

LEAD AND CADMIUM POLLUTION OF HONEY: LINKS WITH THE IR ENVIRONMENTAL PRESENCE IN ROMANIA

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Introduction

The presence of lead(Pb) and cadmium(Cd) in the environment, due to pollutant human activities is a reality in contemporary Romania. Unfortunately, the consequence can be the chemical contamination of products entering in the human food chain. Neither Cd, nor Pb have any biological role to play, being in all cases toxic for plants, animals, insects and humans

Objective

In the present study we aimed to find if there is a connection between the degree and extent of Pb and Cd pollution in some samples of Romanian honey and the heavy metal pollution of the environment from where honey comes. The final target will be, in time, to find if honey or other hive products can be used as environmental pollution indicators

Material and Method

- Honey was obtained from zones located near sources of pollution (highways, factories) and from zones locally known as unpolluted (away from towns, highways, factories) of 2 southern counties, D. and A. (total number of samples n=324).
- Since the quantity of metals varies a lot and is not stable, depending on different factors, especially those regarding weather(rain, wind), we picked up honey from each selected sit 6 times, the time distance between harvesting being each time 2 weeks
- The metal content was evaluated by *atomic absorption spectrophotometry*.
- The results were statistically processed (t- test) in order to find out if there are any differences between honeys from polluted and unpolluted areas.

Results:

The metal load was greater in polluted areas(for lead: $p < .001$; for cadmium: $p < .001$)

County	Cd		Pb	
	polluted	clean	polluted	clean
Dambovita	0.0167± 0.0012	0.0103± 0.0027	0.1907± 0.0437	0.1209± 0.0445
Arges	0.0158± 0.0071	0.0101± 0.004	0.2022± 0.0453	0.1304± 0.0516

Conclusions

-none of the samples had Pb or Cd greater than the indicated European levels;

- even if there are no problems regarding food safety, Pb and Cd levels in honey have to be measured in several areas of Romania, in order to evaluate if honey can be used as a marker-product for heavy metal environmental pollution.

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