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Submission to the Senate Legal and Constitutional Affairs Legislation Committee Inquiry into the Regulator of Medicinal Cannabis Bill 2014

Nevil Schoenmakers - Cannabis Breeder

Medicinal cannabis is a poorly understood subject as it covers a wide range of medicinal properties that can be found among the various types of cannabis genotypes. Some of the effects of the different types of cannabis, include but are not limited to the following:

Narcotic: Certain types, primarily 'Indica' varieties, are capable of delivering effects that are somewhat similar to the effects of opiates.
This comes with muscle relaxant properties, decreased mental and physical activity, drowsiness and often sleep. The sleep is often deep with decreased dreaming.

Sedate: Muscle relaxant properties are evident and thought processes are more sedate, but the effects do not come with the desire to sleep.

Calm/comfortable: This type often comes with feelings of relaxation and contentment. Mental activity is more heightened and this can easily translate into physical activity, but it could go either way.

Euphoric: Heightened mental and physical activity, coupled with a feeling of physical wellbeing, tend to make this one of the most therapeutic phenotypes. The pleasant physical effects often give rise to more balanced mental states.

Profound / psychedelic / spiritual: This type is considered the most psychoactive of all the cannabis varieties. The effects are primarily mental and in some cases they have negligible physical effects. One often becomes introspective with a desire to ponder the deeper meanings of life. This may and often does, cause the user to drop any preoccupations and worries, he or she may have had prior to use, such as PTSD, worry prior to Chemotherapy etc. Serves to distract one from any angst in life.
The effects can last up to 4 hours, as opposed to the usual 2 and sometimes three hours of the previously mentioned types.

Stronger varieties mean that an individual simply requires a significantly smaller dose to get the same effect. Titration of medical cannabis is very simply achieved by starting with very small dosing and working up until the desired effect is achieved.

Hybridization can allow for different mixes of the above properties to be present in different individual plants or cultivars.

It is very important to understand that there is not just one type of medicinal cannabis and that these different effects are determined for the most part by genetics and to a much lesser extent, by environment. It is also important to understand that while certain genetic strains may typically exhibit certain effects, not all plant 'siblings' are the same, so selection of superior cultivars is crucial to providing the best cannabis to be used as medicine.

Fortunately, cuttings of superior individuals can be kept alive for decades, thereby facilitating the uniformity of the product over time.

There are also other factors at play if one is desirous of supplying a uniform and consistent product in order to get the desired effects and outcomes. As the plant material ages (cures), the chemical composition of active constituents changes. When the plant is first harvested, a large percentage of the naturally occurring cannabinoid THC is in acid form. This is known as THCA. It is known that oxygen, ultraviolet light and heat, can convert THCA to the more psychotropic form THC. Fresh cannabis resin containing THCA can easily be converted to THC by a simple process of heating called decarboxylation.

Cannabis resin contains terpenes, which are aromatic hydrocarbons. When terpenes are modified chemically, such as by oxidation or rearrangement of the carbon skeleton, the resulting compounds are generally referred to as terpenoids. Regardless of the chemistry involved, it is known that cannabis benefits from a natural curing process ranging from 6 weeks up to one year, depending on the variety. The ratio of THCA to THC changes with time, as do the flavours and effects of the terpenoids. It has been suggested that there is an interaction between the cannabinoids and terpenoids which changes or modifies the psychotropic effects. I believe this to be true.

Unless steps are taken to arrest the curing process, the same cannabis sample will have different properties, depending on age and cure.

What I would like you to understand from the above, is that there is not just one type of Medical Cannabis and that before trials and or dispensing medicinal cannabis can occur, it is necessary for a considerable amount of Research and Development to take place, in order that meaningful studies and treatments become possible. Fortunately, the Single Convention on Narcotic Drugs, 1961 allows for R&D licenses to be granted without changes to existing legislation. Should the Government wish to take action in a certain direction, it will only be possible if the necessary preparations have taken place.

There are a number of value added base products which can be extracted from cannabis, most of which have medicinal properties.

Some relatively basic R&D is required to refine the extraction techniques so that a standardized or medicinal grade product can be supplied to those who wish to do the more expensive medical R&D and accompanying trials.

Mechanical sieving to separate the resin from the plant material is one such process. Advanced yet to be developed particle separation techniques is potentially a very important area of research.

Using solvents, resin can be extracted and if the extraction occurs without heating, the end product will still be a resin with thermoplastic properties. The THCA and CBDA is not decarboxylated and is said to be less psychoactive. This form is often used to treat Epilepsy with great success.

Resin which is subjected to heat becomes an oil and the THCA and CBDA changes from its acidic form to the more psychoactive THC and CBD. This decarboxylated form is said to be more effective in treating cancers and for pain (there are multiple applications).

It is important to provide a product free of plant waxes, which are not known to have any therapeutic value.

Cannabis terpines may also have medicinal value.

The R&D we need to do initially is to optimize the above processes.

The fundamental basis for cannabis derived medicines lies in access to a range of cannabis genetics.

People can respond differently to the same cannabis strain, and therefore it is necessary to have a range of cannabis types each having a unique cannabinoid and terpene profile.

Like most medicines, patients can develop a tolerance to a commonly used strain. A change in strain will ensure patients get the maximum effect from minimal dosing.

Sincerely,

Nevil Schoenmakers
Western Australia

Bio

Known worldwide as the father of modern cannabis genetics, Nevil founded 'The Seed Bank' in Holland in 1984, and was one of the first legal producers of Cannabis seeds. Most medical grade cannabis varieties can trace their lineage back to Nevil's work. He has over 30 years of experience in breeding cannabis and is uniquely qualified to breed plants with the specific cannabinoid profiles and qualities needed to produce high quality cannabis medicines. He is proficient at growing cannabis indoors under laboratory conditions, in greenhouses and under field conditions.