



بسم الله الرحمن الرحيم

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**ESTIMATION OF SOME METALLIC POLLUTANTS IN
HAIR AS AN INDICATIVE TOOL TO THEIR LEVELS
IN BOVINE TISSUES.**

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The degree of M. Vet. Sci.

In Medical Jurisprudence and Toxicology

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“ Estimation of some metallic pollutants in hair as indicative tool to their levels in bovine tissues.”

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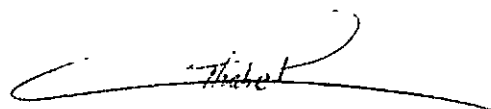
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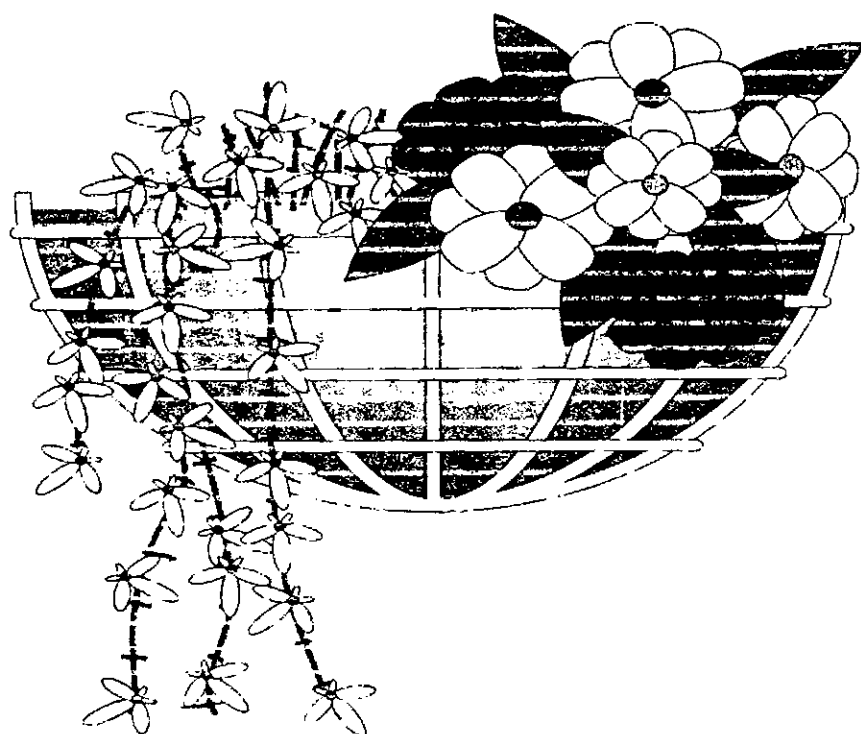
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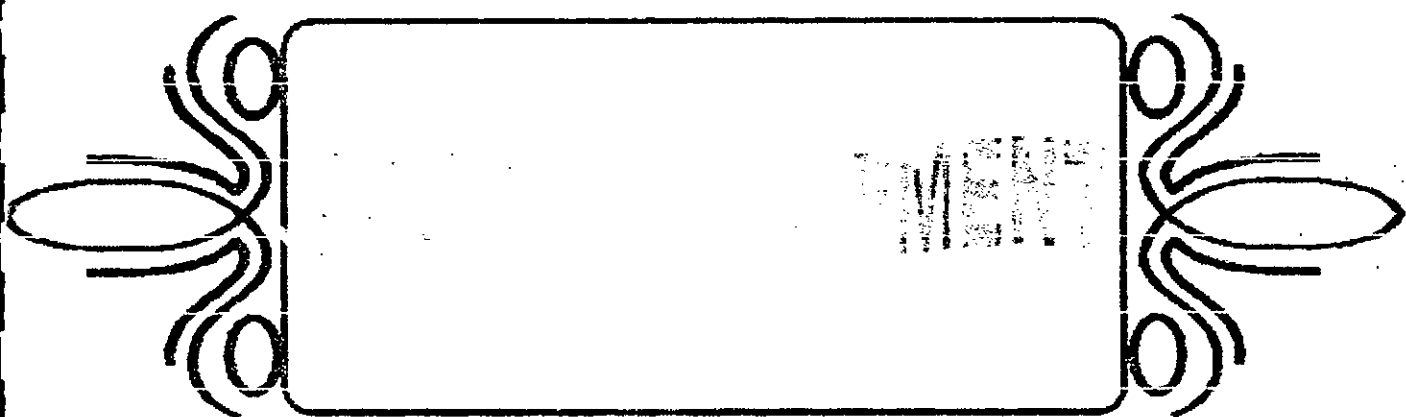
وَاتَّقُوا اللَّهَ وَيَعْلَمَ اللَّهُ كُلَّ شَيْءٍ عَلَيْهِ

صَبَّحَهُ

سورة البقرة آية ٢٨٢

TO MY MOTHER TO MY FATHER





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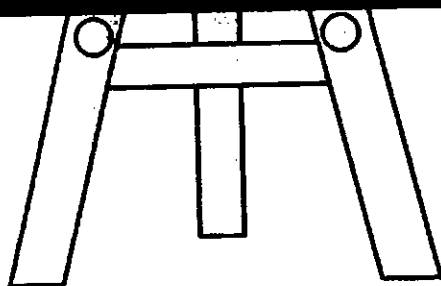
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INTRODUCTION

Environmental pollution by heavy metals is a serious problem, which is recognized in most countries allover the world. The modern industrial and agricultural production provides many contact points for the food animals with several toxic substances through air, feed and water.

Heavy metals contaminate the food chain through industrial sources, natural erosion and geochemical cycles. Plants are contaminated either from deposition of metals in the surface soils or by direct contamination from the air and herbivorous animals may in turn increase their metals by eating the plants (Froslic et al., 1984 and Niemi et al., 1991). Once in the animals, the heavy metals can be stored in tissues or they can be eliminated through excretion or by deposition in feathers or hair (Phelps et al., 1980; Goede and DeBruin, 1986).

The lead content in hair of cattle and horse and the wool of sheep is reported to be raised significantly in poisoned animals, concerning exposure to long term ingestion as a result of industrial contamination (Radostits et al., 2000). Hair cadmium is a reliable indicator for environmental exposure and for assessment of past and continuous exposure levels (Oleru, 1975). The assumption that concentration of mercury in hair is proportional to the amount of mercury in blood has been extensively studied and demonstrated (Cernichiari et al., 1995).

Hair is an integumentary structure, which grows continuously and maintains a blood supply connection with the body. Growing from the base, each segment of hair contains a record of elements circulating in the blood at the time that segment of hair was formed (Burger et al., 1994). Examination of hair is emerging as a useful tool for the assessment of exposure loads for certain toxicants and pollutants (Srivastava and Gupta., 1994).

Concerning the previous scientific facts, the aim of the present investigation is to establish the role of hair as a reliable indicator for determination of some metallic pollutants in tissues of the exposed animals. Thus, metals levels in hair can serve as early warning tool.

