

LEAD CONCENTRATION IN FORAGE, FODDER, WATER AND BOVINE MILK IN SAN IGNACIO.

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Lead is widespread in the environment by a variety of exposure routes allow toxic heavy metals like lead to enter the food chain of farm livestock animals. Samples were taken during the fall, winter, spring and summer season in the region of San Ignacio located in the state of Zacatecas in Mexico where in the middle of agricultural fields is located a metal recycler facility.

Objective: Samples of forage, fodder, water and bovine milk used to cattle feeding were taken in order to determine the lead concentration.

Materials and Methods: Samples were processed and prepared to be analyzed with Atomic Absorption Spectrometry, determinations were performed by triplicate obtained by of pool of the three sample of each season, that it was taken by each one having a relative error < 1% for all them.

Results: From fodder and forage samples it was found that in average the lead concentration is 4.16 µg/g, being the summer season where lead levels reach its maximum values. From water samples the mean lead concentration was 0.218 mg/L, the winter season where water reaches its larger concentration level. The average of cow's milk concentration lead is 0.033 mg/L, being the winter season where lead levels reach its maximum values 0.0545 mg/L, during spring the level of lead reaches the lowest concentration 0.0179 mg/L. For the milk-forage correlation values it was ($p= .430$) and for the correlation milk-water was ($p= 0.874$).

Conclusions: The average lead concentration is below the limits defined by the European Union, the average lead concentration water samples was 22 times higher to levels recommended by the Mexican Norm, and the average lead concentration cow's milk is above the limits defined by the European Union, Australian, FAO. The lead concentration in cow's milk probably is due to the water lead concentration. Therefore, lead concentration in the water and bovine's milk is a potential source contamination to the community habitants.

References: Cofani DoS LG, De Nadai FE, Arruda BM, Sarriés GA. Chemical composition of bovine milk from Mines Gerais State, Brazil. *Journal Radioanalytic Nuclear Chemical* 2009 DOI: 10.1007/s10967-0269-2.