ISSN 2181-3187

UDK: 638.142.54

TYPES OF WAX, CHEMICAL COMPOSITION AND PROPERTIES

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Abstract: Beeswax wax products are obtained by processing in apiaries and wax melting and boiling plants. In beehives, it is obtained by melting wax in the sun in a wax melter or by boiling the wax and wax pieces in water, and in wax factories, the residues and wax left as waste from wax melting in beehives are pressed under high pressure or driven under high pressure and with gasoline. Wax products are divided into the following types: wax waste, wax waste after melting wax, apiary waste and factory waste. In addition, a waxy substance (propolis) is also separated as a separate wax product. Wax products are obtained from low-quality, blackened, moldy, contaminated wax from beehives and wax shavings from bee nests, as well as wax shavings that have been cut off during honey extraction.

Key words: zavog wax, arykhona wax, mumkatak, mold, ether, mineral substances, free fatty acids, type of wax, shirach, fruit seed, cotton fiber, propolis, honey, poison, perga, pollen, pharmacology , wax glands.

Introduction: Beeswax wax products are obtained by processing in apiaries and wax melting and boiling plants. In beehives, it is obtained by melting wax in the sun in a wax melter or by boiling wax and wax flakes in water, and in wax factories, by pressing the residues and wax left as waste from wax melting in beehives, or by driving under high pressure and high heat with gasoline. is taken. Wax products are divided into the following types: muskatak incha, muskatak incha waste after melting wax, apiary waste and factory waste. In addition, a waxy substance (propolis) is also separated as a separate wax product. Wax products are obtained from low-quality, blackened, moldy, contaminated wax from beehives and wax shavings from bee nests, as well as wax shavings that have been cut off during honey extraction. In addition, bees whiten the individual parts of the frame with wax in the places left empty when the nectar comes from nature.

Research methodology: Bees' ability to pollinate crops is well known. When cotton flowers are pollinated by bees, cotton yield increases by 28.9%, and berry-fruit yield by 55-60%. Alfalfa seeds multiply by 2-3 times, the ripening of fruit seeds and cotton fibers accelerates, and their quality improves.

In one season, 20-30 kg of honey, 4-5 kg of pollen, 2-3 kg of feathers, 200-250 g

ISSN 2181-3187

of propolis, 150-400 g of bee milk, 2.4 g of bee venom, 3.5-4 kg of wax can be obtained from 1 bee family.

Considering that there are 1,070,000 bee families in Uzbekistan, in one season they produce 10,000 tons of honey, 600 kg of pollen, 300 kg of feathers, 40-50 kg of propolis, 75-80 kg of bee milk, 150-200 kg of bee venom, 350-400 It is possible to get kg of wax. This is important in turning beekeeping into a profitable industry.

Our republic is distinguished from other countries by its warm climate and the abundance of serous plant species, which, in turn, is of great importance in the development of the industry. It is possible to increase bee colonies to 10,000-12,000 thousand throughout the Republic.

It is said that 1-2 kg of wax caps are cut off for every 100 kg of honey obtained in beekeeping farms, and 98.6% of wax is obtained from such wax caps, and 95.3% of wax can be obtained from maggot-grown hives. Wax products, i.e. mulkat incha and mulkat incha shavings, consist of 3 different types of substances.

1. wax (V).

2. non-wax and water-insoluble matter (n), which includes the wastes of caterpillars, pollen residues, and residues left after the wax melts.

3. non-wax, but water-soluble substance (r), which includes honey residue, worm droppings in wax, etc. If all of this is called V+n+r=100%, it is found that water-insoluble substances are 20-25% more than soluble substances. (R. Jamolov. O. Torayev, D. Khatamova. Basics of beekeeping, 2022).

Using this example, knowing the pure wax count of the wax (V), the amount of soluble matter (r) and insoluble matter (n) can be calculated. taking wax content (V) as 50%, since V +n+r= 100%, the sum is n + r = 100 □ 50 = 50%. in this case, the calculation of 50 soluble substances with 50% is 1 + 2.0, which corresponds to P = □□□ = 22.7%, and it is proved that the insoluble substances are equal to n= 50 □ 22.7 = 27.3% .

Bees secrete liquid wax produced by the wax glands, where a thin layer of wax solidifies in the form of a curtain, from which bees build their own wax. After 2-3 years of use, the soft fibers will darken and become smaller in size.

Wax is obtained by melting old inchas. Beeswax obtained in farm conditions is called apiary wax, wax obtained in factory conditions is called enterprise or extraction wax. Natural beeswax is used in the national economy. In the pharmaceutical industry, it is used in the preparation of adhesives (plasters), therapeutic candles, therapeutic creams, lip paint, and protective pads. products made with wax make the human skin shiny and soft. When wax is used to lubricate shoes, it prevents build-up and water penetration. It is used in the production of electricity and radio industry.

Research results: Indicators of wax quality: when determining the quality of

ISSN 2181-3187

wax, first of all, we pay attention to its color, smell and structure when broken, the color of pure natural wax is white, yellow-yellow and yellowish. High-quality honey-scented wax-colored cocoons are obtained by melting wax particles in the sun. Because water and no additional solutions are added to such wax.

The chemical composition of wax includes about 300 chemical compounds, which can be divided into 3 groups. Free fatty acids. such fatty acids make up 13-15 percent of the total weight of the wax and can combine with them during processing of the wax due to the effect of the free fatty acids contained in it, the color of the wax can change. Complex esters, such esters make up 70-75% of the wax. complex esters are formed as a result of addition of fatty acids and alcohols. Since complex esters are resistant compounds, they do not react with other substances, only when boiled with alkali, complex esters decompose into acid and alcohol.

Moderate carbohydrates are simple organic substances, consisting of carbohydrates and hydrogen, and simple organic compounds in wax make up 12-16 percent. In addition to the main compounds mentioned above, there are coloring substances in the wax, and the color of the wax depends on these substances, as well as odorants from honey and pollen, which are added to the wax during melting. pollen particles and water-dissolved, colored pollen and odorants are mixed.

Summary: Physical composition of wax: density of wax is measured in weight (g), volume of wax (cm3) but also depends on temperature. The average density of wax at 20°C is from 0.965 to 0.970. with each 1°C increase in temperature, its volume density decreases by 0.0088. Solid wax floats on water, but is melted the wax sinks. wax volume density is determined in chemical laboratories in 3 different ways, i.e. hydrometer (Gagera), pycnometer and hydrostat. the first and second different ways (in the book "Beeswax" by I.A. Kablukova and I. Antusheevich in 1893) and the third way was published by M. M. Sadirin in 1960 under the name "Scientific works of the Omsk Veterinary Institute".

Melting and solidification temperature of wax: wax changes from solid state to liquid state at 62-68°C. Wax starts to harden at 61-63°C.

Processing of wax products in the apiary. The most convenient and cheapest wax is obtained in a wax melter in the sun under apiary conditions. Wax in the sun, the temperature in the melting device rises to 70-80°C on sunny days, that is, to the temperature that can easily melt the wax. This device is installed in a place where the sun shines throughout the day and where the wind does not touch it. wax products melt wax flows to one side inside the device wax flows from the tin into the container where it is collected. the higher the temperature, the more wax is obtained. After the wax is removed in the solar wax melter, the remaining wax product waste has an average of up to 50% wax remaining. This unmelted wax is boiled or sent to wax factories, where another 25-30 percent wax is extracted.

ISSN 2181-3187

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