SPbPU at the international conference in Samarkand

Samarkand State University hosted the international conference «Food Safety: Global and National Challenges» under the auspices of the UN Food and Agriculture Organization in Uzbekistan from 13 to 14 October 2023. Within the framework of the conference Polytechnic University co-organized the section «Importance of using modern biotechnologies and application of genetic achievements in maintaining stability of food safety».

The scientific and practical conference promoted the establishment of contacts between scientists from different countries, discussion of scientific achievements, realization and practical identification of modern promising directions of further research in the field of food security. The event was attended by about 40 foreign scientists from Russia, Pakistan, Kazakhstan, Tajikistan and a number of other countries. About 20 practitioners representing industrial and production organizations from near and far abroad delivered lectures and reports on food safety. The conference was opened by Rector of Samarkand State University, member of the Senate of Oliy Majlis Rustam Khalmuradov.

Akmal Akhatov, Vice-Rector for International Cooperation of SamSU, noted: In recent years, food security has become one of the most pressing problems facing the global community. The impact of factors such as natural disasters, water shortages and droughts caused by climate change further complicate the situation. As a result, there is a sharp rise in food prices in the global market. The situation requires further development of the industry through the application of new innovative technologies and scientific achievements.

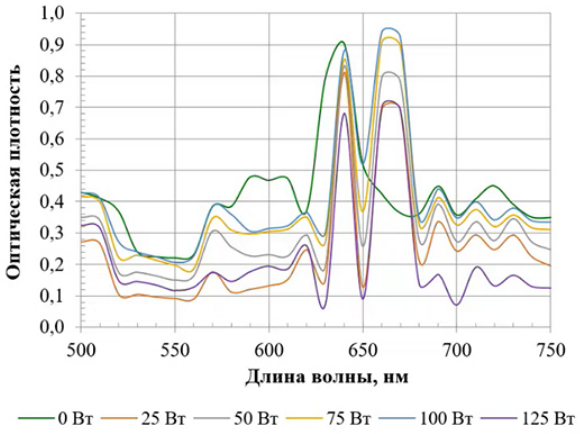
The participants discussed such important issues as biodiversity, physiological, biochemical and agro-technological bases of crop cultivation, the importance of using modern biotechnologies and application of genetic achievements in maintaining stable food safety, modern research in the field of nutrition and digestion, the role of chemical research. A separate discussion was held on the issue of personnel training and professional development — a crucial factor in strengthening food security, especially relevant for the arid regions of Uzbekistan.

At the plenary section of the conference, a report by the Director of the Higher School of Biotechnology and Food Production, Prof. Yulia Bazarnova on «Plant antioxidants and human health: theory and practice» was delivered.

Today, all over the world, one of the acute problems is the growth of socially significant diseases. Deep processing of food raw materials, long storage, refining, use of artificial substitutes for natural products, as well as the deterioration of the ecology of urban areas has led to a chronic deficiency of minerals and vitamins in the population. Search for new natural sources of pharmacological substances from plant raw materials with a high content of biologically active substances is one of the ways to solve this problem, said Yulia Bazarnova during her report.

Динамика экстрагирования полифенольных веществ из биомассы перегородок *Juglans regia* L. после УЗ-обработки (мацерация, 96 ч, 20–25 °С)

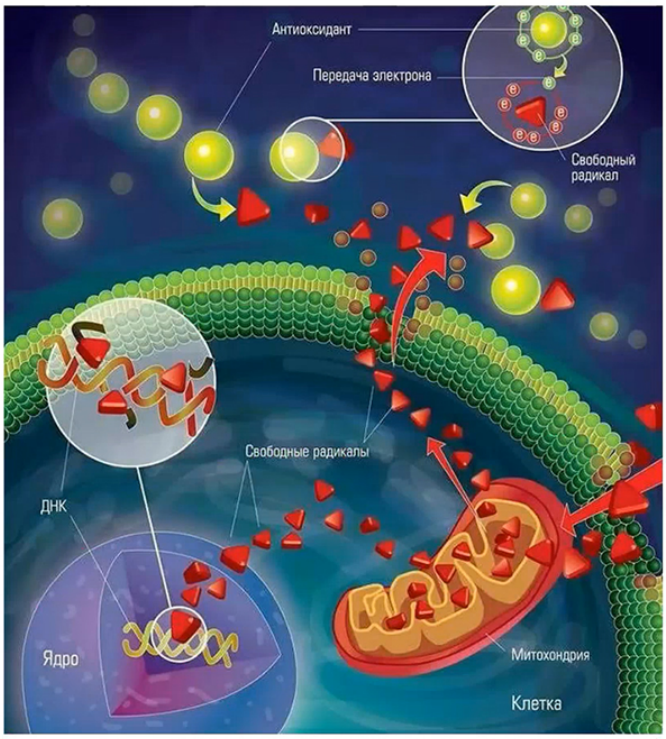
Мощность УЗ, Вт	Продолжительность экстракции, ч			
	24	48	72	96
0 (без УЗ-обработки)	3,84±0,03	4,03±0,03	4,17±0,05	4,19±0,04
25	4,01±0,03	4,17±0,05	4,81±0,04	4,83±0,03
50	4,09±0,03	4,37±0,04	4,98±0,04	5,01±0,03
75	4,29±0,04	4,51±0,03	5,05±0,05	**5,08±0,05**
100	4,37±0,04	4,62±0,05	5,11±0,04	**5,14±0,04**
125	4,32±0,04	4,43±0,04	4,48±0,03	**4,50±0,03**



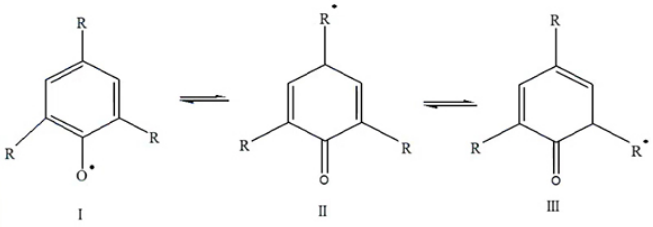
разведение 1:6

< 25 Вт — способ УЗ-обработки не эффективен
> 100 Вт — снижает выход ФВ

Bazarnova Ju., Chernikova D., Sevastyanova A., Đurović S. EXTRACTION OF POLYPHENOLIC COMPOUNDS FROM THE JUGLANS REGIA L. PELLICLES OF USING ULTRASOUND // Khimiya Rastitel'nogo Syr'ya, 2023, no. 1 (in Russ.). DOI: 10.14258/jcprm.20230111970



- Важнейшим свойством многих фенольных соединений является способность к обратимому окислению, то есть переход из фенольных форм в хиноидные и восстановление последних снова в фенолы:



фенольная (I) или хиноидные (II и III) структуры

- Хиноидные структуры способны прерывать цепные реакции окисления за счет образования более стабильных ***феноксильных радикалов***

Samarkand State University is one of the key partners of SPbPU in the Republic of Uzbekistan. Our universities are developing successful and fruitful partnerships in a number of areas, from economics and humanities to physics, materials science and biotechnology. A Joint Technology Center has been opened. Projects of joint (mirror) laboratories of SPbPU-SamSU are under development, in particular, the mirror laboratory «Applied Biotechnology» on the basis of the Institute of Biochemistry of SamSU and the Graduate School of Biotechnology and Food Production of SPbPU. Currently, the Higher School of Biotechnology and Food Production of the Institute of Biotechnical Systems and Biotechnologies of SPbPU is attended by master's degree students from Uzbekistan, who were sent to Polytechnic University's master's degree program after completing their bachelor's degree in Samarkand. This has become possible due to the Agreement on the development of master's degree programs concluded between our universities. Polytechnic University master's degree students were given the opportunity to make online presentations at an international conference, presenting the results of their research not only to their Uzbek mentors and colleagues, but also to the expert international community.

I am grateful for the opportunity to study at Polytechnic University, I very much appreciate the knowledge I was able to acquire here. My master's studies end in the spring, but I hope to enter SPbPU's graduate program right away. We are in constant contact with my native Samarkand University, and as soon as I become a qualified specialist, I will return to Uzbekistan to work in the laboratories of the Institute of Biochemistry at SamSU, Mustafokulov Maruf Holboi, a 2nd year master's degree student at the Higher School of Biotechnology and Food Production, shared his plans.

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