Cultivation 3:

Flower To Quality Control

Course Designed and Created by:

N.H. Cultivator with Sean Berte

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Introduction

When cannabis plants move into their final phase, flowering, the environmental conditions are going to be slightly different than those plants that are in vegetative phase or seedling/clone phase. A different photoperiod will be required as well. Plants will go through three phases of flowering. They will go through a stretch phase from week 1 to week 3. The bloom phase will happen from week 4 to week 6 or 7 followed by a 2 week flush. Each phase will have different nutritional requirements. These time frames are based off of a typical 8-9 week indica or hybrid.

Once the flowering is complete the plants need to be harvested. From there they either get trimmed immediately (wet trim) or they are hung to dry and trimmed right after (dry trim). Harvesting time will depend on the maturation of the trichomes or the desired effect of the product (earlier harvest for a more psychoactive effect and later for a more narcotic effect). Whichever you choose, know that the process is far from complete, proper handling and curing is paramount to a great product.

Flower

Moving into the flowering phase, begin by increasing the amount of hours of darkness to 12 hours. Creating what is commonly referred to as a **12/12 light cycle.** This is easily obtained by adjusting the timer to 12 hours of light and 12 hours of uninterrupted darkness. Though other lighting cycles may be used to obtain the blooming process, 12/12 is most commonly used to endure the least amount of stress on the plants. This cycle is also selected because no matter what variety of cannabis selected to grow, from whatever region of the world it had originated, it will flower under a 12 hour dark period even though a more optimal photoperiod may be chosen.

A green light may be used to work in the garden at night. The plants reflect most of the green light while absorbing the other spectrums. The plants can still see the light so it is only looked at as a last resort if you must

interrupt the dark period.

You will also need to change your lighting spectrum to simulate the autumn sun. A High Pressure Sodium (HPS) bulb is most often used for flowering cannabis indoors. Though you may achieve similar results with LED or florescent bulbs, a HPS delivers an ideal amount of penetration through the canopy with the highest quality resin production due to the UV rays admitted from the bulb.

It is very important to wear the proper personal protective equipment protecting your skin and eyes from harmful rays especially with prolonged exposure in high intensity lighting.

Some growers may relocate the plants they intend to flower to another room to propagate perpetual cycles. This may be done to rotate a selection of strains through your garden or to achieve an even canopy throughout your crop. Obtaining an even canopy ensures that optimal lighting perimeters are met along with increased yield. Grouping like-strains with similar flowering times increases efficiency and saves money.

Light deprivation in a greenhouse or outdoors can also be achieved. This means you block out all light to force a darkness period before it would naturally occur. Be sure not to inhibit any air flow during this process or you increase the risk of pathogens and pests. Light deprivation can be done for a few different reasons. One is that you may have a sativa dominant plant that has an elongated flowering time, therefore not finishing before frost in your region. Another is that the sun is more intense during the summer which will give you a more potent resin production and a possibility of a higher yield. If done correctly you should be able to gain an extra crop rotation or two throughout the year.

Flowering will usually begin outdoors around the autumn equinox; when there in nearly equal amount of daylight and darkness.

You will also need to substitute the food you feed to your plants to ensure the healthy bud formation. The plant will no longer need the high concentration of nitrogen that it once required in its vegetative state. You will need to identify the **N-P-K ratio** of your nutrients and supplement with one that is high in phosphorus and potassium. N-P-K is just an abbreviation for the amount of nitrogen, phosphorous, and potassium contained within that particular food source. Most nutrient lines come with a schedule from the manufacturer to guide you through the process.

It may take a few cycles to dial in your nutrient regiment, but once it's correct, it'll be well worth the wait. Imagine almost effortlessly tending to plants, providing exactly the right type and amount of nutrients they need. This can all be obtained through experience and patience.

Pre-Flower:

Once the 12/12 light cycle has been introduced the plant will respond to the change almost immediately. It sends hormones triggering the flowering process to begin. Most indoor crops will be ready for harvest in about 56-70 days. The first thing you may begin to notice is that the plants will go through what is called the **stretch phase**.

This may last for the first two to three weeks depending on the strain. An indica will stretch less, ultimately creating a much shorter and bushier plant than a Sativa. An indica may grow an additional foot whereas a sativa could double or triple in size before reaching its final height. The surface area of the canopy will greatly increase in size as well, so be sure to consider this when deciding how many plants to flower indoors or how far apart they need to be planted outdoors. Most varieties of cannabis today are a variation of the sativa and indica, referred to as a hybrid. This means somewhere down the line these species of cannabis had their genetics crossed whether by man or nature. This will create what is called a **genotype**, or genetic makeup of the plant.

The genotype of the cannabis plant is just one of three factors that will determine the **phenotype**. A phenotype can be best described as the physical traits of the plant, directly relating to the environment and how it is grown. Breeding may be done for multiple reasons such as to modify the structure of the plant or to combine certain medicinal properties from different strains. Factors such as: trichome production and the plant's structure will be affected by particular environmental parameters of its **land-race** and/or origin.

The other immediate change you will notice is the stem and branches becoming much stockier, with tight inter-nodal spacing. The plant is now preparing itself to bear fruit in hopes of pollination and procreation. This is a good time to identify the sex of the plant in a process referred to as **sexing**. Sexing a plant can be done in a couple of different ways. The most common is waiting until the plant has reached its sexual maturity and identifying the reproductive organ.

A female plant is easily identifiable by the **pistils** growing from the **calyxes** (ovaries) located at each **leaf node** along the main stem and branches. The pistil are two antennae-like structures that range in color from white to pink. The Calyxes are tear drop shaped pods that will produce an embryo if fertilized by passing pollen. The pollen is then transferred down the hollow tube of the pistil to the egg. The female cannabis plant, left un-pollinated, will deliver you the powerful sensimilla you desire.

Males are usually distinguishable before females. The male plant will grow faster and taller and reach sexual maturity quicker to ensure the female plant is fertilized at the most optimal time. A male will have ball like structures dangling from a thin stem with a curved protrusion. Some growers will refer to these as **nanners** due to the resemblance of a banana. These male flowers, left to mature, will position themselves upright and the bulb will begin to open. Contained within the bulb are five petals ranging in color from yellow to cream colored with a **stamen** in the center that releases pollen into a passing breeze.

If a male plant is found it should be carefully extracted by shutting down all air flow in the room followed by wetting the entire plant and neighboring plants with water. Then gently place a large bag over it so no pollen sacs are ruptured and tie tight. If pollen sacs are ruptured the water will help to contain any pollen particles by turning it into a sludge like substance. Remove the plant as far from the garden as possible and embrace the headache you have just avoided. You will need to perform daily checks to ensure every last male has been culled from your garden. One male can pollinate the entire crop, rendering your medicine next to useless. Once the female plant has been pollinated, it immediately halts its focus on producing calyxes and trichomes to now focus on the growth of a seed. It is possible for a branch or part of the plant to get pollinated while the rest of the plant remains focused on producing sensimilla.

You will also need to rigorously check each node for male flowers and pollen sacks in case of a hermaphrodite. This can occur at any point in the flowering stage and can be induced by a genetic trait or excessive stress on the plant. Light leaks into your flowering room or a full moon on the mountain side can stress the plant to the point of producing male flowers. In the event that a hermaphrodite is located it should be removed from the garden in the same manner a male would be discarded and made sure that all genetic offspring are terminated to insure no further propagation will occur. You will have to make this determination based upon whether or not it was human error or a genetic trait that is more susceptible to it. If your crop has been fertilized it will be apparent by the third or fourth day when the pistols begin rapidly dying back and changing color. The calyx at the base of the pistil will begin to swell as it begins to develop a seed within the pod.

Another way to determine the sex of the plant in a shorter amount of time is to take a clone from an established vegetative plant and induce it to a flowering state as soon as it has rooted. Make sure to create an identification system to keep track of which plant the clone was taken from. You should be able to determine the sex of the plant in about 7-10 days. This may save you time and money by not growing a male for months before finally realizing it and culling it from your garden.

Budding:

Over the next four to five weeks the plant will focus all of its energy to bud production. The plant will begin to produce thick clusters of calyxes at each node site along the stem and branches. New waves of flower growth will continuously appear with an abundance of pistils in desperation of being pollinated. The top of each plant will form the thickest cluster of flowers commonly known as the **cola**. Also known as the terminal bud, the cola can range in many different shapes and sizes. This can be due to a variation of circumstances ranging from strain to growing technique.

Some growers may remove a few remaining ***larf*** *areas at the end of the stretch phase allowing the plant to focus on producing a larger cola. This should be done with caution as any stress on the plant may cause it to hermaphrodite.*

You may have noticed small trichomes starting to form on the surrounding leaves of the flowers. They provide a number of benefits to the plant that include anything from deterring pests and animals to protection from harmful ultraviolet rays produced by the sun or light bulb. These mushroom like resin glands that fill with cannabinoids and terpenes are where the medicinal properties of the plant are contained. Over several weeks the trichomes will become very prominent and erect. The caps will swell with a viscous sticky liquid and the aroma of the plant will greatly increase. Each strain will have its own unique fragrance of terpenes. Some are very sweet like citrus; others so pungent and musky you would swear there was a skunk nearby.

Remember to always handle the buds with care to not rupture the trichome glands; reducing the potency of your medicine.

Flush Phase

Over the next two weeks your plants will receive nothing but pure water to force it to use up the nutrients it has stored in its leaves, this is called the **flush phase**. The calyxes have already begun to swell with false seed pods and the pistils have started changing color as they die back. The color of the pistils will be greatly dependent upon genetics and temperature, especially when the **root zone** is exposed to temperature below 55 degrees Fahrenheit. The pistils can range in an array of beautiful colors such as red, orange, purple, and brown. The color of the pistils will remain consistent throughout the entire plant.

When to flush is a lot more complicated than it sounds. Take into account the maturity of the trichomes in the following two weeks. This may take a couple of growing cycles to accurately predict. Different growing methods allow you to flush for a shorter duration of time to achieve the same result, but the rule of thumb is 10-14 days. Test the run off of the plants to ensure the proper amount of nutrients have been leached from the medium before harvesting.

The trichomes are undergoing a major transformation as well. Each gland will progress from clear to cloudy and eventually to an amber state. This is important for timing harvest to ensure the highest potency of medicinal properties. The most opportune time to harvest is when about 10% of the trichomes have progressed to amber. The duration of time this takes depends vastly on the strain. This color change is an indication that the cannabinoids have reached a point of maturity and have begun to degrade.

Harvesting your plants at different trichome maturity will slightly alter the effects the medicine will deliver. For example, if you decide to harvest your buds while the trichomes have only reached their clear state will provide the user with more of a cerebral/euphoric effect. While waiting for trichomes to mature to a cloudy/amber state may give the user a more narcotic effect. Choosing the correct time to harvest will determine which medicinal qualities are most predominant in the final product.

Some growers will rely on the naked eye to determine the percentage of pistols that have died back to predict their harvest time. The proper way to determine the appropriate time for harvest is by obtaining a hand-held magnification device, 40x is commonly used, for the viewing of trichomes. It is recommended to inspect several locations from the top to the bottom of the plant to distinguish the maturity of your trichomes, which will differ by location. Some growers will harvest different sections of the plant at different times to allow any immature trichomes to develop further. Lower bud sites that have been deprived of light and others located on the internal structure of the plant may require an additional one to two weeks to reach full maturity.

You can expect your buds to swell about 30 percent in the final two weeks before harvest in its last attempt at pollination. This may be another sensitive time for the plant where it may hermaphrodite; it now realizes it is dying and has not yet seeded. Something similar to a mid-life crisis. Nanners will usually form between the calyxes and lower internal bud sites. If you are not propagating perpetual cycles within the same room you can leave the plants until harvest. You can remove the nanner site by shutting down all the air flow in the immediate area and wetting your fingers/gloves to pluck any site that may contain pollen. You could also remove them while you are manicuring the bud if the male flowers have presented themselves late in the flush. At this point in the process it is too late to pollinate the entire crop though a single seed may be found here or there. If you do have perpetual cycles within the same room you may want to quarantine those plants to finish blooming in another area to reduce the risk of pollination.

Auto Flower:

There are several varieties bred with a trait that is commercially available known as **auto-flowering** plants. This means no matter what light cycle they are grown under, they have a predetermined gene that will decide when to initiate the flowering cycle. Most varieties will be ready for harvest in about 90-100 days from germination. These plants are usually pretty small and are almost impossible to clone from, so feminized seeds are most often used when growing an auto-flower garden.

Preventative actions:

There are several preventive actions you can take in order to greatly increase the chance of a successful crop cycle. A proactive approach is the best plan of attack when your plants have reached their blooming phase as there is very few treatment options once your plants have begun to fruit. Properly **pruning** plants while in their vegetative life cycle will greatly pay off as you increase the airflow within the dense canopy that will form.

Having proper airflow and humidity levels in your grow room will reduce the risk of mold/fungus spores such as powdery mildew and botrytis. Proper spacing of plants will reduce the risk as well as help contain the transfer of pests from plant to plant. You may even need to pluck a few interior fan leaves to increase the amount of airflow and light that penetrates deeper into the canopy. As the buds reach their final size they drastically increase in weight and may require additional support from stakes or a SCROG net. This will reduce stress on the plant as well as keep the limb closer to the light increasing potency and yield. When using plant ties to help support a limb be sure not to constrict the plant in any way as this cuts off circulation, similar to a human, ultimately losing the limb. Properly cleaning your grow area in between cycles is a must. This will not only kill any unwanted spores being released in the air but also cut down the chance of a possible pest invasion. Your grow area should be regularly cleaned and inspected to maintain an optimal grow environment. Spending an extra half hour per week could save you months of fighting off problems.

Handling

When it is time to harvest, handling your plant gently is of the utmost importance. The trichomes can be disrupted if manhandled and you will lose cannabinoid potency. There are many different styles of curing your flowers whether you manicure a fresh harvest known as wet trim or hang your plants to dry first and trim after, fittingly called dry trim. The difference is between efficiency and quality. Wet trim is said to be the faster process although chlorophyll is released from the leaves as they are trimmed giving dry trim's reputation for better scent

and flavor. However, because the trichomes no longer have the majority of moisture they started with, they can break off easily during dry trimming creating a more tedious process ideal for small grows. Be sure to prepare with the right tools and sanitary practices before manicuring.

When harvesting your plants indoors make sure to cut them down during when the lights are off. During the night cycle the plants store food down in the root system which they made when the lights were on. The starches and sugars created during the day will make their way into the root system at night. You'll want to harvest before the lights come on and this food moves upward into the flowers. This practice can be applied to outdoor harvests as well.

Strain Specific

Different strains will be manicured differently according to their flower-sugar leaf ratio. Genetics determine if some strains will have many leaves surrounding the flower covered in trichomes versus a small amount. More sugar leaves mean more trim which can be as valuable as the bud itself, but will require more work making less to trim ideal.

Hand Trimming Vs. Machine trimming

Hand trimming is a more time consuming task than using a machine to manicure, but will always be named a better quality product as machines can cause more trichome eruption. When hand trimming you will need to sanitize your working station and the tools being used. Gloves and several sharp pairs of clippers are necessary for efficiently removing petioles and sugar leaves without cutting into the calyxes. Clippers should be kept in alcohol when not being used to switch out when needed along with gloves needing frequent changing as sticky, resinous trichomes build up creating "scissor hash" and "finger hash".

Wet trim will require more of switching out gloves and clippers since the moisture still fresh in the branches adds to the stickiness, which is ideal for retaining more trichomes. You will need trays, bins, or screens to collect fan and sugar leaves. Hand trimming has many different styles where the size of your grow and desired outcome of your flower will determine the process you should use. Some will begin before they harvest by removing the fan leaves before cutting the branches. Once the plant has been cut down, the branches are placed in a tray or bin to be trimmed.

The flower can be manicured directly on the branches or individually depending on the curing process used. If the fan leaves were not removed before the harvest, the first step would be to do just that by hand as they can snap off easily with a quick up-down motion. Fan leaves can be used medicinally and nutritionally as they are packed with CBD for edible/topical extractions or put straight into the juicer and consumed for phytonutrients and vitamins. The leaves growing out from the buds known as sugar leaves (called a sugar leaf as it is covered in shiny white trichomes, resembling sugar) are referred to as **trim**. These leaves are covered in trichomes and should be collected separately from fan leaves, as they are almost as potent as the flower and perfect for extractions to vaporize or edibles.

At this point the flowers are bare and should be manicured to the surface leaving a visually stunning shaped bud ideal for smoking or vaporizing. If you are hand trimming after the curing process for dry trim, your station should be set up similar, sanitized with gloves, clippers, and bins to catch the trim. This process is a bit more time consuming as it needs a steady hand (the trichomes will break off easier in its dried state), but ideal for flavor as the chlorophyll has been broken down during the curing process allowing the leaves to be trimmed dry since wet leaves can spill when clipped.

Machine trimming is ideal for large scale grows as it can cut trim time from 50%-75% faster than hand trimming. Machines are built for trimming multiple branches at a time or buds removed from the stems. Large blades are

built in with a grate typically on a rotating system. The styles vary from there using vacuum suction or electric agitation to process the flower from start to finish. Machine trimmed flower will come out well done in comparison to hand trimming, but with all the work and muscle it takes to do it is no wonder it is the best outcome while retaining trichome quality.

Environmental parameters

Freshly harvested plants should be kept in cooler temperatures such as the low 40-degrees to 50-degrees preserving moisture and thickness. Be wary of entering the 60-degree range as this is an environment mold and fungus can thrive in along with significant air circulation preventing the buds from attack.

Breeding/Saving Pollen

Breeding cannabis is a tedious process from deciding which genetics are the strongest in desired effects, flavor or smell to the techniques used to pollinate female plants. Male plants should be kept separately from flowering females. If you have a male and female plant you wish to produce seed from them they can be matured to their optimal state for reproducing; nearly matured males pollen sacks are ready to be collected and sprinkled onto the flowers in their early stages when the pistils begin growing white in color. Remember to always turn off your air circulating fans prior to pollen collecting. Even if the males and females are separated you will need to do this as pollen can fly around and attach itself to your clothing making it dangerous to enter any room where there are female plants flowering.

When the flowers have matured and produced seeds, the best option is to plant as many as you can to narrow down the genetic line to the desired results. When not breeding, male cannabis plants should be separated or culled away from female plants as soon as the gender is identified to prevent pollination. Once pollen sacks have formed, which happens roughly two-three weeks into the flowering stage, it is more tedious to remove. Spraying

the pollen sacks with water and placing a bag gently over the male plant while removing from the crop is the best way to avoid females becoming pollinated when growing sensimilla.

The easiest way to collect the pollen of a male plant that is isolated from females is to remove the pollen sacs just as they are opening. Be sure to turn off all fans to minimize pollen from flying around. Have a sterile jar and pruners available. Pluck off the pollen sacs into the jar and cover with a newspaper. The newspaper is somewhat porous and allows moisture and air through to allow proper drying. After about a week the pollen sacs should be dry and you can remove them with tweezers. Each jar should contain only one male plant's pollen so as to not cross different strains' pollen. Proper labeling will be required. This pollen can be brought into an all female crop and applied to their flowers with a small paintbrush. Be sure to turn all the fans off so that your pollination efforts are controlled. Keep the fans off for a few hours to give the pollen time to pollinate the female plants.

Curing

The curing process is the final stage of your harvest where the plant pigments are broken down, cannabinoids are activated, and flavor is at its smoothest. Just like its life cycle, after harvest requires the same aspects of ventilation and air flow, temperature/humidity, and light. Everything you have done leads up to this process for the final scent, flavors, and colors of the flower. The better the cure, the better the all around quality of your medicine.

Breakdown Pigments

During the breakdown of pigments, chlorophyll is broken down along with carbohydrates and other pigments. You will notice as the process reaches its finished product the flower will have specific scents and unique flavors instead of a "green" taste. Chlorophyll, when it is present in abundance creates a harsh smoke. As the chlorophyll breaks down the green color of the buds become lighter making way for other colors like purple or yellow tones to show and creates a smoother smoke as well as an increase in potency. The main goal of curing is to convert

THCA to THC. *"THC from its non-psychoactive, crude, acidic form to its psychoactive neutral form."* The extra carbon molecule inhibits the psychoactive effects as THCA creates the need to dry out the flowers. Up to 80% of the moisture will evaporate, best when done slowly and evenly throughout to maximize conversion to THC and chlorophyll breakdown.

Equipment

Curing your cannabis and the equipment being used will depend on the technique. If you are screen drying de-sticked flowers which have gone through a wet trim you will need a storage space such as a drying box to lay the screens and spread the flower individually spaced to cure. If you have kept the buds on the branches you have most likely opted to hang dry. You will need to hang a line in a room or on racks for mobility. Hanging racks with screen baskets are ideal for holding leaves or smaller buds that have been de-sticked or fallen off in the process. There should always be good ventilation throughout the plant's life including the drying process. Fans are necessary to move the air around and assist with evaporation. Because mold can thrive where moisture and lower temperatures are present you will need dehumidifiers and/or heaters as warmer temperatures will help remove moisture from the plants and into the air (an air conditioner for when weather is warmer outside).

Storing / Burping

Once the cannabis is down to 8-10% of moisture remaining in the flower determined through a **stick test** you may begin the storage process, aging the product. The stem of the branch when hung to dry will snap clean when bent indicating it is ready to be de-sticked and stored in glass, metal, ceramic or wood for best results (plastic if necessary on a larger scale can be done). Flower that has been drying on screens can be checked for moisture content by rolling it into a joint. Flower that is too wet will need constant relighting while a thin joint that is ready will stay lit. If the flower crumbles upon handling it is too dry. If the flower passes the stick and smoke test they are ready to be stored. During this time **burp** the containers daily for 5 to 15 minutes until the buds start

to crisp on the outside. The process is complete and the resulting quality flower will be apparent when opening the storage containers without smelling the chlorophyll scent, leaving the natural aromas of the terpenes.

Remember that heat, air and light can ruin your curing process. Keeping a stable humidity range of 30-50% and a temperature range below 70 degrees but above freezing will facilitate long-term storage. Keep your cured cannabis in a dark place as light degrades the product. If all of these parameters are met you should not see any significant loss of potency. A dark, cool, dry basement is optimal for long-term storage. Do not put cannabis in a refrigerator because there is too much fluctuation of temperature and humidity. Do not put your cannabis in a freezer because the trichomes become too brittle and fall off the flowers like icicles. All storage requirements for cannabis flowers also pertain to concentrates.

Once your cannabis is properly cured you want to stop the oxidation process. This can be through vacuum sealing although this will still leave very small amounts of oxygen trapped inside. There is another method used for long-term storage that is used by vintners and food processors. They use nitrogen in its gaseous state. Replacing the oxygen within the container with an inert gas such as nitrogen will stop the oxidation process in its tracks. This is important as oxygen will degrade THC and convert it to CBN.

Avoiding pests/fungi

When drying is done correctly there is minimal risk of pests or fungus making its way into the process. This is extremely important during this time as you have put in the work and would not want to risk any or all of your final product getting wiped out by either breakout. Keep the drying area well ventilated, dimly lit and make sure the humidity is in the 45-55% range. Excessive humidity will encourage mold to take hold whereas too little humidity will encourage drying, stopping the curing process in its tracks. Mold is the biggest threat to plants so moisture control is of the utmost importance in keeping it from growing. Plant diseases make the product unusable as they can cause health risks and infections if smoked. Pests should be kept at bay by taking

precautions such as showering and clean clothes going from one place to your grow. Keeping pets out will minimize risk as they will come in on you or your furry friend. Using proper nutrients and products with filtered airflow and ventilation will keep plants healthy and unreached by pests. Pests can cause the plant to become unhealthy creating a path for fungus and bacteria to form during the curing process if the conditions are not controlled properly.

Environmental Parameters

The key components of maintaining the environment during your curing process are light, temperature/humidity, and airflow. Flower will continue to cure when the temps are 60-75 degrees and humidity is between 45-55%. Keep the temperature within 60-75 degrees, monitoring with a thermometer to create the slow drying process, which is ideal for the flowers to dry evenly inside and out. This will maximize chlorophyll breakdown and THC conversion. Putting the temperature higher than advised will dry out your buds too fast, leaving moisture at the center of the flower which can affect the flavor and have a harsh smoke.

Many terpenes can evaporate at these higher temperatures which are responsible for odor and flavor along with dictating the type of high you will get from the THC. A temperature lower than what is recommended will make drying too slow and cause humidity to rise. Humidity is just as important for an even dry throughout the plant and should be kept between 45%-55%. If the moisture content is below 45%, the plant is again at risk for drying too quickly. Humidity above 55% is a suitable environment for mold growth which makes your flower unusable for smoking. Light will degrade the processes so allowing as little light as possible will benefit the drying and curing end result. *Light (UV rays), heat, and friction hasten biodegradation and are dry and drying, marijuana's biggest enemies.*[1]

[1] Cervantes, Jorge. *Marijuana Horticulture The Indoor/Outdoor Medical Grower's Bible.* China: Van Patten Publishing, 2006. Print.

Summary

Now that your plants are ready to be flowered you will change the photoperiod to 12/12 to induce flowering. A HID light with the correct spectrum is necessary and typically a HPS bulb is used to accomplish this. A different NPK ratio will be needed for flowering cannabis as the plants use less nitrogen and more phosphorus and potassium is required.

During the pre-flowering phase you will notice the plants stretch (more for sativa and sativa dominant hybrids, less for indica and indica dominant hybrids). Another thing to notice is that the stems and the branches will become sturdier in anticipation of bearing the weight of flowers or seeds. If you haven't sexed the plants in the vegetative stage this will be the best time to do so. You will notice the female plants produce calyxes and pistils emerging from each of them. Males will have a sac, light in color and a stamen. They will be reminiscent of microscopic bananas.

The next phase is the budding phase. The plants will start to produce clusters of calyxes at the node sites. This will happen rapidly over the next 4-5 weeks. The large terminal bud, also known as a cola will start to take shape. Trichome production will be in full swing.

Once these phases are complete you will need to flush your plants with water for up to 2 weeks prior to harvest. This is the flushing phase. The water forces the plant to use up all excess nutrients it has stored. You will lookout for the maturation of the trichomes to predict the harvesting time. Trichomes start off clear and progress to a cloudy, milky appearance before turning amber and degrading. The most opportune time to harvest is when 10% of the trichomes have turned amber.

Harvested plants will require a drying time of up to a week. Plants will lose approximately 80% of their weight during this time. Proper ventilation and airflow as well as temperature and humidity ensures that your past few months of hard work are not undone. Plants that have dried properly will pass the stick test.

Once your flowers have been properly dried, you can move to the curing process. This is an equally important and often overlooked process. After the plants have dried and a final manicuring is complete you can store your flowers in hermetically sealed jars to initiate a slow cure. Burping those jars for 5-15 minutes, daily ensures a slow drawing out of the remaining moisture. This creates a superior smokeable product with more potency and less chlorophyll, ensuring the natural aromas of the terpenes to come through.

Thought Provoking Questions

- Why would a grower want to change or disrupt the standard light cycles while cultivating?
- How does the genotype and phenotype change the medicinal properties of the final product?
- Why would a grower mix different strains and land races?
- When would a grower want to not sex a garden?
- How does a wild cannabis plant use trichomes?
- When would a grower not bother to flush?
- Why would a grower opt for auto-flowering plants?
- In what ways would a trimmer change their method for varying strains?
- In what ways would hand trimming affect the company?
- When is it important to turn off the air circulation in a grow room?
- How often should a grower be checking the trichome production on the plants?
- What happens to the final product if the trimmed buds are left to cure too long?

Glossary

- Stretch Phase – the natural vertical growth spurt in early flowering
- Genotype – the plants genetic makeup, which acts as it's blueprint for growth
- Phenotype – the traits that are physically expressed from a plants genotype
- Land-Race – a local variety of cannabis that has adapted to the environment of its geographic location
- Sexing – to determine the sex of the plant
- Pistil – the female organs of a flower, comprising the stigma, style and ovary
- Calyx – a teardrop-shaped nodule in female plants which, if fertilized, forms a protective pocket for seeds to develop within. When left unfertilized, they contain high levels of trichomes
- Leaf node – the area of the plant where two branches intersect
- Nanners – exposed male parts of the pollen sac, which resemble a banana
- Stamen – the male fertilizing organ of the plant
- Cola – also known as the terminal bud, the primary bud site at the top of the plant
- Larf – airy, leafy, light buds
- Flush Phase – the final phase before harvest, where your plant is given only water, forcing it to utilize any nutrients stored within the plant and flush them out of the plant
- Trichome – small mushroom shaped resin glands, which contain cannabinoids and terpenoids
- Auto-Flower – strains which have been bred to automatically switch to the flowering stage without the need for switching light cycles
- Trim – leftover leaves from the manicuring of cannabis buds, which can be used for extractions and infusions
- Sugar Leaf – small, close leaves located near the buds which develop trichomes
- Stick Test – a means by which you can test if your cannabis is properly dried
- Burp – opening your curing containers to allow fresh air into the container and let moisture out