# A Dignified What?

April 17, 2015

**The medicine**

You might already know that cannabinoids are a class of chemical compounds which include the phytocannabinoids, (cannabinoid produced with in a plant) and also chemical compounds which mimic the actions of phytocannabinoids or have a similar structure. The endocannabinoids are endogenous cannabinoids produced in the human body and are found in breast milk for instance. These endocannabinoids are found in the nervous and immune systems of all vertebrates actually and serve as intercellular 'lipid messengers', signaling molecules that are released from one cell, and activating the cannabinoid receptors present on other nearby cells.

Conventional neurotransmitters are released from a 'presynaptic' cell and activate appropriate receptors on a 'postsynaptic' cell. Endocannabinoids, on the other hand, are described as retrograde transmitters because they most commonly travel 'backwards' against the usual synaptic transmitter flow.

There are many different molecules in cannabis called phytocannabinoids or exogenous cannabinoids that mimic the endogenous cannabinoids synthesized by the body. The cannabinoids produced by the plant only have an effect because they bind to the body's cannabinoid receptors. The cannabinoid profile in vegetative leaf provides a unique balance between CBD (CannaBiDiol) and THCA (TetraHydroCannabinol Acid) such that there is no net stimulation of the Central Nervous System CB1 Receptor which means there is little or no "high". Stimulation of the 1st Cannabinoid Binding Receptor is associated with euphoria (good feeling) in some patients and dysphoria (bad feeling) in others. It is well known that CBD competitively binds with THC and if present moderates or blocks the effects of THC. CBD is found in higher proportion in the leaf.

The unique smell and flavor of a cannabis strain is partly from its flavonoids and terpenes, the aromatic molecules. Some flavonoids, like quercetin, luteolin and kaempferol, naturally appear in many different plants, but those that are unique to cannabis are called cannaflavins and their smell is pharmacologically active. For example, cannaflavin A has been found to reduce inflammation by inhibiting the inflammatory molecule PGE-2, and it does this 30 times more effectively than aspirin. Similar to CBD, flavonoids also modulate the effects of THC. Through complex biochemical mechanisms, flavonoids interact on many different sites in the body. Some interact with estrogen receptors, others act as potent antioxidants or inhibit enzymatic processes.

Terpenes appear naturally and abundantly in humans, plants and animals, often to deter parasites. Similarly to flavonoids, terpenes also emit a strong smell and flavor. They are volatile molecules that evaporate easily and contribute to the aroma of the buds. Research has discovered that terpenes are psychoactive and contribute to the overall effect of a strain. They show a wide range of effects, including sedation, anti-anxiety, anti-inflammatory, and many more. Perhaps surprisingly, up to 30% of cannabis smoke is composed of terpenes and terpenoids.

The difference between terpenes and terpenoids is that terpenes are simple hydrocarbons, while terpenoids consist of additional functional groups. In nature, simple hydrocarbons like terpenes are often the building blocks for larger and more complex molecules, such as steroids, pigments and vitamins. In cannabis, terpenes and THC share a biochemical precursor, geranyl pyrophosphate, which is developed in the resin glands of the plant and then evolves into the cannabinoids and terpenes.

**Smoking VS. Oral Ingestion and Transdermals**

The benefit from smoking as a route of administration is instant action and the ability of the patient to self titrate the dose needed for relief, however patients can achieve a similar quick acting relief and the ability to control dose without smoking. It is important that the medical community understand that whole cannabis products are available today that provide significant relief without smoking. We don't have to wait for a pharmaceutical pill to be developed years in the future in order to have the benefits from cannabis we need now.

Oral cannabis, such as cannabutter, is absorbed in a very different way than smoking or inhalation. The GI tract gradually absorbs Cannabinoids over the course of a couple of hours. The medicine is processed first by the liver, which converts some cannabinoids such as (delta 9) to a (delta 11) version of THC. Orally delivered cannabis requires four to ten times the amount of the smoked version in order to achieve the same effect. Orally delivered cannabis can present a problem in achieving the required or desired dose level in any consistent fashion, for the unexperienced, but with very little practice this can be regulated easily.

When we ingest marijuana it is absorbed via the intestines and then passes through the liver, which processes the THC into a by-product called 11-hydroxy-THC, which then travels to the bloodstream and then on to our brains. 11-hydroxy THC is thought to be four to five times more potent than regular THC. This is one reason why edibles are known to be more potent when compared to inhaled cannabis. Edibles are also thought to be strong sedatives and many patients use them for treatment of insomnia.

Marijuana taken in edible form usually takes from 40 minutes to one hour to start working and the peak effect is usually about two hours. The effects last though, from six to eight hours, which is very convenient for those patients who want to sleep or have longer control of their pain.

**Transdermal Cannabis Applications**

Cannabis is lipophilic, which means that it can be dissolved into a fat-soluble substance and readily enter cell membranes. In other words, it can be effective when applied topically on the skin. It can be used transdermally to relieve pain from many conditions. Medical cannabis can be a balm, lotion, ointment or rubbing alcohol solution or lineament. In the old days when people only had plants to use for medication, many patients would soak cannabis leaves in alcohol and apply them as a poultice to an arthritic or swollen joint.

Many substances pass easily through the skin and that is why transdermal medicine has recently been more evident in contemporary medicine. A Fentanyl pain patch, steroid cream or nicotine patch is an example of a transdermal application. When it comes to cannabis's anti-inflammatory effect people have long experienced this in action when they have applied it to their skin. Patients with arthritis, muscle and joint pain can testify to the easing of the aches and pains that they feel on a regular basis. Topical preparations usually provide only local relief and do not have a lasting effect or an effect on the brain, meaning there is usually no high. This is helpful for those times when cannabis smoking is inappropriate (like when you have to drive your car) and you still need pain relief, or for pediatric use! Topical preparations can be purchased or made easily at home.

Transdermal medicine is ideal for pain management as well as sports and pediatric medicine and is one of the safest forms of introducing this medicine into a therapy plan. In fact it is one of the best ways to administer medicines quickly and effectively. Transdermal methods of delivery are widely used because they allow the absorption of medicine directly through the skin. Gels, emulsion creams, sprays and lip balm stick applicators are easy to use and are effective in getting medicine into the bloodstream quickly.

**Making a Mendicant:**

When herbs are infused into animal fat, they form a natural salve, without the need of thickening. However, herbs infused into oils are drippy, leaky, and messy. They need a little beeswax melted into them to make them solid.

Tinctures and Infusions are essentially extractions of whole cannabis (usually the flowers and trim leaves). Tinctures are easy to make and very inexpensive. Tinctures contain all 80 of the essential cannabinoids instead of only one with Marinol. Some of the cannabinoids such as cannibidiol (CBD) actually reduce the psychoactive effects of THC while increasing the overall efficacy of the preparation. Tincture is designed to address the problems of rapid medicine delivery and consistent dosing. Most tinctures are made to be used under the tongue or sublingually. But they are also a base for the transdermal medicines.

Glycerin-based Tincture:

You need to use food grade U.S.P glycerin, this can be relatively hard to find inexpensively but a gallon lasts a long time. Glycerin's have a shorter shelf life than alcohol based tinctures. It is easier just to refrigerate them. Vegetable glycerin has nearly no effect on blood sugar or insulin and is very low in calories (4.3 per gram). It has a sweet taste.

Coconut oil, LCT and MCT (long and medium chain triglyceride based medicines):

MCTs are fatty acids of a medium length. Most of the fatty acids in the diet are "long-chain fatty acids", but the medium-chain fatty acids in coconut oil are metabolized differently. They go straight to the liver from the digestive tract, where they are used as a quick source energy or turned into so-called ketone bodies, which can have therapeutic effects on brain disorders like epilepsy and Alzheimer's.

LCTs are hard to digest. They require digestive enzymes and bile, and almost all of their digestion happens in your intestine. In your intestine, the links keeping the fatty acids together are broken *(a triglyceride is three fatty acids held together by one glycerol molecule)*. The individual fatty acids are then absorbed into your intestinal wall where they are bundled into lipoproteins. These bundles of fat and protein are then carried into your bloodstream to circulate your entire body. During circulation, tiny particles of fat are unleashed and collects in your fat cells (belly fat, etc.) and artery walls. Comparing the two, ***MCTs are super easy to digest***. They don't need enzymes and bile to break up into separate fatty acids. By the time they exit your stomach, Medium Chain Triglycerides are already broken down into single fatty acids.

Almost 50% of the fatty acids in coconut oil is the 12-carbon Lauric Acid. When coconut oil is enzymatically digested, it also forms a monoglyceride called monolaurin. Both lauric acid and monolaurin can kill harmful pathogens like bacteria, viruses and fungi. The human body converts lauric acid into monolaurin, which is supposedly helpful in dealing with viruses and bacteria that cause diseases such as herpes, influenza, cytomegalovirus, and even HIV. It also helps in fighting harmful bacteria such as listeria, monocytogenes, and helicobacter pylori, and harmful protozoa such as giardia lamblia, a nasty gut parasite that causes diarrhea.

Hot Oil Extract.

For this you can use many different options like coconut, MCT oil, olive oil, avacado, emu, butter or a cold-pressed hemp oil even. Oils like Flax should be avoided because they should not be heated. For this we prepare a glass jar just as you would for a cold infusion. You should place the glass jar in a crock pot, that is filled with water enough to surround the jar and set on the lowest (warm) setting. Be sure to put a towel on the bottom of the pot so it does not get too warm. You can "activate it at a geared temperature later. You infuse the oil and herbs for 12-16 hours. Note: Watch the crockpot and add water as it evaporates.

Suppositories

These can be prepared a few ways. You can also use size '00' glycerine capsules filled with an infusion.

**1. Hand Rolling** is the oldest and simplest method of suppository preparation and may be used when only a few suppositories are to be prepared in a cocoa butter base. It has the advantage of avoiding the necessity of heating the cocoa butter. A plastic-like mass is prepared by triturating grated cocoa butter and active ingredients in a mortar. The mass is formed into a ball in the palm of the hands, then rolled into a uniform cylinder with a large spatula or small flat board on a pill tile. The cylinder is then cut into the appropriate number of pieces which are rolled on one end to produce a conical shape. Effective hand rolling requires considerable practice and skill. The suppository "pipe" or cylinder tends to crack or hollow in the center, especially when the mass is insufficiently kneaded and softened.

**2. Compression Molding** is a method of preparing suppositories from a mixed mass of grated suppository base and medicaments which is forced into a special compression mold. The method requires that the capacity of the molds first be determined by compressing a small amount of the base into the dies and weighing the finished suppositories. When active ingredients are added, it is necessary to omit a portion of the suppository base, based on the density factors of the active ingredients.

**3. Fusion Molding** involves first melting the suppository base, and then dispersing or dissolving the drug in the melted base. The mixture is removed from the heat and poured into a suppository mold. When the mixture has congealed, the suppositories are removed from the mold. The fusion method can be used with all types of suppositories and must be used with most of them.
Suppositories are generally made from solid ingredients and drugs which are measured by weight. When they are mixed, melted, and poured into suppository mold cavities, they occupy a volume – the volume of the mold cavity. Since the components are measured by weight but compounded by volume, density calculations and mold calibrations are required to provide accurate doses.

The following is a temperature list of the boiling points of cannabinoids and terpenes, so you can gear your times and temperatures for activating.

Δ-9-tetrahydrocannabinol (THC)
Boiling point:157*C / 314.6 degree Fahrenheit
Properties: Euphoriant, Analgesic, Antiinflammatory, Antioxidant, Antiemetic

cannabidiol (CBD)
Boiling point: 160-180*C / 320-356 degree Fahrenheit
Properties: Anxiolytic, Analgesic, Antipsychotic, Antiinflammatory, Antioxidant, Antispasmodic

Cannabinol (CBN)
Boiling point: 185*C / 365 degree Fahrenheit
Properties: Oxidation, breakdown, product, Sedative, Antibiotic

cannabichromene (CBC)
Boiling point: 220*C / 428 degree Fahrenheit
Properties: Antiinflammatory, Antibiotic, Antifungal

Δ-8-tetrahydrocannabinol (Δ-8-THC)
Boiling point: 175-178*C / 347-352.4 degree Fahrenheit

Properties: Resembles Δ-9-THC, Less psychoactive, More stable Antiemetic

tetrahydrocannabivarin (THCV)
Boiling point: < 220*C / <428 degree Fahrenheit
Properties: Analgesic, Euphoriant

Terpenoid essential oils, their boiling points, and properties

β-myrcene
Boiling point: 166-168*C / 330.8-334.4 degree Fahrenheit
Properties: Analgesic. Antiinflammatory, Antibiotic, Antimutagenic

β-caryophyllene
Boiling point: 119*C / 246.2 degree Fahrenheit
Properties: Antiinflammatory, Cytoprotective (gastric mucosa), Antimalarial

d-limonene
Boiling point: 177*C / 350.6 degree Fahrenheit
Properties: Cannabinoid agonist?, Immune potentiator, Antidepressant, Antimutagenic

linalool
Boiling point: 198*C / 388.4 degree Fahrenheit
Properties: Sedative, Antidepressant, Anxiolytic, Immune potentiator

pulegone
Boiling point: 224*C / 435.2 degree Fahrenheit
Properties: Memory booster?, AChE inhibitor, Sedative, Antipyretic

1,8-cineole (eucalyptol)
Boiling point: 176*C / 348.8 degree Fahrenheit
Properties: AChE inhibitor, Increases cerebral, blood flow, Stimulant, Antibiotic, Antiviral, Antiinflammatory, Antinociceptive

α-pinene
Boiling point: 156*C / 312.8 degree Fahrenheit
Properties: Antiinflammatory, Bronchodilator, Stimulant, Antibiotic, Antineoplastic, AChE inhibitor

α-terpineol
Boiling point: 217-218*C / 422.6-424.4 degree Fahrenheit
Properties: Sedative, Antibiotic, AChE inhibitor, Antioxidant, Antimalarial

terpineol-4-ol
Boiling point: 209*C / 408.2 degree Fahrenheit
Properties: AChE inhibitor. Antibiotic

p-cymene
Boiling point: 177*C / 350.6 degree Fahrenheit
Properties: Antibiotic, Anticandidal, AChE inhibitor

borneol
Boiling point: 210*C / 410 degree Fahrenheit
Properties: Antibiotic, Δ-3-carene 0.004% 168 Antiinflammatory

Δ-3-carene
Boiling point: 168*C / 334.4 degree Fahrenheit
Properties: Antiinflammatory

Flavonoid and phytosterol components, their boiling points, and properties

apigenin
Boiling point: 178*C / 352.4 degree Fahrenheit
Properties: Anxiolytic, Antiinflammatory, Estrogenic

quercetin
Boiling point: 250*C / 482 degree Fahrenheit
Properties: Antioxidant, Antimutagenic, Antiviral, Antineoplastic

cannflavin A
Boiling point: 182*C / 359.6 degree Fahrenheit
Properties: COX inhibitor, LO inhibitor

β-sitosterol
Boiling point: 134*C / 273.2 degree Fahrenheit
Properties: Antiinflammatory, 5-α-reductase, inhibitor

There are many healthy products that you can make in your own kitchen, with this incredible plant.
With so many possibilities, It would take years to find all the benefits! How do we get this information to those who need it now? Currently there is still quite a bit of upheaval in the system of delivery, as it is. The medicine is still a drug in the eyes of the law and Health Canada, so what are the options in front of us, that will increase access to healthier forms of administration.

Well besides the win hoped for in the extract trial, Dignified Access is the only option we have left, because unfortunately, setting a precedent and legalizing wont meet our needs as patients. So, what will?

Dignified Access is about providing Healthcare and meeting medical need with a patients dignity intact. Possible solutions to the current barriers to access include a request for inclusion in our provincial formularies, or special benefits access for instance. Perhaps support from municipal funds in trust for maintaining this health right could help. This coverage or acceptance of use for applicable need, ( even though it has no DIN number) can be looked at as a traditional complementary medicine. It is being used as such and we must ask that it is covered in the medical benefits of each province, the same as other traditional medicine, natural supplements or medical necessity might be.

By doing this we are giving those with Low-Income,  Disability pensions and those on social assistance programs an access point to an essential program that meets their individual need. It is an equal access to healthcare "services" or "preventions" and medicines for at least 40,000 tax paying Canadians. This is a big issue. We use this plant based traditional medicine instead of a western pharmaceutical treatment and are experiencing unequal access to healthcare because of that choice or need.

With the court having placed such a devoted expense into our provincial and local municipal pocketbook, we are now focused more on the cost than the need. Though people need to be able to grow this medicine, and that is included in the dignified access proposal, we need to create the template of a model that provides for all patients and puts patients first, that is a sustainable action and adds benefit and support for the industry also.

There is strong reason for Licensed Producers and suppliers, advocates and the governing bodies to invest in the patients who need to buy their medicine. For patients without coverage there is a greater need for the industry to protect and provide for those in their

own communities first. To do that, we need to ALL work toward a fair program.

Alternatively, in order to meet the lifestyle and need of some patients, a medical garden may be best for them- and they need that option. Though a Licensed producer OR dispensary is needed to know what strain you will grow for yourself, most will want a good regulated product that meets their need. Some patients are sick and cannot provide any care for a garden unless it is an outdoor garden, a cooperative, or a designated garden. These proposed options have no structure designed or required yet. This will cost, but is not the same burden and is far less expensive still, than pharmaceuticals.

Dignified Access is not only affordable in any community, it is beneficial to us all! In the end, our quality of life will influence the burden we feel as taxpayers, as we pay more for core and complimentary services. Helping patients establish their own access to healthcare will cost us all less and allow for a competitive, varying industry. A dignified access is not more regulation, it is not less- it is simply a different way of looking at it, and it could meet the need of many who are without means. A program that has an integrated government structure is especially important now, when we have so many unknown variables effecting so many people. A patient must know what the expectations are, of the systems that wish to govern them. We can do this through an implementation of supportive regulations. How CAN this be done for the best interest of those who need this medicine, in a responsible and sustainable way?

Dignified Access is a governing principle. It is based on a patients right to try anything that might ease their suffering. This is a right. We all benefit from a commitment to creating an inclusive and flexible cannabis health program that works for all patients equally. Healthcare is a provincial matter, our need is not.

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# Healing Garden

February 4, 2016

**Community Therapeutic Gardens.**

**Objective:**
To manage the needs of the community members who wish to maintain their own gardens, cooperative gardens, or small designated growing operations for compassionate care.

A community garden means many things to many people. For some, a community garden is a place to grow food, flowers and herbs in the company of friends and neighbors. For others, it's a place to reconnect with nature or get physical exercise. Some use community gardens because they lack adequate space at their house or apartment to have a garden. Others take part in community gardening to build or revitalize a sense of community among neighbors.

Our garden model includes food and medicine grown on the same land. Why not? Patients will grow medicine in an allotted section of an underground earth house garden, and on the outside is an allotted community food garden, which will grow vegetables and fruit to offset fresh food costs for patients while improving nutrition and quality of life. Over grow will be harvested and donated to local families in need.

**MEDICAL CANNABIS By-law needs:**
A by-law regarding Therapeutic Community Gardens

-to meet the needs of community members at risk of repercussions due to lack of policy around cannabis medicines

-to protect patients by decreasing the violation of rights and freedoms imposed by current legislation and inconsistent federal policy around medical cannabis and its production for personal medical use

-to decrease the cost to the taxpayer who shoulders the burden of police and local healthcare budgets

-to improve Quality of Life in the community

-to decrease barriers to access of equal healthcare service while supporting the patients section 7 rights to choice without discrimination.

## 1. Our Urban Community Gardens:

Entrepreneurial/job training market gardens are typically established by non-profit organizations or other agencies to teach business or job skills. They grow and sell the produce they raise. Proceeds from the sale of garden products are used to pay the participants for their work. Programs typically rely on outside sources of funding to offset costs.
Communal gardens are typically organized and gardened by a group of people who share in the work and rewards. Plots are not subdivided for individual or family use. Produce is distributed among group members. Sometimes produce is donated to a local food pantry.

Food pantry gardens may be established at a food pantry, food bank or other location. Produce is grown by volunteers, food pantry clients, or both and donated to the food pantry.
Therapy gardens provide horticultural therapy to hospital patients and others. A trained horticulture

therapist often leads programs and classes. Gardens may be located at hospitals, senior centers, prisons or other places. Demonstration gardens show different types of gardening methods, plant varieties, composting techniques and more.

Demonstration gardens located at working community gardens are often open to the general public for display and classes. They may be managed and maintained by garden members or a participating gardening group such as extension Master Gardeners, community members who receive training in home horticulture and then serve as volunteers to educate the public about gardening.

## 2. Our Rural community gardens:

Although community gardens are often associated with urban areas, they exist in many rural areas as well. However, because of the unique characteristics of rural places, they often take on different forms and serve different functions. Research conducted by Ashley F. Sullivan (1999) from the Center on Hunger and Poverty at Tufts University identified a number of ways in which rural community gardens differ from their urban counterparts. Her research uncovered different types of rural community gardens along with obstacles to community gardening in rural areas.

Sullivan identified seven different types of rural community gardens in her study. They included the following:

1. Traditional neighborhood-type gardens with individual and family plots;
2. Gardens that provide demonstration and education to gardeners at neighborhood gardens and home gardens;
3. Communal gardens tended collectively with the produce going to a local food pantry;
4. Educational gardens that offer classes to the public;
5. School gardens that incorporate gardening and nutrition education;
6. Community-assisted home gardens where an experienced gardener mentors novice gardeners in their home gardening efforts;
7. Gardens affiliated with an existing agency, apartment complex or church.

Sullivan identified obstacles to community gardening in rural areas as well. Obstacles include a high rate of gardener and volunteer turnover, animosity between "outsiders" and community members, lack of gardening skills and lack of transportation.

Sullivan also offers recommendations for overcoming some of these obstacles:

- Do not assume that the traditional neighborhood community garden model will work in rural areas.
- During the planning stages, identify obstacles to starting a community garden in a rural area.
- Identify solutions to the obstacles.
- Respect the values of the community and incorporate those values into the garden's design.
- Be flexible when deciding how to organize a garden; incorporate different models into a plan to see which one works best.
- Help gardeners cultivate a sense of ownership for the garden.
- Take time to look at all of the factors that might hinder participation.
- Involve local organizations and businesses.

***Challenges***

A discussion of starting and managing a community garden would be incomplete without a discussion of the challenges encountered by gardeners and garden organizers. Common challenges faced by most community garden groups include:

**Management**

Community gardens are management intensive. They demand patience, time and the capacity to work

with and organize people and projects. They also typically require systems to enforce rules and resolve conflicts.

**Maintenance**

Community gardens are maintenance intensive. Grass will need to be mowed, equipment will need to be repaired, and plant debris will need to be composted, among other things.

**Participation**

From year to year, gardeners and garden leaders come and go from community gardens for a variety of reasons. Because of this, it can be challenging to maintain a sense of community and consistency at gardens.

**Theft and vandalism**

Theft and vandalism are commonplace at many community gardens. As a general rule, theft is the result of adult activity and vandalism is carried out by children.

**Gardening skills**

Many new and some returning gardeners don't know a lot about gardening. Gardeners who lack gardening skills and have poor gardening experiences may be more likely to give up.

**Leadership skills**

Many gardeners may not have the skills to take a leadership role at their respective garden.

**Services and supplies**

Plowing, tilling and the delivery of compost and mulch can be challenging services for gardeners to arrange for themselves.

**Water**

Most gardens need some way to irrigate fruits and vegetables during the summer. Finding a source of water can be challenging. Also, because most community gardens are located on borrowed land, installing a water hydrant may not be feasible or cost effective.

**Site permanency**

Most community gardens are located on borrowed land. This limits the amount of infrastructure that can be added to a particular site. It may also create an atmosphere of instability among gardeners since the garden could be lost at any moment.

The following suggestions, taken from the *Growing Communities Curriculum* (Abi-Nader et al., 2001) will serve as "core beliefs" and be used to guide the development of the community garden and provide a strong foundation for growth. Taken as a whole, these core beliefs emphasize the importance of being inclusive, making room for diverse ideas and utilizing local assets, they also demonstrate the importance of using a bottom-up or grassroots approach. Most successful community gardens are initiated, established and managed by the gardeners themselves. When gardeners have the opportunity to take ownership in a project, they are more likely to invest their time and effort in making the garden a success.

Additionally, keeping these suggestions in mind will help overcome some of the challenges that arise. For example, the people involved in your project will likely come from different backgrounds and have different ways of relating to each other and the project. They will bring their unique personalities, perceptions, knowledge, skills and experience to a group situation. They will have different ideas about how to accomplish a project. Some group members may learn faster than others. Some will be more pessimistic. Others will be more optimistic. Regardless of these differences, the group should be committed to remaining open and patient with all group members and creating the time and space to facilitate dialogue about the best way to accomplish the tasks at hand.

***Five core beliefs:***

***Core belief 1***

"There are many ways to start and manage a community garden." Although this may be a given, it helps to remember that community gardens can serve many purposes and take many forms.

***Core belief 2***

"In order for a garden to be sustainable as a true community resource, it must grow from local conditions and reflect the strengths, needs and desires of the local community." Assistance from people or organizations outside of the community can be helpful. However, those who will be using the garden should make most of the decisions about how the garden is developed and managed.

***Core belief 3***

"Diverse participation and leadership, at all phases of garden operation, enrich and strengthen a community garden." Gardens can be stronger when they are developed and led by people from different backgrounds.

***Core belief 4***

"Each community member has something to contribute." Useful skills and good suggestions are often overlooked because of how people communicate. People should be given a chance to make their own unique contributions to the garden.

***Core belief 5***

"Gardens are communities in themselves, as well as part of a larger community." This is a reminder to involve and be aware of the larger community when making decisions.

**Approved Conditions:** Cancer, AIDS, positive status for HIV, multiple sclerosis, or the treatment of these conditions if the disease or the treatment results in severe, persistent, and intractable symptoms; or a disease, medical condition, or its treatment that is chronic, debilitating and produces severe, persistent, and one or more of the following intractable symptoms: cachexia or wasting syndrome, severe pain or nausea or seizures.

**MEDICAL Cannabis By-law needs:** Therapeutic Use of community gardens to meet the needs of community members at risk of repercussions due to lack of policy around cannabis medicines, AS WELL AS to decrease the violation of rights and freedoms imposed by current legislation and inconsistent federal policy around medical cannabis and its production for personal medical use.

**CAREGIVERS for designated compassionate care:** A Registered caregiver is a person who has agreed to undertake responsibility for managing the well-being of a registered patient with respect to the use of marijuana for symptom relief. The caregiver must be 18 years of age or older. Patients may only have one registered caregiver at a time. Registered caregiver may only grow ONE plant every 3 sq feet of growing space and must grow in an approved Therapeutic Garden growing space allocated by the community.

**Application information:** Applicants are Medical Cannabis Users with established diagnosis and treatment plans.

**Registration:** A Mandatory registration application and entry into our tracking/follow up process.

**Fee:** $240 registration fee which covers all garden services including security. Any arranged fee for caregivers is separate from the registration fee. Indoor and outdoor greenhouse operations are to have an onsite security presence.

**A garden committee:** volunteers to help establish and run the garden.

This committee can be made up of people who feel committed to the development of a community garden and have time to devote to it. The patients themselves can be involved in the growing practices and maintenance of their own gardens with educational workshops that teach while doing the tasks required.

Having garden participants on the committee will help make the garden appropriate and beneficial for end-users. The garden committee will host regular meetings during the year to make plans and decisions about the garden, and will help organize harvest and fall closing days. The committee may also

have working groups within it that manage particular aspects of the garden, such as education, youth activities, or construction.

Our goal has been to present the plant in the most therapeutic way possible; to search for the best varieties to use with a number of medical conditions; to cultivate them in an environmentally responsible way; to test, breed, and develop varieties in search of different specific applications; to be a positive participant in the communities we operate and provide a new message for cannabis.

***3. A reduced scale collective garden in a qualified patient's residence or municipally approved Community Medical Garden Location.***

**Purpose:**
The first step to cultivating quality cannabis is the environment.

Community garden models in greenhouse facilities will allow us to utilize solar energy to lower our carbon footprint, a nutrient formula and environment that will optimize the variety using organic and environmentally responsible and sustainable production practices.

Our vision for patient cultivation is two fold:

1 -Enable patients to grow the highest quality cannabis they can, in order to increase the likelihood of an adequate crop for the medical need. This decreases barriers to the medicine.

2 - Have the lowest environmental impact while creating the gardens and using the most environmentally friendly techniques to produce the medicine while using innovative, effective, and nontoxic gardening techniques and tools.

For over a decade patients have been able to grow their own cannabis for use to treat certain debilitating or terminal conditions. This was largely due to the lack of safe access for patients to purchase their medicine. Since there were little or no means to purchase cannabis outside the black market, the federal laws have allowed patients to grow their own. A policy change, that did not include the input of all stakeholders, removed the personal production rights that were won by Canadians so long ago. These rights were reinforced by the following court decisions, reminding our government that we have rights that will be up held in this country.

**Key court decisions**

All of these decisions have invalidated the prohibition of marijuana based on the insufficiency of the exemptions provided for legitimate medical users of the drug. However, the laws have been and will probably continue to be modified in order to adapt them to constitutional requirements. As such, there is the possibility that a judge will uphold as valid a newer revision of the law. This also does not stop prosecutors from pursuing charges against marijuana users. Therefore, marijuana users cannot be assured that they will not be prosecuted for their use of the drug.

2000: R. v. Parker (Ontario Court of Appeal)

R. v. Parker was the landmark decision that first invalidated the marijuana prohibition. However the declaration of invalidity was suspended for one year. It concerned the case of an epileptic who could only alleviate his suffering by recourse to marijuana. The Court found that the prohibition on marijuana was unconstitutional as it did not contain any exemption for medical use.

2003: R. v. J.P. (Ontario Court of Appeal)

On 16 May 2003, the Ontario Superior Court found the accused party, "J.P.", not guilty. The appellate court ruled that the Medical Marihuana program's rules do not form a basis for the prosecution of J.P., as they do not themselves contain any effective prohibitions.

The Crown appealed the decision of the Ontario Superior Court to the Ontario Court of Appeals. But in October 2003, the Court of Appeals upheld the invalidity of s 4 of the Controlled Drugs and Substances Act (CDSA) as it applies to cannabis, on the same grounds as those given by the lower court. The court stated, at paragraph 11 of its ruling:

“As we have held, the MMAR [Medical Marihuana Access Regulations] did not create a constitutionally acceptable medical exemption. In Parker, this court made it clear that the criminal prohibition against possession of marihuana, absent a constitutionally acceptable medical exemption, was of no force and effect. As of April 12, 2002, there was no constitutionally acceptable medical exemption. It follows that as of that date the offence of possession of marihuana in s. 4 of the CDSA was of no force and effect. The respondent could not be prosecuted.”

The court's decision is a binding precedent for Ontario courts, but not for courts elsewhere in Canada. Thus, even though marijuana falls under federal jurisdiction, the legal status of marijuana is now different in Ontario than in other provinces.

2007: R. v. Long (Ontario Court of Justice)

The Ontario Court of Justice held in R. v. Long that the prohibition in the Controlled Drugs and Substance Act against the possession of marijuana were unconstitutional in the absence of an accompanying constitutionally acceptable exemption for medical marijuana. The current exemption depended on the government supplying marijuana, which it was only doing as a result of the policy. However, the policy did not impose a legal obligation upon the government to supply marijuana to those who needed it for medical purposes. The court held that without such an obligation, the exemption was constitutionally unacceptable, as access to marijuana depended on the implementation of a policy rather than the application of a law. If the government wanted to control the supply of marijuana, it had to impose an obligation upon itself to supply marijuana to eligible persons. The court held that if the government was obliged by law to supply marijuana in accordance with the policy, the exemption would be constitutionally acceptable.

A notice of appeal was filed by the Crown on 23 August 2007.

2007: R. v. Bodnar/Hall/Spasic (Ontario Court of Justice)

In R. v. Bodnar/Hall/Spasic, the Ontario Court of Justice followed the Long decision, holding that the prohibition against possession of cannabis in the Controlled Drugs and Substances Act is invalid and of no force or effect. Hon. Justice Edmonson stated in his ruling that "there is no offence known to law that the accused have committed."

2008: Sfetkopoulos v. Canada (Federal Court of Canada)

As of 10 January 2008, Justice Barry Strayer of the Federal Court of Canada struck down the federal regulations concerning the growing of medical marijuana by licensed producers. Prior to the case, a producer was prohibited from growing for more than one person. The Marijuana Medical Access Regulations require all medical marijuana users to obtain their prescription from a limited number of sources:

- Personally grown
- Produced by a designated individual for that person
- From a licensed dealer

At the time, there was only a single licensed dealer in Canada, which grew in Manitoba and processed in Saskatchewan, making it difficult to access. A multitude of users requested a single designate, of which all applications were denied except for one. This regulatory structure was, they argued, a violation of the Section 7 of the Canadian Charter of Rights and Freedoms, because it forced sufferers to go through illicit channels to obtain medical marijuana, to which they were legally entitled. Thus, they were being forced to break the law in order to ensure their constitutionally-protected right to "security of the person."

The court agreed with this reasoning and struck down subsection 41(b.1)[32] as being of no force or effect.[33]

This, however, does not concern the non-medical use of marijuana.

2011: R. v. Mernagh (Ontario Superior Court)

On 12 April 2011, Justice Donald Taliano found that Canada's Marijuana Medical Access Regulations (MMAR) and "the prohibitions against the possession and production of cannabis (marijuana) contained in sections 4 and 7 respectively of the Controlled Drugs and Substances Act" are "constitutionally invalid and of no force and effect".[34] The government was given 90 days (until 11 July) to fill the void in those sections, or the possession and cultivation of Marijuana would become legal in all of Ontario. This includes the non-medical use of the drug.[35]

The mid-July deadline was extended when federal government lawyers argued that current cannabis laws and regulations should stay in place until Ontario's highest court could hear the appeal which took place on 7 and 8 May 2012.[36] In granting the deadline extension, the Court of Appeal noted that "The practical effect of the decision if the suspension were permitted to expire on July 14 would be to legalize marijuana production in Ontario, if not across Canada.".[37] The decision released 1 February 2013 states that the Ontario's Appeals Court has upheld current marijuana laws in Canada, overturning the decision made by the lower court judge in 2011.[38] In the decision, the appeals court ruled that the lower court judge had made several errors in striking down Canada's marijuana laws, citing an absence of a constitutional right to use medical marijuana. The court also stated that Mernagh failed to provide evidence from a doctor that he met the criteria for the use of medical marijuana. The decision was met with criticism and disappointment from many in Canada, including the Canadian HIV/AIDs Legal Network. After the ruling, they restated Mernagh's (and many other medical marijuana users in Canada) issue with the current marijuana rules: "Allowing the current regulations to stand unchanged will leave many people with serious health conditions without effective access to legal authorization to use cannabis as medicine".

Canada v. Allard, 2014 FCA 298 (CanLII)

[1] This appeal is from a decision of Mr. Justice Manson of the Federal Court (the judge) dated March 21, 2014.
[2] The judge exercised his discretion to grant an interlocutory injunction to the respondents under s. 24(1) of the Canadian Charter of Rights and Freedoms, Part 1 of the Constitution Act, 1982, being Schedule B to the Canada Act 1982 (UK), 1982, c. 11 (Charter), as well as under Rule 373(1) of the Federal Courts Rules, SOR/98-106.
[3] The judge's decision preserves certain rights that were available under the Marihuana Medical Access Regulations, SOR/2001-227 (the MMAR) thus staying the full coming into force of the Marihuana for Medical Purposes Regulations, SOR/2013-119 (the MMPR) for the persons and classes of persons covered by the order, pending determination of the trial on the merits. The trial is currently scheduled to commence on February 23, 2015.
[4] The underlying action is a claim that the MMPR violates the respondents' section 7 Charter rights to

life, liberty and security of the person in a manner not in accordance with the principles of fundamental justice. In particular, the respondents challenge the MMPR's prohibition of the personal production of marihuana for medical purposes and the possession limit of 150 grams of dried marihuana.
[5] Prior to the coming into force of the MMPR, the MMAR provided for a licence scheme whereby eligible persons who have a declaration signed by a medical practitioner are issued an Authorization to Possess (ATP) marihuana. Individuals who had an ATP could lawfully obtain access to marihuana (i) through a Personal Production Licence pursuant to which the individual was allowed to produce a determined quantity of marihuana for his own use; (ii) through a Designated Person Licence pursuant to which the individual was able to designate another person to produce his or her marihuana; (iii) by purchasing dried marihuana directly from Health Canada which contracted with a private company to produce and distribute marihuana.

R. v. Smith, 2015 SCC 34, [2015] 2 S.C.R. 602

The following is the judgment delivered by:
[1] The Court — Regulations under the Controlled Drugs and Substances Act, S.C. 1996, c. 19 ("CDSA "), permit the use of marihuana for treating medical conditions. However, they confine medical access to "dried marihuana", so that those who are legally authorized to possess marihuana for medical purposes are still prohibited from possessing cannabis products extracted from the active medicinal compounds in the cannabis plant. The result is that patients who obtain dried marihuana pursuant to that authorization cannot choose to administer it via an oral or topical treatment, but must inhale it, typically by smoking. Inhaling marihuana can present health risks and is less effective for some conditions than administration of cannabis derivatives.

[2] The parties accept the conclusion of the Ontario Court of Appeal in R. v. Parker (2000), 146 C.C.C. (3d) 193, that a blanket prohibition on medical access to marihuana infringes the Canadian Charter of Rights and Freedoms . This appeal requires us to decide whether a medical access regime that only permits access to dried marihuana unjustifiably violates the guarantee of life, liberty and security of the person contrary to s. 7 of the Charter . The British Columbia courts ruled it did, and we agree.

**Canadian Charter rights and freedoms**

Section 7 of the Canadian Charter of Rights and Freedoms is a constitutional provision that protects an individual's autonomy and personal legal rights from actions of the government in Canada. There are three types of protection within the section, namely the right to life, liberty, and security of the person. Denials of these rights are constitutional only if the denials do not breach what is referred to as fundamental justice.

Fundamental justice is a legal term that signifies a dynamic concept of fairness underlying the administration of justice and its operation, whereas principles of fundamental justice are specific legal principles that command "significant societal consensus" as "fundamental to the way in which the legal system ought fairly to operate."[1]

These principles may stipulate basic procedural rights afforded to anyone facing an adjudicative process or procedure that affects fundamental rights and freedoms, and certain substantive standards related to the rule of law that regulate the actions of the state (e.g., the rule against unclear or vague laws). The degree of protection dictated by these standards and procedural rights vary in accordance with the precise context, involving a contextual analysis of the affected person's interests. In other words, the more a person's rights or interests are adversely affected, the more procedural or substantive protections must be afforded to that person in order to respect the principles of fundamental justice.[2] A legislative or administrative framework that respects the principles of fundamental justice, as such, must be fundamentally fair to the person affected, but does not necessarily have to strike the "right

balance" between individual and societal interests in general.

Understanding POL-COA

The fundamental rules that Canadians live under are really very simple when it comes to how laws can be created, changed and/or set aside, and there are two aspects of "the law" which ought to be almost as simple to apply in any case of alleged crime.

1) Canada's Constitution Act (the most basic law in the land, which lays out the rules under which every law in the nation must come into being), and the Interpretation Act (which lays out the rules under which judges may and may not interpret and apply legal statutes) both state very plainly that the enactment, amendment and repeal of laws (that means *all* laws) is the duty and sole jurisdiction of Parliament... not of "Government" (the party/parties holding nominal power over policy and its implementation), but of "Parliament" (the entire elected legislative body which represents every voter in every electoral riding in Canada).

POL* Parliament ONLY has power to Legislate:

2) Courts may strike a law down entirely if there's a reason in law that they should do so, but they have no power to enact or to substantively amend any law... and both the Constitution Act and the Interpretation Act are very clear about this.

COA* Courts may Only Abrogate a law they have the authority to judge.

***GOVERNMENT vs. THE LAW***

A) Cannabis prohibition laws in Canada (specifically about possession and by implication cultivation) were declared unconstitutional when Ontario's Court of Appeal last adjudicated Terry Parker's original case in July 2000 and Canada did not appeal that decision.

B) Only hours before the end of the ONE year suspension of that judgement (suspended to allow time for Government to craft and Parliament to enact a new law/amendment allowing the use and possession of Cannabis as medicine), Parliament still had not yet been offered a new Bill to consider, let alone passed a new law.

Instead, Canada's Government (Paul Martin's Liberals at the time) announced and put into force an Order In Council: some regulations (The Marihuana Medical Access Regulations) that modified the unconstitutional Cannabis prohibition law – but the MMAR were only a set of unlegislated regulations trying to fundamentally alter a dying law. Government did this with neither the consideration nor the assent of Parliament.

No new law has been enacted yet to replace what has been struck down by the Parker decision.

C) No Crown Prosecutor is permitted under the Constitution Act to charge or prosecute (and no Judge in Canada has authority under the Interpretation Act to *try*) a case of "Cannabis possession": there is no law under which they're authorized to charge, prosecute or try (but the Criminal Code has not been reprinted, so there is also unfortunately no clear directive yet for police not to arrest) anyone for "Cannabis possession"... it is not a crime because there is no criminal law that concerns itself with it.

**UN SINGLE CONVENTION TREATY 1961**

The United Nations brought delegates together from all over the world to talk about narcotics in 1961. It

was at this gathering of the United Nations that delegates signed the Single Convention Treaty. The Single Convention Treaty was enacted to address additional industrial uses of plants with intoxicating properties. This is the strong international agreement upon which many nations have based their laws which prohibit cannabis cultivation, use and supply. Article 28 specifically permits cannabis for medical and for "industrial and horticultural" uses. For production, it refers to article 23 (regarding the cultivation of the opium poppy). The Universal Declaration of Human Rights is contravened in many Articles by prohibition of cannabis and cannabis people's lifestyles. In the interest of protecting citizens in our communities, we must develop aversion strategies for these violations that are causing harm to people who have a Universal right to access the medicine of their choice in the way they choose providing it does not harm or violate another's rights.

*United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances Vienna, 20 December 1988*
Signed by: Canada on 20 Dec 1988
Ratification, Accession(a), Acceptance(A), Approval(AA), Formal confirmation(c), Succession(d): 5 Jul 1990

Though this has never been followed as laid out in article 23 in Canada, anywhere, and Canada found ways better suited to its population to enable access to this medicine we have a right to access, the contrast has always been created with policy that reinforces a stigma.

***Universal Declaration of Human Rights***

The Universal Declaration of Human Rights (UDHR) is a milestone document in the history of human rights. Drafted by representatives with different legal and cultural backgrounds from all regions of the world, the Declaration was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 General Assembly resolution 217 A (III) (French) (Spanish) as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected. Human rights are rights inherent to all human beings, whatever our nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status. We are all equally entitled to our human rights without discrimination. These rights are all interrelated, interdependent and indivisible.

Universal human rights are often expressed and guaranteed by law, in the forms of treaties, customary international law , general principles and other sources of international law. International human rights law lays down obligations of Governments to act in certain ways or to refrain from certain acts, in order to promote and protect human rights and fundamental freedoms of individuals or groups.

Human rights entail both rights and obligations. States assume obligations and duties under international law to respect, to protect and to fulfill human rights. The obligation to respect means that States must refrain from interfering with or curtailing the enjoyment of human rights. The obligation to protect requires States to protect individuals and groups against human rights abuses. The obligation to fulfill means that States must take positive action to facilitate the enjoyment of basic human rights. At the individual level, while we are entitled our human rights, we should also respect the human rights of others.

***Article 25 of the Convention on the rights of persons with disabilities states,***

States Parties recognize that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. States Parties shall take all appropriate measures to ensure access for persons with disabilities to health services that are gender-sensitive, including health-related rehabilitation. In particular, States Parties shall:

(a) Provide persons with disabilities with the same range, quality and standard of free or affordable health care and programmes as provided to other persons, including in the area of sexual and reproductive health and population-based public health programmes;

(b) Provide those health services needed by persons with disabilities specifically because of their disabilities, including early identification and intervention as appropriate, and services designed to minimize and prevent further disabilities, including among children and older persons;

(c) Provide these health services as close as possible to people's own communities, including in rural areas;

(d) Require health professionals to provide care of the same quality to persons with disabilities as to others, including on the basis of free and informed consent by, inter alia, raising awareness of the human rights, dignity, autonomy and needs of persons with disabilities through training and the promulgation of ethical standards for public and private health care;

(e) Prohibit discrimination against persons with disabilities in the provision of health insurance, and life insurance where such insurance is permitted by national law, which shall be provided in a fair and reasonable manner;

(f) Prevent discriminatory denial of health care or health services or food and fluids on the basis of disability.

Canadians who use cannabis for medical reasons have a disability. They use cannabis to manage the health issues creating this disability. The fact that they cannot access their safe and natural medicine quickly and affordably is a direct violation of Article 25. Paragraph (a) and (c) would also apply to Municipal management of this facilitation of patient rights. In addition, the following articles of the same convention address directly, the need to adapt our community based policies around access to this medical need and choice.

Article 26 - Habilitation and rehabilitation

1. States Parties shall take effective and appropriate measures, including through peer support, to enable persons with disabilities to attain and maintain maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life. To that end, States Parties shall organize, strengthen and extend comprehensive habilitation and rehabilitation services and programmes, particularly in the areas of health, employment, education and social services, in such a way that these services and programmes:

(a) Begin at the earliest possible stage, and are based on the multidisciplinary assessment of individual needs and strengths;

(b) Support participation and inclusion in the community and all aspects of society, are voluntary, and are available to persons with disabilities as close as possible to their own communities, including in rural areas.

2. States Parties shall promote the development of initial and continuing training for professionals and staff working in habilitation and rehabilitation services.

3. States Parties shall promote the availability, knowledge and use of assistive devices and technologies, designed for persons with disabilities, as they relate to habilitation and rehabilitation.

Article 28 - Adequate standard of living and social protection

1. States Parties recognize the right of persons with disabilities to an adequate standard of living for themselves and their families, including adequate food, clothing and housing, and to the continuous improvement of living conditions, and shall take appropriate steps to safeguard and promote the realization of this right without discrimination on the basis of disability.

2. States Parties recognize the right of persons with disabilities to social protection and to the enjoyment of that right without discrimination on the basis of disability, and shall take appropriate steps to safeguard and promote the realization of this right, including measures:

(a) To ensure equal access by persons with disabilities to clean water services, and to ensure access to appropriate and affordable services, devices and other assistance for disability-related needs;

(b) To ensure access by persons with disabilities, in particular women and girls with disabilities and older persons with disabilities, to social protection programmes and poverty reduction programmes;

(c) To ensure access by persons with disabilities and their families living in situations of poverty to assistance from the State with disability-related expenses, including adequate training, counselling, financial assistance and respite care;

(d) To ensure access by persons with disabilities to public housing programmes;

(e) To ensure equal access by persons with disabilities to retirement benefits and programmes.

Article 30 - Participation in cultural life, recreation, leisure and sport

1. States Parties recognize the right of persons with disabilities to take part on an equal basis with others in cultural life, and shall take all appropriate measures to ensure that persons with disabilities:

(a) Enjoy access to cultural materials in accessible formats;

(b) Enjoy access to television programmes, films, theatre and other cultural activities, in accessible formats;

2. States Parties shall take appropriate measures to enable persons with disabilities to have the opportunity to develop and utilize their creative, artistic and intellectual potential, not only for their own benefit, but also for the enrichment of society.

3. States Parties shall take all appropriate steps, in accordance with international law, to ensure that laws protecting intellectual property rights do not constitute an unreasonable or discriminatory barrier to access by persons with disabilities to cultural materials.

4. Persons with disabilities shall be entitled, on an equal basis with others, to recognition and support of their specific cultural and linguistic identity, including sign languages and deaf culture.

***<u>The Solution:</u>***

The collective garden and designated provider have served many people in the past safely and effectively with little risk of diversion in the past. Those patients who either do not have the access to resources for growing or do not have the skills and knowledge to effectively grow cannabis needed access to the medicine they felt most comfortable with taking. By allowing multiple patients to select one grow site and become a member of that collective garden it opens up safe access to their medicine

and also provides an economy of scale. By growing in a group, costs go down and exposure to collateral consequences of the lack of clear policy and law enforcement are reduced.

The structure of our Earth House gardens increases security while decreasing cost and carbon footprint.

Greenhouses are usually glazed structures, but are typically expensive to construct and heat throughout the winter. A much more affordable and effective alternative to glass greenhouses is the walipini (an Aymara Indian word for a "place of warmth"), also known as an underground or pit greenhouse. First developed over 20 years ago for the cold mountainous regions of South America, this method allows growers to maintain a productive garden year-round, even in the coldest of climates. Our set-up combines the principles of passive solar heating with earth-sheltered building.

The Walipini, in simplest terms, is a rectangular hole in the ground, covered by plastic sheeting. The longest area of the rectangle faces the winter sun - to the north in the Southern Hemisphere and to the south in the Northern Hemisphere. A thick wall of rammed earth at the back of the building and a much lower wall at the front provide the needed angle for the plastic sheet roof. This roof seals the hole, provides an insulating airspace between the two layers of plastic (a sheet on the top and another on the bottom of the roof/poles) and allows the sun's rays to penetrate creating a warm, stable environment for plant growth.

The land space allotment for each patient is a minimum of 3 square feet per plant. The earth-houses are up to 1000 sq ft. And will hold a maximum of 80-100 mature plants per house, with a transition cabinet for the starting phase or the production cycle and plenty of room to grow and work. This decreases parasites, mold and cross contamination risks when compared to commercial and large scale operations.

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