

MAKING JAM FROM WHITE MULBERRY BERRIES

Sh.Erkinov*; **R. Normakhmatov****; **A. Gafurov*****

**2nd year Master,*

***Professor, Doctor of Engineering sciences,*

**** senior lecturer.*

e-mail: akramgafurov66@gmail.com

Samarkand Institute of Economics and Service, Samarkand, UZBEKISTAN

Email id: normaxmatov49@mail.ru

Annotation. *This article is devoted to the production of jam from white mulberries with a high content of biologically active components. Grated lemon with peel was used to enrich the jam with ascorbic acid and ballast substances. Organoleptic and important physical and chemical indicators of the finished product were determined.*

Key words: *essential oils, mulberry, jam, shinny (concentrated juice), citric acid, water, vitamins, macro and microelements, nutritional value, biological value.*

In Uzbekistan, mulberry is considered a widespread fruit crop. Mulberry is also common in China, Japan, the Caucasus, Iran and other southeastern countries. Mulberry is a well-known and very common plant here. Ancient medicine believed that if their fruits in folk medicine they are used as a prophylactic for colds, sore throats, bronchitis. In folk medicine of Central Asian countries, white mulberry fruits are used to improve digestion and the functioning of the hematopoietic organs, for anemia, chronic pancreatitis. For rheumatism and degenerative joint diseases, baths in a decoction of white mulberry fruits are used. The fruits of white mulberry are also used in the treatment of peptic ulcers of the stomach and duodenum, form good blood, moisturize the dry brain, open blockages in the internal organs, and improve the poor condition of the liver and spleen. The fruits make the body plump, cure potency, kidney fat, drive urine, soften the insides and all compactions. They lower blood pressure and are a cure for rubella [4].

In Uzbekistan, mulberries are in great demand. Here it is consumed in fresh, dried form, and condensed syrup (shinni) is also prepared from it. To this day, mulberry leaves are used to feed cocoons, and the wood is used to make cradle for babies and musical instruments. Yellow paint is obtained from mulberry roots, which has good coloring ability and resistance to external factors.

For rheumatism, degenerative joint diseases They use baths in a decoction of white mulberry fruits. White mulberry fruit also used in the treatment of gastric ulcers and duodenum. Leaves and bark of the plant, in the form of decoctions prescribed for heart disease, diabetes, mental illnesses, epilepsy, as a diuretic. Chemical composition of the plant. The fruits contain a large amount amount of sugar; organic acids - malic, citric; pectins; tanning; ash and dyes; vitamins C, B, PP; trigonelline; rubber – [5, 6, p.9148]. The fruits also contain a large amount of iron (more in black mulberry), potassium, calcium. The isoprenyl flavonoids sangvenol, cyclomorusin, morusin, mulberrofuran G, sanggenol L, N, cyclomulberrin, cyclocommunol and ursolic acid – [7, p.1563; 8, p.56]. Alkaloids have been identified - mulbains, B, C amino acids - [9, p.190; 10, p.979; 11, p.457; 12, p.504]. Also defined (\pm)- cyclomorusin, 14-methoxy-dihydromorusin – [13], arto-Indonesian O, isobavachalcone, morachalcone, quercetin, astragaline, isoquercetin, rutin – [14, p.406], pyrrole alkaloids - morroles B – [15, p.5657].

The widespread use of mulberry fruits is explained by its unique chemical composition. Important components in mulberry fruits are easily digestible carbohydrates and dietary fiber.

Research in recent years has established that vitamins A, B1 (thiamine), B2 (riboflavin), B3 (niacin), B6 (pyridoxine), B9 (folic acid) were found in mulberry fruits. The macro and micro-elementary composition of mulberry fruit ash is very diverse. A number of deficient microelements, such as iron, selenium and cobalt, were found in mulberry fruits.

According to our research, the content of soluble solids according to the refractometer in white mulberry berries ~~were~~was-22.6%, and the content of reducing sugars was 18.7%. Also, white mulberry berries can serve as an additional source of vitamin C (ascorbic acid), where the content were - 23.6 mg%. In this regard, we have set the task of obtaining jam from mulberry fruits with a high content of biologically active components, which can be used for preventive purposes against a number of diseases.

To produce jam, at the beginning, mulberries were cleaned of mechanical impurities and sorted by quality. Then the sorted berries were washed with running water through a colander.

After draining the flowing water, the berries were crushed in a blender until a porridge-like mass was obtained. Crushed lemon with peel was used as an enrichment agent with biologically active components. The recipe consisted of 1 kg of mulberry porridge, 2 medium-sized lemons (250-300g). The resulting mass was boiled over low heat in an enamel bowl for 10

minutes. From time to time the mass was mixed. After which it was removed from the heat and the resulting mass was left for 4-5 hours to ensure uniform distribution of the components. During the cooling period, the color of the product becomes light brown. Then a secondary cooking was carried out with the addition of crushed lemon with peel for 4-5 minutes. The readiness of the jam was determined by the thickness of the resulting mass. The finished product with the desired consistency is rolled into sterile jars and stored in a cool place.

We determined the organoleptic and some physicochemical characteristics of the jam. Organoleptic indicators were determined by tasting method. The jam was tasted in the laboratory "Examination of Food Quality

Varov" Samarkand Institute of Economics and Service. The tasting was attended by laboratory workers and specialists from the "Service" department of this institute. Tasting quality assessment was carried out based on appearance, color, consistency, taste and smell. To increase the reliability of organoleptic assessments, we developed a 5-point system and used it to assess the quality of the jam. The results of the scoring of tasters were processed using a mathematical and statistical method. The average jam score was 4.8 points. According to the 5-point scale we developed, jam that received more than 4.5 points is considered to be of the highest grade.

We also determined some physical and chemical parameters of the prepared jam.

The content of soluble solids was determined by refractometer (1), invert sugar by the cyanide method (2), ascorbic acid by Prokoshev by titration with 2,6-dichlorophenolindophenol (3).

As is currently known, in the production of canned fruit - preserves, jam and marmalade, sugar reduction is one of the most important areas in the production of functional products. In this regard, we did not use sugar syrup in the production of white mulberry jam, and we also carried out cooking to obtain the finished product with a dry matter content of 40 percent.

We also determined the content of ascorbic acid in the finished product, where the content was 14.8 mg%.

Based on the above, we can conclude that the jam we obtained from white mulberry berries using pureed lemon is characterized by a high content of ascorbic acid and ballast substances. Thanks to this, they can be used for preventive purposes.

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