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Національний університет харчових технологій

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

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

Квітень – Травень 2022 р.

Частина 2

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88 International scientific conference of young scientist and students "Youth scientific achievements to the 21st century nutrition problem solution", April – May, 2022. Book of abstract. Part 2. NUFT, Kyiv.

The publication contains materials of 88 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.

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Матеріали 88 Міжнародної наукової конференції молодих учених, аспірантів і студентів "Наукові здобутки молоді – вирішенню проблем харчування людства у XXI столітті", Квітень – Травень 2022 р. – К.: НУХТ, 2022 р. – Ч.2. – 291 с.

Видання містить матеріали 88 Міжнародної наукової конференції молодих учених, аспірантів і студентів "Наукові здобутки молоді – вирішенню проблем харчування людства у XXI столітті".

Розглянуто проблеми удосконалення існуючих та створення нових енергота 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.

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2. Sampling and its impact on results and interpretation of analysis

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Introduction. Sampling is the complex of activities that end with the acquisition of the test portion (actual subject of analysis) [1]. This stage of chemical analysis has a unique meaning and special importance and it can be considered as a process of reducing the mass of the object that has to be analyzed. The sampling procedure can affect the entire course of analysis. It is believed that sampling is the weakest link in the chain of chemical operations and can be a significant source of errors in the content of the analyte [2].

Material and methods. In this study the analysis of modern domestic and foreign scientific literature, American Society for Testing and Materials (ASTM) standards, Association of Official Analytical Chemists (AOAC International) materials, DSTU for sampling solids and liquids were used.

Results. The most difficult problem is the sampling of solids, especially with high heterogeneity and different particle size. The main stages of sampling for bulk solids are:

1. Selection of gross sample (sometimes up to 50-100 kg).
2. Grinding on special mills.
3. Averaging and selection of laboratory sample. Samples are averaged by envelope method or coning and quartering. According to the method of envelope, the crushed sample is formed into a rectangle that has to be separated by diagonals. Then the middle section is selected and separated by diagonals as well. The quarter is selected from the third envelope. Coning and quartering method involves pouring the sample so that it takes on a conical shape, and then flattening it out into a disk. Then the disk is divided into quarters and two opposite quarters are taken. The same process is continued until the required size of sample is obtained.

Sampling of liquid homogeneous samples is much easier - it is enough to mix it thoroughly. If the liquid samples are inhomogeneous and the volumes are small, they should be mixed thoroughly and sampled immediately. It is better to sample from large volumes after samples passing through the pump because the liquid is mixed intensively. Water samples from large tanks are taken using a special container that allows to take a sample from different levels. It is preferable to take samples from different depths diagonally and not vertically. It is possible to analyze the obtained fluid samples separately and average the results or combine the sample into one general sample and conduct several parallel analyses. The second method is better because it allows to characterize the accuracy of the results.

Conclusions. Some analysts overpass the problem of sampling quite often. But if the samples are selected incorrectly, even in the case of proper storage, preparation and analysis, the researcher will still get false results. The results may be correct and reproducible, but they will be wrong because they do not show the state of the object in relation to the presence, absence or concentration of pollutants. However, with the necessary experience and the use of statistical methods, sampling can be done with the same accuracy as the analysis itself.

References

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