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WOOL QUALITY PREPARATION FACTORS

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Annotation. Some problems are highlighted in improving the technology of wool production in livestock farms and increasing the proportion of pure wool in wool, including factors affecting the quality of wool fibers, negative factors affecting fibers during the primary processing of sheared wool and their solutions.

Keywords: sheep farms; wool production; contaminated wool; technological process; washing, drying and mechanical processing; quality of wool; chemical treatment; pollutants; carbonation; pure wool; preventive bathing; water the sheep; semi-mechanized.

At present, specialized livestock farms of the republic produce over 38,000 tons of sheep, goat and camel wool.

One of the main branches of animal husbandry is sheep breeding, including karakul, and the wool obtained from them serves as an important raw material for the textile industry. Currently, more than 90% of the natural wool produced in the country is sheep wool.

Wool has long been used for carpet weaving in the conditions of our republic, as well as for pressing felt, weaving warm clothes.

To achieve high peaks in livestock production, it is necessary to increase the quantity of local products and their rational use, mainly through the introduction of local processing technologies to improve the quality of the products.

Currently, there are a number of problems in the field of preparation and processing of wool in sheep breeding, especially in karakul breeding. Contaminated wool accumulates in large quantities at sheep shearing stations, farms and private farms of the republic specializing in sheep breeding. The main reasons for this are the lack of proper bathing of the sheep before shearing, the lack of technical means of primary processing of wool and the obsolescence of existing equipment.

Factory cleaning of contaminated wool is a complex technological process that is carried out by washing, drying and mechanical processing. Consequently, due to the increase in the

value of pure wool and the decrease in wool quality, wool produced at the shearing points of the trusses accumulates at the preparation points. As a result, such wool is cleaned by additional processing.

There are various methods and technologies for cleaning contaminated wool, which are intended for use in installations for the primary processing of wool. One of these wool cleaning technologies is the chemical treatment of heavily soiled wool. The method of chemical treatment (carbonization) when cleaning wool is carried out in conjunction with the mechanical method. Therefore, this method is also called the chemical-mechanical method. In this case, to facilitate the separation of impurities from contaminated wool, brittle loops from sticky plant seeds, carbonization is carried out for disintegration, i.e. wool is soaked in water in a 4-5% sulfuric acid solution for a certain time (several minutes). In this case, the loops of burdock and other loose plant seeds containing dirty wool become charred and become brittle in an acidic solution. This hair is then gradually washed in clean warm water and then dried. When the moisture content of the wool dries up to 16-17%, the wool is mechanically processed. Under the influence of mechanical treatment, the loops of a fragile spike are quickly torn and separated from the wool fibers.

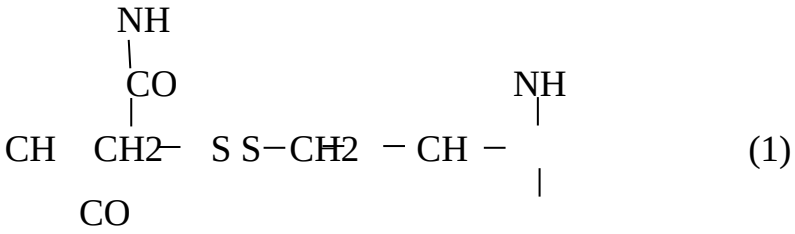
When the wool is chemically treated, the shear strength of the wool decreases. This is especially true of the mechanical processing of junga. This can be explained by the fact that as a result of chemical treatment, the sheath part of the fiber is partially destroyed, the elasticity decreases, since the wool fiber consists of amino acids, keratins. The keratin in fiber is a complex organic compound that contains sulfur, unlike other keratins.

Experiments show that wool keratin contains 3-4% sulfur, and the higher its content, the higher the technological properties of wool. According to most scientists, wool keratin contains more than 20 amino acids, and they interact structural amino and carboxyl groups.

Wool fiber is more acid resistant. In this case, the amino acid ntrictofan is more damaged among the amino acids, but the amino acid cytin remains unchanged. Short-term (5-6

minutes) treatment of a weak acid solution (4-5%) with wool practically does not affect the strength of the fibers, only under the influence of high concentrations the fiber sheath is destroyed. Acids first react with an acid-oxide group and then break some polypeptide bonds. In general, wool is more resistant to the damaging effects of acids.

Alkalis are absorbents of wool fibers. When more amino acids such as cytine, arganine, histidine, serine are broken down than amino acids, the amino acid tryptodsan retains its state. The decomposition of the amino acid cytin under the influence of alkalis leads to the destruction of disulfide bonds and, ultimately, to the elongation of wool fibers, and a decrease in tensile strength.



(1)

(1) The expression describes the disulfide bond in the wool fiber. The solubility of keratin in alkali depends on the temperature and concentration of the alkaline solution and the duration of exposure to the wool fiber.

Experiments have shown that the strength of the fibers is significantly reduced, despite the fact that the amino acid cytin in wool treated with high concentrations of alkali is significantly reduced (degraded). When wool fibers are treated with an alkaline solution, the -S-S-S-C- disulfide bond is broken and a new amino acid lanthionine C -C-S-C-bond is formed.

Wool fiber has the property that it quickly loses its properties in an alkaline medium with a low concentration, without losing its properties in a strong 15% alkaline solution.

Due to the above problems, several veterinary and sanitary treatments are required depending on the season and climatic conditions to protect sheep from disease, insects and pollution during grazing. The sheep grazing in the desert is teeming with various insects.

In this case, the fleece is bathed to protect the sheep from various insects, and to clean and prevent contamination before shearing. Typically, the bath fluid is a mixture of hexachlorane

with creolin or a mineral oil emulsion. In veterinary practice, this is usually done in bathtubs or enclosed baths, or under pressure or a combination of methods.

Bathing sheep with bath disinfectant solutions is most effective. Washing sheep before wool is, first of all, removing accumulated manure, dust, soil and other water-soluble contaminants between wool and increasing the quality of shearing and weight of fresh wool, while secondary sheep are preventive, that is, they are disinfected from various harmful insects. Especially in desert areas, the channels get caught in the wool when the sheep enter the pens. For their mass cleaning, only prevention is carried out. It can be treated by bathing (pooling), spraying with diluted water under pressure. Swimming in these pools is most acceptable. Since the consumption of the solution is slightly lower, the negative impact on the environment is less. Most of the Creolin-X emulsion is used in bathing sheep. This solution has a pungent smell and it will be a problem to bathe animals in it. Because sheep do not fall into such a pungent smell of their own accord. Especially sheep immersed in a solution swallow a certain amount of this solution. While it does not cause serious damage in sheep, it does cause changes in the stomach, irritating the eyes. Therefore, when bathing them a second time, they try not to get into the pool of chemically soluble water.

It takes at least 1 day to wash a single flock of sheep (600 head). It also takes a lot of manpower to get these sheep into the swimming pool.

The bath complex is divided into several blocks, the sheep are first divided into 1 block, then into 2, 3 blocks so that the sheep are not frightened in an orderly manner. The conveyor with 4 blocks consists of a conveyor mechanism for draining water, a bath with 5 special solutions and a block for holding 6 sheep for chemical solutions in sheep's wool, bathed in the bath, to return back to the bath.

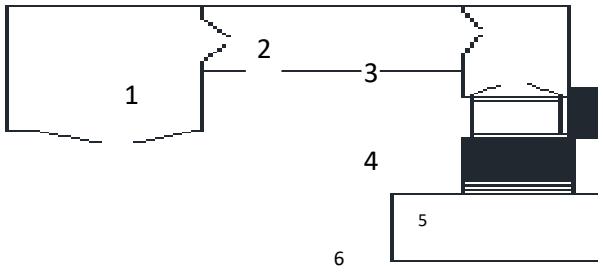
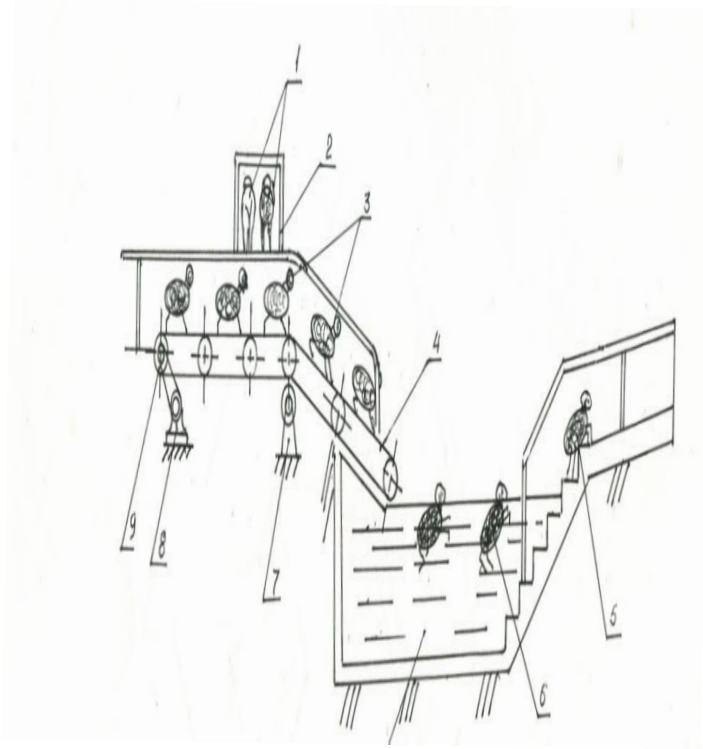


Fig. 1. Complex buying sheep.

To speed up the process of preventive bathing of sheep, to make them injury-free, the conveyor belt device is used in the following order: even if the conveyor belt moves smoothly and smoothly, it will not be easy for the sheep to sit on it. Therefore, several sheep are placed in a steel cage on a conveyor belt. When sheep see sheep in a cage, they begin to climb onto the belt without fear. The conveyor belt is curved (see Figure 2) to allow the sheep to slowly fall into the water bath. The bathed sheep are kept on an inclined floor for some time. At the same time, the chemical solution in the lambswool seeps back into the bath, allowing the bath to drain quickly.



1 sheep in a cage; 2- iron cage; 3- sheep move along a conveyor; 5,6-sheep bathe in a bath; 7-support roller; 8-belt conveyor with a movable electric motor; 9-roller belt tension; 10-special chemical solution.

Fig. 2. Conveyor belt for preventive bathing of sheep

This sheep breeding complex allows you to bathe several flocks of sheep per day. From the above, we can say that the quality of wool fiber depends on the care, nutrition, health of the sheep.

Chemical treatment when cleaning contaminated wool from sheep negatively affects the quality of the wool and the cleaning process. Therefore, when feeding sheep, as well as during preventive bathing of sheep before shearing, health control allows you to produce high-quality wool.

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