

## **INFLUENCE OF HEAT TREATMENT ON MICROBIAL CONTAMINATION OF EMULSION FAT COMPOSITE MIXTURES**

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### **ABSTRACT**

*The article describes a method for obtaining emulsion fatty composite mixtures by blending with flour from sesame and sunflower oil cake without heat treatment and subjected to pasteurization. Microbiological screening of products with and without additives was carried out during storage. It was found that mixtures with additives without heat treatment had a relatively high contamination and after 15 days of storage at a temperature of  $5.0 \pm 1^{\circ}\text{C}$  did not meet the requirements of SanPiN, in contrast to prototypes with additives subjected to preliminary heat treatment, which contributed to the extension of the shelf life of fatty mixtures up to 45 days. The optimal dosage of flour from the raw materials under study has been determined up to 10.0% inclusive to the mass of raw materials of emulsion mixtures, which, according to organoleptic indicators, can be identified as spreads.*

**KEYWORDS:** *sesame seed cake, hull-free sunflower cake, emulsion fat-and-flour composite mixture, heat treatment, microbiological purity, food safety, consumer value.*

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### **LITERATURE**

1. Донченко Л.В. Продукты питания в отечественной и зарубежной истории / Л.В. Донченко, В.Д. Надыкта. – М.: ДeЛи принт, 2006. – 296 с.
2. Игнатова Л.Г. Жировые продукты для здорового питания. Современный взгляд / Л.Г. Игнатова, А.А. Кочеткова, А.П. Нечаев, В.А. Тутельян. – М.: ДeЛи принт, 2009. – 396 с.
3. Жмых кунжутный полезные свойства [Электронный ресурс]. – Режим доступа:<https://xn--c1adanacpmdicbu3a0c.xn-p1ai/svojstva/zhmyh-unzhutnyj-poleznye-svojstva.html>.

4. Продукты функционального назначения. Биохимический состав жмыха кунжутных семян[Электронный ресурс]. – Режим доступа:[https://studbooks.net/1932993/tovarovedenie/biohimicheskiy\\_sostav\\_zhmyha\\_tykvennyh\\_semyan](https://studbooks.net/1932993/tovarovedenie/biohimicheskiy_sostav_zhmyha_tykvennyh_semyan).
5. Состав и применение жмыха подсолнечника [Электронный ресурс]. – Режим доступа:<https://gelznt.ru/articles/sostav-i-primenenie-zhmykha/>.
6. Жмых и шрот подсолнечные. Подсолнечный жмых и шрот [Электронный ресурс]. – Режим доступа:<https://parovarshik.ru/zemyh-i-shrot-podsolnechnye-podsolnechnyi-zemyh-i-shrot/>
7. Егорова Е.Ю. Влияние упаковки на срок хранения муки и жмыхов из масличного сырья/Е.Ю. Егорова, Л.А. Козубаева, С.И. Конева, А.Г. Никифоров // Ползуновский вестник. – 2019. - №1. – С.38-43.
8. Нетрусов А.И. Практикум по микробиологии: Учеб.пособие для студ. высш. учеб. заведений / А.И. Нетрусов, М.А. Егорова, Л.М. Захарчук и др. Под ред. А.И. Нетруса.- М.: Академия, 2005.- 608 с.
9. Исабаев И.Б. Разработка технологии производства низкожирныхмаргаринов с использованием зародышевого продукта И.Б. Исабаев, Н.Р. Джураева, К.Х.Мажидов, Т.И.Атамуратова//Хранение и переработка сельхозсырья.- 2014. - № 1.- С.43-45.
10. Слюсаренко Т.П. Лабораторный практикум по микробиологии пищевых производств /Т.П. Слюсаренко. - М.: Лёгкая и пищевая промышленность,1984.- 207 с.
11. K.S.Rakhmonov. Influence of leavens of spontaneous fermentation and phytoadditives on the provision of microbiological safety of bread // T. I. Atamuratova, N. R. Djuraeva, I. B. Isabaev, L. N. Haydar-Zade//Journal of Critical Reviews //2020, Vol.7, Issue 5, pp. 850-860.
12. S.K. Jabborova.Application of products of processing mulberries and roots of sugar beet in the production of cupcakes // I.B.Isabaev., N.R. Djuraeva., M.T. Kurbanov.,I.N. Khaydar-Zade., K.S. Rakhmonov //Journal of Critical Reviews //2020, Vol.5, Issue 5, pp. 277-286.
13. K.S.Rakhmonov. Application of phito supplements from medicinal vegetable raw materials in the production of drugs // T. I. Atamuratova., M.E. Mukhamedova., N.K.Madjidova., I.Sh. Sadikov //Journal of Critical Reviews //2020, Vol.7, Issue 12, pp. 934-941.
14. Djurayeva N, Mixtures of Vegetable Fat as a Potential Raw Material for Bakery// Barakayev N, RakhmonovK,Atamuratova T, Mukhamedova M, MuzaffarovaKh. // International Journal of Current Research and Review// october 2020, Vol.12, Issue 19, pp. 140-148. DOI: <http://dx.doi.org/10.31782/IJCRR.2020.12192>
15. Djurayeva N, Plant-fat mixtures as a potential raw material for bakery production// Rakhmonov K, Barakayev N, Atamuratova T, Mukhamedova M, MuzaffarovaKh. // Plant Cell Biotechnology and Molecular Biology 2020 21(45-46), pp. 29-42
16. Ravshanov S.S, The impact of ultrasonic activated water on hydrothermal processing of wheat grains grown in dry climate conditions // Rakhmonov K.S., Amanov B.N. // Plant Cell Biotechnology and Molecular Biology 2020 21(45-46), pp. 29-42

- 17.** Kuliev N.SH, Udk 664.8 baking properties and quality expertise wheat flour// Rakhmonov K.S. // European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 2, Pages 6333-6340
- 18.** Ravshanov S.S, The Effect Of Drinking And Activated Water On Field Scales Of Wheat Grains Grown In Arid Climatic Conditions// Rakhmonov K.S. Ergasheva H.B., Yuldasheva Sh. J.// European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 3, Pages 3065-3070.
- 19.** Rakhmonov K.S., Confectionery Products for Therapeutic and Preventive Purpose with Medicinal Herbs Uzbekistan// L.N. Khaydar-Zade., N.SH. Kuliev, G.H.Sulaymonova // Annals of the Romanian Society for Cell Biology, Vol. 25, Issue 2, 2021, Pages. 4126 – 4140.
- 20.** Ravshanov S.S., Influence of the Use of Activated Water during Hydrothermal Treatment on the Quality of Bread// Rakhmonov K.S., Radjabova V.E., Pardayev Z.T. // Annals of the Romanian Society for Cell Biology, Vol. 25, Issue 2, 2021, Pages. 4091 – 4102
- 21.** Azim Oltiev., The role of catalysts in fat transesterification technology// MatlubaKamalova., KakhramonRakhmonov., OrifjonMamatqulov// IOP Conf. Series: Earth and Environmental Science 848(2021) 012220
- 22.** Rakhmonov KS, Spontaneous fermentation starter cultures - an effective means of preventing the potato disease of bread // Isabaev IB. // Journal "Storage and processing of agricultural raw materials" .- M., 2011.- No. 12.- P.23-25.
- 23.** Rakhmonov KS, Influence of the substrate of the nutrient medium on the composition of the populations of microorganisms in the starter cultures of spontaneous fermentation // Isabaev IB, Akhmedova ZR // Journal "Storage and processing of agricultural raw materials". M, 2012 .. No. 9.- P.40-43
- 24.** Rakhmonov KS, Analysis of typical sources of microbial contamination of bread // Buxorodavlatuniversitetiilmiyaxboroti. // 2014.- No. 3.- P.37-43.
- 25.** Rakhmonov K.S. Potato Bread Disease and a Method for Its Prevention // T.I. Atamuratova // Russian Bakery Magazine. M, 2014.- No. 5.- P.37-38.
- 26.** Rakhmonov KS, Biotechnological aspects of ensuring the microbiological purity of bread // E. Muratov, T.I. Atamuratova // Kimyovakimyotexnologiyasi. 2015.- No. 2.- P.64-68.
- 27.** Rakhmonov K.S. Wheaten ferments spontaneous fermentation in biotechnological methods// Isabayev I.B. // Austrian Journal of Technical and Natural Sciences. 2016. - № 7-8. - P. 9-12.
- 28.** Rakhmonov KS, Methods for improving the composition of the nutrient medium of sourdough cultures for bakery products from wheat flour // T.I. Atamuratova. Isabaev I.B. // Bakery of Russia. 2016. –№2. - P.22-24.
- 29.** Rakhmonov KS, Optimization of the recipe composition of wheat breads using spontaneous fermentation starter cultures // Isabaev IB, U.M. Ibragimov, Molchanova E.N. // Bakery of Russia. 2018. –№3. - S. 33-37.

- 30.** I.B. Isabaev, The use of feed flour as a substrate for the nutrient medium of wheat starter cultures in the production of bread // T. I. Atamuratova., Rakhmonov K.S. // Buxorodavlatuniversitetiilmiyaxboroti.- 2018. No. 2.- P.24-30.
- 31.** Ravshanov S.S, Radjabova V.E, Rakhmonov K.S, Pardayev Z.T. Influence of the Use of Activated Water during Hydrothermal Treatment on the Quality of Bread // Journal Annals of the Romanian Society for Cell Biology - Romania, 2021. Vol. 25, №2 ISSN: 1583-6258, pp. 4091-4102.
- 32.** Ravshanov S.S, Rakhmonov K.S, Ergasheva H.B, YuldashevaSh.J. The Effect Of Drinking And Activated Water On Field Scales Of Wheat Grains Grown In Arid Climatic Conditions // European Journal of Molecular & Clinical Medicine. Volume 07. Issue 03. 2020. -pp 3065-3070.