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DYEING OF TEXTILE FABRICS USING DYES FROM DYED PLANTS.

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Аннотация
В данной статье изучались возможности окрашивания шелка гранатовой и луковой шелухой, дубильными веществами, госсиполом и другими природными веществами. Было показано, что эти вещества окрашивают шелк в светлые тона. Показано, что темные и сплошные цвета можно получить при добавлении комплексообразующих солей металлов к смеси или раствору природных веществ.

Ключевые слова: раствор кожуры граната, дубильные вещества, соли металлов, гладкость окраски, четкость окраски, четкость окраски.

Annotation
This article explores the possibilities of dyeing silk with pomegranate and onion peel, tannin, gossypol and other natural substances. These substances have been shown to produce ligt colors in silk. Dark and strong colors are indicated by the addition of complex metal salts to a decoration or solution of natural substances.

Keywords: pomegranate peel solution, tannin, metal salts, color fluency, color clarity.

Introduction

Uzbekistan produces a large amount of durable silk fabrics of expensive types. Therefore, it is very important to improve their production technology and product quality using the resources available in our Republic. The use of plants, especially the use of dye plants, is the most important necessity [1].

Central Asia ranks first in terms of wealth of valuable dyeing plants. Because of this, the art of getting dyes from plants and the methods of dyeing woolen and silk fabrics have been famous in this country for a long time.

Natural silk belongs to the class of protein fibers and differs from wool fiber in that its structure is not reticulated. It consists of natural silk (fibroin, sericin) and non-protein (oils, waxes, dyes, mineral salts) components. Silk fabrics are dyed with several classes of synthetic dyes to produce different colors. can be done. However, some synthetic

dyes harm human health. Therefore, we studied the conditions of fabric dyeing using natural dye plants [2].

Our researches are carried out on blocks that have been brought to a constant mass in advance. 1 gr per bag. and its weight is measured. Then it is dried at 105°C for 3 hours, cooled and its mass is measured on a scale. This process is repeated until the difference between the pairs is 0.0001 g. Then, based on the obtained results, the moisture content of the fiber is determined using the following formula:

$$A=\frac{B-C}{B-D}\times 100\%$$

here,

A-fiber moisture,

The initial theft of biks with B-fiber, gr.

Constant weight of C-fiber cloth, gr.

$$A=\frac{24,27575-24,23935}{24,27575-23,67340}\times 100\%=6\%$$

The obtained results are presented in the form of a table.

The weight of the bag is gr.	The weight of the fiber with the bag is gr.	I check, gr.	II check, gr.	III check, gr.	IV check, gr.	V check, gr.
1	2	3	4	5	6	7
23,27575	24,27575	24,24355	24,24135	24,23945	24,23940	24,23935
23,06310	24,06310	24,03015	24,02830	24,02805	24,02790	24,02780
23,52170	24,52170	24,48670	24,48670	24,48526	24,48515	24,48510

№	Fiber moisture, %	Average humidity, %
1	8	9
2	6	6,3
3	6,5	
4	6,4	

So, knowing the moisture content of the fiber, the weight of the fiber is:

D=0,35×0,937=0,32 gr. should be taken.

In the course of numerous researches, the dyeing process is carried out with the presence of salts of the following metals with dyes obtained from pomegranate peel decoction, tannin, gossypol, onion peel decoction and perfume flowers:

1) FeSO4*7H2O;

2) $FeSO_4*9H_2O$;
3) $K_2 Cr_2O_7$;
4) $Ni(NO_2) *6H_2O$;
5) $CoCl_2$;
6) $CuSO_4*5H_2O$;
7) $Al_2(SO_4)_3*18H_2O$.

All dyes, except pomegranate peel, were in the form of powder and paste. Therefore, first, a dye was prepared from pomegranate peel: 50 gr. dried pomegranate peel is removed and 500 ml. boiled in water for 1.5 hours. Boiled water was added when the amount of water decreased. The decoction was cooled, filtered and diluted in 1 liter of water. Prepared solution (50 gr/l) is used for experiments. Nannin 20 g/l, gossypol 20 g/l, 5 g/l solutions of onion peel and rose dye, 25 g/l solutions of the above-mentioned metal salts were prepared. silk fiber was pulled out, taking into account the moisture to go.

Amount of dye bath:

M=50

Dyestuff - 200% (by fiber weight)

Metal salt-5% (by fiber weight)

Na_2CO_3-pH=10

CH_3COOH-pH=3

Temperature-T=95°C

Painting time-t=30 min.

The drawn silk fiber was dyed in pH=3,7,10 conditions with the presence of each dye substance and selected salts prepared in the given amount of the bath.

The dyed fiber is washed with warm water, 2 gr/l. boil with sulfanol for 5 minutes at 95°C. Then it is boiled with water at 95°C for 5 minutes and rinsed in cold water. Among the colors created as a result of dyeing, the ones that differed in their smoothness, consistency, clarity were selected.

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