

34. USE OF ULTRASOUND POWER IN THE FOOD INDUSTRY

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Nowadays, in the food industry a significant role is played by non-traditional methods of processing raw materials, which perform various functions - promote the intensification of production, improve the functional properties of food raw materials and derived food products, extend their shelf life, allow the introduction of resource and energy-saving technologies.

In the process of research used modern literary and scientific research, results of the leading scientists of the food industry. The methods of system analysis and synthesis are used for processing.

Ultrasonic is known as an emerging technology in food industries. This technology has many advantages including flavor reduction, greater homogeneity, energy saving, more production, enhanced quality, decreased physiochemical hazards, and being environmentally friendly.

In food processing, power ultrasound was used to reduce total fermentation time of yoghurt by 0.5 h after inoculation [1] and extraction of collagen from bovine tendon [2]. Ultrasound has the ability to provide improved heat transfer characteristics, which is a key requirement to avoid such problems, and these have been utilized in cooking. In the food industry, ultrasonic emulsification is attracting interest for products such as fruit juices, mayonnaise and tomato ketchup, in the homogenization of milk [3].

In the ultrasound field, significant acoustic currents develop. Therefore, the influence of the sound on the environment generates specific effects: physical, chemical, and biological. Such as cavitation, sound-capillary effect, dispersion, emulsification, degassing, decontamination, local heating, and many others.

Conclusions. Ultrasound is considered to be an emerging technology in the food industry. Although there are many studies relating ultrasonic application in laboratory scale, its application in the food industry is not sufficiently common. Future studies should be focused on scale-up and standardization of treatment processes.

References

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