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**National University
of Food Technologies**

84
**International scientific
conference of young scientist
and students**

**"Youth scientific
achievements to the 21st
century nutrition
problem solution"**

April 23-24, 2018

Part 1

Kyiv, NUFT 2018

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**84 Міжнародна
наукова конференція
молодих учених,
аспірантів і студентів**

**“Наукові здобутки молоді –
вирішенню проблем
харчування людства у ХХІ
столітті”**

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The publication contains materials of 84 International scientific conference of young scientists and students "Youth scientific achievements to the 21st century Nutrition problem solution".

It was considered the problems of improving existing and creating new energy and resource saving technologies for food production based on modern physical and chemical methods, the use of unconventional raw materials, modern technological and energy saving equipment, improve of efficiency of the enterprises, and also the students research work results for improve quality training of future professionals of the food industry.

The publication is intended for young scientists and researchers who are engaged in definite problems in the food science and industry.

Scientific Council of the National University of Food Technologies recommends the journal for printing. Minutes № 9, 29.03.2018

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Матеріали 84 міжнародної наукової конференції молодих учених, аспірантів і студентів “Наукові здобутки молоді – вирішенню проблем харчування людства у XXI столітті”, 23–24 квітня 2018 р. – К.: НУХТ, 2018 р. – Ч.1. – 512 с.

Видання містить матеріали 84 Міжнародної наукової конференції молодих учених, аспірантів і студентів.

Розглянуто проблеми удосконалення існуючих та створення нових енерго- та ресурсощадних технологій для виробництва харчових продуктів на основі сучасних фізико-хімічних методів, використання нетрадиційної сировини, новітнього технологічного та енергозберігаючого обладнання, підвищення ефективності діяльності підприємств, а також результати науково-дослідних робіт студентів з метою підвищення якості підготовки майбутніх фахівців харчової промисловості.

Розраховано на молодих науковців і дослідників, які займаються означеними проблемами у харчовій науці та промисловості.

Рекомендовано вченою радою Національного університету харчових технологій. Протокол № 9 від 29 березня 2018 р.

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45. Low alcoholic drinks with emulsions as a alternative to strong alcoholic drinks

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Introduction. In recent decades, many values have changed in a healthy way of life,

There was a clear change towards consumption of strong alcoholic beverages drinks, the consumer gives priority to you are low-alcohol beverages, beer.

Materials and methods. Development of low alcohol drinks recipes prepared on the basis of aromatic emulsions. Investigation of beverages for resistance in the process of their storage. The aim of study was to investigate the effect of particle size on the emulsion stability during storage and use of the finished product for 180 days. The materials used for the studies two samples of emulsions (orange and lemon) with particle sizes: one emulsion with a particle size of 0.1 - 1 micron and second emulsion with a particle size greater than 1.0 microns.

Results and discussion. The basis for the preparation of low-alcoholic beverages are aromatic bases, emulsions, sokoso-holding bases, sugar, ethyl rectified ethyl alcohol, citric acid, honey, juices, wine materials, malt brewing, water-alcoholic infusions from vegetable raw materials, pectin. dyes and other. Emulsion stability study was carried out by examining the size of the particle diameter by laser granulometry and resistance to setting low-alcohol beverages over the storage line. It is found that during storage of the product with a particle size greater than 1.0 microns appeared ring, which is associated with breach of the emulsion structure, and the conversion of oil into larger particles and floating them on the surface. In contrast, in the product, manufactured using the emulsion particles with a size from 0.1 to 1 micron above changes was observed.

This paper describes the functional role of hydrocolloids in oil-in-water emulsions low-alcohol beverages. The paper discusses the main factors controlling flocculation, creaming, coalescence and Ostwald ripening, distinguishing between the differing effects of adsorbing and no adsorbing hydrocolloids. The attention is specifically directed towards new understanding concerning the rheological and microstructural control of emulsion stability by non-adsorbing hydrocolloids, and the great potential of electrostatic protein-polysaccharide interactions at the oil-water interface for enhancing emulsion properties. Technological recommendations have been developed using high-methoxylated fast pectin, which is obtained from citrus peels. It improves the structure, gives viscosity in low-alcohol beverages (with an alcohol content of not more than 10%), prevents precipitation.

Conclusions. Thus, as a result of the research it was established that for the manufacture of emulsions in order to maintain their stability and quality of low-alcohol beverages must take into account the size of the particles of emulsions, which should not exceed 1.0 microns.

References

1. Aymeson A. (2012). Food thickeners, stabylyzators. Publishing "profession", St. Petersburg, pp. 24-44.
2. Stephen P., U.S. Patent for invention № 6576285, Cholesterol lowering beverage, Bader, Fowler, 10.06.2003
3. Phillips G., Williams P., (2000), Handbook of Hydrocolloids Cambridge: Wood Head Publishing, pp. 156.