KARAKUL PELTS AND LUBRICATION TECHNOLOGY IN THE PROCESS OF THEIR PRODUCTION

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Annotatsiya. Ushbu maqolada qorako‘l terilari, qadimda qorako‘l terilarining tarqalishi, ularning emprional rivojlanishi, hozirgi kunda respublikada yetishtirish ko‘rsatgichlari va ularga ishlov berishning muhim texnologik bosqichi bo‘lgan yog‘lashning yangi texnologiyasi haqida fikr bildiriladi. Mo‘yna sanoatida qorako‘l terilari alohida ahamiyatga ega bo‘lib, ularga kimyoviy ishlov berishda alohida ahamiyat erish talab etiladi. Ayniqsa, yog‘lash jarayoni muhim hisoblanadi.

Kalit so‘zlar: Qorako‘l teri, “yashil iqtisodiyot”, qorako‘lchilik, qo‘zichoq, yaxobob, embrion, yog‘lovchi moddalar, kollagen.

Аннотация. В данной статье рассматриваются каракульские шкуры, история их распространения, эмбриональное развитие, современные показатели производства в Республике, а также новая технология жирования — одного из важнейших технологических этапов их обработки. Каракульские шкуры занимают особое место в меховой промышленности, и при их химической обработке требуется особое внимание для обеспечения высокого качества и долговечности продукции. Среди всех технологических процессов особенно важным считается процесс жирования.

Ключевые слова. Каракульская шкура, «зелёная экономика», каракулеводство, ягнёнок, яхобоб, эмбрион, жирующие вещества, коллаген.

Annotation. This article discusses karakul pelts, their historical distribution, embryonic development, current production indicators in the Republic, and the new fatliquoring technology—one of the key technological stages in their processing. Karakul pelts hold a special place in the fur industry, requiring particular attention during chemical treatment to ensure product quality and durability. Among these processes, the fatliquoring stage is considered especially significant.

Keywords: Karakul pelt, green economy, karakul sheep breeding, lamb, yakhobob, embryo, fatliquoring agents, collagen.

Introduction

In the current era of rapid technological and industrial development, extensive and effective measures are being implemented in our country to recycle waste, expand its areas of application, and minimize its negative impact on the environment. In particular, in order to fulfill the tasks outlined in the “New Uzbekistan Development Strategy for 2022–2026” and within the framework of

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the Strategy for Transition to a "Green Economy" of the Republic of Uzbekistan[1], our President has adopted a number of decisions aimed at ensuring "green" and inclusive economic growth, enhancing the effectiveness of ongoing initiatives, promoting the use of renewable energy sources, and further expanding resource efficiency across all sectors of the economy.

Pollution caused by hazardous and harmful materials poses a significant threat not only to the ecosystem of our planet but also to human health. Although industrial enterprises and factories are not the sole contributors to anthropogenic damage to the Earth, they account for a considerable portion of it. Despite the efforts of governments worldwide to reduce emissions and pollution levels from factories and industries, our planet continues to experience profound environmental changes. Analyzing the costs associated with implementing environmental protection measures, policies, programs, and projects—and comparing them with the potential benefits of these expenditures—plays a crucial role in selecting the most rational ecological solutions as well as ensuring the efficient functioning of the overall market economy. This principle is equally applicable to the operations of industrial enterprises[2].

Cattle breeding is one of the livestock breeding industries that develop in desert regions. Karakol sheep are bred in more than 40 countries around the world, including the Republic of South Africa, Namibia, Argentina, Iran, Germany, Austria, Moldova, Romania, Russia, Uzbekistan, Afghanistan, Tajikistan, Turkmenistan, Kazakhstan It is grown in Estonia and other republics.

The main product of Karakol sheep is Karakol skin. The uniqueness and shape of the curls, their diversity, the brightness and silky softness of the hair coat, the elegance of their hairs have made black leather skins popular. Karakol furs are among the products in high demand among the population [3]. Therefore, great attention is paid to the quality of Karakol products.

Karakol - 1-3 days after the birth of lambs of the Karakol breed, the wool is distinguished by a thick, elastic, silky wool cover, which forms curls of various shapes and sizes.[4]

The Karakol sheep breed is a coarse-wool tailed sheep bred for its fur [5]. This sheep breed was created a few hundred years ago in the territory of present-day Uzbekistan (Karakol District, Bukhara Region) as a result of long-term selection and breeding of Jaidari sheep by the method of folk selection. The Karakol sheep breed is bred in more than 50 countries (about 15 million heads) on all continents of the world (except Australia). Uzbekistan, Afghanistan, Turkmenistan, Kazakhstan, Iran, and the Republic of South Africa are the countries where the largest number of Karakol sheep breeds are grown.

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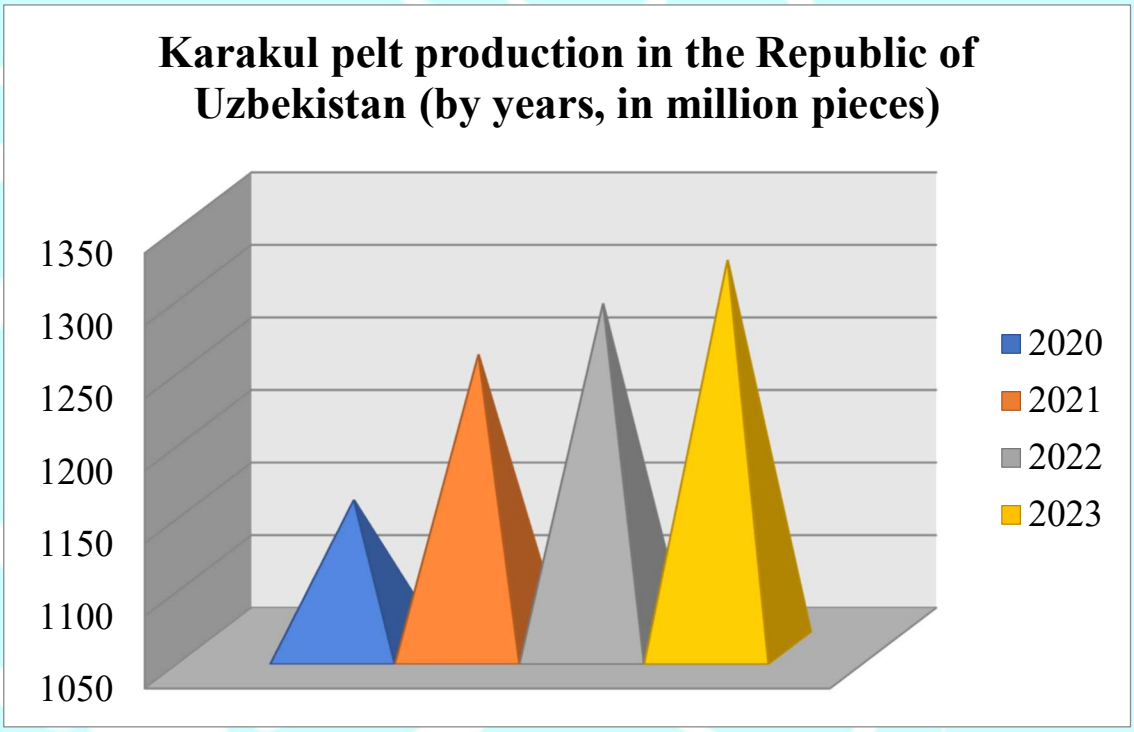
At present, extensive scientific research is being conducted worldwide in the leather and fur industry to develop and improve environmentally friendly and resource-efficient technologies, as well as to establish their scientific foundations. Research aimed at enhancing the physical, mechanical, and chemical properties of finished products through the processing of karakul (Astrakhan) pelts is considered a priority. This is because most of the chemical agents used in the processing of karakul skins are imported products. Naturally, the use of imported chemicals in production significantly increases the cost price of the processed karakul pelts. [6]

The development and strategic directions of karakul sheep breeding in our republic are determined by the Karakul Sheep Breeding Association. Methodological and practical guidance in the sector—particularly in the areas of selection and breeding, the creation of new productive breeds and color varieties of karakul sheep, the efficient use of pastures and the development of methods to increase their productivity, as well as the improvement of primary and industrial processing technologies for karakul products and the establishment of fair quality assessment methods—is carried out by scientists of the Scientific Research Institute of Karakul Sheep Breeding and Desert Ecology of Uzbekistan. [7]

According to the data provided by the State Committee on Statistics, the number of karakul pelts produced in the Republic of Uzbekistan has been steadily increasing year by year.[8]

Depending on the embryonic development stage of the fetus in karakul sheep or the age of the suckling lambs during their growth period, various types of raw karakul pelts can be obtained. The embryonic development of karakul lambs lasts approximately 145–150 days. During this period, hair follicles begin to form in the skin of the developing fetus, then grow and produce fibers, leading to the formation of characteristics specific to karakul pelts. The type and quality of raw karakul pelts depend on the stage of fetal development and skin formation at which the pregnancy was terminated. For instance, the skins of lambs removed from the uterus are evaluated based on the stage of fetal development — according to skin properties and hair length, they are classified as non-standard or standard gulak; and depending on hair length, curl definition, and luster, they are graded as karakulcha, karakul-karakulcha, or karakul. Likewise, depending on the age at which the lambs are slaughtered, their pelts are classified as yakhobob, tarsoq, or submissive raw materials. [8]

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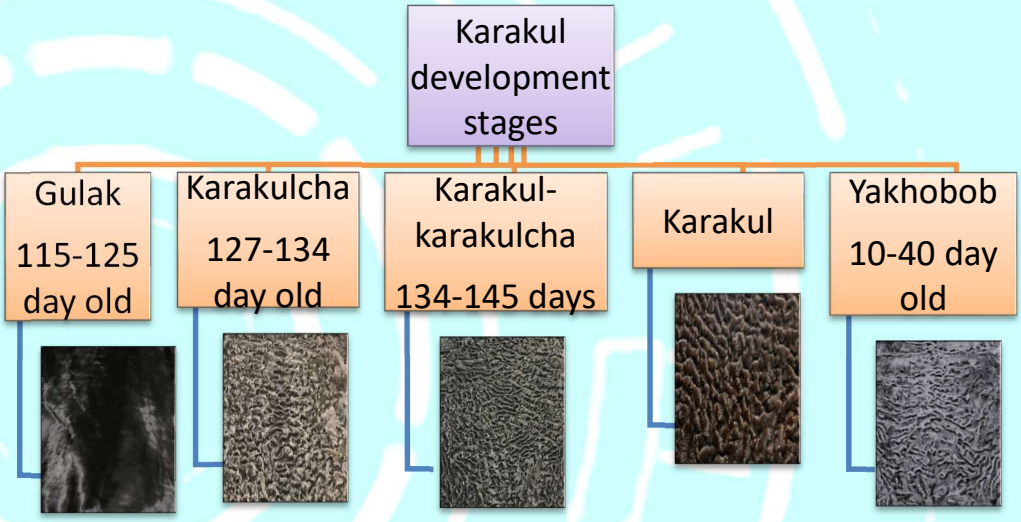


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The process of processing karakul pelts is of great importance, as it consists of several stages aimed at transforming the raw skins into high-quality finished products. Traditionally, karakul pelts are processed using conventional methods. One of the most critical final wet-processing operations is the fatliquoring stage.

Fatliquoring, that is, the treatment or impregnation of karakul pelts with oils and fats, plays a crucial role in improving the quality and durability of the leather. The use of advanced technologies in this process is of great significance, as it enhances the overall quality of the leather product, helps retain moisture, and reduces the stiffness of the pelt.[10]

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During the production of fur semi-finished products, the material is subjected to stretching, compression, and various other mechanical impacts, which ultimately determine its operational lifespan and safety. Therefore, in processing fur-bearing hides, it is essential to select appropriate technological processes that ensure the production of competitive fur products possessing advantageous technological properties, low production costs, and the ability to minimize environmental problems while improving the quality indicators of the finished goods. This necessitates the development and improvement of energy-efficient technologies that reduce material and energy consumption. Modern technologies encompass numerous methods of fur processing, as each hide must undergo complex technological operations to produce high-quality fur products and materials.[11]

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