

The importance of trace elements follow-up in *Cannabis sativa* L. varieties

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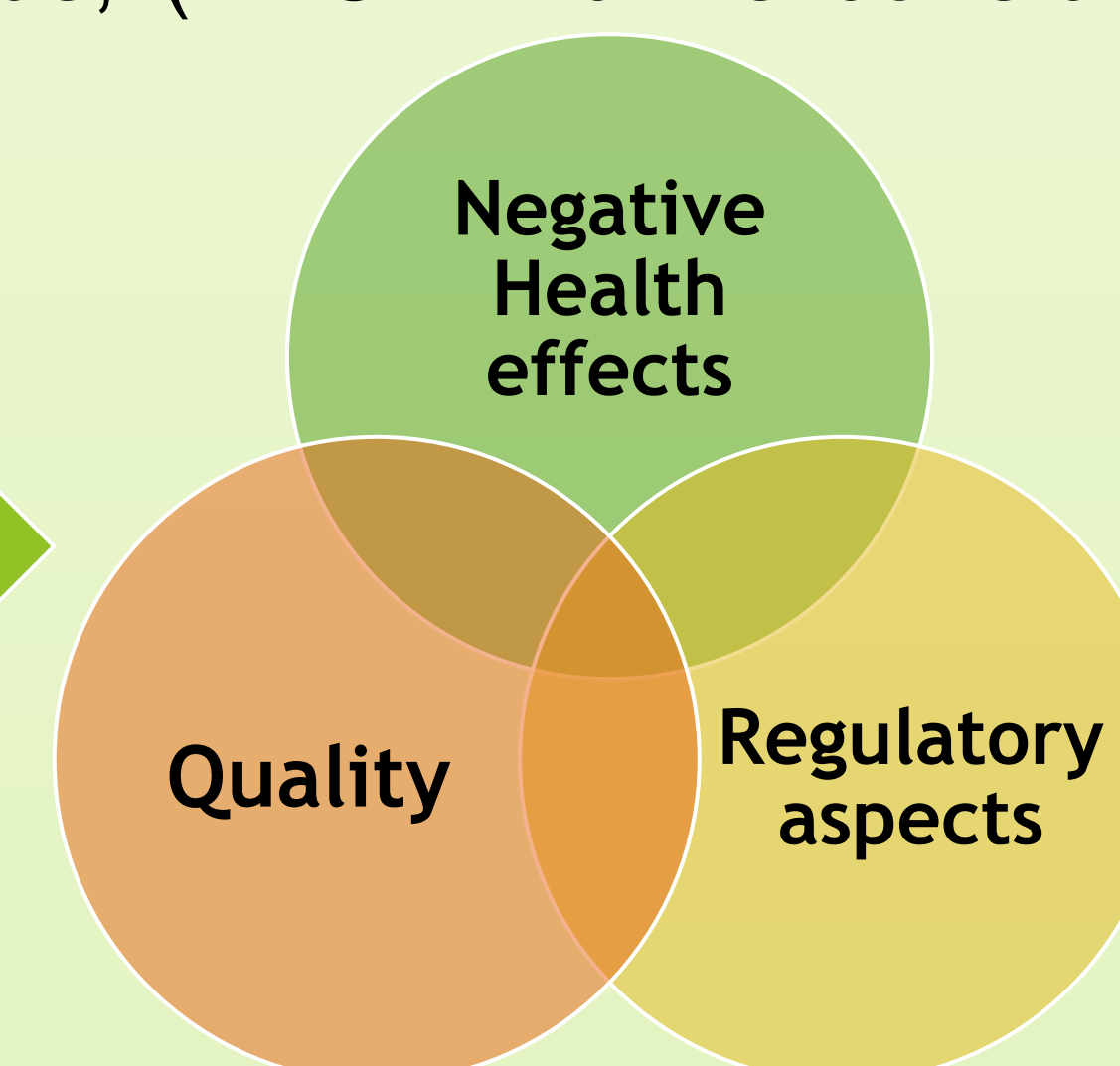
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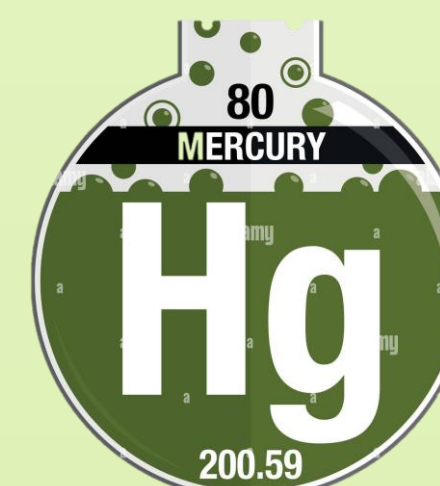
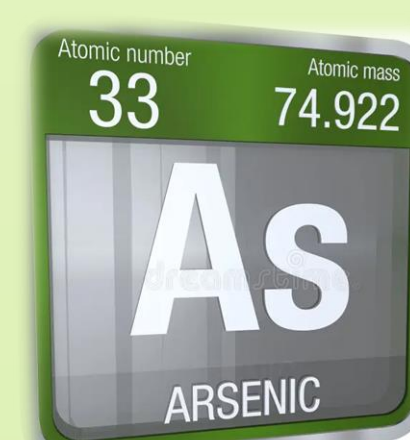
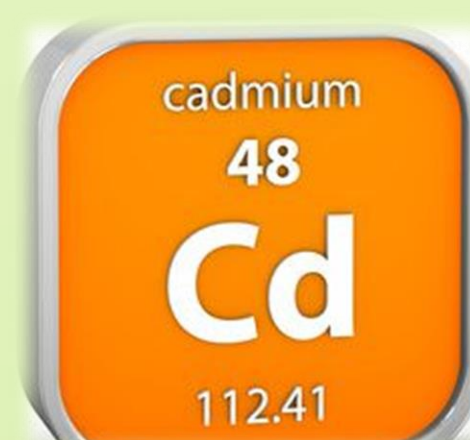
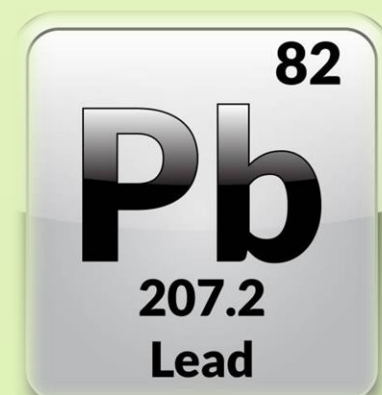
Introduction

Although *Cannabis sativa* L. varieties have become largely included in medicinal, cosmetic or food industry they should be employed with caution not only because of the cannabinoids, (THC which is considered for psychoactive compound), but also for their quality and toxicological aspects.

The importance of trace elements analysis in Cannabis flower should be emphasized due to several reasons



Cannabis plants can absorb trace elements such as lead, mercury, cadmium, and arsenic from the soil, water, or fertilizers. These elements can be harmful or even toxic and should be taken as a serious threat to consumers.



Aim

Some authors confirmed that a trace elements accumulation in Cannabis inflorescence, was mainly affected by the geographical origin but the botanical variety can also influence the potential for absorption of these elements in Cannabis. In this way we have investigated and compared the content of trace elements in six different varieties, grown in a green house in the same indoor conditions.

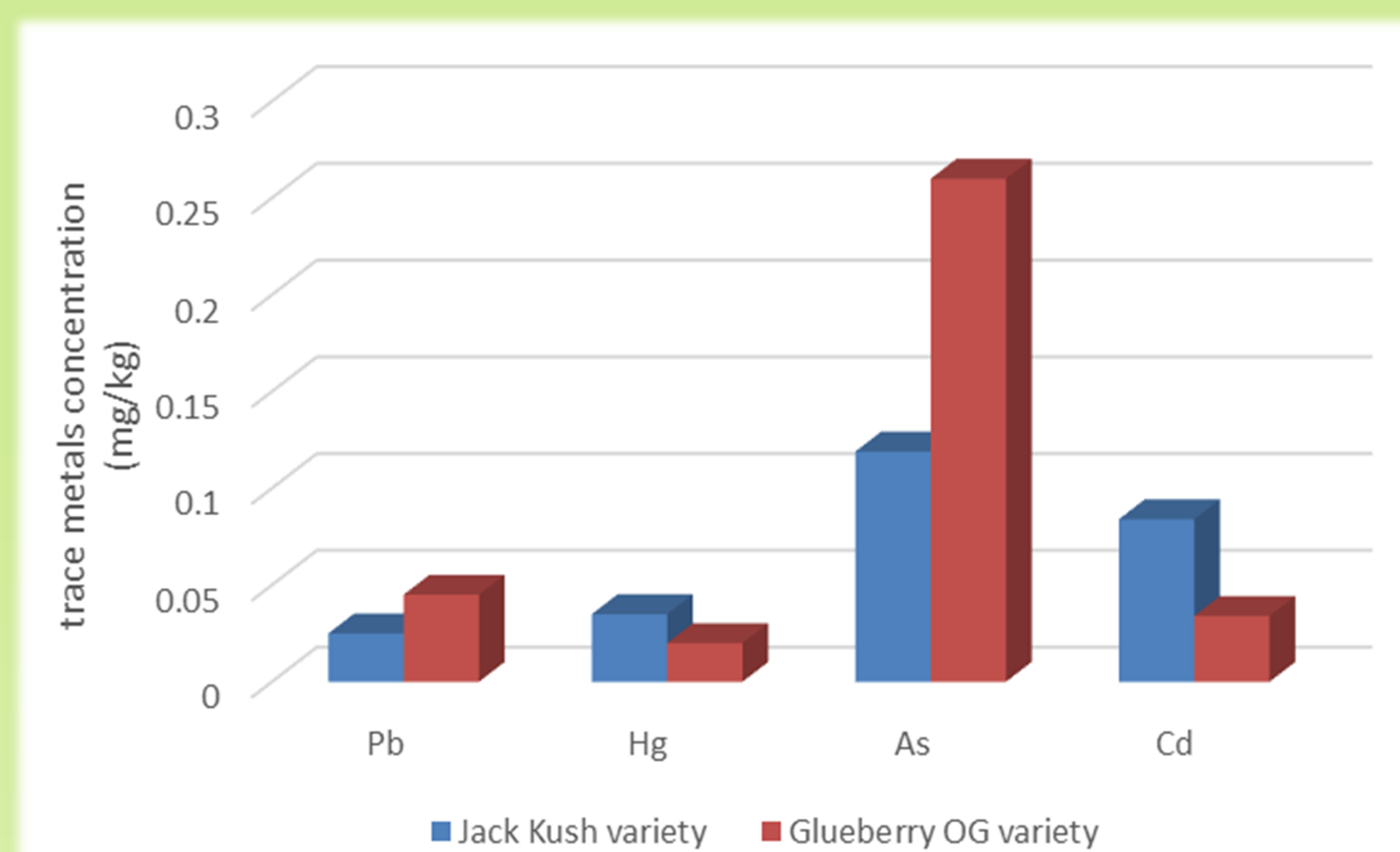
Material and methods

Six different varieties of *Cannabis sativa* (*Jack Kush*, *Charlotte's Angels*, *Mazar*, *Glueberry OG*, *Golosa* and *Big Friendly Giant*) have been planted in the same conditions (rockwool in a special indoor condition) and their clones have been planted in green house on a mixture of humus substrate, perlite, vermiculite and zeolite. Additionally, different proportions of N-P-K fertilizer have been added to the substrate for different vegetation stages to all cannabis clone varieties. Extracts were analyzed by internal validated GS-MS method.



Results and discussion

The results have demonstrated that content of mercury and cadmium were highest in *Jack Kush* variety, and lead and arsenic concentration was most increased in *Glueberry OG* variety. Regular analysis ensures the maintaining of consistent quality across different varieties and/or batches of cannabis products.



Conclusion

Therefore, identifying and mitigating contamination sources, such as soil, water, or agricultural inputs, from one side, and strict follow-up of trace elements content through indoor production quality control will ensure the purity of the final cannabis products.