

Analyzing The Factors For Rejection Of Leather In Bangladesh

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Abstract: Leather plays a vital role in earning the foreign currency for Bangladesh. Export of finished leather and leather products have an important impact on the economy of Bangladesh. Mainly cow, goat sheep and buffalo leathers are produced in this country. Different defects of leather due to numerous numbers of diseases of animals of poor management of people deteriorate the quality of leather which has negative impact in this sector. This paper analyses the magnitude and category of major defects in case of cow, goat and buffalo of Bangladesh. We have studied in sixteen tanneries of Hazaribagh, Dhaka where 95% tanneries of the whole country are situated. This study found that in case of cow skin, hair slip, parasitic skin diseases, wound and pox are mainly responsible for the defects in leather in raw condition. Again, in case of the wet blue leather of cow, flay cut, pox mark, parasitic diseases, growth mark, wound, sun burn, scratch, dark mole are responsible for the defects. Further, for crust leather of cow, flay cut, parasitic diseases, pox, looseness for bating, scratch, wrinkle, grain damage are found as the reason of defects. In case of goat, parasitic diseases, pox, growth mark, mole, scratch, flay cut, hair slip were found responsible mostly for the defects in Bangladesh. Moreover parasite, pox, wound, branding, growth mark, wrinkle, jam wrinkle, mole, scratch, flay cut, curing have been detected for the defects of buffalo in this country. Again in this study it is found that average leather grade A-D is 15%, E-F is 25%, G-H is 30%, HH is 12.5% and again the rejection is 18.43%. It is observed that most of the defects occur during animal life period. The rest of the defects happen during slaughter flaying, preservation and processing period of hides and skins into leather. By proper caring of the farm level and at the point of slaughter and flaying, desired quality of hides and skins could be obtained.

Index Terms: Tannery, pre slaughter, hides and skins, parasite, foreign currency, MSMES, flaying, Bangladesh.

1 INTRODUCTION

LEATHER plays an important role to enlarge the Bangladeshi economic in terms of export and conjugal market[1]. Bangladesh has major potentiality for specialization in leather export particularly raw hides and skins and that's why, entrepreneurs and policy makers should concentrate in raw hides and skins fabrication and export revenues for Bangladesh[2]. The leather sector includes 220 tanneries, 3500 MSMES and 110 big firms of leather products scheming higher than 90% of the export market[3]. The leather industry processes raw hides and skins and creates semi processed and completed leather both for export and for home market[4]. Bangladesh currency produces about 20 million square meters of leather and leather products per year[5]. The leather exported to some 70 countries throughout the world but predominantly in China, South Korea, Japan, Italy, Germany, Spain and The United States[6]. Bangladesh has duty free and

quota free market place access to Canada, New Zealand, Norway, Japan and Australia[7]. The presence of defects is a decisive aspect for the modification of the leather for manufacturing of particular goods because the existence of areas with leather defects may be considered as unusable or useful for certain functions [8]. Leather industry is an agro based by product industry with locally accessible aboriginal raw materials having a potential for export progress and prolonged augmentation over the upcoming years[9]. Excellence of raw material is influenced either by ante mortem defects or post mortem defects while postmortem faults are expedient to assured extent, ante mortem defects pretense severe challenges to tanners[10]. Defects are normally classified as pre slaughter defects[11]. The leather and leather products industry takes part a prominent position in the world's financial system with an estimated worldwide trade value of in the order of US\$ 100 billion per year[12]. Leather production is a moderately obscured and labor rigorous process based on a rather outflow raw hide material and chemicals linked to increasing crude oil values [13]. The dilemmas that influence leather eminence start on the animal is still alive and include- (1) Cuts creating from barbed wired in fighting among male members and prickle scratches and cuts (2) Brand marks made for ownership function, by means of hot iron (3) Holes and spots from contagions originated by tics, horn flies manges and bot flies among others (4) Abscesses producing from incorrect vaccination systems and ordinary growth marks or overload weight related difficulties like fur row and wrinkles[14].

2 MATERIALS AND METHODS

2.1 Study Area

The analysis was performed on the tanneries of Hazaribagh (23.734722°N 90.369444°E) Dhaka. The area of Hazaribagh covers 95% tanneries of the whole country. The study was conducted for sixteen tanneries of this area.

List of Tanneries :

1. Bengal Tannery

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2. H & H Tannery
3. Shahajalal Tannery
4. Ibrahim Tannery
5. RMM Leather Industry
6. Reliance Tannery
7. Sahajada Tannery
8. Crescent Leather
9. Fortuna Leather Industry
10. Ayub Brothers
11. Kids Leather Industry
12. Bay Tannery
13. Phoenix Tannery
14. Dhaka Hides and Skins
15. East Bengal Tannery
16. Rupali Tannery

2.2 Sampling

Random sampling system has been done in our analysis for determining the factors of defects in leather. All the examined tanneries are export oriented leather industries. At different stages of leather processing like raw stage, wet blue stage, crust stage have been analyzed in this study. Among total 300 pieces of rejected hides and skins, 100 pieces were taken at raw condition, 100 at wet blue and 100 at crust leather stage individually of the mentioned tanneries .

3 RESULT AND DISCUSSION

As In Bangladesh the hides and skins of cow, goat, sheep and buffalo are used in tanning process for making leather mainly. Among these, cow skin covers the extent percentage. In this analysis, the raw section, wet blue section and crust section are observed for detecting the reasons of defects of leather in these stages for cow leather processing. In raw section , hides are analyzed with visual observation. Here about 100 hides were analyzed in an average of tanneries. In this section, we get the percentage of factors responsible for defects in leather as hair slip(7%), defects due to parasite(5%), wound(2%) and pox(3%). These pre mortem defects are responsible for 17% defective hide at raw section in this analysis of factors of rejection. In wet blue section, it has been selected that flay cut(23%), pox mark(19%), parasites(9%), growth mark(19%), wound(11%), sur burn(4%), scratch(7%), dark mole(2%) are the major causes of defects in this section. These were found in a piece of leather or in many leathers of certain mentioned pieces of wet blue leather in average. In crust leather section, flay cut(21%), parasites(3%), pox(9%), looseness for bating(11%), scratch(2%), wrinkle(4%), grain damage(15%) have been analyzes as the causes or factors with percentage responsible the defects of leather in this section I average. The experiment for determining the factors of defects has found the reasons for goat leather. These are parasites(5-8%), pox(3%), growth mark(1-2%), mole(2-3%), scratch(1-2%), flay cut(18%), hair slip(8-10%). For goat leather, the factors named wound, branding, wrinkle, jam wrinkle, burning responsible for defects have not been found. In the analysis of buffalo leather, the causes are found as parasite(6-10%), pox(5-10%), wound(15-18%), branding(2-5%), growth mark(30%), wrinkle (10%),jam wrinkle(5%), mole (8-10%), scratch(15-20%), flay cut(21%), hair slip(18-20%) in an average among the examined tanneries. In this case, burning was absent as a factor. In all cases for cow, goat and buffalo , the mechanical fault has been found responsible as(1-2%) for the defects in leather. Again, the study also determines the percentage of grade on

the basis of the quality of leather. In this study of determination of factors, the grade of leather A,B,C and D were found as (10-15%), E, F grade leather(30-35%), G, H grade(30-35%), HH(20-25%) and rejection 10% to below. Unfortunately, the availability of quality hides and skins is declining and currently only 30% of all European hides produced achieve the higher grades. This means that 70% of our output is failing to make the grade and represents an estimated loss to the European economy of 800 M Euros per year.

4 FIGURES AND TABLE

Table 1 shows the overall major causes or factors for the rejection of leather in case of cow, goat and buffalo. The defects are shown as percentage in the table. Again figure 1, figure 2 and figure 3 represent the factors for rejection involved in the raw stage, wet blue stage and crust leather producing stage individually respectively.

Table 1

Factors For Rejection Of Cow, Goat And Buffalo Leather

Major Cause of Rejection	Cow	Goat	Buffalo
Parasite	10 - 12 %	5 - 8%	8 - 10%
Pox	15 - 18 %	3%	5 - 10%
Wound	8%	-	15 - 18%
Branding	0.5%	-	2 - 5%
Growth mark	20%	1 - 2%	30%
Wrinkle	5%	-	10%
Jam wrinkle	5%	-	5%
Mole	8 - 10%	2 - 3%	8 - 10%
Burning	1 - 2%	-	-
Scratch	12 - 13%	1 - 2%	15 - 20%
Flay cut	21%	18%	21%
Curing / Hair ship	17%	8 - 10%	18 - 20%
Mechanical fault (Rare case)	1 - 2%	1 - 2%	1 - 2%

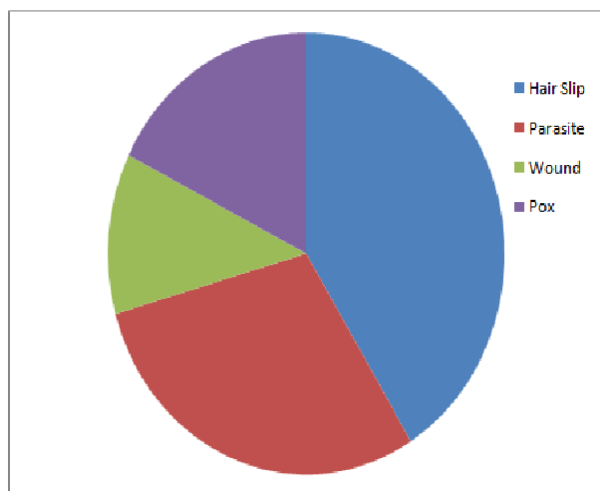


Figure 1: Factors for rejection of leather at raw stage

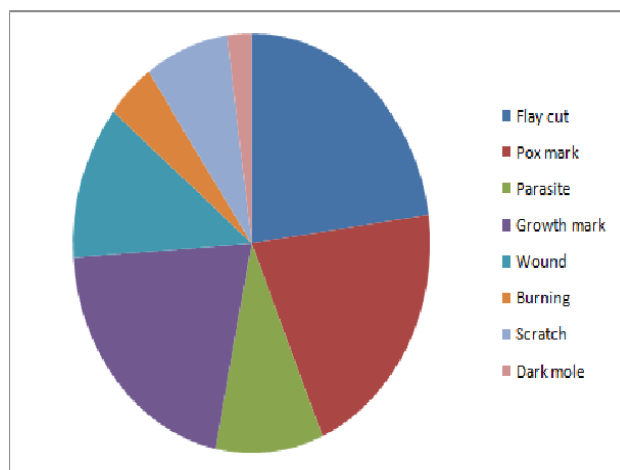


Figure 2: Factors for rejection of leather at wet blue stage

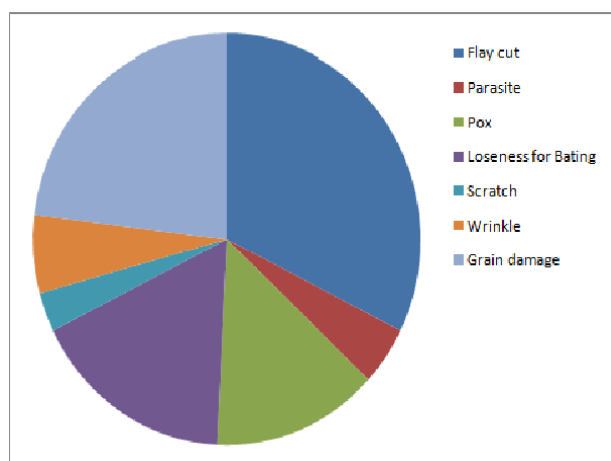


Figure 3: Factors for rejection of leather at Crust leather producing stage

5 CONCLUSION

Leather sector is the third largest foreign currency earning sector in Bangladesh. Defects of leather have negative effects on this sector. Defects occur due to improper nutrition, skin

diseases, improper slaughtering and flaying operation, improper curing, transportation and improper processing of hides and skins into leather. As per the result of this study revealed that major percentage of defects have been found at the pre slaughter stage, the farmers are expected to adhere to annual strategic treatment and vaccination schedule to solve this problem. Again slaughtering and flaying should be performed by professional or trained persons. And leather processing should be carried out by trained people. In order to reduce the huge loss due to defects and improve the qualities of hides and skins, there should be an organized joint effort amongst all stakeholders including farmers, traders, tanners and government. Then only we could get maximum benefit through this sector.

REFERENCES

- [1] Salauddin Biswas, Tawhidur Rahman; The effects of working place on workers health in a tannery in Bangladesh, Scientific Research, Vol: 3 No: 1, 46-53.
- [2] Saiful Islam, Parag Jafar Siddique; Revealed comparative of Bangladeshi leather industry with selective Asian economics, IOSR journal of Business and Management, Vol: 16, Issue: 12, PP: 44-51.
- [3] Technical report leather sector includes a value chain analysis and proposed action plans; Ministry of industries, Government of Bangladesh, January 2013.
- [4] Tesfay Kahsay, Guesh Negash, Yohannes Hagos, Birhanu Hadush; Pre slaughter, slaughter and post slaughter defects of skins and hides at the Sheba tannery and leather industry, Ondersteport Journal of Veterinary Research 82(1), 2015.
- [5] To study current market scenario and the future prospect of the leather chemical industry of Bangladesh; Institute of Business Administration, University of Dhaka report along with ACI group.
- [6] Arantxa Cedillo for Human Watch; October 8, 2012.
- [7] An overview report on Bangladesh by UNICEF, Unite for Children (2008).
- [8] Lidya Georgieva, Kaloyan Krastev, Nikola Angelov; Identification of surface leather defects, International conference on computer system and technologies-Compsys Tech (2003).
- [9] H.L Paul, A.P.M Antunes, A.D Covington, P.Evans and P.S Phillips; Bangladeshi leather industry: An overview of recent sustainable developments, Journal – society of leather technologists and chemists, Vol. 97, P. 25 (2015).
- [10] A.B Habib, LA Noor and A.E Musa; Effects of some skin defects on physical properties of the leather, Journal of Applied and Industrial Science(2015), 2(3): 112-119.
- [11] Leach. I ; ' Marketing requirement of importers of African hides(CFC), presented at the expert group meeting on trade development of the leather industry in Africa(Meet in Africa), Tunis , October 07-09, 2002, pp- 6-13.

- [12] Future trends in the world leather and leather products industry and trade; United Nation Industrial Development Organization (UNIDO), VIENNA, (2010).
- [13] Dr. Jurgen Christner, TFL ledertechnik AG, Basel; Technologies to improve the useful area of leather, World Leather Technology.
- [14] Hemerson Pistori , William A. Paraguassu, Priscila S. Martins and Mauro P. Conti.
- [15] International council of tanners, the worldwide organization for producers of leather; ICT, leather trade house , Moulton park, Northampton, UK, October (2015).