

Legislation proposal observing the variations of heavy metal contents in milk by species and incorporation of Global Positioning System (GPS) data assuring food toxicological safety, soil chemical samplings and agricultural products traceability for public health

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SUMMARY

The health of population depends largely upon the quality, nutritional values, food's hygiene and its safety. Among many agro-products, edible terrestrial snails are a real ecological and silent animal protein production machines. While delivering many other nutrients such as vitamins and minerals, snails can also deliver toxic chemicals. The origin of agro-food starts from soil. Traceability can be assured by maintaining a record of the chemical testing results associated with GPS data. EU norms for maximum lead (Pb 0.02 mg/kg) and cadmium (Cd 0.01 mg/kg) contents refer to cow's milk whereas sheep's milk is higher in Pb and Cd contents when the sheep are fed using pasture in the same area, same soil Pb and Cd levels.



Goat's milk appears to be virtually free (udl) of Pb and Cd even if the goats are fed from / on a highly contaminated with lead (Pb = 24.3716 mg/kg) pasture. Legislation needs to be drafted and refer specifically to the milk of different species. The source of agro-food products can be identified (Opara, 2003) and it needs to be traced all the way to the soil.

| City/Town | GPS coordinates | Samples | Norms | Pb mg/kg | Norms | Cd mg/kg |
|--------------------------|--|------------|-------|----------|-------|----------|
| oro tin town – Sibiu | N 46.03650 ⁰ , E 24.06107 ⁰ | Soil | | 4.1819 | | 1.9934 |
| | | Cow milk | 0.02 | udl | 0.01 | 0.0090 |
| | | Sheep milk | 0.02 | 0.0270* | 0.01 | 0.0220* |
| Comune eica Mic , Sibiu | N 46.08045 ⁰ , E 24.12885 ⁰ | Soil | | 15.5706 | | 6.5858 |
| | | Cow milk | 0.02 | udl | 0.01 | udl |
| | | Goat milk | 0.02 | 0.0027 | 0.01 | udl |
| Mihai Viteazu, Constan a | N 44.66616 ⁰ , E 28.68068 ⁰ | Soil | | 24.3716 | | 0.2119 |
| | | Goat milk | 0.02 | udl | 0.01 | udl |

Note: udl – under detectable limits; * exceeds maximum levels by EU norms and refers to cow milk..

REFERENCES

Opara, L.U.(2003). Traceability in agriculture and food supply chain: A review of basic concepts, technological implications and future prospects. Food, Agriculture & Environment, Vol 1(1): 101-106.