Для того, щоб гідно конкурувати на світовому ринку, необхідно пропонувати покупцю інноваційний продукт. Інноваційна продукція напівфабрикатів повинна мати таку характеристику:

1. Висока якість: збереження вітамінного складу, смаку та кольору, подовжений термін зберігання.

2. Екологічність тари та відходів споживання.

3. Безпека споживання: відсутність ароматизаторів, штучних барвників, консервантів.

Таким чином, за результатами дослідження розроблено схему розділення ставкової риби на окремі анатомічні частини та визначено їх раціональне використання.

ANALYSIS OF PHYSICAL METHODS OF RAW MATERIALS PROCESSING

Chervonyi V., PhD in Tech. Sc., Assoc. Prof.
Postnov D., Master Student
Kharkiv State University of Food Technology and Trade

Technological processes that currently exist in the food industry in some cases have reached the natural limit of speed and, by their nature, cannot be intensified. For the further development of production, new scientific and technical solutions based on modern achievements of science and technology are needed.

The classification of physical methods of food processing with different energy fields can be based on the basic principles of continuum mechanics at different intensities of the field effect on the product. The continuity of the spectrum of electromagnetic waves can serve as the basis for the classification of electrophysical processing methods. Planck's equation establishes the relationship between the radiation wavelength and the quantum energy. Any of these indicators can be taken as a basis.

In recent years, high-intensity processes and apparatus have been developed, based on electrophysical methods (electrothermal, including RF and microwave currents, infrared heating, electrostatic field, ultrasound, pulsed technology, etc.), the use of which in the food industry will allow in some cases to re-construct technological process, significantly increase labor productivity, increase the yield of the finished product and improve its quality, reduce metal consumption and energy intensity of machines and installations.

Currently, infrared radiation is widely used in various industries, in particular confectionery, bakery, meat, dairy, as in technological (thermal)

processes, and when performing various kinds of qualitative and quantitative chemical analyzes, studies of the molecular structure of matter and others .

The flow of infrared radiation, interacting with the material, is converted into heat. The ability of a material to absorb infrared rays depends on its optical properties and the wavelength of radiation, which is easily changed within the necessary limits. Such mobility of infrared radiation opens wide possibilities for its use in various technological processes. Currently, infrared radiation is widely used in various industries, in particular confectionery, bakery, meat, dairy, as in technological (thermal) processes, and when performing various kinds of qualitative and quantitative chemical analyzes, studies of the molecular structure of matter and others . The flow of infrared radiation, interacting with the material, is converted into heat. The ability of a material to absorb infrared rays depends on its optical properties and the wavelength of radiation, which is easily changed within the necessary limits. Such mobility of infrared radiation opens wide possibilities for its use in various technological processes.

In various fields of technology, processes using high-voltage ionization are widespread: electrical gas cleaning, electrostatic enamelling, electric smoking, electrocoupling, etc. All these processes unite the commonality of the method used, the essence of which is that the ionized gas moving in an electric field reports fine charge particles of matter (dust, paint, smoke, etc.), while the particles also perform an orderly directional movement from one electrode to another.

A significant group of technological processes can be intensified on the basis of acoustic methods using ultrasonic and sound vibrations. The possibilities of using ultrasound and low-frequency oscillations in technological processes of food production are most fully investigated.

Impulse technology began to develop only in recent years, but already the first studies indicate its prospects.

Despite the quantitative differences (frequency, amplitude, intensity, etc.) there is much in common in the nature of the impact of acoustic methods on heat transfer and mass transfer processes, which in many cases can be intensified. A characteristic is the simultaneous flow of opposite processes. Thus, when exposed to emulsin, a simultaneous course of the processes of dispersion and coalescence is observed, with the prevalence of one process over another being a result of the physicochemical state of the environment. For example, when processing milk with ultrasound, vibrations and a pulsed discharge at temperatures below 20 °C, the process

of coalescence with the formation of oil grain prevails, and at temperatures above 50 °C, the effect of dispersion is decisive.

In some cases, the known difficulties in choosing one of the acoustic methods are due to the ambiguity of the process flow. Thus, the presence of cavitation during ultrasonic treatment intensifies a number of processes: emulsification, dispersion, etc., at the same time, undesirable redox reactions occurring during the contact of the product with the products of hydrogen peroxide decomposition, which are formed in the cavitation zone, are possible. When using a pulsed discharge, the number of active factors of rather high energies is even greater (pulsed cavitation, shock wave, spark channel plasma, ultraviolet radiation, etc.), which makes it difficult to isolate useful processes from the simultaneously occurring processes and to exclude side ones.

ОБҐРУНТУВАННЯ ТЕХНОЛОГІЧНОЇ ФУНКЦІОНАЛЬНОСТІ КРЕВЕТОК *PALAEMON ADSPERSUS* ДЛЯ МОДЕЛЮВАННЯ ХАРЧОВИХ КОМПОЗИЦІЙ

Сидоренко О.В., д-р техн. наук, проф.
Петрова О.О., асп.
Київський національний торговельно-економічний університет

Рівень споживання риби та рибної продукції в Україні становить 10.7 кг на рік і не відповідає рекомендаціям ФАО/ВООЗ – 20 кг на рік. Вітчизняний ринок риби імпортозалежний: із 2014 р. імпорт креветок становить 85–90%.

Згідно з даними Інституту рибного господарства та екології моря, запаси креветки в Чорному морі становлять 370 тис. т, в Азовському – 250 тис. т. Вилов трав'яної креветки *Palaemon adspersus* в азово-чорноморському басейні у 2008–2011 рр. становив 15.9–21.1 т, а в лиманах Північно-Західного Причорномор'я – 0.1–0.5 т. Відповідно, наявний цінний сировинний вітчизняний ресурсний потенціал потребує науково обґрунтованого використання в харчових технологіях.

Обґрунтування напрямів комплексної переробки та технологічної функціональності креветок *Palaemon adspersus* на основі оцінки їх морфометричних характеристик, харчового потенціалу і показників безпечності є перспективним напрямом рибопереробної галузі вітчизняного ринку харчових продуктів.

Аналітичний і патентний пошук вказує на наявність технологій комплексної переробки хітиновмісної сировини з метою отримання