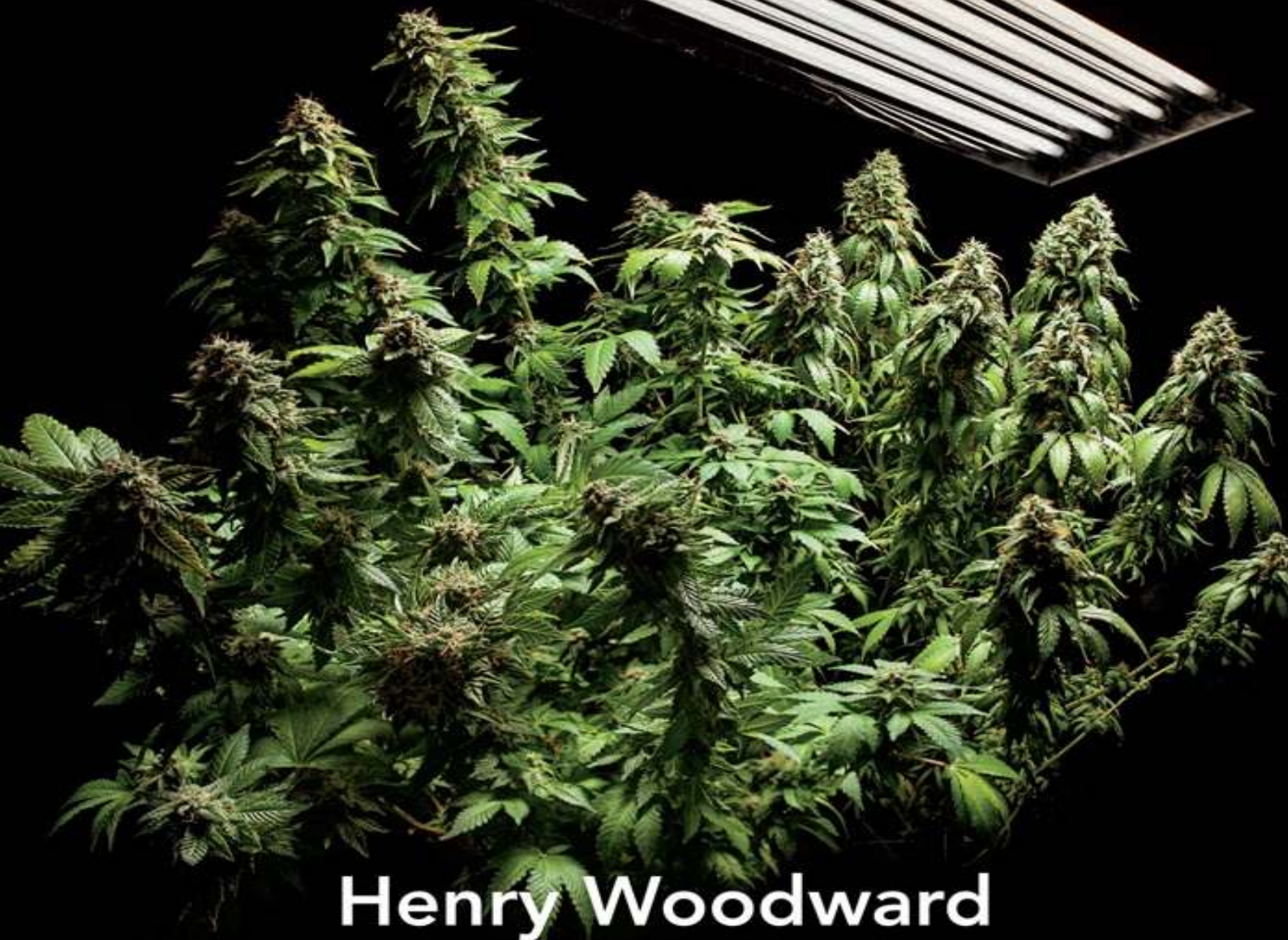
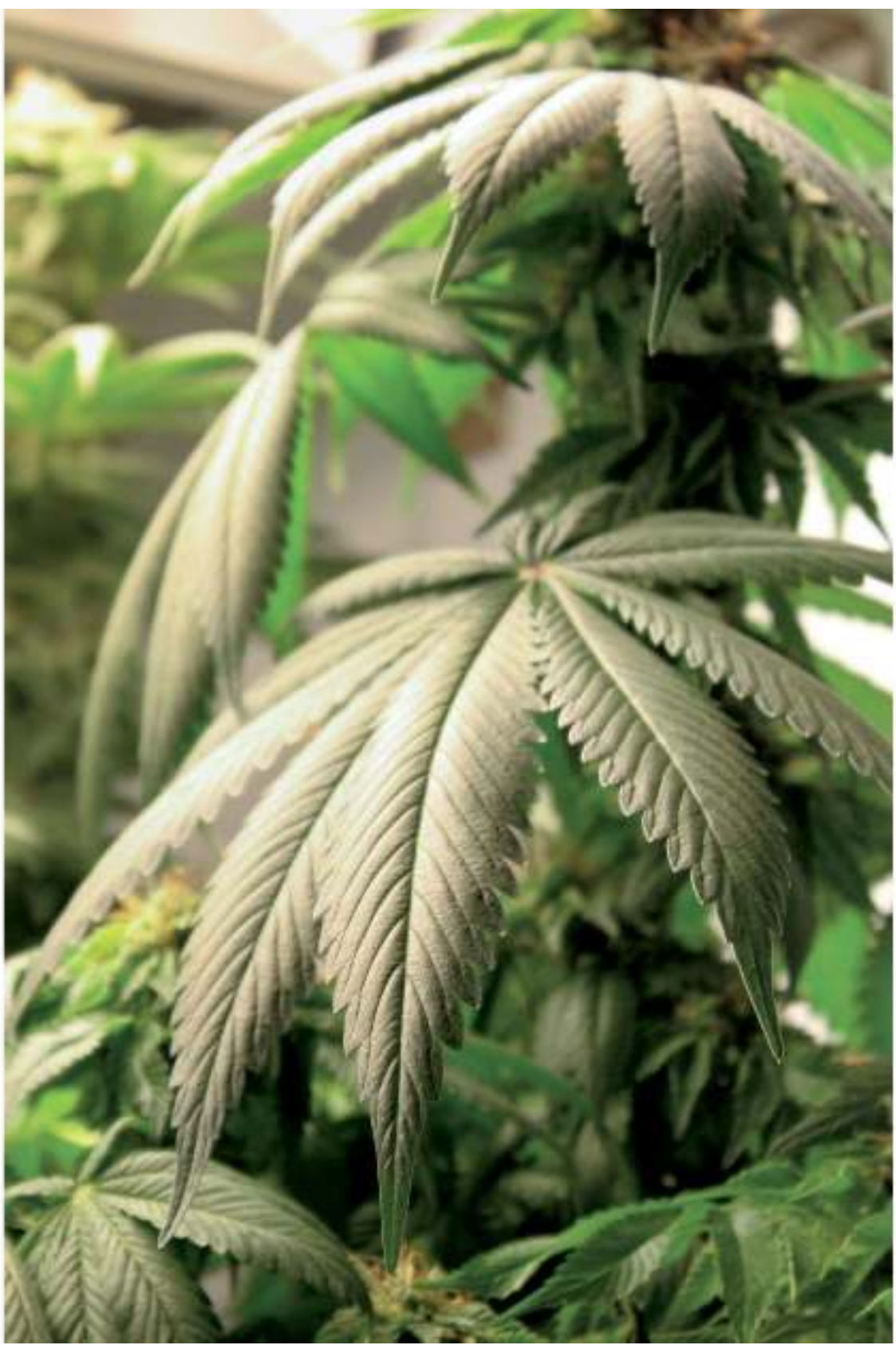


Marijuana Daily Gardening

**How to Grow
Indoors Under
Fluorescent
Lights**



Henry Woodward



Marijuana

Daily Gardening

How to Grow

Indoors Under

Fluorescent

Lights

Henry Woodward

Green Candy Press

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For two late greats: Gerhardt and Doug.

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Getting Started

Congratulations! Welcome to the “growing” community of home marijuana cultivators. The decision to start a home garden can be a difficult one. Well, actually, compared to what can be a bewildering number of considerations in setting up your daily grow for the first time, the decision itself can be comparatively easy. However, my new grower friends should have no fear: the path from complete newbie to experienced cannabis gardener is short, interesting, and definitely rewarding.

I am writing this book as a gardener of moderate experience, specifically for would-be growers with little or no experience. You might be asking why on Earth you should be trusting anyone who is less than a pro. Well, as much as I appreciate the advice of professional growers and have learned from some of their books, I think there are several reasons that a more grassroots book will help new growers. The first is that professional growers are engaged in a number of sophisticated processes (for instance, creating new strains through breeding) and techniques (such as using sophisticated control boards to manage advanced lighting, hydroponic systems and release carbon dioxide) that need not concern those just starting out, at least until their skills and knowledge are well established.

The second is that pro grows are very different animals: big, expensive, and potentially very risky (especially if pursued in jurisdictions where it is criminalized by high-minded but wrong-headed moralism). Your home garden likely cannot and surely need not be any of these things. Though a daily grow can be challenging at times, it is more simple than you might think while reading the introduction and weighing how to approach your own garden. The perspective of someone not too far removed from their own first-timer questions (and who from time-to-time still make mistakes, as you no doubt will) is invaluable for someone, like yourself, who will face just similar situations.

Finally, unlike many professionals, I don't have a huge ego regarding my reputation as a grower. Many writers and even amateur bloggers can be reluctant to share their mistakes. Not so here. This grow will illustrate not only the successes but also the failures and even the completely embarrassing screw-ups that we all make. This grow journal will show the good, the bad and, yes, even the ugly (and there have been some real ugly mistakes, let me tell you). With any luck, it will help you to maximize your chances of achieving the first and avoiding the other two.

We'll be kicking it old school in this grow: (high quality) soil, water, lights, and a nutritious diet for your little ladies. The rest are just details. You'll get them here.

About Me

I began growing nearly five years ago. At the time, I was not even a regular cannabis smoker beyond the occasional tokes at a party, let alone a daily vaporizer as I am today. I had never seen a cannabis plant first hand, let alone grown one myself. My personal knowledge of marijuana was limited to what I had picked up in popular culture and, as such, was fairly limited and marked by the stereotype of the

slacker-stoner, head shops, and hydroponic supply ads. That is to say, I was a complete and total beginner.

Though I have pretty standard outdoor gardens on my home property, I didn't by any stretch consider myself a green thumb – in fact, houseplants have not enjoyed a track record of success in my home. Since I have a day job as a university professor, I enjoy learning and teaching, and quickly found a passion for cannabis cultivation. Needless to say though, I didn't fit the normal profile of a typical grower/user. That was the first part of my own education: in my view today, these stereotypes have been perpetuated by powerful voices in government, law enforcement, and the alcohol lobby. I keep the general public ignorant of how benign, enjoyable, and healing marijuana can be. Today, I count myself as someone who strongly believes that the distinction between “medical” and “recreational” pot is an artificial distinction. Marijuana is a plant. It comes from nature. Used responsibly, it is safe, effective, and easy to enjoy.

So what motivated me to start growing? Equal parts chance and a health emergency experienced by a close family member. Several years ago, my partner was diagnosed with epilepsy. Marijuana was prescribed to mitigate the effect of seizures she experienced multiple times daily. She continues to use it daily in conjunction with pharmaceuticals to keep seizures at bay, which they thankfully have been free of for some time. Indeed, the anti-convulsive effects of cannabis are well if incompletely documented, and my partner has been advised by medical doctors to continue her daily prescribed use of marijuana to maintain her health. But confronted with a need to secure a regular supply of high quality cannabis, we needed to find a source.

At first, my partner sought out what is for many people the only source of marijuana: illegal drug dealers. Though the cost was high, supply was at least regular. But though I know many people maintain contacts to secure pot with people who are dependable and trustworthy, we worried that the handful of sources that we had were potentially dangerous, and not a little unsavory. As a woman walking into places without escort, often in the company of numerous unknown men, she (and I) began to worry about her safety. Here is a genuine danger associated with marijuana use, but to be clear, it is one created by the current legal regime in most places, not the plant itself. There had to be a better way. We began investigating.

From here, we quickly dismissed government-produced cannabis. I'm a believer in the idea that the government can be a force for good in our society. But they sure do produce crappy pot. The sealed bags sent from the government were both expensive and of poor quality: it was clear that entire plants were ground up together, not just the bud that is high in THC or CBD, but also much lower impact stems and leaves. Strains were not advertised, it was just generic “pot,” and overly dry and poorly cured at that. This, coupled with the resistance and often outright refusal (until very recently) of either government or health care professionals to fund and conduct controlled experiments on the efficacy of marijuana consumption for different physical and psychological ailments, meant that we were powerless to identify strains that might best address the symptoms of the medical license holder. The pot bought from the government was a poor deal in terms of quality. It made illegally-sourced pot a superior option. Coupled with punitive laws for possession of marijuana, we had hit strike two in our search for a good source.

We then located several good sources of quality weed via compassion clubs that only accepted clients with valid government permits to possess cannabis for medical use. This made buying pot more (but not totally) safe and secure, and the price was similar: some strains were cheaper than what was available illegally; other more sought-after strains were more expensive. It also meant that we could purchase edibles in some cases, with a reasonable if not total safety guarantee. Still, the

sources currently exist in a legal gray area. We worried about the continued potential for having to deal with law enforcement. The monthly purchase of pot continued to be a hassle, potentially at risk in terms of purchase and transport (who likes walking around with hundreds of dollars worth of cannabis or money to buy cannabis on their person between a store and home if they can avoid it?) and still very expensive.

It was at this point that we made the decision to start a home grow. By necessity, as a result of the severity of my partner's medical condition at the time, responsibility for this start up fell to me.

I began documenting the work for this book in my garden's first year, in large part because I knew so little and was committed to improving my grow techniques and the quantity and quality of the product in successive harvests. I took extensive notes, and experimented with what worked and what didn't. I asked questions at my local hydroponics and head shops when people agreed to share their experiences. Failing this, I researched online and via existing grow books when I had questions I couldn't answer. Slowly, my garden took shape and improved.

Though there is a wealth of knowledge out there to access once you know where to look, it struck me that there was no book that I could find that could speak explicitly to my experience as a new marijuana cultivator. Most books were written by pros, for pros. Others, even explicitly written for beginners, tended to show grows that were perfect or at least without major incidents. This makes sense: for most people in the industry, there is a fair amount of pride (and ego) that accompanies an established practice. What I needed was a book that wouldn't hide the many errors and pitfalls of an initial grow. A book that would share simple, cost-effective solutions to common problems. A book that was written for a beginner, by a beginner. I decided that I would write that book. You're holding the results of that effort. It follows one of my earliest grows, at a time when I was just learning my craft. I haven't air-brushed mistakes I made. I wrote the book I wish I had had when I was starting. I hope it will help fill this need for you.

Before moving on, I must note that becoming an amateur home gardener has been a profoundly positive experience for my family and for me. We now have a source of cannabis that is secure. It costs literally pennies on the dollar compared to what we used to pay others, even after setup and annual expenses. We control the genetics. We control the grow conditions, which is important for those health conscious: we don't have to worry about buying pot that has been sprayed with poisonous insecticides, or laced with anything else we wouldn't choose to consume. We have the ability to manipulate relative THC/CBD levels based on when we harvest (this takes a lot of trial and error, but it is an unbelievably interesting and rewarding process). Moreover, we have been able to locate and produce a dependable source of strains that best impact the health needs of the primary user for whom I am growing. By taking control of our own medicine, we have taken control of our own health.

Finally, I would be remiss not to admit that I now enjoy marijuana on a daily basis. It has improved my mood, been a trusted pain reliever and anti-inflammatory, and a healthier option for altering my mental state than consuming mass units of alcohol (and yes, while the "munchies" are real for me as they are for many cannabis users, I have dropped twenty pounds as pot has largely replaced fattening beer as part of my daily routine). I hadn't really intended to use cannabis much if at all, even when I had started growing. But it is a poor cook or vintner who doesn't try his or her own product, no? There has also been an additional mental health benefit to growing that I have rarely seen mentioned: growing cannabis in your home with proper preparation is generally safe, easy, and inexpensive. But it is also deeply relaxing and even therapeutic. The time I spend in my garden most days is one of the most quiet and relaxing parts of my day. I genuinely derive a benefit from spending time with my plants, which I care for and about a great deal. You might be pleasantly surprised to find

that this will happen to you as well.

But that isn't to suggest that establishing and operating a home grow isn't a significant amount of work. With that in mind, let's turn our attention to the grow itself.

My Home Grow

In terms of layout, I use a fairly compact grow space. The room is located in a small closet-like room in an unfinished basement. The basement itself is only about five feet high at its highest points which puts vertical height at a premium – I have to grow smartly and with good planning to ensure that my grow stays within the confines of my work space; particularly height-inclined sativas.

The entire grow room is lined by white polyethylene tarp to add to the reflectivity of the space. It is four feet wide and just over four feet high (though the ceiling is unfinished, so there is a bit of place there). It is ten feet long, divided into three roughly equally-sized chambers by polyethylene tarps secured by Velcro that allow each room to be easily accessed while remaining light-tight at all other times. The central area provides a small work area in the middle, which houses the power bars and other electrical equipment. The bud and vegetation rooms are accessed on each side via the tarps, and the whole set up is secured behind a locking door. It is as inconspicuous as possible from the outside and the area just outside of the grow rooms can be quickly tidied to remove most evidence that anything unusual is going on, in case someone such as a service worker must access the basement. In short, it is utilitarian: easy to clean, organized, and secure, with all necessary tools in easy reach.



Hang polyethylene tarps cut to fit your grow space. They are a snap to clean and can be quickly rolled up and secured with Bungee cords, and can be made flat with Velcro at the edges so that no light escapes.



Measure your grow space before purchasing an exhaust fan. Be sure to purchase one that will evacuate warm air frequently.

The walls and floor are concrete, which makes for a clean and cleanable workspace. However, this means that the plants must be raised ever so slightly off the floor so that roots won't be too cold. Moreover, the room itself isn't heated or cooled by the house's forced-air system, basements tend to be cooler than the rest of the house in the summer. At times, this can make it difficult to keep the rooms in an optimum temperature range. This is one advantage of using T5 fluorescents: they don't kick a lot of extra heat into an already hot space.

To keep plants from being placed directly on concrete, the rooms have a plywood floor in the ve

room (painted and sealed to make for easier clean up) and rubber “play mats” (what kids in kindergarten would use in a playroom to reduce fall injuries) in the bud room. These are superior raised shelves because both the plywood and mats use less than an inch of the precious grow space on the vertical axis. Shelves to hold the plants would use up too much space to allow for a good grow with only four feet of play.



Simple tubing for a clothes dryer vent can double as an exhaust tube for your grow space.

Oscillating fans are set up in each grow room, also just off the floor to avoid issues in case of spills. An exhaust fan with a carbon filter sits on a shelf near the ceiling of the bud room – a must since it must filter and evacuate air that carries telltale odors when plants are near harvest. All wires are secured to walls using clips that are nailed into studs – it is literally impossible that wires will fall into water. Ventilation tubes have been constructed (out of standard exhaust tubes used for a clothes dryer) and placed behind the polyethylene on the walls to encourage airflow into and out of the room. These are curved to ensure that rooms remain light-tight: that is, no ambient light from outside the grow rooms can enter via vent access points.

For lighting, a band of T5 fluorescents, each a foot wide and four feet long that house four 54 watt T5 tubes apiece, are hung from chains to allow lights to be easily moved up and down as plants grow. The chains are in turn secured to ceiling studs – the lights are very secure and won’t fall or be easily disturbed. The work areas are also fitted with green incandescent bulbs. This allows work to be done in dark periods where the T5s are off and the plants are resting. The green bulbs access a part of the light spectrum that won’t disturb the plants. This is a must for any grower.



Lights should be hung from chains to allow for easy movement up and down. Secure chains to hooks that will safely bear the weight of your setup.

Outside of the grow rooms is a work area that doubles as a normal basement workshop. The tools and equipment help hide the true nature of this area's primary use. All grow supplies are kept on secure shelves that can be cleaned up in less than five minutes. A separate closet nearby (measuring four square feet) is used for drying and curing bud, as well as storage of other supplies such as mason jars (for bottling bud), shelving (for raising seedlings closer to the T5s when other, larger plants must also be under the lights), additional nutrients (for feeding), and additional light bulbs as well as other miscellaneous gear.

Beyond this, I have also installed a good set of stereo speakers so that I can easily play music or listen to the ball game on the radio. This might seem like a small detail, but given that even a small grow can be a time consuming hobby, it is important to have such creature comforts ready to go whenever possible. Cold beer and a vaporizer are also steps away. As a result, I'm more than happy to spend hours each week in my secret garden.



Hot air rises! Raise your exhaust vent and be sure to make the exhaust tube light-tight so that no light from outside can disturb sleeping beauties.

The only real shortfall of this setup is the lack of easy access to water. There is no sink in the basement and consequently I must lug pails of water downstairs each day. This is something I want to address in the future. If you have a small work sink (as one would typically find in a laundry room) nearby for watering plants and cleaning up, that is a big plus.

Since I began this grow journal with some plants already partially matured, there are two Master Kush females in my home garden as of right now. They are confirmed females since they were grown from previously sexed clones taken from a mother plant. Master Kush is a pure indica strain. Typical of the Kush family, it really packs a punch in terms of effects, but I chose to grow it because it has a relatively “small nose” (i.e. it doesn’t stink like some more skunky strains), and has a clean taste when vaporized – just a hint of pine needles and maybe a bit of lemon but the weed itself really shines through.

The grow journal that follows documents the continuation of this strain: I start by taking several new Master Kush clones to propagate the next generation of plants. It also involves the germination of a new strain in my garden: Tangerine Dream, a sativa-dominant hybrid. I am growing these from seeds that came billed as a good “daytime smoke” since Tangerine is supposed to taste of citrus and cultivate a cerebral rather than body high. The idea here is to create a crop of plants that can be alternated for use during the day and at night.



Be sure to secure all wires to make your garden a safe workspace.



Timers and power bars should be kept off the floor. It is a good idea to label each wire with a nametag. This takes the guesswork out of unplugging lights or other appliances when needed.



~~Smaller, single tube T5s can be easily added to compact grow spaces.~~

Since this grow, I've graduated to more than a dozen different strains (and counting) as I continue to experiment with new growing methods and new strains. I also like to renew the genetics of each plant strain (starting over from seed) at least once a year, and this allows me to decommission particular strains when I have created an adequate supply and to then move on to new ones or reintroduce strains of times gone past. With some preparation and a bit of hard work, you can be here too. Let's take a look at how to get you there.

Preparing Your Grow Room

Detail number one is perhaps the most crucial consideration: where to grow? Your first task will be to survey and prepare the location of your grow room or rooms. There isn't really a limit on the size of your grow space, apart from the amount of physical space you have to work with, and what you can easily manage. A grow can also be very compact, sometimes no larger than a moderately sized closet.

Above all, choose a location that is secure. Account for daily use of the space in your home or apartment. Will guests or visitors such as repair people need and be able to access this space? Ideally the answer to this will be no. Choose a space that is inconspicuous. Your space will also be one that can quickly be swept clear if, for instance, a furnace repair or emergency visit from a plumber is required nearby. It should be a space that can be locked. This is also a consideration for would-be gardeners who have kids. You'll probably want to avoid a conversation with the parents of your child's friend about the strange, stinky garden they found while playing Hide and Go Seek at your house! You should definitely have the ability to lock it down, even if it is something that you rarely, if ever, have to do.

Basements are ideal, particularly those typical of old houses that may be little more than glorified crawl space, unfinished and largely not subject to much traffic. Attics, which typically lack proper insulation let alone air conditioning, can be too hot in the summer and cold in the winter to use effectively. Spaces in close proximity to a washroom, laundry area or even water tank are also good provided they can be hidden, because this makes watering your garden less time consuming. Watering plants will be the most time consuming part of your daily grow. You will also have a frequent need to clean up the room, the tools, and even yourself. Hauling water buckets up and down some stairs isn't the end of the world, but it is also not ideal. Choose a space that you will be comfortable working in if you will spend hours over the life of your garden, or even a single grow, in this space. Ask yourself this: would you choose to hang out here, even if nobody else would? Even small touches make a big difference. In my case, I purchased a good set of speakers to allow me to play music or listen to the radio from my iPhone while working. These things matter. If tending to your garden is a drag, you're more likely to avoid it, give it insufficient attention or otherwise make avoidable mistakes. Make this space a room into your own little haven!

One final consideration: this book details the particulars of indoor grows only. You may have an outdoor space that is ideal for growing, a cottage or farm property with a quiet space or even a fence and heavily shielded back yard in the city, one that for instance is lush with the growth of many plants that can hide one or more marijuana plants in its leafy confines, and you might understandably be very tempted to start a grow there. However, I strongly discourage such grows. They are definitely much less secure and the chance of discovery by a friend, a would-be thief or, worst of all, a law

enforcement agent also grows exponentially in these situations. Outdoor growing of any type, and most especially “guerilla” style grows (ones where you plant one or more cannabis plants surreptitiously in a public space or on property belonging to another person) are definitely not for the faint of heart.



Green lights are a must. They allow cannabis to effectively remain in the dark cycle. This is important for when you need to work in the garden at these times.

Your chosen grow space will also need to be properly wired. Ensure that you have access to an adequate number of electrical outlets before you start building; my small rooms consistently use no less than seven plugs when lights, fans, vents and, occasionally, space heaters are considered. If you will be using extension cords, they should be secured to reduce the chances of tripping or immersing them in spilled water.

Power bars and timers (or best, power bars with timer functionality) are a must to control different light schedules. Finally, do some rough and easy to figure calculations: does your home or apartment have sufficient wattage to meet your needs? Perhaps the only thing worse than an insecure room that is discovered is an improperly wired room that results in a fire. When it comes to safety, don't skimp and don't take chances.



An unnecessary mess: tie down loose wires and cords with Velcro straps or twist ties.

Once the space is selected, you will need to prepare the room (or rooms) properly. Soon, you'll have new baby plants growing here. You definitely want to prep the babies' room before they come home. Ideally, you will have sufficient space to create two dedicated rooms in which you will grow and maintain your garden: a "veg" room and a "bud" room. The veg room will house plants grown from seed or cloned cuttings and will expose them to a light cycle that is either 18/6 light to dark or even has the lights on 24/7. The other room will be the "bud" room, a space into which physically mature plants will be moved when vegging is complete. This room will be set up on a 12/12 light/dark cycle, meant to mimic the shorter days of the autumn harvest season. It is essential that each room be light-tight. Escaping light could arouse suspicion from passersby and light entering could actually harm your grow, particularly light bleeding into a sloppily assembled bud room. A larger room can even be split into two sections with relative ease. This book shows a grow conducted in a room smaller than a typical walk-in closet that has been split into two rooms; that is, less than four feet tall with each room measuring about four feet across and less than that deep, with a small antechamber of similar size in between the two grow rooms.



At least two timers are required to operate two rooms on different light cycles. Here a small timer is plugged into a power bar that also has a separate timer.

If you can dedicate one other small space of say four feet across by two deep and two high, you will also be able to create a dedicated space for hanging your harvested bud to dry. This room is the easiest to assemble: all it really requires is a space where you can string several lengths of string like clothes lines, tied securely and with sufficient clearance (a minimum of 18 inches to be safe) to hang stems while they dry. Finally, you will need space to work (a basement work bench is ideal) that is adequately lit and that allows for easy access to stored tools and supplies.

Cleaning Your Grow Room

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