



I ❤️ growing marijuana

# THE MARIJUANA GROW BIBLE

ROBERT BERGMAN





# Marijuana Grow Guide for Beginners

Congratulations! You've just downloaded the Marijuana Grow Guide For Beginners. This grow guide will learn you everything you need to know about growing marijuana. Every aspect of the complete growing process is explained. From germinating seeds to drying and storing your marijuana buds, both indoors and outdoors. Carefully read this eBook and start growing like a professional.

I wrote this eBook after receiving many questions and requests from website visitors at [ilovegrowingmarijuana.com](http://ilovegrowingmarijuana.com). Many people requested an collection of the articles on my website as pdf to read on an Ereader or Ipad. I want to help people grow and I hope you share your knowledge as well. Feel free to share this document with fellow growers. Please read our disclaimer, NO RIGHTS RESERVED!

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So if you want to grow medical marijuana, marijuana for recreational use or make some money with it, this beginner grow guide will help you grow the best marijuana. Learn all about marijuana seeds, watering, pruning and harvesting marijuana both indoors and outdoors. If you grow marijuana indoors you can yield up to 18 ounces per 10 ft<sup>2</sup> with a 600 watt HPS light. Outdoor yields of up to 18 ounces per plant are possible. It all depends on the love and care you put into growing marijuana.

For any additional information, questions, suggestions or proposals, please visit **www.ilovegrowingmarijuana.com** or contact me directly on [robert.bergman@ilovegrowingmarijuana.com](mailto:robert.bergman@ilovegrowingmarijuana.com). For daily updates and the latest growing techniques add me on **facebook** or **google+**.

Happy growing,

**Robert Bergman**





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# Preface

Marijuana is likely one of the most interesting and rewarding plants to grow if only because it has a remarkably short lifespan. You get to see the entire process from germination to harvest in only three to six months, and, of course, you get to enjoy the fruits of your labor when the process is finished. Many prospective growers might take to growing marijuana with an air of nonchalance, but that is really not the way to go about it. It is a labor-intensive effort that requires you to take great care of the plants if you want the best product by harvest time. Even though it can be somewhat difficult, that doesn't mean it shouldn't be attempted at all. In fact, many people who have no gardening or horticultural history whatsoever have taken to growing cannabis. Many people suggest that, while you can't become addicted to marijuana *use*, you can certainly become addicted to marijuana growing. This beginner grow guide can certainly give you solid foundation to help make growing your marijuana garden a much simpler process overall.

Of course, as marijuana's murky legal history in the United States (and, really, around the world) will let you know, growing marijuana comes with a certain amount of risk. Even states that have legalized marijuana use recreationally (Colorado and Washington) still maintain strict laws about actual marijuana growth. Indeed, the federal government has yet to back down from its stance that both marijuana possession and growth are punishable offenses. But that doesn't stop people from growing it and there are plenty of ways to ensure that you maintain a certain amount of security during the process.

The interesting thing about marijuana's legal status in modern times is that the plant and humanity have shared a sort of symbiotic relationship for centuries. The plant has thrived as a result of cultivation and humans have benefitted from the medicinal effects that cannabis provides. Indeed, up until about 70 years ago, cannabis was used in Western medicine as a way to treat all kinds of different ailments. Unfortunately many governments across the world have criminalized it despite the fact that it is one of the most innocuous drugs you can use. It does not have the addictive properties of hard narcotics like cocaine or heroin, and, in some cases, it's even safer than using commonly prescribed drugs. So grow and smoke as you want...



# Types of Marijuana

Marijuana is one of the only annual plants to have two different sexes. This means that plants can come in both male and female varieties, and even occasionally hermaphroditic varieties in which the plant features both male and female reproductive organs. There are also three major species of marijuana:

- ▶ **Indica:** Relatively short and wide, with greener colors and round leaves that have marbled-like patterns. Provides a heavy, body high.
- ▶ **Sativa:** Can grow taller, but are thinner with more pointed leaves that don't have patterns on them. Provides an energetic, cerebral high
- ▶ **Ruderalis:** Lesser known among the other two. Small plants, used primarily for making clothes, ropes, etc.

Each of these types of marijuana has its own properties when it comes to actually using it. One of the largest indicators of potency for a particular plant is its THC (tetrahydrocannabinol) content. This is essentially the stuff that provides the soothing, medicinal qualities that many people associate with cannabis. In general, most growers use indica, sativa, or hybrid varieties of the two. Ruderalis generally gets left out of any cannabis cultivation because it lacks a high amount of THC. In addition, it should be pointed out that the female sex on the cannabis plant is most-prized by growers because of its high THC content.



**Indica, small and bushy**



**Sativa, tall and thin**



**Ruderalis, hemp. Low THC**





In large part, the THC in female plants rises when the plant remains unpollinated. It will produce more flowers, more buds, and more THC resin, making the eventual smoke much more potent by the harvest. There are also plenty of other natural chemicals on a marijuana plant that influence the kind of high you receive. These chemicals are referred to as cannabinoids and they interact with your cognitive and physical functions to produce altered states of mind and being. Growing the plants under ideal conditions will promote high-quality THC production in your female plants. Indica/Sativa crossbreeding's like Skunk, Northern Lights, Orange Bud and Blueberry are very popular. Read more about different **marijuana strains**



# Marijuana Seeds

There are a number of ways to find marijuana seeds, but if you're in the United States, almost all of them are illegal. Of course, the most effective (and least costly) way to get seeds is by receiving them from a friend. First of all, you'll stay off the radar of any law enforcement, and the seeds will be coming from a trusted source. There will be no surprises when it comes to the growth period or harvest time. Getting seeds from a fellow grower is the best of every world but sometimes you won't have that option.

Another option you have at your disposal is buying seeds from a dealer. Of course, you'll need to have some inroads into the black market and this option is really a toss-up when it comes to quality. It's possible to finish with some weird, but very nice plants, but some of the seeds might be inert and won't grow adequately or at all.

Your third option is to go to a seed bank. You can find a lot of these online, most of which are based out of the Netherlands or Canada where it's legal to sell marijuana seeds. Unfortunately, many Dutch seed banks refuse to ship to the US, and there is a decent possibility of getting ripped off in the end. There's very little risk of being caught by any authorities because the seeds are packaged discreetly. Of course, if a postal employee mishandles the package, the seeds might come to you cracked or otherwise unusable. If you live near the border with Canada, you can cross the border and find a physical seed bank that might be willing to sell to you.



**Healthy marijuana seeds**





For novice growers who have some experience with different marijuana strains, locating a favorite type is likely a priority. Most vendors categorize their seeds by strain. They might have special names for their individual strains, but the species (i.e. indica, sativa, etc.) will reveal what you can expect from the smoke. In any event, it's important to find the seeds that best correlate to the smoking experience you desire.

After receiving your marijuana seeds, make sure to inspect them for quality. Most mature seeds will have a dark brown color with swirling or marbling patterns. Mature seeds like these are the ones most likely to germinate and thrive. Seeds that are a sort of pale green are often not mature enough and were taken off the plant too early. There's no harm in trying to grow these, but you might not have as much success. Once you have a fully-grown crop, you can harvest your own marijuana seeds and not need to deal with anyone in the future. What are your favorite marijuana seeds? Leave a comment on my article about **quality marijuana seeds**.





# Growing Marijuana

Obviously, obtaining seeds is only the first in a long line of steps that you must complete in order to start growing your marijuana plants. Before you start doing anything, you need to know where the growing will ultimately take place. Of course, there are two major options: indoors and outdoors.

Growing marijuana isn't like picking up packages of pumpkin seeds at the grocery store and then throwing them into the ground. Many marijuana growers need to take stock of the feasibility of growing marijuana in the space they have afforded to them. For example, do you have the space in your house to grow marijuana indoors? How many plants do you want to grow? Are you prepared for all the vagaries of being a grower? If you're growing marijuana outdoors, do you have a concealed location? How's the weather where you live? How's the soil?

The following sections of this e-book will explore those questions and much more.

## Indoor Growing

For many people, growing marijuana indoors is the only option. Luckily, cannabis is a relatively versatile plant and many varieties can be grown both indoors and out. Even so, you should check with the breeder (if at all possible) to see where they meant for their plants to be grown. Sometimes breeders develop the seeds specifically for outdoor use. The last thing you want to do is grow marijuana plants indoors that were really meant for the great outdoors.

If you grow your marijuana plants under the right circumstances you can yield a lot of marijuana, over a pound per square meter. Temperature, air circulation, humidity and plant care have to be perfect but can be controlled very well when growing indoors. No weather extremes or neighbor's cat that will damage your marijuana.



# Lights

Lights often represent the lifeblood of plants grown indoors. Because any sunlight that they might receive is sparse, artificial light is valuable and necessary. Plants need the light to perform photosynthesis, which is vital for sugar and tissue production.

Many people who grow for personal use will use a closet space for their garden. Some can get away with using a guest bedroom that can't be seen from the outside and is rarely used otherwise. Regardless, any grower must assess the viability, both in terms of space and electrical capacity, of bringing in a large amount of lights.

Most growers limit their choices to one of the following three: fluorescents, incandescents, and HID (high-intensity discharge) lamps. To save yourself some time and money, it's in your best interest to just opt for HID lamps during vegetative and flowering stage. These are sold as Metal Halide (MH) or High Pressure Sodium (HPS) lamps and they are, without question, the best for your marijuana garden. Although they have a higher up-front cost than fluorescent or incandescent lights, their overall value is much greater in the long run. That's because they don't require as much electricity as the other options, they are brighter, and they also last much longer. Even if you're on a budget and you don't want to throw away money up-front, you must factor in the cost of the electricity bill and bulb replacements.



**Fluorescent light**



**Marijuana needs a lot of light**



**HPS light**





So, when it comes down to it, MH and HPS lamps represent a much better value and a better product overall. The plants will also need an even distribution of light so that growth is congruent. It is possible to hook up a track system that allows the light(s) to be moved, a lot of professional growers use this technique. The plants will receive an optimal amount of light without the need for extra lights here and there.

For seedlings a HPS light bulb can be too much so many growers use fluorescent lights during germination. They don't produce a lot of heat and can be lowered to four inches from the top leaves.

Reflective material also helps enhance the amount of light that the plants receive. This can be as simple as lining the walls with aluminum foil or just painting the walls of the room a bright white. While mirrors are certainly interesting decorations, they don't reflect as much light as other material.

Large indoor gardens (and the light they require) place some heavy burdens on the electrical capacity in certain locations. Personal growers really won't have any problems, because they might only use a few hundred volts per hour which would add, at the most, about \$10 to the electric bill. Extensive growers, on the other hand, might be limited by the size of their circuit. For instance, older homes might only have a 15-amp circuit that can't maintain all the excess light that a large garden needs. Read these articles about **HPS** and **fluorescent** lights and let me know what kind of lights you use.

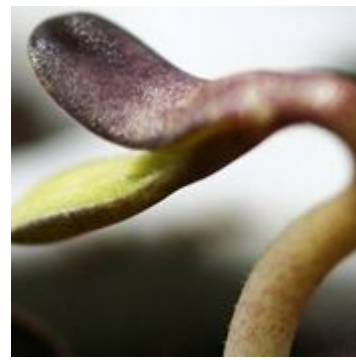
## Germination

Once the lights are up, you can begin the process of germination. Germination essentially entails taking the marijuana seed and coercing it to sprout. If you don't provide it with the right environment, then the seed will just remain a seed for the foreseeable future.

There are several methods that you can use to germinate your marijuana seeds, and every grower recommends something different. For the most part, the options are limited to either using soil (or other growing medium) or using a wet paper towel.



Just by looking at these options, soil seems like it would be the most natural way of germinating a seed. Indeed, simply place the seed about 3 mm deep into the soil, and then keep the soil moist for about 7 days. This usually has around a 75 to 80% success rate in terms of getting seeds to germinate, also depending on seed quality.



### Germinating process

The wet paper towel method is relatively simple and requires that you place the seed on a damp paper towel and fold it over the top. In theory, the success rate with this method is around 80 to 90%, but it is more common for breakages to occur during transplanting. The seedling clearly won't be able to thrive in a paper towel, so transplanting is a necessity that should be performed with great care.

Other options for germination include "propagation kits," which is just a fancy and more economical way to say "growing mediums for seeds." These include rockwool cubes and have a similar success rate when compared to the paper towel trick. You can find these devices at many garden centers.

Even so, perhaps the easiest method for any beginner is to just use soil. Transplanting will not be necessary, and it really is the most natural way to get your seeds to germinate adequately. When transplanting the seedlings at such an early age, you run the risk of "shocking" the plants. This will either stunt their growth or kill them altogether, so it makes sense to just stick with using soil until you get comfortable enough as a grower to use something else.





I met many growers the last years and everybody has their own way of germinating seeds. Some prefer soil, others rockwool or peat pots. What is your favorite way of germinating seeds? Read my article about **germinating marijuana seeds** and leave a comment.

## Germination Soil

This brings up an obvious question: "What kind of soil should I use for germination?" At many garden centers, you will find soils that are marketed specifically as "germination soils." Nothing really separates these soils from more conventional soils except that they have certain nutrients and won't contain any composted material. Look for soils that have an NPK (Nitrogen-Phosphorus-Potassium) ratio of around 5:1:1 or 8:4:4. Really, any soil composed of more nitrogen than the other two nutrients will be adequate for germinating marijuana seeds.

The containers you place the soil in are also relatively important. It's common for growers to use buckets that can hold up to 2 to 5 gallons because the root system in a marijuana plant can become quite extensive. Smaller containers will work for the germination and seedling period, but the plants will need to be transplanted later. Thus, it makes sense to plant the marijuana seeds and leave the plants in a single 2- to 5-gallon bucket for the majority of their lives. This gives the roots adequate room to grow and thrive while also providing a perfect environment for nutrients and a satisfactory reservoir of water. In addition, leaving them in buckets makes them easily transportable.



**Seed cracks open**



**Leaves come out**



**Ready to grow...**



Depending on the intensity of the lights that you use, the plants will need about 25 to 35 watts per square foot. The seeds won't need light to germinate right away, but it's common for growers to turn the lights on after sowing the seeds to warm the soil and promote germination. It's also a good idea to keep the lights on and ready for when the first sprouts appear out of the soil.

A few more things you should also take into account are the pH balance and the actual texture of the soil. You can feasibly use the same soil throughout the life of the plant if you ensure that it can drain properly (texture) and it maintains a good pH balance (between 6.0 and 8.0). The texture is particularly important because soils should neither be too dry or too moist. Moist soils that have an almost muddy consistency reduce the amount of oxygen that can reach the roots. As long as the roots can "breathe" and still maintain adequate water uptake, the soil should be fine.

## Light Cycle and Distance from Plants

Perhaps the best thing about growing marijuana indoors is that you have increased control over virtually every aspect of the growing process. While the seeds themselves won't need light initially, they will certainly need some light when they produce visible sprouts. Light acts as their sustenance at this period of time and it can affect the plants later on in life if they are deprived of the valuable light they require. This assumes, of course, that the soil, nutrient quality, and watering regimen are all adequate as well.

At this delicate stage, the lights should be somewhat close to the marijuana plants. In fact, dropping them down to about four inches away from the soil is ideal if you use fluorescent lights. The light cycle should also be relatively rigid at around 16 to 18 hours of light per day. This will be the light cycle for a majority of the plant's life, but it can be hard to maintain a reliable schedule. To remedy this, you can purchase an automatic timer which only costs about \$8 and will let you focus on other things.





**Lights close to plants**



**Automatic timer**



**Small plants under fluorescent light**

Depending on the particular strain, some plants could stand to use a more intensive light regimen. Cannabis really tends to absorb light voraciously because it is a high-energy plant. Some marijuana growers have been known to expose their plants to a light cycle in which the plants received a full 24 hours of light. Most growers won't have to go to those extremes, but you may need to increase the light cycle to over 18 hours at some point if you want to improve growth. Of course, the automatic light timer can make this considerably easier, and some lights actually come installed with a timer.

As the marijuana plant ages and starts to grow, the lights should still remain as close to the leaves as possible without causing damage to them. The instructions on the lights might tell you to keep them at a certain distance from the plants, but cannabis requires a lot of light energy to thrive. In fact, with lower output bulbs, you can place the lights about 2 to 4 inches away from the tops of the leaves. For higher output bulbs, you can place them about 4 to 6 inches from the top of the leaves.

## Watering

Every living thing on the planet requires water in some form, but, when working with marijuana, extra caution should be exercised. During the germination period, avoid inundating the marijuana plant with moisture. The top layer of soil should be kept moist, but even then it's best to only use a few sprays of water from a spray bottle. When the plant actually sprouts, the area near the stem should be kept dry. This is because moist conditions around the stem are often conducive to stem rot.





At this stage (and really any stage) it's relatively easy to overwater marijuana plants. Using excessive water can cause major issues with the soil and major stress with the plants. As mentioned previously, the soil should not be too wet. Indeed, if you make the soil soggy by overwatering it, the roots will essentially drown as a result of the lack of oxygen. This is particularly true when watering small marijuana seedlings in large pots. These plants won't need to be watered as much as bigger plants because they won't need to take in as much water.

Unfortunately, it can be hard to tell if you are overwatering the plants, because the symptoms for overwatering and under-watering are exactly the same (i.e. the leaves will droop). Obviously, one way to check is by inspecting the moisture level of the soil. You can do this simply by testing the soil with your hand. If the soil appears to be damp, then holding off on watering your plants is the best recourse. It will still have plenty of water to draw from in the soil if it is still definitively moist. If the soil is dry, then adding more water is certainly advisable. As the plants grow, they will require more and more water to quench their thirst.



**Keep soil moist**

**Use regular plant sprayer**

**Spray leaves every now and then**

Overall, keeping the soil exceptionally moist or exceptionally dry for any long period of time will not be good for the plants. In fact, it actually needs to alternate between moist and dry to provide for better aeration in the soil.

Tap water is frequently used to grow marijuana, but many growers have concerns about its viability. Some municipal water systems put a lot of chlorine in the water which could kill beneficial bacteria





around the plant. In general, chlorine isn't going to be a huge problem and many plants grow and thrive using chlorinated water. There are solutions that are normally used for fish tanks but can work for growing a marijuana garden. Essentially, concerned parties add sodium to the tap water they are planning to use for watering. The sodium then bonds with chlorine in the water to make sodium chloride (a.k.a. salt). This won't harm the plant, but if used in excess the soil could become too saline.

It's also possible for your water supply to be infected with other minerals, which is a condition known as hard water. While hard water might be detrimental to your plumbing over a long period of time, it won't have any negative effects on the plants. In fact, the minerals in the water actually help promote growth by adding extra nutrients. It is advisable to stay away from artificial water softeners during the growing period because they tend to put excess amounts of sodium in the water supply that make it unsafe for the soil and the plant. They also use a lot of other artificial additives that might not be good for the plant later on.

## Indoor Vegetative Growth

Once the marijuana plant progresses out of the seedling stage, it will enter vegetative growth. The growth rate will increase by leaps and bounds, and more leaves and branches will start to appear over time. The seedlings will also finally start looking like actual marijuana plants.

## Transplanting

Marijuana plants that were germinated in small pots will need to be transplanted to larger ones as soon as vegetative growth starts to kick in. If the pots are too small for the plants, they can quickly become rootbound and start to lose vigor (or even die). The key is, of course, to transplant them before that happens.

Of course, the [transplanting process](#) should be treated with a lot of care because transplant shock is common. You can avoid transplant shock if you treat the process with exceeding caution. Before you do anything, make sure the soil is moist so that nothing will be jarred out of place. Then, insert a spade



(or even a large spoon) into the soil about 1-inch away from the plant's stem. Make sure that you don't damage the roots and that you take out a large enough clump to make the transplant fully. You should have a previously prepared hole in the new soil. It should be dug in such a way that the seedling will be at the same height.



**Squeeze pot and hold upside down    Beware of rootbound**

**Almost rootbound**

Place the plant into the hole and cover it as best you can with the new soil. Then, moisten the soil so that the transplant and the host soil form a nice meld. If you do this carefully and correctly, you won't have to worry about the plants suffering from any transplant shock and they will continue to grow like normal.

I transplant my plants when the first root tips grow out the bottom of the pot. Read more on when and how to **transplant marijuana plants**.

## Vegetative Growth Techniques

From this point on, the plants will largely live out their lives in vegetative growth. It is important to make sure during this stage that you provide them with all the proper environmental conditions that promote growth and higher yields and potency. One of the benefits of growing marijuana indoors is





that you can manipulate the conditions exactly as you see fit without having to account for natural influences.

## Water and Lighting

We've already seen essentially how the plants should be watered and how much light they should receive. During vegetative growth, the plants are likely going to become "thirstier" and require more water as they get larger. The same rules still apply when it comes to watering: don't severely overwater and don't severely underwater. Many growers develop patterns for watering their marijuana plants. For instance, you might water one day, skip watering for two days, and then water again.

It really all depends on the plants themselves. You need to pay close attention to exactly how dry the soil gets after a few days. If the soil is still moist, then you can probably continue on the same pattern, but, if it dries out significantly before the next scheduled watering, you should increase the rate at which you water the marijuana plants.

When it comes to light, marijuana requires a lot of it. In fact, it is feasible to keep the lights on 24 hours per day to achieve the maximum growth potential. Adjustable light tracks are ideal when you have a large grow room and little electricity so that you can move the lights around to every part of your garden. This way, every plant gets intense amounts of high-quality light.

Try to keep a sharp eye on the distance between the lights and the top of the plant canopy, 20 to 30 inches is usually perfect. The accelerated rate at which the plants tend to grow will cause them to inch closer to the lights almost on a daily basis. So, be sure to place the lights close enough so that they provide adequate light energy, but far enough away that they don't burn the tips of the leaves.



**Watering marijuana**



**Vegetative stage**



**Light**

If you want to avoid this, you can install an air-cooled or water-cooled system that will essentially reduce the heat that the lights produce. One of the things about electric light bulbs is that they produce both light and heat whenever they are turned on. Of course, if you let them go unencumbered, they can produce incredibly hot temperatures. But, if you want to make use of all the light they have to offer, a cooling system will allow the lights to get closer and work better in the long run.

It should also be noted that certain lights emit different color spectrums. When we talk about visible light, we're referring to all the colors that we can see which is often represented as ROYGBIV (red, orange, yellow, green, blue, indigo, and violet). Marijuana tends to thrive under light that is strong in the red spectrum. This promotes photosynthesis which is vital for tissue production during vegetative growth. High-pressure sodium (HPS) lamps produce the most light in the red spectrum (and the most light in general) and are often the best choice during virtually every state in the growing process.

Using anything that is high in the green spectrum will produce wilted, unproductive plants in general. This is largely because the plants reflect green light entirely, which is why they are green in color themselves.

Make sure to visit my website every now and then to get the latest **marijuana growing techniques**





# Soil Control

When you have an indoor marijuana garden, soil is also a relatively important aspect to keep your eye on. It's also something that you have more control over. As noted previously, marijuana prefers to grow in a nutrient-rich soil that has a neutral pH of around 7.0. Sometimes, however, the pH in the soil can shift quite far out of the comfortable range from 6 and 8 on the scale. Some drastic measures might need to be taken in order to ensure that the soil does not end the life of your plants.

One method of reducing chemical contamination in the soil is by using a soil flush. This is generally not a recommended step to take, but it might be necessary in some situations. In reality, it should only be used as a last resort when trying to keep your marijuana plant alive. It essentially involves taking your entire plant with the pot included and placing it in a sink. From there, you turn the faucet on and let the water run through the soil so that it eliminates any of the contaminants that might have been harming the plant. The danger with this method is that you run the same risk of killing the plant by oversaturating the soil with water as you do by contaminating it with too many nutrients. But, sometimes this is the only way to ensure that the additives don't kill your marijuana plants.



**pH problems**



**Good pH**



**pH problems**

For less serious issues, there are other options. If your soil pH drops below the recommended 6.0 and becomes too acidic, then you can simply add some lime to the soil next time you water it. This should get the pH back within the acceptable range between 6 and 8. If the soil is above 8 and too alkaline, you might consider adding some concoction of cottonseed meal, lemon peels, and ground coffee.





Some fertilizers are also made to be highly acidic and can bring down the alkalinity if they are applied to the soil. In any event, it's always a good idea to keep checking the pH balance of your soil, otherwise you could be in for a disappointing surprise.

## Nutrients and Feeding

Of course, the primary cause of any major irregularities in soil pH is the actual nutrients that you apply to the soil. Unlike just using standard dirt, your soil will need to be infused with nutrients. Sometimes, you can produce an adequate amount of nutrients just by using a unique fertilizer combination. But, in many cases, you will “water in” the nutrients using a solution. Of course, if you accidentally include too many nutrients you could wind up making the soil toxic (which would cause one of the soil control procedures laid out above). Professional growers prefer to feed their plants water with a pH of around 6.

In any event, all plants need nutrients to thrive, and providing them with those nutrients can make sure that your work pays off in the end. We have already mentioned “NPK” (Nitrogen, Phosphorous, Potassium) as the three major nutrients that every grower needs to understand. During vegetative growth, the fertilizing solution should be one in which the concentration of N is higher than or equal to both P and K. Again, you can help with nutrient infusion by using a fertilizer if you want to. Fertilizers will, in large part, be mixed in with the soil prior to beginning the growth process. In general, though, you can find solutions that can be used for “feeding” the plant.



**Nitrogen deficiency**



**Phosphorus deficiency**



**Potassium deficiency**





In most cases, the plant won't need to be fed that frequently. In fact, you only need to feed it about once every week if everything is progressing satisfactorily. However, you should never feed the plants with 100% of the nutrient content because marijuana plants "burn" easily. Instead, dilute the solution to around 50% so that you don't have to employ a soil flush.

Other important chemicals include Calcium (Ca), Magnesium (Mg), and Sulfur (S). In general, you might find it difficult to notice any major changes in the amount of nutrients that the plants take in or don't. In fact, in most cases, the nutrient uptake will constitute the least of your worries. As long as the soil's good and you continue to use the same regimen for your nutrient solutions, you should be all right. Many growers keep several diluted solutions on hand to make growing just a little bit easier. One solution should be an NPK solution where N has the most prominent concentration. This should be used for vegetative growth. Another should be an NPK solution in which the P has the highest concentration (used for flowering stage). You can also keep a couple of bottles of a diluted micronutrient solution in the event that your plants really start to turn.

Nutrient deficiencies can damage your marijuana plants and seriously decrease the yield. There is a section on [ilovegrowingmarijuana.com](http://ilovegrowingmarijuana.com) about all the possible **nutrient deficiencies**. A great reference if any nutrient problems occur.

## Pruning

**Pruning marijuana plants** can be both a logistical practice and something that helps produce more buds when it comes time to harvest. Many indoor growers will want to keep their plants in check if they start to grow too high. This is because there is only so much vertical space in the grow room for plants to really stretch their wings. For the most part, indoor plants don't grow as large as outdoor plants, but they will need to be kept at bay if they start to grow really well. Snipping off the top stem will also force the plant to create more branches and grow out wider. So, while you may be losing vertical height, you still won't be losing anything in terms of girth.

If your goal is to ensure uniform growth, then cutting shoots and leaves won't really harm the plant if done in moderation. You don't want to get too carried away with this because cutting too many



shoots and leaves can make it hard for the plant to regrow anything. You have to give it some time to recuperate before cutting off a large amount of leaves or shoots.



**Before pruning**



**After pruning**



**After few weeks**

For many growers, this might seem like a waste of perfectly adequate leaves and shoots, but, during vegetative growth, the shoots are the most potent part of the plant. They can produce a high-quality smoke that will at least get you a little buzzed. The leaves can also be used in cooking preparations to great success.

The marijuana plants on the picture on the right are grown by a method called ScrOG. It's an advanced growing technique but it can double your yield! Read this article about **marijuana in scrog**.





## Other Environmental Factors

While it might seem obsessive, the vegetative growth period requires intricate attention to detail regarding every aspect of the plant's development. Neglecting even one aspect could end up having detrimental effects on your plant's ability to thrive and produce excellent bud.

### Air

As with most living things, fresh air something extremely valuable. Opening up a window or installing a fan system in the room can help provide your plants with some much-needed fresh air. Of course, if it is particularly cold outside, it's probably not a good idea to keep the window open for too long, even if it's your only means of recycling the air. The cold outside will stunt plant growth and make it difficult for you to help them recover.

### Temperature

The temperature of the grow room and the plants is also something that needs to be monitored and regulated. The average temperature for a grow room should be around 75°F. But, cannabis is remarkably adaptive and will produce buds lower or higher temperatures. If the temperature drops to extreme lows or rises to extreme highs then you could be in for a surprise when it comes to the quality of your plants. Although cannabis can survive at temperatures around 50 to 55°F, they will not produce the best, most potent bud when the time comes to flower and harvest. In general, keeping the room at about 75°F is your best bet.

In reality, plants will grow slightly better at slightly higher temperatures, but it might be difficult to maintain those higher temperatures. You might also need to counteract the extra heat by watering the plants more to cool down the roots.



**Too hot, curling leaves**



**Perfect temperature**



**Too cold, small plants**

Sometimes, lights present a problem when it comes to temperature maintenance. Lights that produce a great deal of heat can give the room a sweltering feel and cause the plants to dry up or burn. If this is a problem, then you might want to install an air- or water-cooled system to alleviate the heat emitted from the lights. If you must, you can even install an air conditioner if it is cost-effective for your grow room. Most houses will keep average temperatures that remain around the ideal, but it's important for you to monitor the temperature on a daily basis to ensure that your plants are being taken care of properly.

## Humidity

You might think of humidity as something that occurs in the Deep South or in otherwise tropical environments. But, humidity can be found virtually everywhere including your grow room. In general, about 40 to 80% relative humidity (rH) is ideal. Humidity is basically a measurement of the water in the air. This can largely be achievable through the use of fresh air as stated above. Some growers even have an rH meter at their disposal to adequately check for ideal humidity percentages. There are also expensive devices called dehumidifiers that control the levels of humidity in a certain room. But, unless you're planning on having a rather substantial operation, you can probably just get by with a little fresh air once in a while.





## Carbon Dioxide (CO<sub>2</sub>)

Another vital component that plants need to survive is CO<sub>2</sub>. For humans, CO<sub>2</sub> isn't that great, but plants like cannabis use CO<sub>2</sub> as their air. It's basically the stuff that helps them breathe. But, CO<sub>2</sub> is also vital for spurring and maintaining photosynthesis. If your grow room lacks enough CO<sub>2</sub> input, then it will likely become obvious. There are plenty of methods to increase CO<sub>2</sub> in a room, but the best way to do it is with a CO<sub>2</sub> generator. These generators will keep a steady flow of CO<sub>2</sub> coming into the room and the plants will be able to take it in adroitly. There's almost no way to inundate cannabis plants with CO<sub>2</sub> unless you somehow go really overboard. For instance, if the grow room is unsafe for you to breathe, then you might need to tone it down a little. Otherwise, the amount of carbon dioxide in the room is directly proportional to how large the plant (and later the buds) will end up growing.

## Flowering

Because you're planting indoors, the time at which your plants begin to flower is almost wholly dependent on when you want the plants to flower. Of course, you want to start flowering when the buds are at their most potent. It's feasible to keep a marijuana plant in vegetative state for up to 10 years, but those plants certainly won't be potent by the end of their lifespan. Before you induce flowering, you'll probably want to know which plants are male and which ones are female.



**Grow huge marijuana buds**





# Determining the Sex

In general, the plants will start to “pre-flower” before you even manipulate them to flower. During this time, they will start to exhibit subtle signs as to their sex. Male plants will generally start to pre-flower earlier than females (around two weeks). This will manifest itself in the male plants growing taller than the female plants. They also might develop sacs that resemble buds but aren’t actually buds. The reason the male plants grow faster and taller than the female plants is so that they can pollinate them. The pollen in the sacs (or false buds) will drop down onto the females to start the pollination process.

By contrast, the female plant will enter pre-flowering by producing a white, hairy growths at the nodes and on the top cola (the head). These are called pistils and they are what attract the male pollen to the female plant.

There’s really no surefire way to determine the sex until they start exhibiting these telltale signs. You can, however, take a cutting from one of the plants, and then plant in an area separate from your garden. The cutting is basically a clone of its “mother” plant and will share the exact same genetic structure. You can then force flowering with the clone and it will definitively start to show signs of its particular sex. Then, you can go back to your garden and label each plant that you do this for.



**Male marijuana plant**



**Female marijuana plant**



**Hermaphrodite marijuana plant**

Many growers want to determine the sex as soon as possible because the female plants will naturally produce a much better high. That’s not to say that the males are useless, but you really want to





distinguish between male and female early on so that you can knowledgeably move forward. This is particularly true for growers who want “sinsemilla” buds. Sinsemilla literally means “without seed,” in Spanish, and, if the males are not allowed to pollinate the females, the plants will not produce any seeds. These seedless female plants are considerably more potent than their counterparts because they focus more attention on THC production and bud growth rather than focusing on producing seeds. In fact, you can practically see the THC resin dripping off the buds.

Of course, this requires taking out the male plants early on. If you rely on your own garden to give you seeds for next year’s harvest, then this probably wouldn’t be a good idea. As mentioned before, buying seeds from a dealer or even a seed-bank is often a random grab bag. You don’t know what the seeds will become, and receiving a full batch of males is not outside the realm of possibility. Allowing your male plants to pollinate the female plants will provide you with plenty of seeds and you won’t have to pay for them.

It is also possible to end up with hermaphroditic plants, which are basically just plants that have both sets of reproductive organs. Thus, they might exhibit early signs of both male and female plants. Most growers also eliminate these plants from their crop even if they want to pollinate the females. While they are self-pollinating, they will only ever produce hermaphroditic plants, and they might even pollinate some non-hermaphroditic plants. It might seem like the best of both worlds, but understand that your potency will be mostly limited when it comes to these plants.

It should also be noted that male plants aren’t useless in terms of smoking either. They can still produce a little bit of a high and can also be used in culinary preparations.

It’s very important to take out the male marijuana plants if you want to grow Sinsemilla. One male marijuana plant can pollinate hundreds of female’s. For more information about **sexing marijuana plants** check [ilovegrowingmarijuana.com](http://ilovegrowingmarijuana.com)

## How to Force Flowering

Now that you know how to check for the signs of male and female plants, the next step is getting them to flower properly. Just remember that, once you start flowering, it might be difficult to stop the



males from pollinating the females if you haven't removed them. Even if you segregate the plants by their sex, the air still might carry some of the pollen to the female pistils. It's really a tossup between whether you want hyper-potent buds for this year only or you want to keep growing your favorite strain without having to pay for new seeds. (Most personal growers will want to stick with the latter option because paying for your own seeds every year can be costly).

In any event, if you want to force flowering, all you have to do is put the plants on a 12-12 light regimen. That essentially means that you'll need to leave the lights on for only about 12 hours per day and turn them off for the remaining 12 hours.



**Flowering week 3**



**Flowering week 5**



**Flowering week 9**

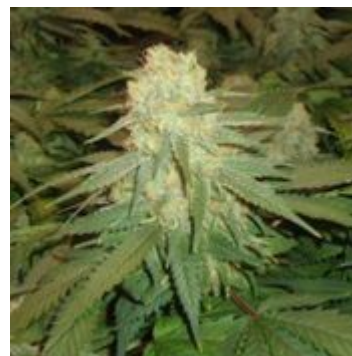
But, the room should be kept as dark as possible during the 12-hour dark period. Turning off the lights won't always do the trick especially if there are other light sources nearby. In fact, even shining a flashlight on the plants for a few minutes at a time during the dark period can keep them in vegetative growth. If you have windows in the grow room, do your best to block them out especially if the sun comes up before the 12-hour period is over. If your lights came equipped with a timer, then it's a good idea to set that so you don't have to worry about manually turning the lights on and off every 12 hours.

You'll notice that the female plants will start to grow larger as the flowering period wears on. They will produce more branches, buds, and flowers, and the plant will start to produce more THC overall. It will start to take on a sort of cone shape that resembles a Christmas tree, and you might even start to smell a distinctive fruity or smoky smell. Their pistils will change from the whitish color to a darker shade





(generally brown, red, or orange) and, at that point, they should be ripe for the picking. Even if you want to pollinate your female plants, you might think of removing the male plants post-pollination so that the female plants have more room to flourish.



**Beautiful marijuana buds**

The plants start to flower when the light period and dark period are equal at 12 hours because they are genetically programmed to do so. If you plant outdoors (more on that later), you'll find that the plants will start to flower naturally when daylight starts to dwindle in the fall.

(Note: There will be a section on harvesting and curing the plants below since it's the same process for both indoor and outdoor growing).

## Indoor Problems and Pests

For the most part, indoor growers won't have to worry about any diseases or pests plaguing their plants. But, that doesn't mean it's entirely impossible. In general, microbial diseases are minimal because the microbes that affect the plants usually don't exist in Europe or North America (where it's likely that many of you will be growing from).





Nutrient diseases occur, but those are just moments in which the plants receive too many or too few nutrients. This can be remedied in a number of ways that were outlined in the “Indoor Vegetative Growth” section above.

Pests are really what you need to focus on preventing or eliminating if they make their way into your house. This is because, in nature, these pests will be mitigated by their natural predators, but in an enclosed system inside your house, they won’t have anything but you to stop them. Of course, the best option when it comes to these pests is always prevention. But, some of the most insidious plant pests, like mites and whiteflies, are very difficult to detect. You can bring them in on your hands or clothes or they might slip through cracks in windows. It’s also possible that the mites could have already been in your house to begin with. Many houseplants are resistant to these types of pests, but it doesn’t mean that the pests will stay away from the houseplants.



**White flies**



**Spider mites**



**Mealy bugs**

Indeed, if you have a houseplant that’s resistant to mites and other pests, it could already be infested with many of these creatures. You can test this out by placing a marijuana seedling in the pot with the other houseplant. If the seedling starts to show signs of drooping or enervation, or if the leaves start turn a whitish color, then you probably have mites already in your house.

Make sure to never use the same tools for your houseplants and your marijuana garden. If you have windows in the grow room, install a nylon mesh or wire screen to prevent access to the pests. Also,





make sure that the soil you use is pasteurized and sterilized fully so that it doesn't contain any larval eggs.

Pests can be devastating for your marijuana plants. If you suspect any intruders in your grow room act immediately. There is a section on my website about **pest control** with pictures of every possible pests. Read them all to identify any problems.

## Eliminating Pests

If you still incur an infestation mites or whiteflies (or any other pests), then there are a few things you can do to get rid of them. Of course, insecticides will work, but many people don't want to harm their plants with all the chemicals involved. If the plants are otherwise healthy but you can see some major deterioration in the leaves, then you might want to force flowering right away. If the pests only infected a few plants or a few leaves, then try to only remove the infected sections. Plants that are already in flowering stage will likely stand up to any pests adroitly.

If the problem still persists, you might want to think about using an insecticide. Sprays that include things like pyrethrum, rotenone, and malathion are generally considered safe to plants when used properly. Of course, you don't have to spray an entire canister of the insecticide onto your plants to get the job done. The best part about these insecticides is that they degrade into chemical compounds like CO<sub>2</sub> and water when they stop working. There are natural solutions that you can make, but they aren't as effective as these insecticides. Still, it's important to remove any affected leaves prior to spraying, and also don't use any insecticide during flowering.

## A Few Notes about Indoor Security

Although most people grow indoors to avoid any security issues, there are still some problems that can crop up if you're not careful. In many jurisdictions, growing marijuana is still definitely illegal, and, if any unfriendly snitch thinks there's reason to suspect that you are growing, you could wind up behind bars (or at least paying a hefty fine).



The first rule about growing marijuana is don't talk about growing marijuana. Even if you feel like you're friendly with your neighbor or your bank teller or an acquaintance, they might not be friendly with the practice of growing marijuana. Although it's natural for any gardener to want to tell everyone about their exploits, it's dangerous when the plant their gardening happens to be illegal.



### **Keep the fucking police out**

If you have a window in your grow room, then concealing the marijuana plants won't be that easy unless your window isn't visible to your neighbors or anyone else from the outside. Also, if you leave the grow lights on at night, it might lead someone to suspect that something illicit is going on. To avoid that, you can buy a blackout curtain that you can leave pulled down for most of the time you spend growing marijuana. A blackout curtain will also help make the flowering period easier because it ensures that no outside light will leak in.

Sometimes, your marijuana plants will give off the distinctive smell that you associate with cannabis. It might be relatively strong waft out of any open windows. The scent might make your neighbors suspicious particularly if they are not proponents of growing cannabis. In this case, you might need to keep your window firmly closed and install fans in the grow room to circulate the air.

Have you ever had problems with the law? Tell me your story on [ilovegrowingmarijuana.com](http://ilovegrowingmarijuana.com)

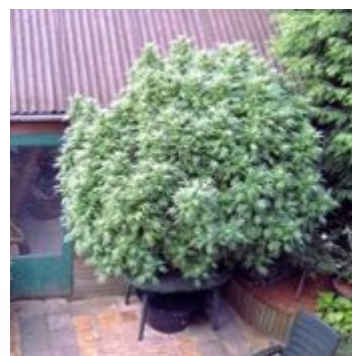




# Outdoor Growing

Many growers prefer to sow their marijuana seeds outdoors because it's supposed to provide a better smoke and there is certainly nothing more natural than [growing your plants outside](#). Most of the environmental factors outlined above will be provided to the plant via natural resources that you won't have to provide yourself. While indoor growing gives you a lot of control, outdoor growing allows to the plants to flourish to their fullest capacity.

The main problem with outdoor growing, however, is that the plants are visible to anyone who happens to have prying eyes. If you live in a residential neighborhood, you might be able to get away with growing your plants in your backyard, but you'll likely need to be rather paranoid about keeping the operation under wraps. Even then, you could still be caught and the penalties for that are potentially very serious.



## 2 pound marijuana plants

If you live in a secluded or wooded area and you own a lot of land, then it might be a little easier to grow your own smoke on your own property. For instance, if you live on ranchland (or you have access to a friend's ranchland), then you might be able to successfully grow outdoors with minimal interruptions. This is really the ideal way to go about it because you can inspect the plants whenever you want without the fear of being caught. You can also avoid the hassle of having to deal with thieves looking to score your homemade bud.

Unfortunately, many people don't have access to secluded private land that wouldn't incite suspicion from law enforcement or other individuals. Thus, if they want the best bud, they will have to employ



a system known as “guerrilla farming.” This means that you’ll have to go to public lands that are sort of off the beaten path in order to grow your garden to the best of your ability. There are obvious dangers to doing this because anyone could happen upon your garden and alert the proper authorities. It’s also not uncommon for law enforcement to survey many public lands using helicopters or slow-flying planes. The police are equipped with infrared devices that can point out any irregularities in foliage. If the spot you planted your garden is in an open space, then the plants will likely be clearly visible to anyone flying by. But, if you plant underneath some dense foliage, it might just blend in with the rest of the trees and shrubs in the area.

## Soil

Regardless of where you’re growing outside, a [good soil](#) is imperative. But, not every kind of dirt will be ideal for growing your marijuana. It’s always a good idea to test the ground soil that you’re planning to grow in prior to actually using it. This is to ensure that it won’t be too alkaline or acidic when the plants start extending their roots even farther into the ground. If the pH test shifts too far in either direction, then you might want to consider a new location, or infuse the soil with some nutrients and fertilizers.

Many growers like to use composted material as a natural fertilizer. Anything that once was organic can be used as compost. This means that you can gather leaves, banana peels, and even dog droppings, and, in a few months, you’ll have a nice, nutrient-rich fertilizer. Obviously, you can’t just take the leaves or shrubs or banana peels and use them as a fertilizer if they haven’t decayed. But, virtually any decayed organic material makes for a cheap fertilizer. If you want to get the pH to an acceptable level, use some of the techniques outlines in the “Soil Control” section above.





**Plant in green areas**



**Make your own container**



**Corn and marijuana need the same soil**

You can also buy other fertilizers from the store. A fertilizer with an NPK ratio of around 5:1:1 (just like before) will be the best option. Any fertilizer that has more nitrogen than the other two nutrients will be ideal for most of the plant's life, up until flowering when more phosphorous is ideal.

Of course, if guerrilla farming is your preferred method of growing, then you won't really have these options at your disposal. In fact, unless you have a definitive location picked out months ahead of time, you won't really have the option of creating a more workable soil. You'll just have to go with what you can find, as hiking in your own fertilizer could make it exceedingly obvious that you're growing something out there.

## Sowing the Seeds

Many growers like to start out their seeds with rows that are fashioned into the soil. You don't really need to bury the seeds that deep into the soil. In fact, some growers have been known to just scatter their seeds on top of the soil to get them to germinate. This random seeding is called broadcast seeding.

Maybe a more effective way to get the plants sown is by using hills or mounds. You essentially sow the seeds on the tops of small mounds in the soil. This certainly gives you the freedom to plant outdoors even when the soil is somewhat wet. This is because the water is naturally going to drain off the mound





so that the seed (and, later, the plant) won't be inundated. In either the hill or row option, try to ensure that the seeds have some adequate soil coverage so that they can stay moist.



**Sowing in rows**



**Broadcast seeding**



**Sowing on hills**

Most guerilla farmers employ broadcast seeding to limit any suspicion and because it's a lot easier. If you spend hours building the rows or mounds there is a strong likelihood that someone could happen upon you. It's also rare to see any uniformity in nature. If your plants are ordered in perfect rows or they are all sitting atop a small mound of some kind, then any passersby (whether on the ground or in the air) are probably going to take notice of the anomaly. Scattering the seeds around definitely gives the area a look of complete arbitrariness the way nature might have intended. The plants will blend in with all of the other scattered trees and/or shrubs and won't be easily noticed by anyone else.

Unfortunately, broadcast seeding isn't the best way to ensure that your plants will germinate. If you place a layer of soil over your seeds and gently press them down into the soil with your foot, then there's a better chance that the seeds will germinate. Many seeds, however, will never germinate or will just simply die after becoming seedlings if you try to grow in this fashion. That's why using a large amount of seeds for broadcast seeding is crucial so that you are at least guaranteed some growth by the time they start germinating.





# Germination

Just like with indoor germination, outdoor seeds require moisture to germinate properly. Adding too much water can be detrimental, but as long as the seeds are relatively encompassed by some slight moisture, they should start to germinate. Of course, this is easier if you built mounds or rows for the seeds to really maintain moisture.

Sometimes, the conditions outside are not conducive to germination or the resultant seedling stage. If you live in an area where the temperatures remain relatively low well into spring, then you may need to germinate the seeds indoors. To do this, just follow the instructions laid out in the indoor growing section on germination above. Then you can transplant the seedlings when the weather starts to improve.



**Outdoor germinating**



**Indoor germinating**



**Germinating in soil**

Again, transplanting to a secluded location on public land is pointless at best and dangerous at worst. There's a strong likelihood that the plants won't survive the transplant because of all the stress they would be under. There is also a strong likelihood that you could be caught, because it would probably take more than one trip to get all of your plants in the right position. The whole germination process is difficult for guerrilla farmers especially if there isn't a reliable source of water nearby. Hiking in your own water could be difficult and but the soil will still need to be moist for the seeds to germinate. If you're interested, read more about **guerrilla marijuana farming**.



## Weeding

As your plants start to germinate, it's important to keep the area free from weeds. Avoid using any weed killers like Round-Up that might also affect your marijuana plants. It should be noted that weeds will end up taking a lot of the water and nutrients meant for your plants if you don't stamp them out quickly. But, the best way to get rid of weeds is simply by pulling them by hand. Trying to kill them with any chemicals will only be bad for the plants that you want to grow to be nice and strong. Obviously, before planting in an area, you should pull out any weeds that happen to be there.

## Light

The benefit of being in the great outdoors is that you don't really need to [worry about light](#) too much. The sun will provide all the light a plant could need and much more. There is no way to duplicate the sun's intensity and it's just a better light source than anything you could produce artificially.

If you transplant your plants from indoor artificial light to outdoor sunlight, they could be shocked by the intensity. This would certainly not be an ideal way to start your outdoor growing experience as you might see the plants lose vigor and ultimately die. If you sowed the seeds outdoors in the bright sunlight, then your plants will be acclimated to the sun for the rest of their lives. Even so, when transplanting from indoors to outdoors, place the plants in a location that is shaded for part of the day to begin with to ensure that the sun's rays hit them directly but for a shorter period of time. This is assuming that you will leave them in portable pots rather than planting them directly into the ground. As they start to get used to the sun's rays, gradually move them more into the direct sunlight until they are receiving light all day. This process shouldn't take more than 7 or 10 days to get the plants acclimated to the sunlight.





**Huge outdoor plant   Marijuana plants in full sunlight   Grow in your garden**

Light can also be a problem if there is something blocking it from getting to your plants. For instance, if you live in a cloudy area, the plants might not be receiving enough light from the sun. You may have to bring the plants indoors at night and put them under some lamps so they get a full complement of light for the day.

If you are guerrilla farming in a forested area, then your plants might be at risk of having the light blocked out by the taller trees in the area. Although the trees provide security and cover from any potential onlookers, they may also limit the amount of light that your plants receive. It will be difficult to transplant them once they are in the ground so you may just have to deal with the limited amount of light.

When planting on the slope of a mountain, make sure that you plant on the south side of the mountain (if you're in the northern hemisphere). This is because the sun will go from east to west, but it will be in the southern half of the sky. If the plants are on the southern slope of the mountain, they will receive the most sunlight possible throughout the day.

## Watering

Watering your outdoor plants can be kind of tricky, especially if they are located in a relatively dry and arid place. If your plants aren't close to a hose, then you'll have to devise a plan to get your plants





as much water as possible. Obviously, early on, the plants won't need a lot in the way of H<sub>2</sub>O, but as they enter into vegetative growth and start to get much larger, they will need more water. Large adult plants can consume up to a gallon of water per day. This doesn't mean that you'll have to water the plants with a gallon of water every day because the soil should retain some of the water from previous waterings (or even rains).

If your plants are on private land that you have access to, then there is no shortage of unique techniques that you can employ to get water to your plants. For instance, you can fill buckets up with water and transport them with a truck to the grow site. Try to avoid dumping the water on a single plant and inundating it.

Other growers have set up a drip method of watering that acts almost like a squeeze bottle that has a permanent drip. This method allows the growers to avoid having to water the plants every day while also keeping the soil moist on a continuous basis. Although it is gradual by nature, the drip method keeps the plants relatively healthy and doesn't flood them with water.



**Watering marijuana**



**Grow near watersource**



**Marijuana loves water**

Of course, you might live in an area where cannabis can grow naturally without the use of any extra water on your end. This is ideal for guerrilla farmers who likely won't be able to check on their plants on a daily basis. If you are a guerrilla farmer and you live in an area where the weather is often hot and dry, then you might need to keep a firm watch on the plants. Hiking in your own water will be difficult on a number of levels, and it's better if you can find a nearby lake or stream that can provide water for you naturally.





If your plants are underwatered, then it is likely that they will start wilting. Just be aware that plants will naturally start wilting in the summer as a response to the heat of the sun. The best way to check if your plants are getting enough water is to dig about 6 inches into the soil, making sure not to cut any major roots on the way down. If the soil there is still cool and moist, then the plants should be fine. Many soils are adept at maintaining water for long periods of time so that there is essentially a reservoir of water stored up there.

If at all possible, you might want to water your plants with a nutrient solution about once every couple of weeks. As long as the nutrient solution has a higher concentration of nitrogen, than phosphorous and potassium, then it will be good for vegetative growth. For flowering, use a solution that is higher in phosphorous than either of the other two nutrients. This should be done during the time at which you water the plants.

## Temperature, Weather, and Air

Obviously, temperature is one of the major issues when planting outdoors. There's not a lot you can do to keep your plants warm enough or cool enough to suit their needs if there should be some weather problems. If your plants are still in pots, then you can move them indoors to avoid any excessive cold at night. When the temperature is particularly hot outside, the roots can start to sort of "boil" in the soil. Keeping them cool with extra water will help ensure that the plants don't start to lose vigor.

Of course, being outdoors leaves your plants open for a large variety of other weather problems. Wind, rain, and snow (depending on where you live and when you plant) can all be problems that will hurt your plants. For the most part, high winds won't have much effect on healthy cannabis plants. They generally grow firm stalks that won't need any exterior support to stay standing. Indeed, most high winds will cause some miniature cracks in the plants' stalks, but, if they are healthy, they will heal themselves quite easily.

If the plants are suffering from nutrient deficiencies, however, they may have a hard time recuperating. This is also true if they are top heavy and susceptible to more angled bends of the stalk. In this case, you might think about staking the plants so that they don't experience any irreparable damage. If you



know of a storm that is coming, it's best to find your weakest plants and make sure they have some exterior support to mitigate the damage that the storm might do.



**Not enough rain**



**Too cold**



**Too much rain, bad drainage**

To do this, simply place a stake about six inches from the base of the plant, and then tie the plant and the stake together with wire twists or string.

For guerrilla farmers, it's a good idea to not plant your crop on a slope known to experience mud slides. But, not every slope is going to be an obvious mudslide area. A good indication that the area won't be adequate for your plants is if there aren't any other small plants growing in the area. If all you see is sturdy trees or shrubs, then the slope likely does not support small vegetation. This could wipe out your entire crop over the course of a freak summer storm.

In terms of the air quality that your plants will experience, there's nothing better than the great outdoors. Your plants will get all the fresh air they need and plenty of CO2 to stay healthy.

## Outdoor Flowering

For the most part, flowering outdoors will require no input from the grower. Most plants will start adjusting to the changes in the daylight hours and begin the flowering process. The days will naturally start to get shorter which will trigger the plants into flowering organically.





For some growers, however, this will not be the ideal circumstance. Sometimes you don't want the plants to enter flowering and sometimes you want them to enter it earlier. For instance, if the weather is still nice and you want to eke out all the vegetative growth you can with your plants, then you'll want to delay flowering as long as possible. By that same token, if you know that the weather will soon become exceptionally cold or at least too cold for the plants to survive, then try to make sure that they start flowering sooner than they might have naturally.

For growers that have access to their plants, both of these options are possible. If you want to delay the onset of flowering, then it merely takes a little light during the night. You can accomplish this with a high-powered flashlight shining on the plants once every couple of hours or so for about 10 minutes during the night. This will adequately mess with the natural inclination for the plants to start flowering and they will stay in vegetative growth for the time being.



### **Outdoor Marijuana Flowers**

Obviously, if the weather starts to get cold early where you live, try to ensure that your plants start flowering as soon as possible. But, outdoor plants offer certain challenges to this goal. If the light to darkness period isn't yet 12 hours to 12 hours, then you'll need to make that happen on your own. Using a polyethylene sheet will help block out any sunrise or sunset light so that you can get the required 12 hours of darkness. For instance, if you know that your area is going to get exactly 13 hours of sunlight during the day and that sunset is at 7 PM, then place the sheet over the plants at 6 PM and remove it at 6 AM when the sun rises. After doing this for about 1 to 2 weeks, the plants should start to flower and you can begin harvesting.





When it comes to manipulating the flowering period, guerrilla farmers are kind of out of luck. They will be at the mercy of the local weather in the area and won't have a lot of say in the matter. Just trust that nature will work its magic and find a way to give you some excellent smoke.

## Pests, Predators, and other Problems

You might expect plants that are grown outdoors to fare much worse than plants grown indoors when it comes to pests. That's true but because the ecosystem is often self-regulating, there are many tricks to get rid of unwelcome visitors. For instance, even if a few bugs start munching on the leaves of your cannabis plants, it's likely that they will be held in check by any of their natural predators. Spider mites, aphids, whiteflies, and mealy bugs are all common pests that many growers have to deal with both inside and out. The plants are in the most danger when they are young and not well-developed. A single meal for a group of mites when the plant is a seedling could cause some irreparable damage to the plant.



**Ladybugs**



**Snail**



**Bird**

As the plant ages, however, it will start to become less susceptible to enervation via the bites of a small insect. This is largely because these insects will be taken care of by natural predators before the plant incurs much damage. If pests are a problem there are a few options you can try to get them away from your plants.





# Companion Planting

Although the THC that marijuana produces is supposed to act as a [natural repellent](#), it is sometimes not very helpful for getting rid of certain insects. Many outdoor growers have taken to planting companion plants that work to repel any pests. In general, you must plant the companion plants near the actual marijuana plants. The most effective repellent plants are those that have strong scents like spices, herbs, and mints.

Garlic cloves are probably the best repellents because they ensure that a wide range of pests stays away from your garden. Aphids, spider mites, potato bugs, many types of beetles, and a wide range of other pests will be repelled by garlic cloves. Even rabbits and some deer will be put off by the scent that garlic cloves produce.



**Garlic**



**Other plants as camouflage**



**Mint**

Mints are particularly effective at controlling flea beetles if you've got a particularly large infestation of them. They also repel a wide variety of other insects and even mice.

Geraniums and marigolds can also be interspersed in between your garden to provide an even larger range of protection. Geraniums can even be placed outside in pots so that you don't have to go through the hassle of actually planting them in the soil. Marigolds are some of the fastest growing flowers and they will produce a strong scent within a matter of a few days.





## Natural Predators

It's also possible to buy the natural predators of these pests and place them in your garden. Other insects like ladybugs have no interest in eating the marijuana plant, but they do have quite an appetite for aphids and insect eggs. Both praying mantises and lacewings also provide you with a natural way to rid yourself of any unwanted predators. All of these are sold commercially.



**Birds eat insects**



**Ladybugs eat mites**



**Frogs love larvae**

Several birds, including blue jays, robins, martins, chickadees and others, are adept predators when it comes to killing off marijuana pests. To attract these birds, some growers have installed bird houses, feeders, and pools of water. It's also not a bad idea to let a few chickens, ducks, or geese run through the garden every once in a while as the plants grow larger. These birds will take out many pests along with a number of different weeds and you won't have to do any work in that regard. Other insect predators include frogs, toads, snakes, turtles, and lizards which all should be encouraged to take up residence in your garden.

## Other Repellent Methods

Many gardeners employ the use of some ingenious homemade sprays or other solutions that are remarkably effective. It's possible to use a concoction composed of liquid garlic extract and regular





soap. You can also add cayenne peppers, onions, or almost anything that is safe for the marijuana plant and also pungent enough to repel many different kinds of pests.

If you really want a cheap solution, you can literally just stomp on the bugs or squeeze them to death. It's best to do this in the early morning when the bugs are moving much slower in general. If anything, it gives you something to do in the morning before you head off to work or do whatever else you have to do for the day.

Many growers like to place barriers around their garden. This is particularly effective for guerrilla growers because it's hard to notice and doesn't take a lot of time to prepare. All you have to do is create a barrier about 6 feet away from the plant using powdered potash (wood ash). You can even sprinkle some of the wood ash onto the leaves to keep flying bugs at bay as well.



**Homemade spray**



**Greenhouse keeps out many bugs**



**Hidden growsite in the woods**

But, insects aren't the only pests that can cause problems. This is particularly true if you live in an area that has a large quantity of omnivorous or herbivorous mammals or birds. Deer, rats, rabbits, cows, and other mammals are prone to finding ways to get to your marijuana plants. When the plants are young, it's common for deer to come by and virtually decimate the crop. As the plants age, however, the ruminants are not that attracted to it.

For large mammals, the best repellent is an equally large fence, but many growers don't have the luxury of being able to build a fence. Thus, other methods are required to force those mammals away. Many growers have started purchasing the urine of certain predators. For instance, if a group of deer





is constantly messing with your garden, then you might think about purchasing some bear urine and placing a perimeter of the stuff around the plants. When the deer catch the scent, they will inherently want to avoid the area from here on out because they recognize the smell as something predatory. This can work for smaller mammals as well. As long as you purchase the urine of one of the mammal's main predators, they will stay away. A rabbit might be repelled by the scent of fox or wolf urine. You can find these repellents at many outdoor shops.

In general, birds don't represent much of a threat to any marijuana garden. When you have just sown the seeds, however, crows, sparrows, and starlings can be potentially harmful to your crop because they like to pilfer the seeds. They may be a risk in that regard up until the plant germinates and becomes a seedling. To avoid any of your seeds being taken prematurely, you could use plastic netting or even a scarecrow to get the birds off your back. After the seeds have germinated, you really won't have any problems with birds. They don't really like the taste of the leafy marijuana plant. As mentioned previously, the birds should be encouraged to nest in your garden because they are natural predators to other insect pests.

## Some Notes about Outdoor Security

Obviously, the difference between growing outdoors and indoors is that your plants are basically wide open to any onlookers who happen to pass by. If you're on public land (or even private land), there's always a chance that your plants could be found by either law enforcement or thieves. The only way to really prevent yourself from being caught is to meticulously cover your tracks.

If you're growing on public land, be sure to find a place that will be difficult to discover by land or by air. Try to find an area where you know that fly-bys are rare or non-existent. Also, don't plant your garden in an area that is visible from any trails or walking paths. Even a random citizen could report your crop to the police and, even if you don't get caught, you'll still lose your garden. It's always a good idea to be as clandestine as possible and remain out of the sight of any onlookers (for instance, a park ranger) when you go to the garden. If you can find a place that is secluded but not hard to reach, then you will be much better off when taking care of your plants and ultimately harvesting them.





**Outdoor growsite**



**Police helicopter patrol**



**Rangers by foot**

If you have to make a relatively long hike to a place like a clearing in the forest, then it's vital to take 3 or 4 different routes to the place. Even an amateur tracker will start to notice the path you make when walking to your garden if you only have one entry point. This path will be obvious to any thieves or other people who know what they're looking for. You should always try to leave your garden in a different way than you came in. For instance, if you are planting in a park with a number of different trails, it could be prudent to enter the park on one trail, leave that trail to tend to your garden, and then leave the garden to get on another trail altogether. Always keep a map of the land handy in the event that you get lost. If it's possible, try entering the public land from inconspicuous places (for instance, areas that don't have trails).

If growing on private land, make sure you do everything in your power to keep the plants from being seen. This includes pruning and trimming them so that they don't incite any suspicion from passersby or neighbors. Plants grown outdoors can often reach incredible heights that will make them relatively obvious to anyone looking. For instance, if you're growing in your backyard, a six-foot monster plant is going to catch the eye of any neighbors relatively quickly. Keeping the plant pruned will limit its size and detectability and might also produce a higher yield in the end.

Some growers have considered growing their crop on land adjacent to their own that is owned by someone else. For example, if you live next to a cornfield, you might think it would be advantageous to grow out there. Unfortunately, it's hard to predict how frequently the landowner inspects their land or



if any flybys are performed in the area. If you get caught, expect to be hit with more than a trespassing charge.

It should also be reiterated that you should never talk to anyone about growing marijuana. Even if your plants are heavily secluded and almost impossible to find, don't tell anyone.

## Harvesting

Indoor and outdoor harvesting are basically the same thing except that you have to bring your harvest inside in the case of outdoor growers. If the plants are on private land where you can just pull the plants out of the ground and bring them in your house, then you shouldn't have any trouble. Guerrilla farmers, however, will probably have to hike in to retrieve their plants and then hike back out unnoticed. Of course, this is generally not that easy to do and may require the help of a friend depending on the size of the plants and the overall size of the crop. If at all possible, try doing this during the night or in the early morning to avoid any people potentially seeing you. Even if you conceal the plants in bags, any onlookers will reach some obvious conclusions.

In any event, taking a few leaves and shoots before the actual harvest time is one of the more prudent decisions you can make. This essentially ensures that you'll at least get something for all your efforts in the event that your plants get ripped off or noticed by law enforcement. For indoor growers, it's always good to sample a little bit of the smoke beforehand. The leaves and shoots during vegetative growth will actually be rather potent and will provide you with some good smoke in general.

The right time to harvest the plants won't always be apparent. You don't want to harvest too early and you certainly don't want to harvest too late. In either case, the THC and other cannabinoids on the plant won't be nearly as concentrated as you might like. Obviously, if you want sinsemilla buds, the male plants must be harvested early so they don't pollinate the female flowers. If you pull male flowers early, you won't really be losing that much in terms of potency or yield. For the most part, male plants don't produce the highest quality smoke anyway. Still, if you want to avoid pollination, you should get them out as soon as you determine the sex.





**Not ready, white pistils    Be careful during transportation    Ready, many red pistils**

If you do want to pollinate your female seeds, then you should just leave the males in the soil so that they can flower and produce pollen. This will keep you from having to pluck out the males prematurely and it will also ensure that you will have seeds for next year's crop.

When it comes to pollinated female plants, you won't want to pull them before the seeds have had enough time to mature. Many growers start to notice the telltale signs of high THC production and increased flower and bud growth and they might think it's a good idea to pull out their female plants. But, if you pull the plants out too early, the seeds might just be inert and won't germinate next season. You can investigate the seeds by opening up their sheaths or bracts and seeing if they have achieved the marbling brown color associated with maturity.

Of course, sinsemilla plants don't have to rely on seed maturation for them to be viable for harvesting. But, in general, these plants have a longer flowering period. In fact, they might bloom for 4 to 5 weeks with new growth happening almost instantaneously. The new growth will be sort of a boon to your overall yield, but you should wait until there is a noticeable decline in flower production. This will generally happen in the fourth or fifth week of blooming. When you notice the decline, don't start to harvest immediately. Wait about a week after the decline starts to really start harvesting your sinsemilla plants. This is when the THC will be at its highest and the smoke will be the most potent. If you leave the plants in to grow more, they might slowly get a bit larger and produce a few extra buds. But, the THC won't be as potent because it will finally start to degrade.



To actually harvest the plants, all you'll have to do is gently pull them up out of the soil. To facilitate this process, you might want to wet the soil beforehand. Avoid bending or cracking the plants as you pull them up as it makes them harder to deal with. If your plants are in pots, then you can simply pull them out or even dump the pot and all the soil out.

There are many different techniques of harvesting and transporting marijuana and I'm always interested in your story. You can leave a comment on this article about **harvesting marijuana**

## Post-Harvest Activities

When you finally harvest the plants, the first thing you should do is strip the fan leaves off the plant. This is because they are less potent than the colas and they often don't cure as well as the other parts of the plant. That doesn't mean that they can't be used, however. In fact, fan leaves are known to have a somewhat high concentration of THC, especially after they have just been pulled.

Once you've done that, you can start grading and manicuring the plants. Grading simply involves separating the plants by their particular sex, strain, and anatomical part of the plant. For instance, you might place all sativa-dominant, female, top colas in the same area. Most growers like to hang their plants upside down from a wire, if only because it's considerably easier than doing anything else. Manicuring involves taking any excess leaves from around the colas so that the plants will dry quite easily.

After all the plants are graded and manicured neatly, you can start curing them if you want to. Curing is a process that is meant to bring out the best flavors and tones in the grass, but sometimes it can actually decrease the amount of THC substantially if you do it wrong. Sinsemilla buds often don't require curing because they are potent enough as is.





**Ready for harvest**



**Cut branches**



**Hang upside down**

The most common way to cure a plant is by air curing. It involves hanging the plants upside in an unventilated room. You want the temperatures to be relatively hot, so if you can place the plants in the sun, then the curing process should go off without a hitch. The plants will start to lose color and become pale at which point you should open the ventilator or window to slow down the curing process. The entire length of curing might take you around six weeks to complete. If you are having relatively overcast or wet days or the room isn't getting up near 90°F, then you could be at risk of getting mold on your plants. This is something you desperately don't want to have happen and you might want to introduce a heater of some kind to get the temperature up as high as it can go.

Flue curing expedites the process of curing by adding an external force that works to heat the plants faster. You can place the plants in a water-tight box that you then place into a pool of water (generally, a fish tank). Then, heat that pool of water to about 90°F consistently. When the plants start to lose their green color, turn the heat up to about 100°F. When all the green is sapped out of the plants, turn the heat up again to 115°F. This process will also dry the plants, but make sure to turn the heat down as they start to dry, otherwise they might end up being brittle. This process generally only takes about a week to complete.

Sweat curing is a method used primarily in Colombia to get the plants to cure within about 5 days. It generally involves stacked branches and colas about 1.5 feet high and 2 square feet minimum. The microbial action works like a fermentation process in the same way that compost starts to heat up. The plants will start to lose color little by little. You should take out the plants that have lost the most color





each day. To avoid any mold or rot, place paper towels, cotton sheets, or rags in between each of the plants. The rags will absorb any excess moisture and facilitate the curing process.

## Drying

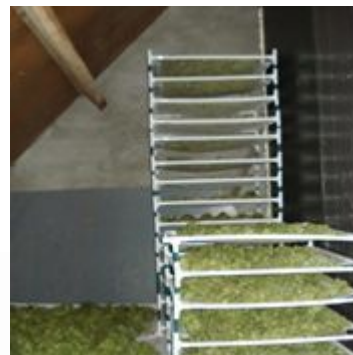
At this point, you should start drying your plants. Drying is a necessary activity, particularly if you want to store your bud for later use. It eliminates the risk of incurring mold and also ensures that the grass will last a long time. Most growers use a slow drying method that simply involves hanging them upside down and letting the air dry them out naturally. This usually takes about two weeks to complete fully. Of course, they will also start to cure a little bit during this process which may limit the potency somewhat.



**Drying outside**



**Drying inside**



**Drying in nets**

Fast drying techniques include using the oven, microwaving, and even using a skillet. Most people will want to test out their smoke relatively quickly, and, even though these methods might produce a harsher taste overall, they will still give you the ability to smoke some bud soon after harvesting. It should be noted that you don't want to dry your entire harvest using one of these fast drying methods. In fact, it might be more prudent to dry the plants using a heater to facilitate the regular slow drying process. In any event, it's important to not leave the grass in the oven or skillet for too long. Keep it in the oven for about 10 minutes at a temperature of 150 to 200°F. Don't be careless as you could end up charring your bud entirely.





# Storage

[Storing your bud](#) is the best way to ensure that it lasts you until at least the next harvest. Many growers simply place their dried bud in a dark (usually glass) container and then put that container in the refrigerator or freezer. Light and heat are two of the major things that will degrade THC, so if you keep the storage area dark and cold, then you will still be able to enjoy your smoke well into the future.



**Airtight jars**



**Ziplock bags**



**Compressed blocks**

It should also be noted that storing your entire crop together is a recipe for disaster. Although it might be more convenient to do it that way, you still run the risk of incurring mold on the plants. If even one portion of one plant stayed moist, then you could end up ruining the entire crop with mold. That's why it's important to keep your crop separate so that you don't run into a disaster like that.

After that, you can always get ready for next year's crop by tilling some soil or inspecting your seeds. Of course, you could also just sit back, relax, and enjoy the fruits of your labor for a while. Hopefully, this Grow Bible helped you through the process of growing your marijuana crop and it will continue to help you as you keep growing for years to come.



# Epilogue

Thank you very much for reading this grow guide. I hope this information was useful and helps you grow higher quality marijuana and increase your yield. As you know, there are over 500 marijuana growing related articles on my websites with over 2500 pictures. A marijuana growers forum is under construction and will be online within two months. You'll be notified of course.

If you have any comments or if you want to add some information to this grow guide, let me know on [robert@ilovegrowingmarijuana.com](mailto:robert@ilovegrowingmarijuana.com). I'm always looking for growers who can help build the website by writing articles, leaving comments, become moderator on the forum or tell your friends about us.

Happy growing,

*Robert*