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# 41. IMPACT OF TANNERIES WASTE DISPOSAL ON ENVIRONMENT WITH SPECIAL REFERENCE TO VELLORE DISTRICT TAMIL NADU

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## ABSTRACT

**T**he Leather Industries occupies a place of prominence in the Indian economy in view of its massive potential for employment, growth and export. There has been increasing emphasis on its planned development aimed at optimum utilization available raw material for maximizing the returns particularly from exports. This paper aims at understanding the impact of tanneries waste disposal on environment. From the very beginning of industrialization in India, tanning industries have been playing a significant role in the country's economy. Due to its importance as a labor based export oriented industry the full flourish of this industrial sector is essential. But due to the absence of proper waste management, using inferior technologies, lack of facilities for treating industrial wastes; the tanning industries especially located in Vellore district are aggravating environmental problems day by day. The discharging and dumping of wastes near the water bodies without treatment makes it almost look like an area which is lying under the blanket of pollution. It is an emerging problem not only for the environment but also as the social context of the country. This study focuses on the tanneries located in Vellore District to assess the present situation arising from such activities and proposed several mitigation measures.

**KEYWORDS:** Tanneries, Water Pollution, Air Pollution, Environment, Mitigation Measures

## INTRODUCTION

Over the years the Indian Leather Industry has undergone drastic change from being a mere exporter of raw materials in the early 60's and 70's to an exporter of finished, value-added leather products. The main reason behind this good transformation is the several policy initiatives taken by the Government of India. Indian leather industry currently is one among the top 8 industries for export revenue generation in India, holding 10% of the global raw material, and 2% of the global trade. India has become biggest livestock producer in the world with the capacity of 1.8 billion sq. Feet of leather production annually. Global footwear

of 13% production comprising of 16 billion pairs are made in India.

Ambur, Vaniyambadi and Ranipet are important industrial areas of Vellore District. Many tannery industries have been developed in these areas. The industries expanded frequently when ever orders increased from the overseas. The Vellore district was selected because of its long history of widely known discharge of chromium based tanning effluents. About approx 400 tons of solid waste is generated per day during peak season and approx 125 tons during off-peak season from the tanneries in Vellore district. Vellore district is situated mainly beside of Palar River. The present study aims at investigating the impacts of tannery waste disposal on water, and its impact on environment.

## STRUCTURE OF TANNERIES

The Tanneries is spread in different segments like,

→ Raw to Wet Blue Tanning

At this process most of the hazardous chemicals were used for converting the raw skin to wet blue like huge percentage of chrome and sulphite, sodium sulphite, ammonium bi carbonate etc.

→ Wet Blue to Crust Conversion Process

At this Process oftenly the Syntan and Oil products were used for converting the raw skin to wet blue like Chrome Syntan, dye leveling, melamine Syntan, Sperm based oil, fish oil, lecithin oils etc

→ Crust to Finished Leather

At this stage mostly liquid chemicals were used which is most dangerous as a results it is saviour effect on human health.

## OBJECTIVES OF THE STUDY

- To describe present scenario of the existing surrounding environment.
- To promote environmental awareness of population.

## REVIEWS ON LEATHER INDUSTRIES

There has been an increasing emphasis on its planned development, aimed at optimum utilization of available raw materials for maximizing the returns, particularly from exports. India ranks first among major livestock

holding countries in the world and thus has a rich endowment of raw materials in terms of the cattle population. Information is provided on the micro structure of the Indian leather industry. The modernization of leather industry and set up of new unit for footwear, components and leather products results in terms of productivity, rightsizing of capacity, cost-cutting, and design-development will give way to further development to this industry. (Center for Management Research (CMR) 20053 ).

Apart from the quality of raw material, the process of its conversion into leather and later of the design, product development and process of manufacture of leather products play a key role in adding value to leather industry (The Indo-Italian Chamber of Commerce & Industry

20084 ).

**REVIEWS ON ENVIRONMENT**

According to Imamul Huq (1998), various chemicals are used during the soaking, tanning and post tanning processing of hides and skins. The main chemicals used include sodium sulphite and basic chromium sulphate including non-ionic wetting agents, bactericides, soda ash, CaO, ammonium sulphide, ammonium chloride and enzymes. Others are sodium bisulphate, sodium chlorite, NaCl, H2SO4, formic acid, sodium formate, sodium bicarbonate, vegetable tannins, syntans, resins, polyurethane, dyes, fat emulsions, pigments, binders, waxes, lacquers and formaldehyde. Various types of processes and finishing solvents and auxiliaries are used, as well.

**PROFILE OF STUDY AREA:**



**The Most Popular Leather Industries In and Around Vellore District**

COMPANY	YEAR	FOUNDER	PLANT	EMPLOYMENT
Farida Groups	1957	Haji Mecca Abdul Majid Sahib	12	7000+
KH Group	1982	Khizar Hussain	4	7000
NMZ	1972	N M Zackriah	5	1800
TAW	1949	T. Abdul Wahid	3	3400
Florence	1979	Aqueel Ahmed	10	4000+

**TANNERIES WASTAGE IMPACT ON ENVIRONMENT**

In the tanning process many chemicals such as Chromium oxide, ammonium sulfate, formic acid, sulfuric acid, sodium chloride etc are used which causes solid and liquid wastes. In the processing of raw hide and skin the sulphuric acid and salt are used and then it was treated with the solutions of chromium salts. In the tannery chromium, HCl, Sulphuric acid, Formic acid, Caustic soda, Caustic potash, Soda ash, Sodium arsenate, Arsenic sulphite etc is used for different tanning process such as soaking, liming, deliming, tanning etc. At the end of every process the chemicals are washed by water which causes liquid waste. The major solid wastes generated by the tanneries are dusted curing salt, wet trimmings, dry

trimmings, wet shaving, buffing, raw materials packing etc. gaseous emissions were observed by the researcher but no one respondents.

It is observed that the quality of water deteriorates significantly after the discharge of industrial effluents into the river. Chrome tanning is the most common type of tanning where maximum amount of chromium is used. The tannery is used different chemicals in tanning process. In a tanneries more than 50 types of chemicals are used. At the end of leather processing those chemicals are washed. After washing these chemicals it turn into different colors. The waste comes out the tannery and runs through the drain and goes into the river and nearby ponds. The waste contain high amount of chemicals and for this reason the wastes are of many colors. So it

showed that the maximum type of waste color is black. The blackish color tannery waste which discharged from the tannery. In the survey it was found that large number of chemical is absorbed by leather others turn to the waste. Pollution of environment is one of the most horrible ecological crisis to which we are subjected today. About 55% of the tannery industries have been built in unplanned way at the congested places. These unplanned tanneries caused environmental pollution very much. It was showed that the most harmful environmental effect was bad smell to the surrounding areas which caused environmental pollution.

Huge amounts of chemicals flow off the tannery floor, into open gutters in those areas streets, which are the mainly associated with Palar River. Most of the workers in the tanneries of Vellore District were suffer from gastrointestinal, dermatological, and other diseases. The presence of arsenic in the ground water increasing scarcity of fresh drinking water which causes skin lesion, kidney, liver complication, cancer etc and most of the employees suffer from skin diseases. The tannery labors did not wear any gloves, apron and special shoes rather than they work in bare feet. The tannery wastes were disposed in unplanned way. These wastes covered the surrounding area which creates foul smelling and the foul smelling environment damaged human health.

## CONCLUSION

From this study, the researcher comes to the conclusion that The most environmental effect was bad smell to the surrounding area, and the scarcity of fresh water. Different types of health problems occurred in the study area according to observation. A large number of common public had low environmental pollution awareness where some of the general public had no knowledge in environmental pollution. In the study it is demonstrated that mostly all the stages of tannery processing, individually and collectively impacts negatively to the environment. Results revealed that tanning industry wastes poses serious environmental impact on air, water and soil pollution, human disease Finally, it could be said that adequate preventive measures should be taken in tannery industrial activities with a view to ensuring safe, sound and healthy environment for greater benefit.

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