Lately the most notable question I am asked on my website is from medicinal growers and patients. The questions range from how to grow a plant so it is acceptable for sick people to use, and how to control the flowering of cannabis so the product is without harmful substances? These are the sorts of questions coming from people who 5 years ago did not consider using Cannabis to relieve their medical conditions. So I feel it is the time to outline some general guidelines to help those who are curious to minimize contaminations on their plants and the subsequent products.

Realizing everything you do can influence the outcome of a product should be motivational to those who wish to control as many things in their lives as they physically can. From eating foods that have been grown with good quality products and natural sun, to recycling the waste by-products of your cultivations.

Hippocrates advised, “Let your food be your medicine, and your medicine be your food,” humans have grown medicinal plants alongside, or overlapping with, food crops for hundreds of years with excellent results.

Dr Xiaorui Zhang (Coordinator Traditional Medicine (TRM), Department of Essential Drugs and Medicines Policy (EDM), World Health Organization) said,

"Traditional medicines, particularly herbal medicines, have been increasingly used Worldwide during the last two decades. Unfortunately, the number of reports of patients experiencing negative health consequences caused by the use of herbal medicines has also been increasing. Analysis and studies have revealed a variety of reasons for such problems. One of the major causes of reported adverse events is directly linked to the poor quality of herbal medicines, including raw medicinal plant materials. It has therefore been recognized that insufficient attention has been paid to the quality assurance and control of herbal medicines."
How do you grow a Medicinal grade plant at home?

If you want to regulate yourself based on WHO (World Health Organization) suggestions for growing Medicinal herbs then follow these points and treat each stage equally as important.

1. **Site selection** for cultivation; water source, soil type, climate, average rainfall, prevailing winds and directions, slope or gradient of the land, closeness to industry...are all things to consider if growing outside not indoors.

2. **Climate**; length of day, seasonal rainfall, field temperature day and night, sunlight intensity and hours, shading.

3. **Soil**; best to take several samples and get it tested to know what is missing or in excess. But nutrients, organic matter, sandy or clay or limestone type of ground, drainage limits in case of excessive water or drought, moisture retention, fertility, pH and EC, use of fertilizers the type and how often it is necessary...are important attributes to get correct before planting. Sterilized potting mix in bags is the only way to protect against unwanted weeds and pests for indoor and to start clean.

4. **Irrigation/Drainage**; where is the water source and is it affected by any other people or industry before it gets to the site? A lab test on the water is essential to adapt water base nutrient fertilizers to the needs of the plants in cultivation. Quickness to drain large rains, and how effected by leaching is the ground...so you can prepare for slow release fertilizers or liquid feeding regimes.
Plant Maintenance and Protection; pruning, cleaning lower branches, tipping, bud nipping, shading to maximize the best product and highest quality of the substance, whether pesticides or herbicides are to be used then it should be documented and the products used are done sparingly to do their job, follow guidelines of maximum doses and how to use the product, general plant health maintenance and preventative pest and herb control as organically as possible.

Storage; air sealed and stored inside a refrigerator to maintain the freshness and weight, moisture content is the most important factor to gauge in drying and storing, preferably keeping the final product in a humidor situation is the most correct and clean store for potential medicine.

Harvest; should be done at the optimal time, time of harvest depends upon the plant part in question for harvest, time of harvest should be determined by quality and quantity of the biologically active constituents rather than vegetative yield, harvest after the morning dew or rains to reduce the risk of microbial fermentation and moulds, avoid harvesting any material decomposing to reduce mould risks and keeping air moving as the drying process goes on will reduce air born moulds risks and keep the product clean and fresh.
**Miscellaneous**

**Hand washing**
cleanliness is godliness for young plants, cloning and health of mothers and fathers.

**Disinfect facilities**
weekly regime of cleaning all well used areas or surfaces with H2O2 (peroxide) is a great preventive action to hygiene and plant health.

**Lighting**
supplemental lamps for all year growing climate means cleaning lamps with alcohol after each crop to reduce any unwanted influences.

**Storage**
of all new products is a must. Things should be kept dry and clean away from all influences or water or chemical residues, dry and cool under key and lock is safest and surest.

**Ventilation**
cleaning the ventilators and filters and blades are a necessity every few weeks to stop unwanted particles from circulating in the air.

**Correct labeling**
noting the exact dates of germination and change of light or treatments, so no chance of mess up with staff.

**Documentation**
of all facets dates and chemicals used all chemical treatments should be written in a book for all to see as well as all details of the grow...kind of a diary filled out with factual info by those who do the jobs and dated so all facets of the grow can be precisely calculated and scrutinized. Like a car has a service book it is imperative this exists for each crop from beginning to end, so the years after similar difficulties or increases in yields etc...can be understood by anyone reading at the history of cultivations. This is probably the most important document in the end of a crop for the purchaser of the medicine and its applications.

Good Agricultural Practices is a general rule for any product used in human consumption. Most contamination comes on to the products in handling if not packed hermetically or stored in cool dry places in sealed containers. Taking a cue from the way pharmacies keep their products cool and dry and stored out of sunlight in well ventilated rooms is obviously the model to standardize for the end user/patient.

Until a set of guidelines is drawn up and agreed upon by the various departments in charge of these important things, it may be best to follow good sense. As a general rule, if you would use the product after growing it then it should be good enough for others. If there is any doubt or you know of some possible contamination then it is better to directly test for this or make the buyer aware of this, as knowing is already better than not knowing!

We will inevitable mess up from time to time, that is the history of man made events, but doing our best and being open and honest about all the processes and history of the plants will already be far more therapeutic than walking blind or leaving it up to companies with eyes only for profit and efficiency. To avoid messing up and to make a standard product that can be on a market as a consistent reliable product, one needs to make a selection of a plant and clone it. Cloning a selected mother is simple, but selection is where the real work lays.

If you want to make something special and good for yourself and others then take every step of the way thoroughly and with knowledge of all that can cause dramas, since in the end Natural grown medicines are at the mercy of many elements in Nature. Only by using greenhouse structures or tunnels can we attempt to control some elements of Climate, which in turn allow a plant to grow to its potential.

Personal cleanliness and cleanliness of the areas of work reduce all nasty contaminants and pests entering in the first place. There are no real secret to making a good product except to be vigilant at all times of the crop and try to be as consistent in all facets that constitute growing and processing the medicinal plant.