INTRODUCTION

CHAPTER - I
Introduction

It is a well known fact that the earth is the only planet in our planetary system, which support life as we know it. The five elements of the life support system air, water, land, flora and fauna are inter-related and inter-dependent and the entire process is self generating and auto sustainable. As long as, human being worked in harmony with nature and used the resources of nature for its normal sustenance, damage to the system was minimal but with the process of development human activities assumed such enormous dimensions that the life support system could no longer sustain these.

While every one agrees that development is necessary for raising the living standards and affording a quality of life to the people, it is but certain that all major development is associated with some negative environmental impacts. The need of the hour is to ensure that the biotic shock, from such development should not cross the threshold limit of resource sustenance. If the damage is temporary, there is enough resistance in the life support system to restore itself. But if it is continuous and large the life support system does not return to the original situation and leaves scars behind.
Since independence India has made tremendous progress on all fronts. We are today, among the first ten industrialised nations. Evidently such a major national industrial transformation has some costs associated with it. These are in the form of generation of solid, liquid and gaseous pollutants. Environment of Varanasi region, specially carpet industrial belt is no exception. Carpet industries situated in Bhadohi, Gopiganj, Khamaria, Aurai, Mirzapur, Sonabhadra etc of Eastern Uttar Pradesh are considered as largest carpet producing and exporting zones of the world. Now the carpet industries of the area have been recognized as the most profitable business. A large number of promising enterpreneurs have associated themselves with this roaring business. As a result carpet industry has grown and still growing very fast but unsystematically. A mushroom growth of this industry is likely to cause environmental pollution, as wastes from these industries may contain large quantities of Cr. In fact chrome dyes are widely used in this industry due to their resistance against light and washings. These ultimately come in contact with water, soils and crops and cause pollution to the environment of the area concerned. The main pollutant is possibly Cr. Cr is considered as one of the highly toxic metal that may be present alongwith other toxic metals in water, soils,
plants and different edible substances. In carpet industrial area Cr is likely to be accumulated over a period of time along a food chain at very high proportions in organisms from very low concentration in environment. Once this metal enters the biological systems it disturbs the biochemical processes leading in some cases to fatal results. The chemical infestations of exposure to Cr-rich sewage and industrial effluents, water, aquatic sediments, soils, plants, edible substances including milk are ulcer, perforation of nasal septum and respiratory cancer.

Inspite of toxicological and nutritional importance of Cr to health, there remains paucity of accurate concentration data for Cr in different environmental segments including important edible substances such as water, milk etc. Authentic data are almost unavailable on background level of Cr in milk, water and environmental segments influencing the content of Cr in these substances in carpet industrial belt of Varanasi region (eastern UP). So, keeping in view the importance of Cr to human health and santé information available regarding the pollution of water milk etc. the present research work entitled 'Pollution of Water and Milk with Reference to Cr in Carpet Industrial Belt of Eastern Uttar Pradesh' was undertaken which has immense
importance in monitoring the Cr pollution of water, milk etc. and segments of environment influencing the Cr content of these substances. The specific objectives of the present research were:

1. To determine the status of Cr in water and milk samples of the area under study.
2. To assess the impact of water, soils and grasses polluted by carpet industrial effluents, on Cr content of milk.