

Letter to the editor

## Letter: The herbal way - a response to Ethan Russo

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In his recent letter in CANNABINOIDS, Ethan Russo points out the need for the scientific method in development of cannabinoid medicines, because „patients worldwide are seeking symptoms relief with an approved pharmaceutical that their physicians can prescribe with confidence that is standardized, safe, effective and reimbursed by governmental agencies and third-party payers” [1]. His conclusion is that Sativex is currently the only medicine that can comply, and therefore is the new gold standard in cannabis therapeutics. As a result, the letter is marginalizing the role that herbal cannabis can play in further development of medicinal cannabis. On several points made in the letter, I would like to speak in defense of herbal cannabis.

### ***„Herbal cannabis as currently available for patient use is a highly variable product with respect to composition”***

It is clear that cannabis medicines must be „standardized, efficacious and safe preparations as demonstrated in statistically significant randomized clinical trials, and adhering to the modern scientific method.” But although the composition may be highly variable between cultivar-types, the composition of single cannabis varieties can be highly standardized. After all, GW Pharmaceuticals itself is capable of growing standardized plants, the extracts of which are the basis for Sativex. They are „clonal strains grown in organic media under climate control in accordance with Good Agricultural and Manufacturing Practices.” Up to the harvest of the plant, there is no difference between Sativex and herbal cannabis. When a real effort is made to make plants available to the patient, it can be done. The Dutch experience has shown that it is possible to provide highly standardized quality; cannabis plants supplied to patients by the Office of Medicinal Cannabis have had the same composition for the last 4 years. Furthermore, „procedures for standardized prescription botanical products have been formalized in the USA [2], providing a blueprint for regulatory approval of phytochemicals (botanical medicines).”

### ***„Vaporization.....remains as inefficient and unpredictable as smoking in THC delivery”***

Herbal cannabis is most often smoked, and it is true that „anecdotal claims of efficacy for smoked cannabis mean little in the regulatory realm.” However, it is the experience of scores of medicinal users (mainly smokers) that has put cannabis back on the political and pharmaceutical agenda, in the first place. Nowadays, it is widely accepted that the inhalation of cannabinoids is an excellent route of administration, even though it is uncommon for other drugs. What is now ‘simply’ needed is a non-smoked inhaled delivery system for cannabis [3]. With some of the high-quality vaporizers, this goal finally comes within reach. According to the results of my own study with the Volcano vaporizer [4], it has the benefits of smoking (fast delivery, ease of titration, quick onset of effects), but without the high exposure to carcinogenic compounds. In a follow-up clinical study [5], it was shown that the blood levels of THC are significant and very reproducible. It is true that a few doubtful components remain present in the vapor, but the big step forward from smoking to vaporizing should spark optimism, not skepticism.

### ***„Problems in cultivation in Dutch and Canadian government-approved herbal cannabis programs have led authorities to gamma-irradiate their products”***

Cannabis materials must be free of pathogenic microorganisms, and this must be ensured during cultivation, as well as after packaging of the final product. Although the Canadian product has indeed experienced problems with fungal contamination (after all, it is cultivated 400m underground), the Dutch medicinal cannabis has never suffered from this problem. Gamma-irradiation was performed merely as a precaution, and it is a standard procedure for a score of other drugs, including herbals and phytochemicals. Because of the low stability of the cannabis constituents, there is no other suitable choice for sterilization, such as ethylene oxide or heat-treatment. Microbiological contami-

nation may be a common problem, but it is not inherent to the cultivation of herbal cannabis. By a combination of technical and hygienic measures, the Dutch are already capable of producing cannabis that meets the requirements even without irradiation.

**„Most practitioners would prefer to prescribe an FDA-approved pharmaceutical form“**

This is undoubtedly true. But the fact that a certain packaging form of medicinal compounds (such as cannabinoids in herbal cannabis) is not acceptable to the FDA, does not mean it has no future. Maybe the rules of the FDA are just too rigid to allow cannabis to mature into modern medicine. FDA-approval means sticking to the current pharmaceutical rules, and for a growing group of professionals, these rules increasingly seem unrealistic and outdated. As a result, already twelve US states have passed their own medicinal cannabis laws. The ongoing lawsuit of MAPS vs. NIDA in the US is another example.

If herbal cannabis can not be seriously considered as a medicine, how can an alcoholic extract of the same plant suddenly be a highly standardized pharmaceutical product? In my opinion, this has not much to do with pharmaceutical rigor, but possibly more with fear of cannabis plants. It is therefore fair to ask if herbal cannabis is unacceptable in terms of (FDA) safety, or in terms of attitude.

Grinspoon [6] sees a growing division between approved vs. illegal sources of cannabis medicines. However, this is true for many successful drugs, ranging from Viagra to diet pills. Currently, the more relevant distinction is between herbal cannabis and pharmaceuticalized cannabis. Sativex has provided valuable clinical proof that cannabis can indeed be developed into a modern, pharmaceutically acceptable preparation. Pharmaceutically, it has been more successful than other cannabis-based products, because it has played best according to the rules of the play. Therefore, the merits of Sativex are not under discussion here. But Sativex is not the ‘new gold standard for cannabinoid medicines’. Only for those who wish to comply with pharmaceutical requirements that are unwilling to in-

corporate new knowledge on medicinal plants in general and a growing understanding of *Cannabis sativa* in particular. Surely, providing a safer access to herbal cannabis must be a priority, considering the very real risks that do exist. Russo has pointed these risks out, and they can be solved.

The reality is that the majority of medicinal cannabis users still smoke herbal cannabis. Despite the health-risks, their positive experiences keep pushing authorities to take a better look at the matter. So even though a pharmaceutical product may appeal more to the authorities, herbal cannabis is still the gold standard in terms of number of satisfied users.

It is high time that a group of scientists stands up to defend herbal cannabis against the pharmaceutical powers in this world. There would be sufficient scientific data to support them. Readers of the online journal CANNABINOIDS could be in the front line of this discussion.

#### References

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