



## Research Article

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## PROBLEMS FACED IN COTTON EXPORT BY THE GINNER ROLE, COST ANALYSIS AND ASSESSMENTS IN TERMS OF OCCUPATIONAL SAFETY

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**ABSTRACT:** Due to the fact that cotton is an industrial product, the production amounts of the countries that control the world cotton production (such as China, India, USA) and the raw product taken by the main mechanisms reach the industrialist after pre-treatment. increasing day by day. Yalvaç District Leather arts and leatherwork; The leather, which is processed and made ready for use in the shops in the region called the tannery, is generally marketed abroad. In the past, although the masters used to tan leather for use in different fields in the tannery region, it is now known that many masters produce cotton ginning rolls due to the market problem. In this study; The aim is to examine the problems faced by the producers of Yalvaç ginning rolls in foreign trade, to investigate the effects of these problems on the economy of Yalvaç, and to gain a scientific perspective on the problems they encounter in foreign trade. In addition, leather processing workshops were evaluated in terms of occupational safety.

Keywords: Ginner role, Export, Cost analysis, Safety.

### 1. INTRODUCTION

The historical development of leather processing in Yalvaç dates back to the Leather Factory established in 1929. Factory; It operated until 1949 under the Beykoz Leather Factory [1]. Today, production continues in the tannery where there are more than 20 workplaces. Bovine and ovine hides are processed in Yalvaç. Approximately 1,500 tons of cattle and 500 tons of small cattle hides are processed in Yalvaç. The leather industry, which makes a significant contribution to Yalvaç's economy, is one of the important centers in this field in Turkey. One of the most important manufactured products is the ginner role made from bovine hides. Yalvaç Turkey stands out in the production of ginner roles. Approximately 30,000 ginner roles are produced annually.

Cotton is the most produced fiber worldwide. The increase in world cotton production and consumption has increased the demand of the textile industry for cotton fiber. In addition, the

fact that raw materials constitute 45-80% of the cost in textile factories has increased the importance of clean cotton, known as cotton yarn feasibility, in the yarn-weaving sector [8].

The expectations of the developing textile industry from cotton fiber are increasing. In our country, foreign matter and ginning are important in grading cotton in terms of cleanliness. The importance of cotton ginner role, which is important in the pre-treatment phase of cotton, is increasing day by day. It is known that although the masters in the tannery used to process leather to be used in the manufacture of different products in the past, it is now known to produce cotton ginner roles because there is no market problem. In this study; The problems faced by the manufacturers of Yalvaç ginning rolls in export were examined and a scientific perspective was gained on the effects of Yalvaç economy.

## 2. GINNER ROLE MANUFACTURING

The purpose of the ginning process is to separate the bean from the fibers and also to bale the fibers. The gin industry is a source of raw materials for some industries, these are the textile oil and feed industry.

The seed cotton in the warehouse is transported to the ginning machine with the help of an aspirator. Firstly, the seed cotton is passed through the pre-cleaner, the seed cotton is divided into two parts as fiber and core in the ginning machine, the fibers are cleaned in the fiber cleaner and sent to the baling department.

The skins are cut in thicknesses of at least 3.5 mm and maximum 10 mm and pressed into thin strips by performing the preliminary preparation process to be used in the role in the desired length. It is seen in the Figure 1.



**Figure 1.** Preparation of wood covered skins

The square-shaped iron in the middle, whose two ends will be connected to the machine, forms the backbone of the ginner role. This piece of iron is covered with a cylindrical poplar tree consisting of two or four parts. The cylindrical tree, which is covered on iron, gains complete integrity with the iron, which is in the position of the main shaft, thanks to the clamping wire and clamping screw wrapped around it, and it is prevented from getting rid of the iron and loosening. The leathers, which are cut to the desired length and prepared from cowhide, are glued to the wooden cylindrical role with gelatin glue and the leather ends are stretched one on top of the other and dried. It is seen in the Figure 2.



**Figure 2.** Application of adhesives to the skin



**Figure 3.** The stage of covering the skin to the wood

After all the leathers are dry and firm, the nailing process is carried out. pressed against the chassis. Row iron is used to wrap the skins. In the manufacture of ginner role; 160 mm role (35 square iron), 180 mm relay (40 square iron) and 220 mm relay (50 square iron) are covered with dry poplar wood.



**Figure 4.** Wrapping process

After the poplar wood is turned in the form of a cylinder on a lathe, the coating process is carried out by wrapping it with a leather belt for 1.5 cycles.



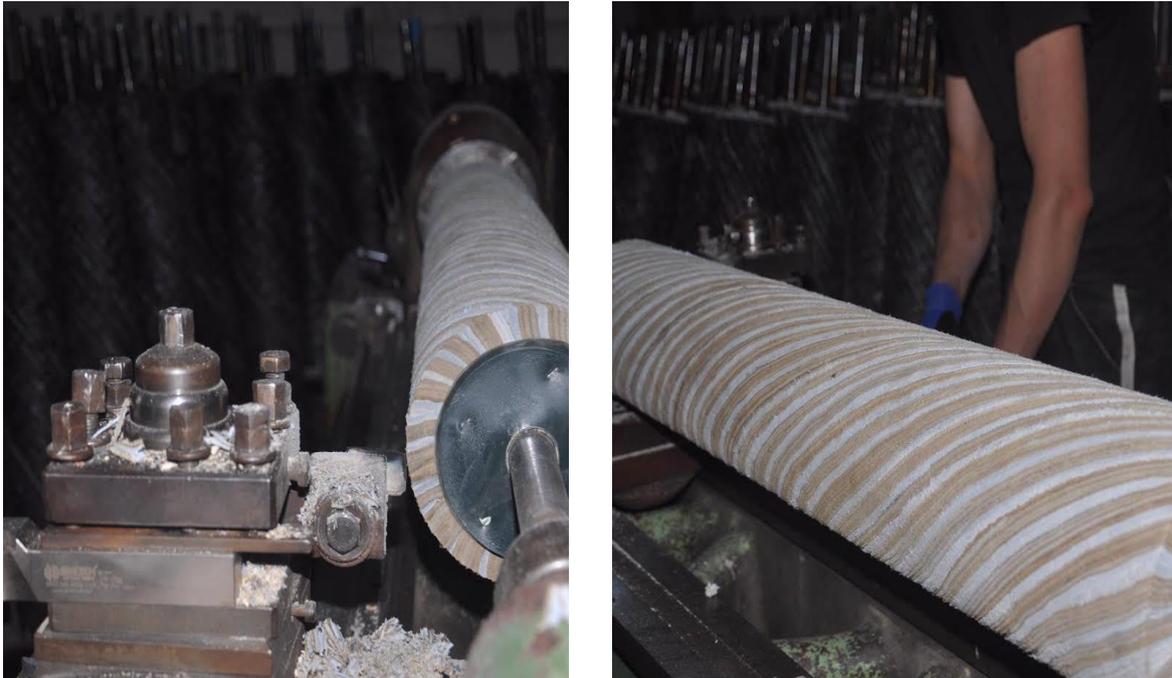
**Figure 5.** Drying process of the ginner role

After the process, it is kept in areas with suitable ventilation for one day to dry the ginner role. Iron nails are removed from the dry and hardened skin



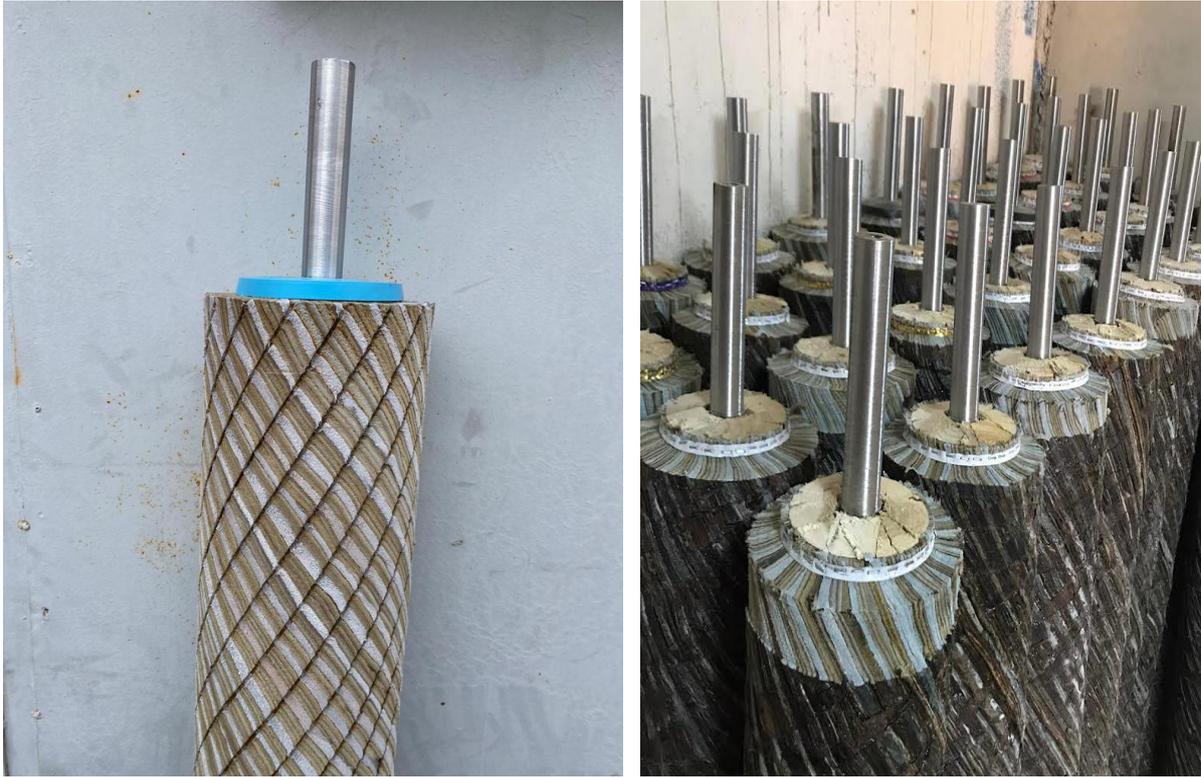
**Figure 6.** Shaving

With specially produced blades for shaving, the excess skin protrusions on the sides of the skin bundle are cut and cleaned by shaving.



**Figure 7.** Turning and cleaning process

In the final stage, after the ginner role is passed through the turning process, it is subjected to a cleaning process and becomes a product. A ginner role is manufactured in seven days. It meets the demands of customers in the world market with relay manufacturing, which is a labor-intensive business.



**Figure 8.**Final product

The cotton ginner roles, which are turned into the final product, are prepared in line with the demands of the customers and transported as a result of the customs clearance process to be exported.



**Figure 9.** Ready-to-ship ginner roles

### 3. EXPORT PROBLEMS AND COST ANALYSIS OF LEATHERS

Ginning role manufacturers are leather makers established with a low capital and trying to survive. With the number of workers around 250 employed in Yalvac, they have a great contribution to production and exports. Of course, manufacturers that contribute to Yalvaç's economy also have problems. In manufacturing enterprises, important problems are encountered in subjects such as education, personnel, planning, institutionalization, decision making.

The most common point encountered in supply problems is that the raw material cannot be found and its quality is insufficient due to the increase in gelatin factories. Since leather manufacturers are small businesses, they are limited in taking orders for economic reasons[2].

Problems faced by businesses

- ✓ Manufacturers do not have an export market plan
- ✓ Sales level for international markets
- ✓ Pricing issues
- ✓ Insufficiencies of production amount
- ✓ Uncertainty in the national economy
- ✓ Amount of tax incentive support
- ✓ Transport and port distance
- ✓ Exchange rates
- ✓ Inadequate product standards
- ✓ Storage and stock costs
- ✓ Price imbalance in foreign markets
- ✓ Supply-demand fluctuations in foreign markets
- ✓ Language and communication difficulties

**Table 1.** Cost analysis

N	Substance, Materials and Activities	Previous Period	Current Period
1	wood raw material	13	20
2	bleaching process	6	8
3	crimping operation	4	5
4	Turning Process	3	3
5	Repair Process	4	5
6	Wire, Nails, Bolts	2	4
7	Workmanship	35	40
8	shaving process	15	20
9	Strap On	25	25

10	Strap Bonding	25	25
11	Glue	50	50
12	Leather Turning process	8	8
13	Head-Line Drawing	3	3
14	Paint	1	1
15	Lid	2	2
16	Derby	5	5
17	Hook Straightening	5	5
18	Transport	25	30
19	Finance, Accounting	7	9
20	Electricity Water	8	10
21	Workplace and Facility expense	8	10
22	Skin	150	200
	<b>Total</b>	<b>337</b>	<b>488</b>

When the current period cost analysis is made, a cost increase of 151 TL emerges compared to the previous period.

## 4.SAFETY IN LEATHER PROCESSING INDUSTRY

### 4.1. Accidents

Various accidents are encountered during tanning works. Fractures, dislocations, sprains and crushes caused by falls due to wet and oily floors are common. The sharp knives used while trimming the leather cause cuts. Along with these, the machines used to process the leather cause cuts, jams and ruptures[3].

### 4.2. Diseases

#### 4.2.1. Infectious Diseases

In the tanning process, the upper skins of the animal hides are removed and the rest is converted into leather as is known. There is always the possibility of infection during this job; because there are many micro-organisms in animal hide. Fungal colonies such as *Aspergillus niger* and *Penicillus glaucum* may have settled on the skins. Chlorinated phenols, especially pentachlorophenol, have been used frequently to prevent their formation. However, they are extremely dangerous for workers' health because they can be poisonous[4,5].

#### 4.2.2. Diseases Caused by Chemical Hazards

Eczema and contact dermatitis are seen in crockery workers due to chemicals that protect their skin. It has been statistically proven that the highest rate of dermatosis among different sectors in the USA is in the leather tanning business. Inflammation of the mucous membranes may occur in the throat and nose.

Those who work in tanning businesses, suspected of causing cancer; They are exposed to chromium salts, benzidine-based azo dyes, organic solvents (benzene and formaldehyde), pentachlorophenol, arsenic, dimethylformamide and leather powders. Various studies conducted in England and Italy have revealed that the risk of the disease known as soft tissue sarcoma is higher in crockery workers and the leading cause of this may be chlorophenols[6, 7].

## 5.CONCLUSION AND RECOMMENDATIONS

Leatherworks has been operating in Yalvaç District of Isparta province in the Western Mediterranean Region from past to present, and it provides the formation of knowledge in this field and the training of a qualified workforce. From the point of view of the leather ginner, the production of ginner role is an opportunity. It is exported to Azerbaijan, Uzbekistan, Sudan, Egypt, Turkmenistan and all countries where cotton is grown. Yalvaç contributes approximately 30 million dollars annually to its economy. The correct use of this potential is of great importance for manufacturers. In this study, the problems faced by leather makers in manufacturing and marketing in Yalvaç are discussed. Problems that may occur in marketing may prevent manufacturers from exporting. In this case, determining the main problems and taking effective and constructive measures will be beneficial for the producers. Economy is one of the most important problems of leather traders. In addition, providing tax relief to leather producers, ease of payment in loans, incentive policy will provide economic relief. If the economic support to leather makers is increased, production will increase, so the unemployed will decrease, and the country's economy will revive.

Another problem for the manufacturers is the exports made in the world market without the necessary examination. Research and development studies should be developed to increase competition. With institutionalization, production efficiency will increase. Innovations in technology should be followed closely.

Recommendations for ginner role manufacturers:

- ✓ Incentive studies should be carried out by supporting the export of the products produced.
- ✓ Marketing policies should be implemented by conducting market research.
- ✓ Incentive measures should be taken to increase the amount of domestic input.
- ✓ Leather companies that want to export should be organized and export should be realized within the framework of cooperation.
- ✓ Advertising activities should be increased
- ✓ Exchange rates should be followed.

Taking these measures will reduce the problem of ginner role manufacturers and thus their contribution to Yalvaç economy will increase.

## REFERENCES

- [1].Batı Akdeniz Kalkınma Ajansı (BAKA, 2012) Deri ve Deri Ürünleri Sektörü Raporu, Aralık,
- [2]. İslambay, T., (2018), "Küçük ve Orta Ölçekli İşletmelerin İhracat Sorunları: Konya İmalat Sektöründe Bir Araştırma", KTO Karatay Üniversitesi, Sosyal Bilimler Enstitüsü, İşletme Anabilim Dalı Yüksek Lisans Programı, Yüksek Lisans Tezi, KONYA.
- [3]. Kodaloğlu, M., 2020. "Yalvaç Oto Tamir Esnafının Sorunları ve İş Güvenliği Açısından Bazı Öneriler" Yalvaç Kent Araştırmaları. KONYA, (pp. 379-384). Çizgi Kitabevi Yayınları.
- [4]. Kodaloğlu, M., Delikanlı, K., 2021. Battaniye İşletmesinde Maruz Kalınan Gürültünün İş Sağlığı ve Güvenliği Açısından Değerlendirilmesi. Teknik Bilimler Dergisi, 11, 33-38.
- [5]. Kodaloğlu, M., Günaydın Karakan, G., 2021. Evaluation Of Dust Exposure Measurements Regarding To Occupational Health And Safety In A Warp Knitting Facility. International Journal of Engineering and Innovative Research, 3, 1-11.

[6]. Kodalođlu M., (2021). Evaluation Of Particular Material And Exposure Measurements In Terms of Occupational Health And Safety In A Yarn And Weaving Factory In Denizli Organized Industry Region Teknik Bilimler Dergisi, 12

[7]. Kodalođlu, M.. 2021. Evaluation of Noise From Jacquard And Dobby In The Weaving Facility The In Terms Of Occupational Health And Safety . International Journal of Engineering and Innovative Research, 3, 222-235.

[8]. Krl, A., E., Bařal, G., reyen, M. E., elik, P., (2008), Rollergin Tipi Cırcır Makinelerinde Ayar Parametrelerinin Lif Kalitesine ve zelliklerine Etkisi, Tekstil Teknolojileri Elektronik Dergisi (1), 1 -9.