formed buds can be removed as they're found and will do little damage at this late stage.

Sinsemilla

Literally meaning “without seeds,” sinsemilla is the prize you’re after. In order for female buds to be seedless, they must never be pollinated by a male plant. This is why it’s so important to discard any male plants as soon as you’ve detected them. If they release their pollen onto your female plants, your harvest will end up being infested with practically worthless seeds instead of the pristine nuggets you’re after.

Female

Keep an eye out for frond stigma emerging nodes.

Male

Male preflowers are round, ball-shaped sacks, also observed on the nodes.

Preflowers

Even before flowering, some tiny clues on your plants can help you gain an understanding of what they may become when blooming.

Experienced growers can sometimes recognize the sex of their plants earlier than the flowering period. When propagated from seeds, plants will begin to show preflowers after a month or so of vegetative growth. These appear in the middle of the joint, or node, where individual branches protrude from the main stem.

Use a loupe or magnifying glass and good lighting to examine the node. Keep in mind that both sexes will show stipules, the leafy spikes that protrude from each node. Above the stipule is where tiny preflowers emerge.

Females indicate themselves with stigma, or fuzzy white hairs, that extend outward from a teardrop-shaped bract (also known as calyx). Male preflowers don’t have pistils; they resemble a closed fist at the end of a very short arm. Some liken them to mushrooms or to a ball-on-a-stick shape. If you’re not sure about the preflowers, wait it out—there won’t be any damage done at this point. You have plenty of time to become certain before anything drastic, like killing off all suspected males.

Female Flowers

Female flowers begin as tiny white-haired puffballs at branch tips that fill out and stack up as the plant matures.

Female flowers start to show as bracts at the various bud sites that occur at branch nodes and tips. Two white hairs (stigmas) will emerge from the end of the pear-shaped bracts, looking very much like their precursor female preflowers. The bracts gradually swell, becoming covered in a “resin” made up of glandular trichomes-the tiny cannabinoid- containing crystals that glisten like diamonds in the light. As the female flowers mature, thousands of these swelling bracts form into clusters, eventually filling branches to form long colas. Kept free of male pollen and fed with the finest phosphorus-rich nutrients, females will swell in size, producing trichome-laden buds.

Male Flowers

Male flowers look like tiny yellow bunches of bananas that eventually open up to release their pollen.

A week or two into flowering, when males truly begin to show, they’ll look like a miniature bunch of bananas hanging down as they slowly begin to swell with pollen. You have less than a week to remove the males from your garden at this point, before they release their pollen and seed your entire crop.

If you’re interested in experimenting with seed breeding on your own, keep the males alive in a separate area well away from the females. They don’t need to thrive-just keep them alive with fluorescents or low-watt grow lights. Place paper under the plants when the male flowers look close to popping open. Once you’ve collected the pollen, place it in a dry sealed container. Lightly sprinkle or brush the male pollen onto developing female flowers to create seeds for future crops. Beginner growers shouldn’t experiment with breeding, so when in doubt, remove the males upon determining their sex and get rid of them immediately.



Chapter 5

Extra

Cloning Your Marijuana Plants

What's a cannabis clone and what are the advantages of doing it? Well, to begin with, cloning of cannabis strains is one of the easiest and fastest ways of multiplying your marijuana plants without worrying on gender. A clone is a small piece of plant that has been extracted or cut from the original mother plant. Clones are usually pure copies of the original mother plant and usually contain the same genes and characteristics as the parent. Cloning is a smart way of propagating a cannabis plant without worrying on gender. If you notice that your cannabis is among the best in the market or maybe it's resilient to some pests or environmental conditions, you can simply clone them to produce multiple "copies". With that being said, we will focus on some effective techniques you can use to clone healthy and perfect marijuana plants.

How To Clone A Cannabis Plant

The first step to take when cloning a marijuana plant is disinfecting all your tools such as scissors/razors and getting everything ready for the "operation". Look for strains that show pure signs of maturity and good health before cutting preferably new strains. To detect mature strains, always check on the

leaves/nodes connection (the leaves/nodes should be alternating and shouldn't be connected at the same exact point on the stem).

When cutting, choose a spot where there's a fresh growing stem and cut at an angle of 45°. Ensure that the new cutting is about 5-8 inches for more desirable results. Some people may choose to split the bottom of their cutting or scrap it a bit to expose more of the inside. This idea is perfect as it promotes faster rooting.

After you've cut your clone, trim the lower leaves and soak it in water so it can develop roots by itself. In case the leaves are not trimmed, your clone may focus more on making leaves grow instead of focusing on developing roots. Some growers prefer to induce rooting hormones for faster root growth. This can be done through dipping the freshly cut stems into a gel or rooting hormone powder.

Now that you have the clones ready, a wise grower will place them inside a humidity dome, a heating pad or automatic cloner. Usually, the new clones require weak light and warm temperatures to develop roots faster. Therefore, you should expose them to temperatures ranging from 72-77°F (22-25°C) and an 18/6 night/dark cycle for the first 10 days. Depending with the parent plant, cannabis clones may take 7 days to 2 weeks to fully develop a strong rooting system. Always be patient and wait until the roots are fully formed to transplant your marijuana plants.

Growing Indoors

When you grow cannabis indoors, you must provide the entire environment for its success. This includes obvious things like "sunlight" and water, but also a growing medium, proper ventilation for your growing room and roots, and all the nutrients necessary for your marijuana to thrive. This chapter will teach you what you need to set up for growing indoors, from the different types of lighting to examples of systems that you can set up.

Start Small

Once you have made the decision to grow marijuana, it can be very easy to get wrapped up in all the excitement of testing your green thumb. However, even if you have the funds it can be a mistake to jump into a large growing operation right away. While you may be eager, mistakes that are often made by newbies can be quite costly and possibly cost you your entire marijuana crop. While reading this book will help you prevent that, it is still best to start with a few small plants (or even just one) to get a feel for what your cannabis needs before you jump into a large grow operation. Even though you are starting small, however, be sure to think big and choose a growing area that will accommodate a larger setup once you are ready.

Choosing Your Grow Area

The first problem that you must tackle upon deciding that you are going to grow marijuana is where you are going to grow it. After all, even if growing marijuana is legal in your area, you will want to keep your

operation a secret from most people, in case they blab to others or may want to steal your hard work. Some of the best places to grow in the house include a closet or cupboard, a spare room, or your basement. This section will go over the considerations that you must make when choosing the location for your grow space indoors.

#1: Discreetness

Even if growing cannabis is legal in your area, it is very likely that you want to maintain a high level of discreetness for your growing operation. For this reason, it is best to keep your grow area somewhere people will not go unless they are invited. Once you have chosen a discreet location, be sure not to blab to everyone about it. Some people will just gossip about it when they run out of things to talk about, while others may find themselves brainstorming ways to get part of your crop. Only tell people that you trust the most and for the highest level of discreetness, tell nobody.

#2: Proximity to Electricity

Most people do not want to re-do the wiring in one room of their house for their growing set up. For this reason, you should consider the proximity to electricity before you choose your growing space. Your lighting system is going to need quite a bit of power, especially as your system starts to grow. Additionally, a closed indoor area often requires ventilation of some kind and this will use electricity as well.

#3: Ease of Cleaning

Cleanliness is a must when it comes to growing marijuana. Any unclean or damp surfaces can lead to mold and mildew growth and invite pests and fungus to live on your plants. If you do not catch it fast enough, you may have to dispose of your entire marijuana crop and start from nothing. To prevent this, make sure the area that you choose to grow in is easy to clean. Some of the most difficult areas to keep dry and clean are raw wood, drapes, and carpeting, so try to avoid rooms with these types of materials if you can.

#4: Keeping Light Brightness High

To mimic natural sunlight, your grow lights will need to be incredibly bright. Two things that will help you achieve this is having the right colors on the walls of your grow area and making sure that no light is escaping the grow area. You can either coat the insides of your grow area with Mylar or paint it with white paint. This will help to reflect light back onto your plants. You should also check for any holes, including cracks in doors that will let light escape your operation and decide what way to prevent light from escaping.

#5: Consider Humidity and Potential for Air Flow

Some climates and houses are naturally moister than others, which is a problem for cannabis plants. If you start with an area that is humid, you can expect to have problems in terms of humidity and may even need an expensive dehumidifier for your grow room. If it is an option, you should also choose a

location with a window, smokestack, or other outlet to outdoors. If your cannabis operations grows, you may find the need to funnel the scent of your plants outdoors (through a carbon filter to mask the odor of course) or to use the outlet to let heat out.

Choosing the Right Container for Your Marijuana Plant

The right container is key to keeping your marijuana plant healthy and thriving indoors. There are several considerations that you must make, including the size of the pot, how the outside materials will conduct heat or cold, and how good the drainage and aeration is throughout the pot. If you are growing a single plant, then a simple pot with drainage will work well. You should also consider getting a pot made of a fabric outer, as this will allow incredible airflow for your plant.

Choosing Your Growing Medium

When you grow indoors, there are many different types of growing system that you can use. For the most basic set-up, you are going to want to use soil. This can be basic, nutrient-rich soil from your local home and garden store because it will likely contain everything you need. Additionally, you will be able to adjust the pH using some of the methods from the previous chapter or by using a solution to raise or lower pH, which can be purchased at your local dispensary, online, or from select gardening stores.

Another option when it comes to growing indoors is hydroponics. These are soil-less techniques for growing marijuana. Some may make use of a soil-less growing medium like coco coir while others will use a drip system of water treated with nutrients to get your plants what you need. You will learn about hydroponic systems in detail in the next chapter.

Lighting

Obviously, you have the option of moving your marijuana plant around the house if you only have one to soak up sun throughout the day. For a little less work, it is every likely that you will want to try out one of the below types of lighting.

Fluorescent Grow Lights

CFL (Compact Fluorescent Lamp) bulbs are one of the lowest cost lighting options and a favorite of people growing on a smaller scale. They do not generate as much heat as bulbs used in larger grow operations and are typically more cost effective. If you are just starting out with a plant or two, then this is an excellent choice. You will even find a way to use this bulb to create an entire growing ecosystem with a few five-gallon buckets later in this chapter.

When choosing a fluorescent bulb, you want to choose one with a high output. You will also find that proper reflective material is key to providing your plant with the amount of light that is needed to grow. They are not as efficient as some of the other options and generate around 25% less light for the energy that is used. However, fluorescent lighting does still have its benefits for smaller setups.

Fluorescent bulbs are also convenient, because all the parts necessary for you to grow your plants are included in the package, including the bulb itself, the reflector, and the ballast to regulate the flow of electricity and adapt your light to the environment.

A ballast is essential in many growing setups, because it will dim when necessary to save you electricity. You can also manually or digitally set some ballasts, which allows you to change the light at different times to mimic the natural growing season indoors.

HID Grow Lights

High intensity discharge lights are a very popular choice among growers because of their high output and great efficiency, as well as the value that comes when you bundle these two things together. They are more expensive than fluorescent options initially, but you will find your savings in efficiency and the total wattage used of electricity each month. Additionally, the high output of these lights allows them to be used for multi-plant growing setups.

When you grow marijuana, you will likely need two different types of lights. The first is MH, or metal halide. MHs give off lights that are blueish white in color. They are used in the earlier vegetative stages of growth because they mimic the light of early Spring. The other HID light you will need is HPS, or high-pressure sodium. This type of lighting is used in the later flowering stages, because the red-orange light that it gives off mimics the harvest time of autumn.

If you cannot afford both types of HID lighting, then you should start with HPS bulbs. These bulbs are the most efficient and you can still change the wattage when it is necessary to mimic seasonal changes.

Most MH and HPS bulbs do not come with a reflector/hood or ballast. The ballasts are either magnetic or digital. While you will find the magnetic more affordable, they are less efficient, get hotter, and will cause more wear and tear on your bulbs. If you do choose a better-quality digital ballast, be sure to choose one that is high enough quality that it does not create an electromagnetic interference field.

LED Grow Lights

One of the more recent developments in indoor growing technology is light emitting diodes or LEDs. A high-quality LED setup has a few benefits, including more efficient use of energy, a longer life, and the creation of less heat. Some of the bigger more efficient designs put off a full spectrum of light that allows for higher quality marijuana and bigger yields.

The downside of these fixtures is that they are often quite costly. You should also be very wary if you find a cheap LED grow light, as there are many manufacturers that offer less than quality products. These will not be able to do nearly what you want to with your marijuana grow. Always be sure to read reviews online and if any seem like they are overly positive, do a check with the Better Business Bureau to be sure the site hasn't been reported for poor service.

Other Lighting Consideration

Something else to consider as you set up your lights is their initial height and their final height. As you make your system, remember that your plants are going to grow. The best light systems will allow you to adjust them per the height of your plant by raising them up. You may even be able to achieve this with a few clamps in the right places if you are tight on funds.

Ventilation

If you remember grade school science class, then you already know that carbon dioxide is one of the critical components of the photosynthesis process. This means that your plants will need fresh air to let them thrive. The best way to do this is to provide a steady stream of air through your grow room. Regardless of your setup, you can put an exhaust fan pointing outward to blow through your grow area. This is best placed toward the top, since hot air rises. A second exhaust outlet should be positioned pointing inward toward the bottom of the grow area, across from the first. This will create a steady flow of cool air in and hot air out. You will find this is also useful for regulating the temperature of your plants.

Temperature

For cannabis plants to engage in the natural growing process like they would outdoors, you must regulate the temperature in your grow room. If you know the specific strain that you are plating, then you have the option of looking up the best temperature for that strain. In general, marijuana grows best at temperatures between 70 and 80 degrees Fahrenheit during the “daytime” lights and between 58 and 70 degrees at “night”, when lights are off.

Outdoor Cultivation

Cannabis has thrived in the outdoors for hundreds of years. As an aspiring grower, you should be able to try outdoor cultivation at least once. Perhaps, the main factors that can stop you from doing so include, the law, the lack of outdoor space and the thought of kids, pets or someone else messing up your marijuana plants. If you are allowed and have the space to do so, then try it. Regarding kids, pets or other persons who might mess up your home plantation, you can always set up a fence to protect your plants from intrusion.

There are many benefits to outdoor marijuana cultivation. With this method, you do not need to buy pots unless you are going to do it in your veranda or roof deck. You can take advantage of sunlight, rainwater and carbon dioxide as well. This also allows you to apply farming methods that are organic. All of these make outdoor cultivation less expensive than indoor cultivation.

Cannabis plants are hardy thanks to their being grown in the wild for years so the preparation of your planting site should not be that hard. Another good thing about this is that you can yield more because

you can use plants with better foliage. With such, the leaves can undergo photosynthesis that will provide the plant with more energy to produce the flowers later on.

Remember that it is called a weed for a reason. It can grow nearly in the most random of places and sometimes, in the most random of times. The derivatives from outdoor marijuana plants are also known to have better taste and aroma.

To reap the benefits of outdoor marijuana cultivation, you have to spend much time garden preparation. Getting all your gears ready makes the latter steps of cultivation easier and quicker.

Garden Preparation

It is best to start your garden preparation during early springtime. Make it a part of your annual spring cleaning. Instead of just de-cluttering your home, you should also get rid of the garden waste that the previous season left by on your yard. Once you are down with a general cleanup of your yard. It is time to choose a spot for your mini marijuana plantation.

Location

You should pick a location where your marijuana plants will receive sunlight the most. Therefore, areas near or under the trees or the awnings of your home are not ideal. Additionally, the location should be away from areas there is standing water. The plants will be under high stress if you do so. Aside from that, standing water may attract pests. You should also consider the spacing between your plants (3 to 5 feet away from each other). This is to allow your plants to grow freely and to allow you to move between them with so much ease. You should plan and set up drainage for your garden when you are done picking the right location.

If you are setting up your garden in a veranda or roof deck, make sure your plants will be elevated. The flooring therein, especially if it is tiles, may be too warm that it may put the roots of your plants in high stress. You can elevate your plants by setting a platform using wood since the material is a good insulator of heat. You can simply create a rectangular box and drill holes where you will place the pots. Coat your wooden platform with a water-resistant finish. Make sure there are trays or saucers below the pots. These are meant to catch run-off water from the potted plants.

Soil

The first thing you need to do is to get rid of grasses or weeds on your planting location. The sight of these organisms might mean trouble, but their presence actually indicates that the site is good for marijuana plants. If you have other valued plants in it, transfer it somewhere else. Use a rake to further remove debris in the area. You do not want the possibility of a random piece of broken glass blocking or hurting the root of your upcoming marijuana plants.

Getting your soil ready requires checking its pH level. You can buy a soil testing kit from most gardening stores to know the pH level of your soil. There is no such thing as perfect soil for marijuana cultivation, but the ideal pH level of your soil should fall within 5.8 to 6.5.

If the pH level of your soil is not within the said range, you have to improve it by adding compost and other organic fertilizers such as bone meal, bloodmeal, worm castings, aged manure and bat guano. You

may add some biodegradable mulch as well. Chemical fertilizers are more readily available, but they can hurt your soil in the long run, preventing you to plant regularly. Once your soil gets polluted, you have to let it rest for a while and treat it with organic soil amendments.

The soil type in your yard matters as well. The soil testing kit you are going to buy is likely to have a tool that can help you know whether your soil is clay, sand or loam. You can simply rely on your observation, too. Clay tends to stick together while sand is too loose. Loamy soil is the most ideal because it may stick together but it drains well which is highly preferred by marijuana plants. Loam contains silt, sand, clay and organic matter.

To find out what kind of soil you have, grab a fistful of soil and squeeze it. If it tends to form a ball, it is probably clay and you might need to boost the amount of silt, sand and organic matter in your soil. If it tends to crumble, it is probably sand, and you might have to add clay, silt and organic matter to balance it.

When you are done treating it, pour water in your soil. If it drains well yet remains moist, you have achieved the type of soil conducive for your marijuana cultivation.

Water Supply

Marijuana plants require lots of water in order to thrive. You will not have much of a problem if you live in a place where it rains a lot. If it rarely rains in your place even in springtime, you should buy an extensive hose or place a water faucet nearby. It pays to have a stream or other bodies of water near your place as well. You can get water from the bodies of water for free, but it takes a lot of time and effort.

Protection

Your outdoor marijuana plants have three main enemies: wind, animals and humans. There is nothing much you can do to control the wind but if there is a hilly side in your place, you may use such as a natural shield against wind. If there are no hills, you have no other choice but to set up a fence. This does not only protect your plants against wind but possibly against large animals and humans as well.

That is not enough though. You need to surround your mini marijuana plantation with thorny bushes to prevent small animals like rabbits from messing up your garden. You may also plant other taller plants such as maize. Elderberry and bamboo are both good shields for marijuana plants as well.

Once everything is ready, you can start your hunt for the best strains for outdoor marijuana cultivation. While waiting for your seeds, decide the germination methods you have to employ. Pick at least two. For outdoor cultivation, you might want to germinate some of your seeds directly on the grounds. If you are opting for starter cubes, purchase them before you buy seeds.

After germinating some seeds indoors, you can transfer them to pots for a while. Let them grow indoors first while the outdoor seeds remain. Keep their soil moist but not too wet or too soaking. For the indoor seedlings, give them 24 hours of light. Transfer them outdoors after 3 to 4 weeks.

Plant Care

After transplanting the seedlings, you are bound to face the most tiring part of marijuana cultivation. This requires you to be observant of the way you handle your plants and the way they respond to care you provide.

Vegetative Phase

After the seedling phase, your plants will enter the so-called vegetative phase. It is usually on the second month after germination. In this phase, the plants will do nothing but grow more leaves and stems. They are going to need lots of water, nutrients and sunlight.

During this stage, you should water your plants every other day if it does not rain much in your place. If it rains a lot in one week, you might not need to water at all.

When it comes to nutrients, you should provide nitrogen, phosphorus and potassium (NPK). The ratio between the three macronutrients should be 10-5-7. Add some micronutrients such as zinc, molybdenum, magnesium and iron as well. You can buy all of these from your preferred gardening stores.

As for the sunlight, you cannot do much about it. However, if there are trees in your yard that tend to hang over your marijuana plants, you should trim the branches of the said trees.

Pre-flowering Phase

The phase between the vegetative and flowering stages is also known as the stretch. This one only takes 10 to 14 days, though. (The vegetative and flowering phases take a month or more.) In this stage, you should gradually increase the water supply and nutrients you give to your marijuana plants. As to the nutrients, you should adjust the ratio of NPK to 5-10-7 or 5-50-17.

In this phase, you have to do the elimination for your male marijuana plants. Do not wait until the 14th day before you proceed with this task. Male marijuana plants tend to mature faster than their female counterparts do so you should act as soon as possible.

Remember to look at the appearance of the buds. Male buds tend to resemble small balls while female buds have hairs.

Flowering Phase

This stage may take 6 to 22 weeks. This is the stage where you can finally see the possible quality and quantity of your harvest. If you are using chemical fertilizers, you have to lessen the supply during the flowering stage to prevent the flowers from tasting and smelling like chemicals. Stop supplying nutrients altogether on the last two weeks. In this phase, the plant will stop growing but it will focus more on producing flowers.

Common Plant Problems and Their Solutions

As a first-time grower, you are likely to make mistakes and it might take a toll on the health of your marijuana plants. When they reach the vegetative phase, many of their health problems may manifest. Below are some of the signs of common plant problems that many beginners tend to experience with their outdoor marijuana plants.

- Drooping leaves – This is a sign of overwatering. In many instances, the foliage remains green and lean, but it is drooping down from the excessive amounts of water they get. The solution here is quite easy. You have to just lessen the amounts you provide but if it is quite rainy in your place and your plants are on the ground, you might want to put some cover to the soil. Improve drainage as well. Make sure that no standing water is near your plants.
- Limping leaves – This is a sign of under-watering. You have to boost up the amounts of water you provide. Aside from that, get rid of plants or grasses that might be competing with your marijuana plants for water.
- Cupping Leaves – This is a sign of heat stress. In this problem, the tips of the leaves are pointed while the sides are curled up in response to too much heat. In the flowering stage, aside from cupping leaves, extensive growth at the top of the flowers is another sign that the plants are getting too much heat. You may help cool them down by adding some water. Also, you might need to provide some shade to stop the heat from affecting the flowers of your marijuana plants.
- Clawing leaves with brown spots – This is a sign of wind burn. The brown spots are actually burns from strong winds that your plants had to withstand outdoors. Help them by setting up a better fence to lessen the impact of strong winds to the plants.
- Brown spots on lower and middle parts of the leaves – Sign of pH fluctuations. The remedy herein is to add compost to your plants. It pays to have your own compost nearby.

Your marijuana may encounter many other plant problems. You can spot these problems on their leaves. They might manifest as brown spots, burnt margins or tips, and yellowish foliage. Always be on the lookout because these problems are going to lessen the potency and quantity of your yield. Also, be mindful of the nutrients you provide. The quantity may be the cause for the plant problems. Adjust the amount you provide accordingly.

Pest Control

Pest control may involve the use of organic solutions, chemical solutions or a combination of both. You can set up fence to fend off the larger pests but for bugs, the battle is harder. Chemical solutions are the fastest of the three. However, too much from these may cause the bugs to develop resistance. You will end up using more, spending more and polluting your soil. It may affect your yield as well. Organic solutions may not be effective but at least they are safe. These are also less expensive. Between the two, organic solutions are better in the long run, unless the pest infestation is severe. For terrible pest infestation, a combination of the two is the most efficient.

Detection is the first step in pest control. This is another reason for you to inspect your plants regularly. Aside from the top sides of the foliage, check the undersides of the leaves and stems, too. Blisters, bites, glossy leaves and webs are some of the sign of insect infestations. Thrips, whiteflies, beetles, mealybugs, leaf miners, aphids, spider mites, snails and slugs are some of the pests that are likely to feast on your marijuana plants.

Organisms

One organic solution is to use your own hands in removing visible pests. Just wear protective gloves for this. Picking snails and slugs should not be a problem

You may also seek the help of other organisms. You can actually fight off insects with the help of other insects such as lacewings, praying mantises, and ladybugs. These helpful bugs are now being bred commercially to help growers ward off pests organically. Aside from the said bugs, you may also recruit turtles, lizards or birds. You have to leave some food to attract them to your garden though. Be careful when using this method if you only have a small garden as the help you sought might end up becoming pests in the end if they do not have many pests to feast on. You should only consider these if you already have plants that are around two feet tall. If they are still shorter than that, the helpful animals you are introducing may hurt them during their vegetative phase.

Pesticides

Right now, there are organic and chemical pesticides available in many gardening stores and nurseries. As much as possible, you should go with the organic ones as they are made specifically with a plant's natural pest control mechanism in mind. Of all organic pesticides out there, the most sought after is pyrethrum. The downside with all organic pesticides is that, even though they are supposed to be green solutions, they can actually kill even the beneficial animals that are around the area or the animals you introduced. Keep in mind that you are not supposed to use them in the last few weeks of flowering.

The pests may be indicative of other problems in your plants or garden. There may be pH fluctuations, the soil may not be draining well, or your plants may not be cleansed properly. Treat these problems along with the pest infestation.

Prevention

The best solution against pests is always prevention. Before you plant, clean your yard well and look for possible pest infestation in your existing plant. You may also apply seaweed extract on the roots of your marijuana plants while they are still on their vegetative phase.

Homemade Remedies

One low-cost preventive solution is that you bath your plants with mild soap water. To do this, get a gallon of water and mix two tablespoons of mild liquid soap. Put your solution in a spray bottle and

spritz it evenly on the entire plant. Wait for two minutes before you rinse it off. It is important to get rid of the solution as the soap may damage the plants when left for too long.

You may also mix minced garlic and water. Spraying this mixture can keep beetle and other bugs away from your plants. Just like the soap and water solution, you should wash off the garlic and water mixture as they might cause damage to the plants. The downside with garlic is that the smell might also affect you. Wear a facemask as you spray.

Some growers use alcohol along with the water and soap solution. This can repel snails and slugs in your garden but too much of the alcohol may negatively affect the resin production in your plants. This might also affect the quantity and quality of yield.

You may find other homemade recipes for pest prevention online. Be careful though and make sure to follow the guidelines.

Chapter 6: Growing Marijuana Hydroponically

Another frequently used method when growing marijuana indoors is hydroponics. Hydroponically grown marijuana describes a growing process done without soil. Instead, a soil-less growing medium is used. This chapter will review the considerations that you must make when growing with a hydroponic setup. You can combine this information with what you learned in the previous chapter about indoor growing to produce higher quality buds.

The Major Advantage of Growing Hydroponically

Like all other methods of growing marijuana, a hydroponic setup has advantages and disadvantages. The major advantage of hydroponic growing is the incredible amount of control that you have over your growing ecosystem. Soil itself is an ecosystem, meaning that you must deal with the pH and nutrient levels of the soil, as well as changing bacteria levels that may affect your plants. You must deal with the levels for your plants, as well as the ever-changing soil and that can be difficult. When you grow hydroponically, it is incredibly easy to control the temperature, pH, and nutrient levels of your entire growing environment. This allows you to produce a consistently good harvest of marijuana.

So, What Do You Need to Set Up Your Own Indoor Hydroponics System?

Though the techniques used vary, there are some basic pieces of equipment that you will need for your hydroponics system. These include:

- **Grow Lights-** Unless you have an incredible amount of sunlight in your grow area (which is usually unlikely for indoor growing), you will need grow lights for your operation. Keep the considerations from the last chapter in mind as you choose your lights.
- **Growing Chamber-** Your growing chamber describes whatever part of your system where your roots will grow. For some systems, this will be an entire tray. For others, this will be netted pots or other growing containers. As you consider the growing chamber that you will use, you should consider how much light your container will attract or deflect, as well as whether it provides

both good aeration and good drainage. Something else that you must consider is the size of your containers. Your marijuana plant will not be able to grow larger than the root system, so the amount of room that your roots have is key.

- **Reservoir-** The reservoir describes the part of your system that holds your water/nutrient solution. This will either run through a drip system, pump the solution into your growing containers, or work with another hydroponics technique. You will learn more about the various hydroponics systems a little later in the chapter. Remember to keep your reservoir very clean and to change out your nutrient solution whenever it is needed.
- **Delivery System-** The delivery system is going to vary based on the technique that you choose. For the most part, it will be made up of PVC tubing or piping and connectors. The only thing that will be different is the size of the pipe and where you need to connect it for your particular hydroponic growing system.
- **Submersible Pump-** You can usually find these in home improvement stores or in hydroponic supply shops. In a home improvement store, they may be sold as pond or fountain pumps. You will need to adjust the pump in relation to the size of your growing operation. Another necessary part of a submersible pump is a filter. If your choice does not have one, you can easily make one yourself by cutting a small piece of screen or furnace filter. Make sure that you clean your pump regularly, because a blockage could damage your entire growing operation.
- **Simple Timer-** While your marijuana plant is growing, you are going to live your life. This means that you will not be sitting around the house all day to switch your plants lights and nutrient solution on or off. Additionally, cannabis requires very precise timers to produce a quality product. This is where timers come in handy, because they can be connected to your lighting system, your nutrient system, and your submersible water pump. You can choose analogue or digital, though a digital can wipe your settings if it loses power and cause your growing operation to dysfunction.
- **Air Pump (Optional)-** Some setups use an air pump, which supplies a great deal of oxygen to the water. This is set up by attaching a line to air stones. The air pump will push air through the line then create oxygenated bubbles that rise through the nutrient solution these are generally only used for water culture systems.

Choosing Your Growing Medium

Hydroponically means without soil. So, what do you grow marijuana in, if not soil? This section will teach you about the many growing mediums for hydroponic cannabis.

Soil-Less Growing Mediums

For a growing medium to be considered soil-less, it will not have a pH or other factors that affect the growing environment of your marijuana plant. This will allow a greater control over your environment. Here are some of the most common soil-less growing mediums for growing cannabis:

- **Coco coir –** Coco Coir can be found in any DIY store, as it is a very popular growing medium, both alone and mixed in with soil or perlite. Coco coir is made up of the brown, fibrous husk of the coconut. For growing cannabis, a good way to use coco coir is to mix it coco coir with a ratio of

75% coco coir and 25% perlite. This can also be used with soil, to loosen the soil if it is compacted too much.

- **Rockwool** – Rockwool can be purchased from most home improvement stores. It is commonly used for hydroponic tomatoes, but it can work just as well with cannabis. Rockwool is manmade material that is made by melting down basaltic rock and adding it with thin fibers. This mixture is quickly cooled to form slabs, cubes, and even granulated materials. It provides excellent retention of water and good airflow, so it is optimal for your marijuana plant. It is commonly used in hydroponics setups, since it is used as an alternative to soil during the germination process.
- **Poprocks** – These are harder to find than other options and your best bet is to search for them online and see if there are any near you. These are smooth, round balls that are made up of shale that has been formed into pellets with a super heating process. These expanded clay balls are very easy to clean, which makes them reusable. When used in a hydroponics setup, poprocks provide perfect aeration and flow of water because they do not absorb water at all. They also come in different sizes. Poprocks only need to be rinsed well before you use them.
- **Lava rocks** – You can find lava rocks in most landscaping areas of a home improvements stores. They are big, red rocks that are porous. However, they do not absorb water and provide airflow, which makes them a good growing medium. If you are expecting large plants that may shift lighter growing mediums, these are an excellent choice. You can also use them as anchors for stakes, drip lines, air stones, and more. To get lava rocks ready for your marijuana plants, you need to soak them for 3-5 days. You also need to rinse them before use.
- **No Growing Medium** – Another alternative is to use aeroponics or a nutrient film technique, both of which will be discussed in the next section.

Techniques for Growing Marijuana Hydroponically

Another way to grow hydroponic plants is without use of a growing medium. Instead, your set up will involve adding the nutrients directly to your water (as you would with even a soil-less growing medium) and then using a drip system or misting the roots of your plants to help them get the nutrition that they need to thrive. This section will go over the basics for different types of hydroponic techniques.

Harvesting, Drying, and Curing Your Marijuana Buds

Congratulations! If you have reached this chapter, then there are good odds that you have used the information in this book to successfully grow some marijuana! The good news is that your buds are done. The bad news, however, is that you cannot smoke them just yet. First, you must dry and cure your marijuana buds to make them the perfect moistness and maximum potency for smoking.

When to Grow (and Harvest) Your Marijuana

Growing Outdoors

For most outdoor growers, they can harvest once per year by following the natural growing cycle of a plant. They plant their cannabis in early spring, once the frost has stopped at night. Then, the plants thrive and grow all the way until the early days of fall.

As you choose when to grow your cannabis, consider the legality of growing in your area. Law enforcement know that a May-August growth cycle is common for marijuana plants, so they will be on the lookout for it around this time.

Growing Indoors

One of the biggest benefits of growing indoors is that you can harvest year-round. Therefore, the determination of when to grow and harvest your marijuana will depend on your own personal preferences and how much you are trying to grow yearly.

Signs That Your Plants are Ready to Harvest

You will know that your cannabis buds are ready to harvest by paying attention to the pistils and the trichomes. The pistils are the hairs on the outside of the bud. You should aim to have at least 50-80% of these hairs an amber/brown color before you harvest. You will also want your trichomes to change color. These will be clear as your plant is growing. When your plant is ready to harvest, either half will milky colored and half will be amber or all the trichomes will be milky colored.

You should also be aware that you can change the way that your bud affects you by changing the harvest time. When you harvest earlier, you have more of a Sativa effect on the body that allows for a thoughtful, in-your-head high. If you are seeking for a body high like you would get from an Indica plant, then you will want to wait to harvest until a little later. You can experiment with harvesting times on the same strain of bud until you find what works best for you – then stick to it!

Harvesting and Drying Your Marijuana Buds

When you are ready to harvest your buds, you will need a sharp pair of scissors. You can either cut the plant above the roots or cut off the buds individually, leaving a few inches of stem below them so you can hang them. Once you have cut all the buds off, trim the leaves. You can save these in a separate area if you plan on using butter, hash, or another byproduct later, but leaving them with your marijuana can lower the quality and give your bud a harsher taste.

Take the buds and use a string or another system to hang them in a cool, dark place that is relatively dry. You will want them to dry until you can easily snap the buds off the stem when you apply pressure. If they are not ready, they will only bend.

Curing Your Buds

Once you have dried your marijuana buds, you are still not ready to smoke if you want the highest quality. The key to high quality is getting the perfect balance of stickiness, without the marijuana getting too dry. Remove the excess stem from your buds and place them in cool, dark area for at least 2 weeks, but no longer than one month. Open the container at least once per day, being sure that any moisture in the container is released. Moisture can cause mold growth and ruin your entire harvest, so use caution and be sure that buds are dried thoroughly before you attempt curing them.



Chapter 6

The Vegetative State

Once you've gotten your plant into the pot and into your grow area, you begin the next phase of development: the vegetative phase. Here, you have to make sure that your seedlings get full 24-hour periods of straight light. Your young leaves are going to be spending all their time in photosynthesis and they'll need all the help they can get.

It's called the vegetative phase because all you'll be seeing from your plant are longer stems, more branches and leaves. It's only giving you vegetative life without any flowers or buds. This stage is equally important as what comes after is because this is the time that you prepare your plant to give you a big payload when it's time to harvest buds.

Pre-vegetation

Before you declare that your seedling is done germinating, be on the lookout for the bud that comes from the surface of the soil.

When your cannabis first shoots from the ground, you're going to notice two smooth leaves from the initial stem. Take note that these leaves will look nothing like any other cannabis leaf you've seen before.

That's completely normal and no cause for worry. That's a natural part of the germination process. Think of those two abnormal leaves as baby leaves that have resulted from germination.

Give the seedling about two more days in this state and you'll notice two more leaves from your initial stem. There, you'll notice that these new, serrated leaves are more characteristic of cannabis leaves. Those are your first official adult leaves. That's the signal that your pot plant has begun the vegetative stage.

Think of this stage as the time that the plant has to create as many leaves and branches as it can before it focuses on giving you flowers. This is why it needs as much help as it can from you, the grower.

Besides being the next phase of development, it's also the longest part of the plant's life. It could take anything between two weeks to two whole months to get it into the flowering stage.

At this point your pot plant needs plenty of nitrogen which will come from the soil. This is to help the plant make plenty of healthy branches and leaves. It will also need sunlight so that the leaves have plenty of building material.

If you're using auto-flowering seeds, there's a good chance you'll have roughly three weeks until your plant start flowering. If you're not using auto-flowers, then you can dictate the time that the flowering starts by controlling the amount of daytime your plants receive.

Matters of Size

The time your plant spends in the vegetative state has a big impact on what kind of harvest you'll be making at the end of the plant life cycle.

Naturally, the larger the plant you grown, the better the harvest. This is because you'll have more leaves and more surfaces on which for colas to grow. When you get more colas, you get more usable cannabis. You get your money's worth of investment in seeds when the time comes.

This is the main reason the vegetative stage of development is important. Some long-time enthusiasts give their pot plants at least a full month or even more in this state, carefully watching the growth of their plants and providing them with additives and vitamins to ensure a good harvest.

If you're not using auto-flowering seeds, there's a big chance that you can screw up the growing process if you get things wrong. Getting the wrong photoperiods, poor conditions, and negligence when it comes to watering.

Getting It Right

If you want the biggest yield possible, you have to spoil your plants that they have everything they need. To do that, several requirements should be met.

First is proper lighting. With your set-up, be prepared to get a boost in your electric bill because you will need to subject your plants to more than 18 hours a day.

To do that, your lights have to be on for a considerable amount of time. That will take a certain toll on your bills. The good thing about this is that you don't have to worry about your natural day and night cycles. Since you're growing indoors, you can start your pot plant's "daytime" whenever you want.

Some expert growers even choose to start lighting up their grow areas at night when they sleep so that they don't disturb their plants. They also make sure that they keep their plants in the dark once their photoperiod ends.

One important consideration is to never ever let your budding plants get anything less than 18 hours of light in a day.

The reason behind this is that you want the plant to think that it's still in the early ages of development. In such a state, the plant will eat and grow as much as it can for you. To do that, you'll need to fool the leaves of the plant by giving it as much daylight as you can for as long as possible.

Sometimes, expert enthusiasts decide to give their seedlings a full 24-hour period of light.

When your buds start getting an equal amount of day and night, it will start to prepare for the winter. As you already know, the lifespan of cannabis only lasts short of a year. When the plant starts to feel it is around the corner, it'll act accordingly. Whatever nutrients and building material the plant has garnered over its lifespan will be channeled into flowering.

Watering

In addition to plenty of sunlight, you also want to hydrate your pot plants. They will need an adequate amount of water to power up the process of photosynthesis.

With that thought in mind, it's not just enough to open up the tap and take out the old watering pail. Remember that you're feeding something to your plant when you water it. You're dealing with an organism that has different resistances and requirements from humans. What may be palatable and potable to you may not be the same for your cannabis.

On that same note, reaching out for that bottle of mineral water could be just as bad an idea as tap water. You could end up flooding your soil with unneeded minerals that could just make your cannabis sick.

Your water may be lean by your standards because human throats and stomachs can weed away certain contaminants, but your delicate plants don't have stomachs full of bacteria. They have sensitive roots that will take in anything you give it.

You could be looking at too much chlorine, fluoride, calcium, bacteria, fungus, and parasites that could give your plants mineral clogging and root disease. When that happens, one bad plant will affect the healthy plant sitting next to it if you're growing batches. One small mistake could cost you your whole growing area and everything green inside of it.

Depending on your water source, you could be looking at a combination of good and bad things for your plant. Look back at the discussion of the nutrients your plants need. If your water has those things, then it's doing the job right. Anything else is going to get in the way of you growing the best batch you can.

This is why you should be filtering your water on your own before watering your plants. In fact, investing in a home-based filtration system isn't just a wise idea of your plants, it's also a great idea for your whole household.

With filtered water, you're sure of what goes into your soil and what your plant eats. That way, you'll be able to determine the causes of problems that could arise in the middle of your growing stages.

One more thing that you have to remember is to never overwater. You would rather want to underwater the plants than to drown them. Malnutrition is easier to remedy than a drowned-out plant.

The next question to ask yourself is how often should you be watering your plants then? This is where your love for your hobby beings to show. Different strains of cannabis plants will have different watering requirements. There is no universal rule that dictates how much each strain needs.

Watering your cannabis requires a close monitoring of your plants. One good indicator that your plants need watering is when their leaves start to droop. That indicates poor energy and moisture in the area.

When you're actually watering your plants, be careful not to drown your plants. The idea here is not to create a pool with the water. You simply want to improve the moisture of your soil.

If you're using smart pots, any excess water you would have poured out with holes in the pot. If you're using regular containers and you start having water run-off, you're going to have to delicately transfer your plants to a new container.

Consistency

Take a note that during this stage is that your lighting schedule has to be followed down to the ledger. If you've decided to give 18 hours of light every day, it has to be the same throughout the whole vegetative stage.

When you start off with a specific lighting period, you have to keep it at that for as long as possible before you enter the flowering stage.

If your lights only operate on a switch, you're going to have to time these photoperiods and act accordingly. When your photoperiod is up, the lights go out and you ensure that your plants live in complete darkness to start their resting period.

One way to circumvent this issue is to use timer switches and link them to your lights. These are inexpensive devices that can be bought separately from lighting boutiques. In some cases, lighting systems for plants will already come with a timer switch included in the package.

With a timer switch, you don't have to monitor the hours of sunlight your plant gets. Simply set the timer to your desired length and it will do the rest. The lights go off when the timer clocks out without you have to be there to flip the switch.

Monitoring

Despite using a timer, you can't just leave your plants unattended for days without checking up on them. Because of all of the active elements in your small ecosystem, you will need to monitor the various factors of these elements to ensure that your plant is living in optimum conditions.

It may sound like nitpicking at such an early stage, but every detail that is carted to will contribute to a satisfying number of flowers at the end of everything.

pH Levels

You'll be surprised to know that even soil has a pH level, and it's just as impactful as the pH level in an aquarium when it comes to taking care of fish.

pH stands for the power of Hydrogen. The presence or absence of Hydrogen in something will indicate if it is either acidic or alkaline. This is measured on a scale of 1 to 14.

If the pH level of your soil is pegged at 7, then it's neutral. It's neither acidic nor alkaline, which may mean different things for your plant. Depending on the strain that you have, different seeds may need different pH levels in order to thrive. Most seed packages will have that value indicated with them.

If you're unsure, the safest way to go would be to maintain a pH level dancing between 6 and 7. This is the safest range for your pot plant in the sense that the soil isn't burning away your roots and it's feisty enough to host all the nutrients that the plant needs.

But how do you measure pH levels in your soil. To do that, you need a testing kit. These are devices that are sensitive to the presence of hydrogen ions in soil. Testing kits are a bit pricey and can cost you anything from \$30 upward. But a testing kit will help you ensure that you have the right pH levels for your soil, to ensure proper growth of your plants.

The next thing to ask yourself is what do you do if your pH levels are beyond the 6 to 7 scales as per the testing kit? How do you repair something like that?

The pH kit will help you with that.

There are simple substances that you can also buy at any gardening shop to adjust the pH levels in your soil. What you get are bottles of compounds such as potassium silicate or even essences of hydrogen inducing agents such as crushed marble and dolomite lime.

You'll only need to drop a minute amount of the substances into the soil. These substances are proactive and can cause immediate changes to the nature of your growing medium.

Should you find a need to correct the pH level of your soil, you must do so sparingly over the course of a few days. If you up the dosage of these substances to adjust the pH level, you're going to create a new osmotic environment to which your plant will adjust. If the change is too drastic, you will stress out your plant and hurt your harvest. This is why going in small steps over a few days is better.

Thus, you'll need to monitor the pH level of your soil daily. This is because your soil will go through myriad changes as your plant's nutrient requirements change over time.

The more your plants eat out of the soil, the less the soil has to offer. The longer your stems and roots grow, the less space is there in the soil for nutrients and good bacteria to grow.

Humidity

On top of the pH level of the soil, you also need to keep the humidity in check. You don't want to maintain your plants in an extremely dry grow area, you still have to adjust. This can easily be done by adjust your lights so that more of it hits moist areas. You can also change bulbs that have a higher light output if your overall grow area is feeling moist.

Temperature

Just like humidity, the temperature also has to stay constant. Do you remember the initial thermometer readings you took when you selected your growing area? Those conditions have to remain constant throughout the plant's life.

When the temperature changes drastically, you could be giving your plants the wrong impression of the time of year and end up flowering ahead of schedule affecting the amount of cannabis you're going to yield.

To do all this monitoring sounds like a lot of work, but this is why a lot of enthusiasts call it a labor of love. Cannabis is one of the very few things in this world that share a direct correlation to the labor you cater. The more effort you put in, the better the yield.



Chapter 7

The Flowering Stage

All your trouble during the vegetative stage transforms into the promise of buds during the flowering stage. Here, all the effort and nutrients you've been giving your plant will come into play and you truly see the value of your investment in your seeds.

The flowering stage of cannabis denotes the most awaited time for any enthusiast. Here, the plant exhibits the results of your care and attention by beginning to form flower buds that will later on be harvested for their cannabinoid content.

This stage follows the 3-6-week vegetative period you put them through. Despite shifting the focus from the vegetation to flowers, you have to remember that the plant is still growing. You have to change a few things about your approach but maintain a few more practices.

Lighting

Whether you're using auto-flowering seeds or not, you have to help your cannabis enter the mood and stick with the program. Change your lighting patterns and reduce the number of hours of lighting that your cannabis gets.

From the usual 18+ hours under the lamp, kick it down to a simple 12-hour cycle with an equal amount of darkness. What this does is that it alerts the plant that winter is coming (even if that isn't the case).

During that stage, the plant will start allotting building material to create the flowers you're hoping to harvest at the end of the cycle. You'll be surprised to know that your cannabis plant is sensitive enough to notice these changes in temperature and lighting to enter the flowering stage with the right stimuli.

Nutrients

Given that you've already entered the flowering phase, your cannabis is still going to need plenty of nitrogen. This is to support the flower in making large amounts of colas for you. If you're supplying nitrogen to your soil, there's no reason to stop doing so.

You're also going to need hydrogen to support the continued growth spurt of your cannabis. Yes, it still has more room to grow, especially at this point. This is known as the "flowering stretch".

Here, the cannabis starts to prepare its stems, leaves, and branches to support the number of flowers it will create as you've ready earlier, the larger the plant, the larger the yield. Don't be surprised to see a few inches more on your plant despite you changing your light schedule.

With that in mind, you will have to introduce some new elements into the equation, which are phosphor and potassium. Again, these supplements are readily available commercially.

Nitrogen, Phosphor, and Potassium will work hand in hand in helping your cannabis put on a few more inches to support the large colas you've been expecting. This makes it an extremely delicate and critical time for your pot plant.

If, by any chance, you fail to supplement these nutrients or neglect your plants, you will affect your final output and all those weeks of labor and monitoring will go to waste.

Signs

You'll know you're nearing the finish line when you see pistils and stamens near the leaves of your pot plant. Those are its sex organs and that means it's preparing to propagate itself for the "winter" you've made it feel.

In addition to that, your plant will have short spaces in between its leaves to support the nutrient needs of the flowers. When that happens, you'll see the first few buds starting to show.

This initial phase and adjustment will take about two to three weeks from the end of your vegetative period. When you start noticing these changes, record them in your journal and mark your calendar. You'll be harvesting 6 to 8 weeks from that point.

You're going to want to prune away premature buds that form under the shadows of your plant these buds aren't going to be getting enough sunlight to be of any use to you. You also don't want to be moving your plants around have them adjust to new altitudes and stress them out at this crucial point.

If you're noticing large leaves that are blocking some of the buds on your plant, do not cut them. It's better to sacrifice one bud that won't grow well instead of cutting off a leaf that could supply the whole

plant with nutrients which will affect the overall harvest. By no means should you damage your leaves. They are your powerhouse at this point, and you will need them to bulk up your harvest.

Temperature and Humidity

At this particular stage, you need to keep the temperature and humidity at the same levels during this stage. If you induce any changes here, you could be telling the plant to go back to the vegetative state and set you back a few more weeks.

The flowering

The magic starts to happen when your plants stops growing. Whatever height it has at that point will no longer change. This is because it will now focus on flowering. That's where all of the nutrients will be going from that point moving forward.

Keep the 12/12 ratio of night and day the same for these last few weeks. This is the time your buds will start to grow in mass. Whatever vegetative growth you have seen in the plant during the vegetative phase will now turn into cannabis budding energy during this phase.

You will also notice the protective resin forming near the leaves and the buds. You may think that this a good time to start sampling your buds. This is wrong and you could potentially waste the whole plant by destroying it for a sample.

If you're only three or four weeks into flowering, you're still far off. Your plant may have stopped growing but it's not yet done working. In between the fourth to sixth week, your buds will start to gain more mass and form colas for you.

Keep the new mix of Phosphor and Potassium coming into the plant on a daily basis do so in small increments over the period of a few days. You don't want to shock the plant at such a delicate time, but you also want to give it everything it needs.

The Ripening

If you've done everything right, your pot plant will start looking like the things you see in magazines and Google searches during the sixth to eighth week of the flowering stage.

Despite the amazing changes that are happening to your plant, you should still be on top of things. As your buds start to fatten and ripen, they will start coming closer to each other on the plant.

This is where you start getting your colas. Because of this change in the structure of the plant, you're also going to get a shift in the weight of the plant. This is where you find plants that are swaying to the side and support them with ballasts and piping.

What's important is to keep these plants underneath the light without having any of your would-be colas in the shadows. Those are what you've been waiting for. The last thing you want is to stunt their growth this late in the game by depriving them of sunlight.

Your plant will grow heavy and more resin will form near the colas and the leaves. You will also begin to get that distinct cannabis smell from the mature plants that betrays the product you are farming your grow area.

It is also during this time that you should stop fertilizing your soil. This is because you're nearing the end of your cycle and the plant will have very little use for anything else left in the soil. It's taken everything it can and is now working on its own.

You will also want to stop fertilizing now, for the plant to start discarding any surplus nutrients and minerals that could affect the quality of your product. Think of it as a mineral cleanse of your cannabis.

When doing so, simply give your plant filtered water without any supplements during these weeks. This is known as flushing. It will help improve the quality of your harvest by taking out anything unwanted from your plants, leaving only THC and CBD.

You'll know you're nearing the end of the flowering phase when the flowers have already closed the distances between them, and your pistils are starting to grow a dark red hue.

You will also have to put up with the powerful odor of not just the resin on the plant but the smell of the flowers. Mind you, cannabis is not something used for its aromatic properties.

If you're growing in a conservative part of the neighborhood, you'll need to deal with these smells by using carbon filters in your ventilation system.

The Ultimate Signal

For the cannabis grower, the best time comes when more than half of your pistils have turned full red. This means that the plant has reached full maturity and is ready for harvesting.

The resin you used to notice upon closer inspection is now visible to the naked eye even from a distance. Here, you will see your cannabis plant in full bloom; a towering multitude of spiky leaves and fluffy colas that are ripe for the picking.

These things should start taking place by the eighth week of the flowering phase. Along with the formation of these colas, you will also notice the leaves turning yellow.

Don't be thrown off by this sign. This is actually a good thing. This means that your plant has exhausted your nourishment and has put it all into developing these colas for you.

If these yellowish leaves are blocking out the light from other parts of the plant or from other plants in the bunch, don't be afraid to cut them off. What you don't want to cut off are the leaves that are still green. Take note, those leaves still have some fight left in them and the plant is still using them to fatten up your harvest.

Make sure to record the date into your journal and compute the amount of time it took for you to deliver that plant from seedling to harvest.

What that journal log, it's time to move on to the best part about being a cannabis grow

Harvesting

After months of waiting and caring for your plants, it is time to reap the flowers that you waited for so long. For some, this stage in cultivation is the most fulfilling part. It may even give a more rewarding feeling than the consumption. The great feeling comes from the idea that you are done with the toughest part of cultivation process.

There are three major considerations for the harvesting stage, and these are: timing, drying and curing. This will help determine the taste of your buds later on.

Timing

This aspect is important because if you do it too early, the beneficial components of the produce may be too low or too insignificant. If you are too late, the said components may degrade. For the timing, do not just rely on the rough estimate from your seed supplier.

To know the proper timing, you have to evaluate the leaves and flowers of your marijuana plants. The tips of most leaves are going to turn yellow as they near maturity. You may remove these leaves to allow flowers below to receive light.

You should inspect the trichomes or the crystal-like parts in the flowers as well. You are going to need magnifying glass for this step. The shape of a trichome is likened to mushroom up close. They look like dewdrops due to their colorless appearance. However, they will turn amber when they are nearing maturity. You may harvest during the time they turn amber or when they appear cloudy.

You may also assess the pistils or the white hairs in your flowers. Do not harvest when there are still new hairs growing. When there is no more growth, wait until they turn dark. You may start harvesting when 50% to 90% of the hairs have darkened.

To harvest, get a large knife pruner. Use the pruners to get rid of the large marijuana leaves. Leave the small ones because they protect the trichomes. Use the knife to cut each branch. Handle each branch with care to avoid wasting the trichomes.

Drying

Drying takes a few days to two weeks. You may set up a drying box or buy a readymade drying cabinet. It should have a fan, but it should not be directed to the marijuana flowers. The flowers are regarded as dried when the stems seem to crack easily instead of bending. You may already roll the flowers and smoke them but if you want a better-tasting joint, proceed to curing.

Curing

Have mason jars for this stage. Use small scissors to further remove some of the remaining leaves. You may place the cuttings in a separate container so you may use them for cooking later on. Separate the flower buds from the stems individually. Fill each mason jar with flower buds up to 75%.

Curing is important because it gets rid of the grassy smell and taste of the plant. For the first two weeks, open the jars twice a day for 15 minutes. This will help remove the remaining moisture. You may only open it once a week after that. In the 4th week, you may open it once a month. You may continue doing this until the 6th month. After that, keep your cured marijuana in a jar for longer storage.

You may trade your stored marijuana. You may cook using them. You may use them for smoking. Best of all, enjoy the health benefits from your homegrown remedy.

Final Words

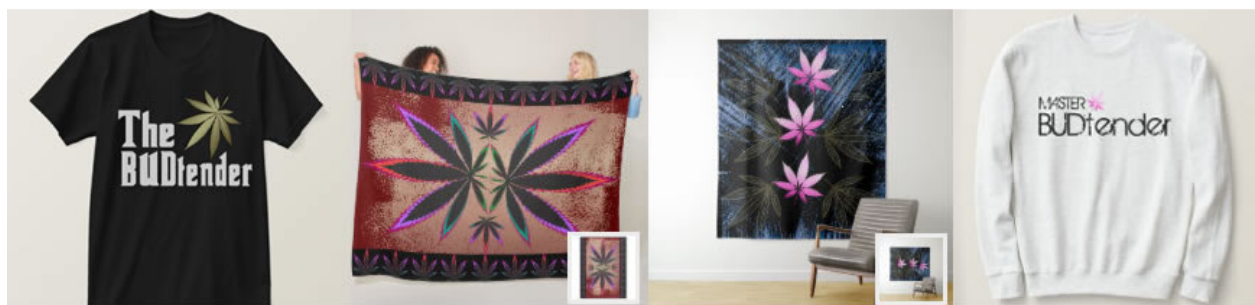
I hope you found our workbook helpful. You should now know how to start growing your own marijuana at home. There are a lot of factors that are not discussed in this book because I wanted to keep it short and powerful so you can get a general idea of how it works and the work that comes with it.

If you're keen on setting up your own cannabis plants indoors you should do some more research yourself on the forums.

If you got some time in your schedule, you would you please give this book a rating on Amazon? This really helps me out.

Thanks for reading my book and let's grow these plants!

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