

ELEMENTAL COMPOSITION AND HEALTH RISK OF HEMP FOODS

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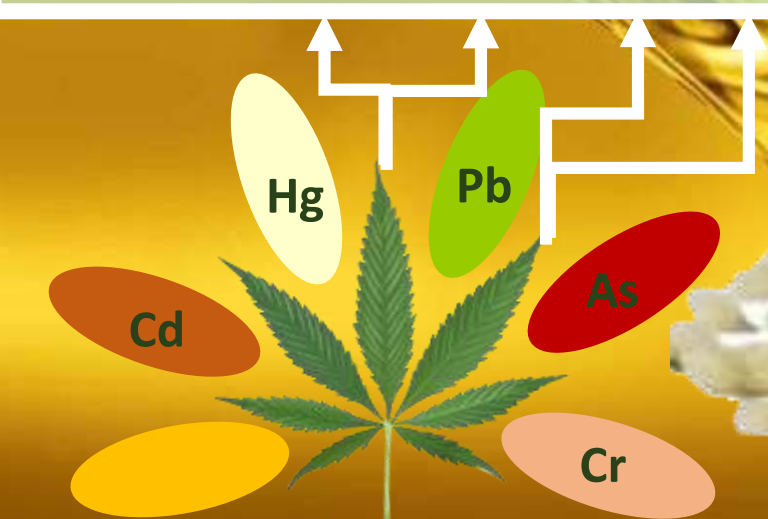
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➤ **Research idea:**
 ➤ **Bioaccumulation of toxic elements** is the intrinsic signature of *Cannabis* species. When industrial cannabis (hemp) is used for food products, they have no market value and pose health risk if elemental contamination is above the permissible level.

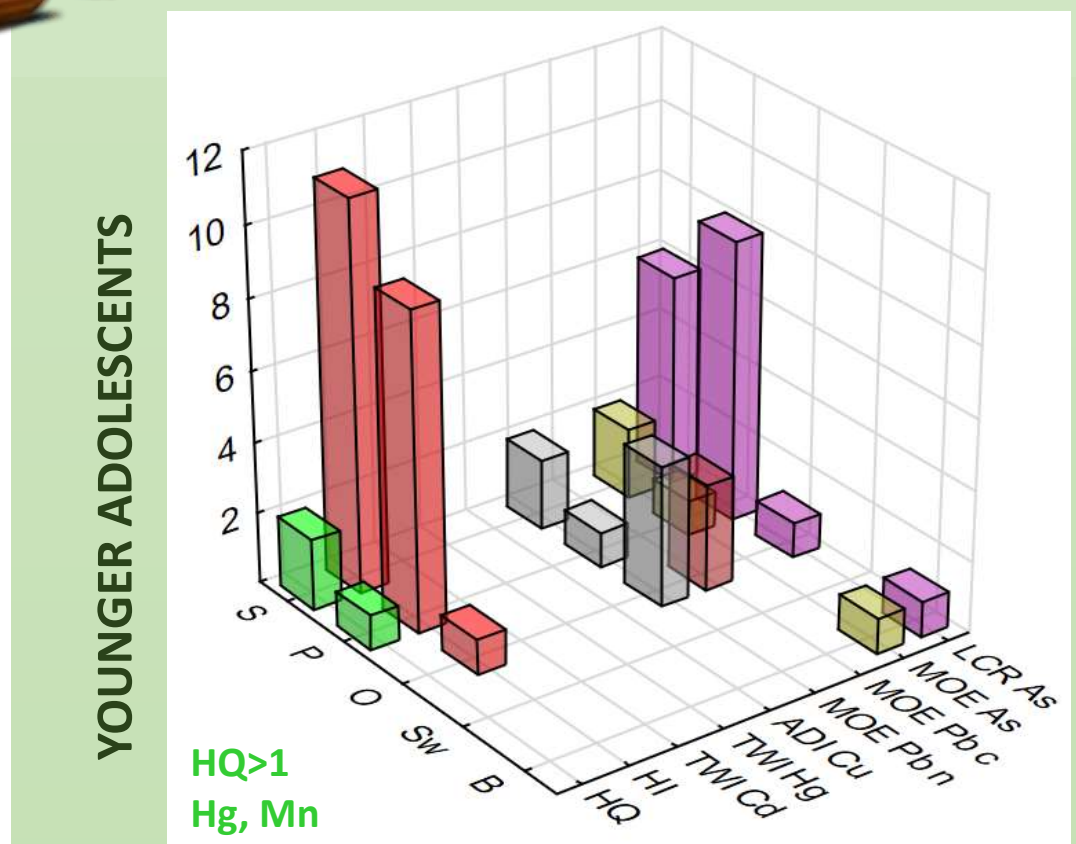
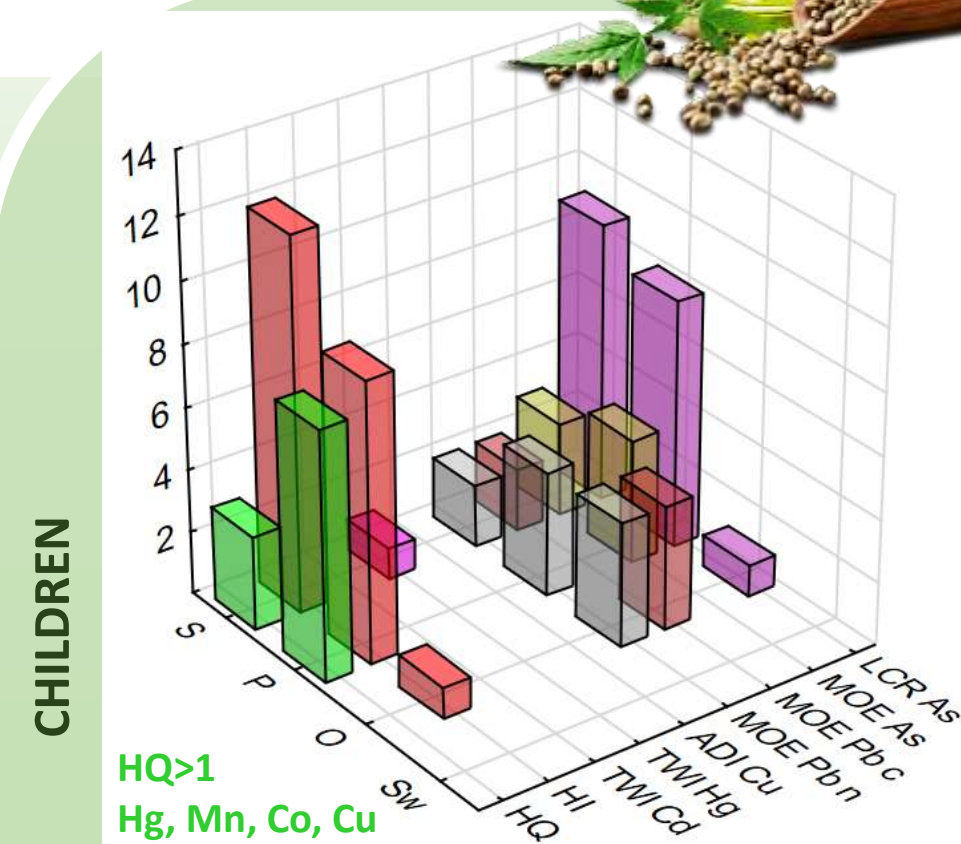
➤ **Analysis:**
 ➤ **ICP-MS** - 23 elements in 46 hemp foods
 ➤ **Risk assessment/metric:**
 ➤ **Non-carcinogenic risk:** Hazard Quotient ($HQ < 1$); Hazard Index - summary metric ($HI < 1$); Tolerable Weekly Intake ($> TWI$); Acceptable Daily Intake ($> ADI$)
 ➤ **Carcinogenic risk:** Margin of Exposure ($MOE < 10$); Lifetime Cancer Risk ($LCR > 1$ extra lifetime cancer case per 100,000 persons)

ALL	OIL	PROTEIN	SEEDS	SWEETS	BEVERAGES
	O	P	S	Sw	B
46	20	9	12	3	2



➤ **Additional concern:**
 ➤ **THC contamination!**
 Kladar et al. Food Control 2021;129:108233

Be
B
Al
V
Cr
Mn
Fe
Co
Ni
Cu
Zn
As
Se
Sr
Mo
Cd
Sn
Sb
Te
Ba
Hg
Tl
Pb



NUMBER OF SAMPLES EXCEEDING ACCEPTABLE RISK LEVEL

