

# How to grow marajuana essay



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Introduction: Growing marijuana indoors is fast becoming an American Pastime. The reasons are varied.

With the increased interest and experimentation in house plant cultivation, it was inevitable that people would apply their knowledge of plant care to growing marijuana. Many of those who occasionally like to light up a joint may find it difficult to locate a source or are hesitant to deal with a perhaps unsavory element of society in procuring their grass. There is, of course, the criminal aspect of buying or selling grass; Growing marijuana is just as illegal as buying, selling, or smoking it, but growing is something you can do in the privacy of your own home without having to deal with someone you don't know or trust. The best reason for growing your own is the enjoyment you will get out of watching those tiny little seeds you picked out of your stash sprout and become some of the most lovely and lush of all house plants. Anyone Can Do It Even if you haven't had any prior experience with growing plants in your home, you can have a successful crop of marijuana by following the simple directions in this pamphlet.

If you have had problems in the past with marijuana cultivation, you may find the solutions in the following chapters. Growing a marijuana plant involves four basic steps: 1. Get the seeds. If you don't already have some, you can ask your friends to save you seeds out of any good grass they may come across.

You'll find that lots of people already have a seed collection of some sort and are willing to part with a few prime seeds in exchange for some of the finished product. 2. Germinate the seeds. You can simply drop a seed into

moist soil, but by germinating the seeds first you can be sure that the seed will indeed produce a plant. To germinate seeds, place a group of them between about six moist paper towels, or in the pores of a moist sponge. Leave the towels or sponge moist but not soaking wet.

Some seeds will germinate in 24 hours while others may take several days or even a week. 3. Plant the sprouts. As soon as a seed cracks open and begins to sprout, place it on some moist soil and sprinkle a little soil over the top of it.

4. Supply the plants with light. Fluorescent lights are the best.

Hang the lights with two inches of the soil and after the plants appear above the ground, continue to keep the lights with two inches of the plants. It is as easy as that. If you follow those four steps you will grow a marijuana plant.

To ensure prime quality and the highest yield in the shortest time period, however, a few details are necessary. Soil Your prime concern, after choosing high quality seeds, is the soil. Use the best soil you can get. Scrimping on the soil doesn't pay off in the long run. If you use unsterilized soil you will almost certainly find parasites in it, probably after it is too late to transplant your marijuana.

You can find excellent soil for sale at your local plant shop or nursery, K-Mart, Wal Mart, and even some grocery stores. The soil you use should have these properties for the best possible results: 1. It should drain well. That is, it should have some sand in it and also some sponge rock or perlite.

2. The ph should be between 6.5 and 7.5 since marijuana does not do well in acidic soil. High acidity in soil encourages the plant to be predominantly male, an undesirable trait.

3. The soil should also contain humus for retaining moisture and nutrients. If you want to make your own soil mixture, you can use this recipe: Mix two parts moss with one part sand and one part perlite or sponge rock to each four gallons of soil. Test your soil for ph with litmus paper or with a soil testing kit available at most plant stores.

To raise the ph of the soil, add 1/2 lb.

lime to 1 cubic foot of soil to raise the ph one point. If you absolutely insist on using dirt you dug up from your driveway, you must sterilize it by baking it in your oven for about an hour at 250 degrees. Be sure to moisten it thoroughly first and also prepare yourself for a rapid evacuation of your kitchen because that hot soil is going to stink. Now add to the mixture about one tablespoon of fertilizer (like Rapid-Gro) per gallon of soil and blend it in thoroughly. Better yet, just skip the whole process and spend a couple bucks on some soil.

Containers After you have prepared your soil, you will have to come up with some kind of container to plant in. The container should be sterilized as well, especially if they have been used previously for growing other plants. The size of the container has a great deal to do with the rate of growth and overall size of the plant. You should plan on transplanting your plant not more than one time, since the process of transplanting can be a shock to the plant and it will have to undergo a recovery period in which growth is slowed

or even stopped for a short while. The first container you use should be no larger than six inches in diameter and can be made of clay or plastic.

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o transplant, simply prepare the larger pot by filling it with soil and scooping out a little hole about the size of the smaller pot that the plant is in. Turn the plant upside down, pot and all, and tap the rim of the pot sharply on a counter or the edge of the sink. The soil and root ball should come out of the pot cleanly with the soil retaining the shape of the pot and with no disturbances to the root ball. Another method that can bypass the transplanting problem is using a Jiffy-Pot. Jiffy pots are made of compressed peat moss and can be planted right into moist soil where they decompose and allow the passage of the root system through their walls.

The second container should have a volume of at least three gallons.

Marijuana doesn't like to have its roots bound or cramped for space, so always be sure that the container you use will be deep enough for your plant's root system. It is very difficult to transplant a five-foot marijuana tree, so plan ahead. It is going to get bigger. The small plants should be ready to transplant into their permanent homes in about two weeks.

Keep a close watch on them after the first week or so and avoid root binding at all costs since the plants never seem to do as well once they have been stunted by the cramping of their roots.

Fertilizer Marijuana likes lots of food, but you can do damage to the plants if you are too zealous. Some fertilizers can burn a plant and damage its roots if

used in to high a concentration. Most commercial soil will have enough nutrients in it to sustain the plant for about three weeks of growth so you don't need to worry about feeding your plant until the end of the third week. The most important thing to remember is to introduce the fertilizer concentration to the plant gradually. Start with a fairly diluted fertilizer solution and gradually increase the dosage.

There are several good marijuana fertilizers on the commercial market, two of which are Rapid-Gro and Eco-Grow. Rapid-Gro has had widespread use in marijuana cultivation and is available in most parts of the United States. Eco-Grow is also especially good for marijuana since it contains an ingredient that keeps the soil from becoming acid. Most fertilizers cause a ph change in the soil. Adding fertilizer to the soil almost always results in a more acidic ph.

As time goes on, the amount of salts produced by the breakdown of fertilizers in the soil causes the soil to become increasingly acidic and eventually the concentration of these salts in the soil will stunt the plant and cause browning out of the foliage.

Also, as the plant gets older its roots become less effective in bringing food to the leaves. To avoid the accumulation of these salts in your soil and to ensure that your plant is getting all of the food it needs you can begin leaf feeding your plant at the age of about 1.5 months. Dissolve the fertilizer in worm water and spray the mixture directly onto the foliage.

The leaves absorb the fertilizer into their veins. If you want to continue to put fertilizer into the soil as well as leaf feeding, be sure not to overdose your plants. Remember to increase the amount of food your plant receives

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gradually. Marijuana seems to be able to take as much fertilizer as you want to give it as long as it is introduced over a period of time. During the first three months or so, fertilize your plants every few days.

As the rate of foliage growth slows down in the plant's preparation for blooming and seed production, the fertilizer intake of the plant should be slowed down as well. Never fertilize the plant just before you are going to harvest it since the fertilizer will encourage foliage production and slow down resin production.

A word here about the most organic of fertilizers: worm castings. As you may know, worms are raised commercially for sale to gardeners.

The breeders put the worms in organic compost mixtures and while the worms are reproducing they eat the organic matter and expel some of the best marijuana food around. After the worms have eaten all the organic matter in the compost, they are removed and sold and the remains are then sold as worm castings. These castings are so rich that you can grow marijuana in straight worm castings. This isn't really necessary however, and it is somewhat impractical since the castings are very expensive. If you can afford them you can, however, blend them in with your soil and they will make a very good organic fertilizer. Light Without light, the plants cannot grow.

In the countries in which marijuana grows best, the sun is the source of light. The amount of light and the length of the growing season in these countries results in huge tree-like plants. In most parts of North America, however, the sun is not generally intense enough for long enough periods of time to

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produce the same size and quality of plants that grow with ease in Latin America and other tropical countries.

The answer to the problem of lack of sun, especially in the winter months, shortness of the growing season, and other problems is to grow indoor under simulated conditions. The rule of thumb seems to be the more light, the better. In one experiment we know of, eight eight-foot VHO Gro-Lux fixtures were used over eight plants.

The plants grew at an astonishing rate. The lights had to be raised every day. There are many types of artificial light and all of them do different things to your plants. The common incandescent light bulb emits some of the frequencies of light the plant can use, but it also emits a high percentage of far red and infra-red light which cause the plant to concentrate its growth on the stem. This results in the plant stretching toward the light bulb until it becomes so tall and spindly that it just weakly topples over.

There are several brands of bulb type. One is the incandescent plant spot light which emits higher amounts of red and blue light than the common light bulb. It is an improvement, but has its drawbacks. It is hot, for example, and cannot be placed close to the plants. Consequently, the plant has to stretch upwards again and is in danger of becoming elongated and falling over. The red bands of light seem to encourage stem growth which is not desirable in growing marijuana.

the idea is to encourage foliage growth for obvious reasons.



Gro-Lux lights are probably the most common fluorescent plant lights. In our experience with them, they have proven themselves to be extremely effective. They range in size from one to eight feet in length so you can set up a growing room in a closet or a warehouse. There are two types of Gro-Lux lights: The standard and the wide spectrum. They can be used in conjunction with one another, but the wide spectrum lights are not sufficient on their own.

The wide spectrum lights were designed as a supplementary light source and are cheaper than the standard lights. Wide spectrum lights emit the same bands of light as the standard but the standard emit higher concentrations of red and blue bands that the plants need to grow. The wide spectrum lights also emit infra-red, the effect of which on stem growth we have already discussed. If you are planning to grow on a large scale, you might be interested to know that the regular fluorescent lamps and fixtures, the type that are used in commercial lighting, work well when used along with standard Gro-Lux lights.

These commercial lights are called cool whites, and are the cheapest of the fluorescent lights we have mentioned. They emit as much blue light as the Gro-Lux standards and the blue light is what the plants use in foliage growth. Now we come to the question of intensity. Both the standard and wide spectrum lamps come in three intensities: regular output, high output, and very high output.

You can grow a nice crop of plants under the regular output lamps and probably be quite satisfied with our results. The difference in using the HO or

VHO lamps is the time it takes to grow a crop. Under a VHO lamp, the plants grow at a rate that is about three times the rate at which they grow under the standard lamps. People have been known to get a plant that is four feet tall in two months under one of these lights. Under the VHO lights, one may have to raise the lights every day which means a growth rate of at least two inches a day.

The only drawback is the expense of the VHO lamps and fixtures. The VHO lamps and fixtures are almost twice the price of the standard. If you are interested in our opinion, they are well worth it. Now that you have your lights up, you might be curious about the amount of light to give you plants per day.

The maturation date of your plants is dependent on how much light they receive per day. The longer the dark period per day, the sooner the plant will bloom. Generally speaking, the less dark per day the better during the first six months of the plant's life. The older the plant is before it blooms and goes to seed, the better the grass will be. After the plant is allowed to bloom, its metabolic rate is slowed so that the plant's quality does not increase with the age at the same rate it did before it bloomed.

The idea, then, is to let the plant get as old as possible before allowing it to mature so that the potency will be as high as possible at the time of harvest. One relatively sure way to keep your plants from blooming until you are ready for them is to leave the lights on all the time. Occasionally a plant will go ahead and bloom anyway, but it is the exception rather than the rule. If

your plants receive 12 hours of light per day they will probably mature in 2 to 2.

5 months. If they get 16 hours of light per day they will probably be blooming in 3. 5 to 4 months.

With 18 hours of light per day, they will flower in 4. 5 to 5 months.

Its a good idea to put your lights on a timer to ensure that the amount of light received each day remains constant. A " vacation" timer, normally used to make it look like you are home while you are away, works nicely and can be found at most hardware or discount stores. Temperature and Humidity The ideal temperature for the light hours is 68 to 78 degrees fahrenheit and for the dark hours there should be about a 15 degree drop in temperature. The growing room should be relatively dry if possible. What you want is a resinous coating on the leaves and to get the plant to do this, you must convince it that it needs the resinous coating on its leaves to protect itself from drying out. In an extremely humid room, the plants develop wide leaves and do not produce as much resin.

You must take care not to let the temperature in a dry room become too hot, however, since the plant cannot assimilate water fast enough through its roots and its foliage will begin to brown out. Ventilation Proper ventilation in your growing room is fairly important. The more plants you have in one room, the more important good ventilation becomes. Plants breathe through their leaves.

The also rid themselves of poisons through their leaves. If proper ventilation is not maintained, the pores of the leaves will become clogged and the leaves will die. If there is a free movement of air, the poisons can evaporate off the leaves and the plant can breathe and remain healthy.

In a small closet where there are only a few plants you can probably create enough air circulation just by opening the door to look at them. Although it is possible to grow healthy looking plants in poorly ventilated rooms, they would be larger and healthier if they had a fresh supply of air coming in.

If you spend a lot of time in your growing room, your plants will grow better because they will be using the carbon dioxide that you are exhaling around them. It is sometimes quite difficult to get a fresh supply of air in to your growing room because your room is usually hidden away in a secret corner of your house, possibly in the attic or basement. In this case, a fan will create some movement of air. It will also stimulate your plants into growing a healthier and sturdier stalk. Often times in an indoor environment, the stems of plants fail to become rigid because they don't have to cope with elements of wind and rain. To a degree, though, this is an advantage because the plant puts most of its energy into producing leaves and resin instead of stems.

Dehumidifying Your Growing Room Cannabis that grows in a hot, dry climate will have narrower leaves than cannabis grown in a humid atmosphere. The reason is that in a dry atmosphere the plant can respire easier because the moisture on the leaves evaporates faster. In a humid atmosphere, the moisture cannot evaporate as fast. Consequently, the leaves have to be

broader with more surface area in order to expel the wastes that the plant put out. Since the broad leaves produce less resin per leaf than the narrow there will be more resin in an ounce of narrow leaves than in one ounce of broad leaves. There may be more leaf mass in the broader leafed plants, but most people are growing their own for quality rather than quantity.

Since the resin in the marijuana plant serves the purpose of keeping the leaves from drying out, there is more apt to be a lot of resin produced in a dry room than in a humid one. In the Sears catalog, dehumidifiers cost around \$100.00 and are therefore a bit impractical for the "hobby grower."

Watering If you live near a clear mountain stream, you can skip this bit on the quality of water. Most of us are supplied water by the city and some cities add more chemicals to the water than others. They all add chlorine, however, in varying quantities.

Humans over the years have learned to either get rid of it somehow or to live with it, but your marijuana plants won't have time to acquire a taste for it so you had better see that they don't have to. Chlorine will evaporate if you let the water stand for 24 hours in an open container. Letting the water stand for a day or two will serve a dual purpose: The water will come to room temperature during that period of time and you can avoid the nasty shock your plants suffer when you drench them with cold water. Always water with room temperature to lukewarm water.

If your water has an excessive amount of chlorine in it, you may want to get some anti-chlorine drops at the local fish or pet store. The most important thing about watering is to do it thoroughly. You can water a plant in a three

gallon container with as much as three quarts of water. The idea is to get the soil evenly moist all the way to the bottom of the pot. If you use a little water, even if you do it often, it seeps just a short way down into the soil and any roots below the moist soil will start to turn upwards toward the water. The second most important thing about watering is to see to it that the pot has good drainage.

There should be some holes in the bottom so that any excess water will run out. If the pot won't drain, the excess water will accumulate in a pocket and rot the roots of the plant or simply make the soil sour or mildew. The soil, as we said earlier, must allow the water to drain evenly through it and must not become hard or packed. If you have made sure that the soil contains sand and perlite, you shouldn't have drainage problems. To discover when to water, feel the soil with your finger. If you feel moisture in the soil, you can wait a day or two to water.

The soil near the top of the pot is always drier than the soil further down. You can drown your plant just as easily as you can let it get too dry and it is more likely to survive a dry spell than it is to survive a torrential flood. Water the plants well when you water and don't water them at all when they don't need it. Bugs If you can avoid getting bugs in the first place you will be much better off. Once your plants become infested you will probably be fighting bugs for the rest of your plants' lives. To avoid bugs be sure to use sterilized soil and containers and don't bring other plants from outside into your growing room.

If you have pets, ensure that they stay out of your growing room, since they can bring in pests on their fur. Examine your plants regularly for signs of insects, spots, holes in the leaves, browning of the tips of the leaves, and droopy branches. If you find that somehow in spite of all your precautions you have a plant room full of bugs, you'll have to spray your plants with some kind of insecticide.

You'll want to use something that will kill the bugs and not you. Spider mites are probably the bug that will do the most damage to the marijuana plants.

One of the reasons is that they are almost microscopic and very hard to spot. They are called spider mites because they leave a web-like substance clinging to the leaves. They also cause tiny little spots to appear on the leaves. Probably the first thing you'll notice, however, is that your plants look sick and depressed. The mites suck enzymes from the leaves and as a result the leaves lose some of their green color and glossiness.

Sometimes the leaves look like they have some kind of fungus on them. The eggs are very tiny black dots. You might be wise to get a magnifying glass so that you can really scrutinize your plants closely. Be sure to examine the underside of the leaves too.

The mites will often be found clinging to the underside as well as the top of the leaves. The sooner you start fighting the bugs, the easier it will be to get rid of them. For killing spider mites on marijuana, one of the best insecticides is "Fruit and Berry" spray made by Millers. Ortho also produces several insecticides that will kill mites. The ingredients to look for are Kelthane and

Malathion [erowid note- Malathion may be very toxic to humans, should be handled very carefully, and is certainly not intended for indoor use.

It also seems highly preferable to avoid spraying pesticides or any chemicals on plants that will be smoked without being washed thoroughly first.] Both of these poisons are lethal to humans and pets as well as bugs, but they both detoxify in about ten days so you can safely smoke the grass ten days after spraying.

Fruit and Berry will only kill the adult mite, however, and you'll have to spray every four days for about two weeks to be sure that you have killed all the adults before they have had a chance to lay eggs. Keep a close watch on your plants because it only takes one egg laying adult to re- infest your plants and chances are that one or two will escape your barrage of insecticides. If you see little bugs flying around your plants, they are probably white flies.

The adults are immune to almost all the commercial insecticides except Fruit and Berry which will not kill the eggs or larva. It is the larval stage of this insect that does the most damage. They suck out enzymes too, and kill your plants if they go unchecked. You will have to get on a spraying program just as was explained in the spider mite section. An organic method of bug control is using soap suds. Put Ivory flakes in some lukewarm water and work up the suds into a lather.

Then put the suds over the plant. The obvious disadvantage is if you don't rinse the soap off the plant you'll taste the soap when you smoke the leaves.

Pruning We have found that pruning is not always necessary. The reason one

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does it in the first place is to encourage secondary growth and to allow light to reach the immature leaves.

Some strands of grass just naturally grow thick and bushy and if they are not clipped the sap moves in an uninterrupted flow right to the top of the plant where it produces flowers that are thick with resin. On the other hand, if your plants appear tall and spindly for their age at three weeks, they probably require a little trimming to ensure a nice full leafy plant. At three weeks of age your plant should have at least two sets of branches or four leaf clusters and a top.

To prune the plant, simply slice the top off just about the place where two branches oppose each other.

Use a razor blade in a straight cut. If you want to, you can root the top in some water and when the roots appear, plant the top in moist soil and it should grow into another plant. If you are going to root the top you should cut the end again, this time with a diagonal cut so as to expose more surface to the water or rooting solution. The advantage to taking cuttings from your plant is that it produces more tops. The tops have the resin, and that's the name of the game. Every time you cut off a top, the plant sends out two more top branches at the base of the existing branches.

Pruning also encourages the branches underneath to grow faster than they normally would without the top having been cut. Harvesting and Curing Well, now that you've grown your marijuana, you will want to cure it right so that it smokes clean and won't bite. You can avoid that "homegrown" taste of chlorophyll that sometimes makes one's fillings taste like they might be

dissolving. We know of several methods of curing the marijuana so that it will have a mild flavor and a mellow rather than harsh smoke. First, pull the plant up roots and all and hang it upside down for 24 hours.

Then put each plant in a paper grocery bag with the top open for three or four days or until the leaves feel dry to the touch. Now strip the leaves off the stem and put them in a glass jar with a lid. Don't pack the leaves in tightly, you want air to reach all the leaves. The main danger in the curing process is mold. If the leaves are too damp when you put them into the jar, they will mold and since the mold will destroy the resins, mold will ruin your marijuana.

you should check the jars every day by smelling them and if you smell an acrid aroma, take the weed out of the jar and spread it out on newspaper so that it can dry quickly. Another method is to uproot the plants and hang them upside down.

You get some burlap bags damp and slip them up over the plants. Keep the bags damp and leave them in the sun for at least a week. Now put the plants in a paper bag for a few days until the weed is dry enough to smoke. Like many fine things in life, marijuana mellows out with age.

The aging process tends to remove the chlorophyll taste. Editor's Note and Important Warning: This pamphlet was written about 8 years ago. While the facts, figures, and methods described here are still valid, an important note must be added concerning the purchasing of equipment and supplies. The information age is upon us and an increasing amount of data is being kept about all of us whether we realize it or not.

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With the war on drugs in full effect, the D. E. A. is using this information at every possible opportunity. When you make a purchase with a credit card, every last bit of information regarding that purchase is filed away into a database, both at the store and with your credit card company.

Not only the price, but the exact date, location, and items purchased are recorded and stored away. Many stores and credit card companies routinely sell their databases of customers and transactions to anybody who can afford it. The D. E. A can certainly afford it.

After all, they're using your tax dollars. The D. E. A. as well as other government agencies DO purchase these databases for their own uses. They feed them into their computers and the computers spit out a list of anybody with " suspicious" purchases.

Any purchases that could be associated with drug production, use, or selling could be flagged for further investigation. These " suspicious" purchases include unusual chemicals, medical supplies such as syringes, lights and timers, and even potting soil and fertilizer.

The point is, if you are planning on purchasing supplies to grow marijuana don't take any chances. While the average home grower, who is simply growing enough for his own use, would probably never be flagged by the computers, you never know. If you are purchasing equipment or supplies, PAY CASH! In addition, many supermarkets and discount stores now have some sort of " Preferred Customer" cards.

When you buy something, regardless of how you pay, you give them your card to scan and all of your purchases are recorded. They then send you some sort of coupon depending on what and how much you purchased each month. It sounds like a good deal, but you wind up having all of your purchases recorded and sold just like with the credit cards. DON'T use one of these cards when you are purchasing anything that might be deemed suspicious. For that matter, don't use them at all. They just result in a ton of junk mail and a lot of people knowing exactly what you buy and when you buy it.

It is recommended that you buy the book that these files are taken from. Many charts and some chapters have been omitted. Besides, Ed might need the money. Cannabis probably evolved in the Himalayan foothills, but its origins are clouded by the plant's early symbiotic relationship with humans.

It has been grown for three products - the seeds, which are used as a grainlike food and animal feed and for oil; its fiber, which is used for cloth and rope; and its resin, which is used medically and recreationally since it contains the group of psychoactive substances collectively known as Tetrahydrocannabinol, usually referred to as THC. Plants grown for seed or fiber are usually referred to as hemp and contain small amounts of THC.

Plants grown for THC and for the resin are referred to as marijuana. Use of cannabis and its products spread quickly throughout the world. Marijuana is now cultivated in climates ranging from the Arctic to the equator.

Cannabis has been evolving for hundreds of thousands of generations on its own and through informal breeding programs by farmers. A diverse group of <https://assignbuster.com/how-to-grow-marijuana-essay/>

varieties has evolved or been developed as a result of breeders' attempts to create a plant that is efficient at producing the desired product, which flourishes under particular environmental conditions. Cannabis easily escapes from cultivation and goes "wild." For instance, in the American midwest, stands of hemp "weed" remain from the 1940's plantings. These plants adapt on a population level to the particular environmental conditions that the plants face; the stand's genetic pool, and thus the plants' characteristics, evolve over a number of generations.

Varieties differ in growth characteristics such as height, width, branching traits, leaf size, leaf shape, flowering time, yield, potency, taste, type of high, and aroma. For the most part, potency is a factor of genetics. Some plants have the genetic potential of producing high grade marijuana and others do not. The goal of the cultivator is to allow the high THC plants to reach their full potential. Marijuana is a fast growing annual plant, although some varieties in some warm areas overwinter. It does best in a well-drained medium, high in fertility.

It requires long periods of unobstructed bright light daily. Marijuana is usually dioecious; plants are either male or female, although some varieties are monoecious - they have male and female flowers on the same plant. Marijuana's annual cycle begins with germination in the early spring.

The plant grows vigorously for several months. The plant begins to flower in the late summer or early fall and sets seed by late fall. The seeds drop as the plant dies as a result of changes in the weather.

Indoors, the grower has complete control of the environment. The cultivator determines when the plants are to be started, when they will flower, whether they are to produce seed and even if they are to bear a second harvest.

Marijuana Grower's Handbook - Part 2 of 33 by pH Imbalance " Choosing A Variety" Gardeners can grow a garden with only one or two varieties or a potpourri. Each has its advantages.

Commercial growers usually prefer homogenous gardens because the plants taste the same and mature at the same time. These growers usually choose fast maturing plants so that there is a quick turnaround. Commercial growers often use clones or cuttings from one plant so that the garden is genetically identical; the clones have exactly the same growth habits and potency.

Homegrowers are usually more concerned with quality than with fast maturity. Most often, they grow mixed groups of plants so they have a selection of potency, quality of the high, and taste. Heterogeneous gardens take longer to mature and have a lower yield than homogenous gardens.

They take more care, too, because the plants grow at different rates, have different shapes and require varying amounts of space. The plants require individual care. Marijuana grown in the United States is usually one of two main types: indica or sativa. Indica plants originated in the Hindu-Kush valleys in central Asia, which is located between the 25-35 latitudes. The weather there is changeable. One year there may be drought, the next it might be cloudy, wet, rainy or sunny.

For the population to survive, the plant group needs to have individuals which survive and thrive under different conditions. Thus, in any season, no

matter what the weather, some plants will do well and some will do poorly. Indica was probably developed by hash users for resin content, not for flower smoking. The resin was removed from the plant.

An indication of indica's development is the seeds, which remain enclosed and stick to the resin. Since they are very hard to disconnect from the plant, they require human help. Wild plants readily drop seeds once they mature. Plants from the same line from equatorial areas are usually fairly uniform. These include Colombians and central Africans.

Plants from higher latitudes of the same line sometimes have very different characteristics. These include Southern Africans, Northern Mexicans, and indicas. The plants look different from each other and have different maturities and potency. The ratio of THC (the ingredient which is psychoactive) to CBD (its precursor, which often leaves the smoker feeling disoriented, sleepy, drugged or confused) also varies. High latitude sativas have the same general characteristics: they tend to mature early, have compact short branches and wide, short leaves which are dark green, sometimes tinged purple.

Indica buds are usually tight, heavy, wide and thick rather than long. They smell "stinky", "skunky", or "pungent" and their smoke is thick – a small toke can induce coughing. The best indicas have a relaxing "social high" which allow one to sense and feel the environment but do not lead to thinking about or analyzing the experience. Cannabis sativa plants are found throughout the world.

Potent varieties such as Colombian, Panamanian, Mexican, Nigerian, Congolese, Indian and Thai are found in equatorial zones.

These plants require a long time to mature and ordinarily grow in areas where they have a long season. They are usually very potent, containing large quantities of THC and virtually no CBD. They have long, medium-thick buds when they are grown in full equatorial sun, but under artificial light or even under the temperate sun, the buds tend to run (not fill out completely). The buds usually smell sweet or tangy and the smoke is smooth, sometimes deceptively so.

The THC to CBD ratio of sativa plants gets lower as the plants are found further from the equator. Jamaican and Central Mexican varieties are found at the 15-20th latitudes. At the 30th latitude, varieties such as Southern African and Northern Mexican are variable and may contain equal amounts of THC and CBD, giving the smoker and buzzy, confusing high. These plants are used mostly for hybridizing. Plants found above the 30th latitude usually have low levels of THC, with high levels of CBD and are considered hemp.

If indica and sativa varieties are considered opposite ends of a spectrum, most plants fall in between the spectrum. Because of marijuana and hemp's long symbiotic relationship with humans, seeds are constantly procured or traded so that virtually all populations have been mixed with foreign plants at one time or another. Even in traditional marijuana-growing countries, the marijuana is often the result of several cross lines. Jamaican ganja, for example, is probably the result of crosses between hemp, which the English



cultivated for rope, and Indian ganja, which arrived with the Indian immigrants who came to the country.

The term for marijuana in Jamaica is ganja, the same as in India.

The traditional Jamaican term for the best weed is Kali, named for the Indian killer goddess. Marijuana Grower's Handbook – Part 3 of 33 “ Growth and Flowering” The cannabis plant regulates its growth and flowering stages by measuring the changes in the number of hours of uninterrupted darkness to determine when to flower. The plant produces a hormone (phytochrome) beginning at germination. When this chemical builds up to a critical level, the plant changes its mode from vegetative growth to flowering. This chemical is destroyed in the presence of even a few moments of light.

During the late spring and early summer there are many more hours of light than darkness and the hormone does not build up to a critical level.

However, as the days grow shorter and there are longer periods of uninterrupted darkness, the hormone builds up to a critical level.

Flowering occurs at different times with different varieties as a result of the adaptation of the varieties to the environment. Varieties from the 30th latitude grow in an area with a temperate climate and fairly early fall. These plants usually trigger in July or August and are ready to harvest in September or October. Southern African varieties often flower with as little as 8 or 9 hours of darkness/15 to 16 hours of light.

Other 30th latitude varieties including most indicas flower when the darkness cycle lasts a minimum of 9 to 10 hours. Jamaican and some

Southeast Asian varieties will trigger at 11 hours of darkness and ripen during September or October. Equatorial varieties trigger at 12 hours or more of darkness. This means that they will not start flowering before late September or early October and will not mature until late November or early December.

Of course, indoors the plants' growth stage can be regulated with the flick of a switch. Nevertheless, the plants respond to the artificial light cycle in the same way that they do to the natural seasonal cycles.

The potency of the plant is related to its maturity rather than chronological age. Genetically identical 3 month and 6 month-old plants which have mature flowers have the same potency. Starting from seed, a six month old plant flowers slightly faster and fills out more than a 3 month old plant.

Marijuana Grower's Handbook – Part 4 of 33 “ Choosing a Space” Almost any area can be converted to a growing space.

Attics, basements, spare rooms, alcoves and even shelves can be used.

Metal shacks, garages and greenhouses are ideal areas. All spaces must be located in an area inaccessible to visitors and invisible from the street. The ideal area is at least 6 feet high, with a minimum of 50 square feet, an area about 7 feet by 7 feet.

A single 1, 000 watt metal halide or sodium vapor lamp, the most efficient means of illuminating a garden, covers an area this size. Gardeners who have smaller spaces, at least one foot wide and several feet long, can use fluorescent tubes, 400 watt metal halides, or sodium vapor lamps. Gardeners who do not have a space even this large to spare can use smaller areas (See <https://assignbuster.com/how-to-grow-marijuana-essay/>)

part 17 - " Novel Gardens"). Usually, large gardens are more efficient than small ones. The space does not require windows or outside ventilation, but it is easier to set up a space if it has one or the other.

Larger growing areas need adequate ventilation so that heat, oxygen, and moisture levels can be controlled. Greenhouses usually have vents and fans built in. Provisions for ventilation must be made for lamp-lit enclosed areas.

Heat and moisture buildup can be extraordinary. During the winter in most areas, the heat is easily dissipated; however, the heat buildup is harder to deal with in hot weather.

Adequate ventilation or air coolers are the answer. Marijuana Grower's Handbook - Part 5 of 33 " Preparing the Space" The space is the future home and environment of the plants. It should be cleaned of any residue or debris which might house insects, parasites or diseases. If it has been contaminated with plant pests it can be sprayed or wiped down with a 5% bleach solution which kills most organisms. The room must be well-ventilated when this operation is going on. The room will be subject to high humidity so any materials such as clothing which might be damaged by moisture are removed.

Since the plants will be watered, and water may be spilled, the floors and any other areas that may be water damaged should be covered with linoleum or plastic. High grade 6 or 8 mil polyethylene drop cloths or vinyl tarps protect a floor well. The plastic should be sealed with tape so that no water seeps to the floor. The amount of light delivered to the plant rises dramatically when the space is enclosed by reflective material.

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Some good reflective materials are flat white paint, aluminum foil (the dull side so that the light is diffused), white cardboard, plywood painted white, white polyethylene, silvered mylar, gift wrap, white cloth, or silvered plastic such as Astrolon. Materials can be taped or tacked onto the walls, or hung as curtains. All areas of the space should be covered with reflective material. The walls, ceiling and floors are all capable of reflecting light and should be covered with reflective material such as aluminum foil. It is easiest to run the material vertically rather than horizontally.

Experienced growers find it convenient to use the wide, heavy-duty aluminum foil or insulating foil (sold in wide rolls) in areas which will not be disturbed and plastic or cloth curtains where the material will be moved.

Windows can be covered with opaque material if a bright light emanating from the window would draw suspicion. If the window does not draw suspicion and allows bright light into the room, it should be covered with a translucent material such as rice paper, lace curtains, or aquarium crystal paint. Garages, metal buildings, or attics can be converted to lighthouses by replacing the roof with fiberglass greenhouse material such as Filon. These translucent panels permit almost all the light to pass through but diffuse it so that there is no visible image passing out while there is an even distribution of light coming in.

A space with a translucent roof needs no artificial lighting in the summer and only supplemental lighting during the other seasons.

Overhead light entering from skylight or large window is very helpful. Light is utilized best if it is diffused. Concrete and other cold floors should be

covered with insulating material such as foam carpet lining, styrofoam sheeting, wood planks or wooden palettes so that the plant containers and the roots are kept from getting cold. Marijuana Grower's Handbook - Part 6 of 33 " Plant Size and Spacing" Marijuana varieties differ not only in their growth rate, but also in their potential size. The grower also plays a role in determining the size of the plants because the plants can be induced to flower at any age or size just by regulating the number of hours of uninterrupted darkness that the plants receive.

Growers have different ideas about how much space each plant needs. The closer the plants are spaced, the less room the individual plant has to grow.

Some growers use only a few plants in a space, and they grow the plants in large containers. Other growers prefer to fill the space with smaller plants.

Either method works, but a garden with smaller plants which fills the space more completely probably yields more in less time. The total vegetative growth in a room containing many small sized plants is greater than a room containing only a few plants. Since each plant is smaller, it needs less time to grow to its desired size. Remember that the gardener is interested in a crop of beautiful buds, not beautiful plants.

The amount of space a plant requires depends on the height the plants are to grow.

A plant growing 10 feet high is going to be wider than a 4 foot plant. The width of the plant also depends on cultivation practices. Plants which are

pruned grow wider than unpruned plants. The different growth characteristics of the plants also affect the space required by each plant.

In 1- or 2-light gardens, where the plants are to grow no higher than 6 feet, plants are given between 1 and 9 square feet of space. In a high greenhouse lit by natural light, where the plants grow 10-12 feet high, the plants may be given as much as 80 to 100 square feet. Marijuana Grower's Handbook - part 7 of 33 "Planting Mixes" One of the first books written on indoor growing suggested that the entire floor of a grow room be filled with soil. This method is effective but unfeasible for most cultivators. Still, the growers have a wide choice of growing mediums and techniques; they may choose between growing in soil or using a hydroponic method.

Most growers prefer to cultivate their plants in containers filled with soil, commercial mixes, or their own recipe of soil, fertilizers, and soil conditioners. These mixes vary quite a bit in their content, nutrient values, texture, pH, and water-holding capacity. Potting soil is composed of topsoil, which is a natural outdoor composite high in nutrients. It is the top layer of soil, containing large amounts of organic material such as humus and compost as well as minerals and clays. Topsoil is usually lightened up so that it does not pack.

This is done by using sand, vermiculite, perlite, peat moss and/or gravel. Potting soil tends to be very heavy, smell earthy and have a rich dark color. It can supply most of the nutrients that a plant needs for the first couple of months. Commercial potting mixes are composites manufactured from ingredients such as bark or wood fiber, composts, or soil conditioners such as

vermiculite, perlite, and peat moss. They are designed to support growth of houseplants by holding adequate amounts of water and nutrients and releasing them slowly.

Potting mixes tend to be low in nutrients and often require fertilization from the outset. Many of them may be considered hydroponic mixes because the nutrients are supplied by the gardener in a water solution on a regular basis. Texture of the potting mix is the most important consideration for containerized plants.

The mixture should drain well and allow air to enter empty spaces so that the roots can breathe oxygen. Mixes which are too fine may become soggy or stick together, preventing the roots from obtaining the required oxygen.

A soggy condition also promotes the growth of anaerobic bacteria which release acids that eventually harm the roots. A moist potting mix with good texture should form a clump if it is squeezed in a fist; then with a slight poke the clod should break up. If the clod stays together, soil conditioners are required to loosen it up. Vermiculite, perlite or pea-sized styrofoam chips will serve the purpose. Some growers prefer to make their own mixes. These can be made from soil, soil conditioners, and fertilizers.

Plants grown in soil do not grow as quickly as those in hydroponic mixes. However, many growers prefer soil for aesthetic reasons. Good potting mixes can be made from topsoil fairly easy. Usually it is easier to buy topsoil than to use unpasteurized topsoil which contains weed seeds, insects and disease organisms.

Outdoors, these organisms are kept in check, for the most part, by the forces of nature. Bringing them indoors, however, is like bringing them into an incubator, where many of their natural enemies are not around to take care of them. Soil can be sterilized using a 5% bleach solution poured through the medium or by being steamed for 20 minutes. Probably the easiest way to sterilize soil is to use a microwave.

It is heated until it is steaming, about 5 minutes for a gallon or more.

Potting soils and potting mixes vary tremendously in composition, pH and fertility. Most mixes contain only small amounts of soil. If a package is marked " potting soil", it is usually made mostly from topsoil.

If the soil clumps up it should be loosened using sand, perlite or styrofoam. One part amendment is used to 2-3 parts soil. Additives listed in Chart 7-2 may also be added. Here is a partial list of soil conditioners: Foam Foam rubber can be used in place of styrofoam.

Although it holds water trapped between its open cells it also holds air. About 1.5 parts of foam rubber for every part of styrofoam is used. Pea-size pieces or smaller should be used. Gravel Gravel is often used as a sole medium in hydroponic systems because it is easy to clean, never wears out, does not " lock up" nutrients, and is inexpensive.

It is also a good mix ingredient because it creates large spaces for airpockets and gives the mix weight. Some gravel contains limestone (see " Sand").

This material should not be used. Lava Lava is a preferred medium on its own or as a part of a mix. It is porous and holds water both on its surface and

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in the irregular spaces along its irregular shape. Lava is an ideal medium by itself but is sometimes considered a little too dry. To give it more moisture-holding ability, about one part of wet vermiculite is mixed with 3 to 6 parts lava. The vermiculite will break up and coat the lava, creating a medium with excellent water-holding abilities and plenty of air spaces. If the mix is watered from the top, the vermiculite will wash down eventually, but if it is watered from the bottom it will remain. Perlite Perlite is an expanded (puffed) volcanic glass. It is lightweight with many peaks and valleys on its surface, where it traps particles of water.

However, it does not absorb water into its structure. It does not break down easily and is hard to the touch. Perlite comes in several grades with the coarser grade being better for larger containers. perlite is very dusty when dry. To eliminate dust, the material is watered to saturation with a watering can or hose before it is removed from the bag. Use of masks and respirators is important. Rockwool Rockwool is made from stone which has been heated then extruded into thick strands which are something like glass wool. It absorbs water like a wick. It usually comes in blocks or rolls. It can be used in all systems but is usually used in conjunction with drop emitters. Growers report phenomenal growth rates using rockwool. It is also very convenient to use. The blocks are placed in position or it is rolled out.

Then seeds or transplants are placed on the material. Sand Sand is a heavy material which is often added to a mixture to increase its weight so that the plant is held more firmly. It promotes drainage and keeps the mix from caking. Sand comes in several grades too, but all of them seem to work well. The best sand to use is composed of quartz. Sand is often composed of

limestone; the limestone/sand raised pH, causing micronutrients to precipitate, making them unavailable to the plants. It is best not to use it. Limestone-containing sand can be "cured" by soaking in a solution of water and superphosphate fertilizer which binds with the surface of the lime molecule in the sand, making the molecule temporarily inert. One pound of superphosphate is used to 5 gallons of water.

It dissolves best in hot water. The sand should sit in this for 6-12 hours and then be rinsed. Superphosphate can be purchased at most nurseries.

Horticultural sand is composed of inert materials and needs no curing. Sand must be made free of salt if it came from a salt-water area. Sphagnum Moss Sphagnum or peat moss is gathered from bogs in the midwest. It absorbs many times its own weight in water and acts as a buffer for nutrients. Buffers absorb the nutrients and hold large amounts in their chemical structure. The moss releases them gradually as they are used by the plant. If too much nutrient is supplied, the moss will act on it and hold it, preventing toxic buildups in the water solution. Moss tends to be acidic so no more than 20% of the planting mix should be composed of it. Styrofoam Pellets Styrofoam is a hydrophobic material (it repels water) and is an excellent soil mix ingredient. It allows air spaces to form in the mix and keeps the materials from clumping, since it does not bond with other materials or with itself. One problem is that it is lighter than water and tends to migrate to the top of the mix. Styrofoam is easily used to adjust the water-holding capacity of a mix. Mixes which are soggy or which hold too much water can be "dried" with the addition of styrofoam. Styrofoam balls or chips no larger than a pea should be used in fine-textured mixtures. Larger styrofoam pieces can be used in

coarse mixes. Vermiculite Vermiculite is processed puffed mica. It is very lightweight but holds large quantities of water in its structure. Vermiculite is available in several size pieces. The large size seems to permit more aeration. Vermiculite breaks down into smaller particles over a period of time. Vermiculite is sold in several grades based on the size of the particles.

The fine grades are best suited to small containers. In large containers, fine particles tend to pack too tightly, not leaving enough space for air. Coarser grades should be used in larger containers. Vermiculite is dusty when dry, so it should be wet down before it is used. Mediums used in smaller containers should be able to absorb more water than mediums in larger containers. For instance, seedlings started in 1 to 2 inch containers can be planted in plain vermiculite or soil. Containers up to about one gallon can be filled with a vermiculite-perlite or soil-perlite mix. Containers larger than that need a mix modified so that it does not hold as much water and does not become soggy. The addition of sand, gravel, or styrofoam accomplishes this very easily.

Here are lists of different mediums suitable for planting: Below is a list of the moist mixtures, suitable for the wick system, the reservoir system and drop emitters which are covered in part 9. Chart 7-1-A: Moist Planting Mixes

1. 4 parts topsoil, 1 part vermiculite, 1 part perlite. Moist, contains medium-high amounts of nutrients. Best for wick and hand-watering.
2. 3 parts topsoil, 1 part peat moss, 1 part vermiculite, 1 part perlite, 1 part styrofoam. Moist but airy. Medium nutrients. Best for wick and hand-watering.
3. 3 parts vermiculite, 3 parts perlite, 1 part sand, 2 parts pea-sized gravel. Moist and airy but has some weight. Good for all systems, drains well.
4. 5 parts vermiculite, 5 parts perlite. Standard mix, moist. Excellent for wick and drop

emitters systems though it works well for all systems. 5. 3 parts vermiculite, 1 part perlite, 1 part styrofoam.

Medium dry mix, excellent for all systems. 6. 2 parts vermiculite, 1 part perlite, 1 part styrofoam, 1 part peat moss. Moist mix. 7. 2 parts vermiculite, 2 parts perlite, 3 parts styrofoam, 1 part sphagnum moss, 1 part compost.

Medium moisture, small amounts of slow releasing nutrients, good for all systems. 8. 2 parts topsoil, 2 parts compost, 1 part sand, 1 part perlite.

Medium-moist, high in slow-release of organic nutrients, good for wick and drip systems, as well as hand watering. 9. 2 parts compost, 1 part perlite, 1 part sand, 1 part lava. Drier mix, high in slow-release of nutrients, drains

well, good for all systems. 10. 1 part topsoil, 1 part compost, 2 parts sand, 1 part lava. Dry mix, high in nutrients, good for all systems. 11. 3 parts compost, 3 parts sand, 2 parts perlite, 1 part peat moss, 2 parts vermiculite.

Moist, mid-range nutrients, good for wick systems. 12. 2 parts compost, 2 parts sand, 1 part styrofoam. Drier, high nutrients, good for all systems. 13.

5 parts lava, 1 part vermiculite. Drier, airy, good for all systems. Here are

some drier mediums suitable for flood systems as well as drip emitters

(hydroponic systems covered in part 9). Chart 7-1-B: Flood System/Drip

Emitter Mixes 1. Lava 2. Pea sized gravel 3. Sand 4. Mixes of any or all of the above. Manure and other slow-releasing natural fertilizers are often added to the planting mix.

With these additives, the grower needs to use fertilizers only supplementally.

Some of the organic amendments are listed in the following chart. Organic amendments can be mixed but should not be used in amounts larger than those recommended because too much nutrient can cause toxicity. Some

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growers add time-release fertilizers to the mix. These are formulated to release nutrients over a specified period of time, usually 3, 4, 6 or 8 months. The actual rate of release is regulated in part by temperature, and since house temperatures are usually higher than outdoor soil temperatures, the fertilizers used indoors release over a shorter period of time than is noted on the label. Gardeners find that they must supplement the time-release fertilizer formulas with soluble fertilizers during the growing season. Growers can circumvent this problem by using time-release fertilizer suggested for a longer period of time than the plant cycle. For instance, a 9 month time-release fertilizer can be used in a 6 month garden. Remember that more fertilizer is releasing faster, so that a larger amount of nutrients will be available than was intended. These mixes are used sparingly. About one tablespoon of dolomite limestone should be added for each gallon of planting mix, or a half cup per cubic foot of mix. This supplies the calcium along with manganese, both of which the plants require. If dolomite is unavailable, then hydrated lime or any agricultural lime can be used.

Plants growing in the wild outdoors obtain their nutrients from the breakdown of complex organic chemicals into simpler water-soluble forms. The roots catch the chemicals using a combination of electrical charges and chemical manipulation. The ecosystem is generally self-supporting. For instance, in some tropical areas most of the nutrients are actually held by living plants. As soon as the vegetation dies, bacteria and other microlife feast and render the nutrients water-soluble. They are absorbed into the soil and are almost immediately taken up by higher living plants. Farmers remove some of the nutrients from the soil when they harvest their crops. In

order to replace those nutrients they add fertilizers and other soil additives. [pH : perhaps shake would be good fertilizer for one's next crop] Gardeners growing plants in containers have a closed ecology system. Once the plants use the nutrients in the medium, their growth and health is curtailed until more nutrients become available to them. It is up to the grower to supply the nutrients required by the plants. The addition of organic matter such as compost or manure to the medium allows the plant to obtain nutrients for a while without the use of water-soluble fertilizers. However, once these nutrients are used up, growers usually add water-soluble nutrients when they water. Without realizing it, they are gardening hydroponically. Hydroponics is the art of growing plants, usually without soil, using water-soluble fertilizers as the main or sole source of nutrients.

The plants are grown in a non-nutritive medium such as gravel or sand or in lightweight materials such as perlite, vermiculite or styrofoam. The advantages of a hydroponic system over conventional horticultural methods are numerous: dry spots, root drowning and soggy conditions do not occur. Nutrient and pH problems are largely eliminated since the grower maintains tight control over their concentration; there is little chance of "lockup" which occurs when the nutrients are fixed in the soil and unavailable to the plant; plants can be grown more conveniently in small containers; and owing to the fact that there is no messing around with soil, the whole operation is easier, cleaner, and much less bothersome than when using conventional growing techniques. Marijuana Grower's Handbook - part 9 of 33 "Hydroponic Systems" Most hydroponic systems fall into one of two broad categories: passive or active.

Passive systems such as reservoir or wick setups depend on the molecular action inherent in the wick or medium to make water available to the plant. Active systems which include the flood, recirculating drop and aerated water systems, use a pump to send nourishment to the plants. Most commercially made "hobby" hydroponic systems designed for general use are shallow and wide, so that an intensive garden with a variety of plants can be grown. But most marijuana growers prefer to grow each plant in an individual container.

#### PASSIVE HYDROPONIC SYSTEMS

##### The Wick System

The wick system is inexpensive, easy to set up and easy to maintain. The principle behind this type of passive system is that a length of 3/8 to 5/8 inch thick braided nylon rope, used as a wick, will draw water up to the medium and keep it moist.