

до зниження швидкості випаровування вологи на 19%, внесення желатину – на 15%, сумісне застосування цих добавок – на 30%.

**Висновки.** Доведено ефективний вплив добавок білкової та полісахаридної природи на водоутримуючу здатність тіста. Більш наглядно це спостерігається при додаванні суміші агару та желатину в тісті з підвищеною вологістю. Швидкість випаровування вологи в таких умовах суттєво знижується. Це дозволить отримати вироби більш стійким до черствіння і як наслідок зберегти свіжість хліба на більш довгий термін.

## EFFECT OF ULTRAFINE GRINDING ON FUNCTIONAL PROPERTIES OF SOYBEAN BY-PRODUCTS

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**Research objective.** The main ingredients of soybean by-products were dietary fiber and protein, with high nutritional and health value, and it is a good dietary fiber raw material. The direct consumption of dried soybean by-products was rough. the ultrafine grinding technology can effectively increase the content of dietary fiber in the bean dregs, and improve the taste and quality of the product.

**Result and discussion.** The water solubility and expansion of ultrafine powdered soybean by-products has increased, compare with the control group. As the frequency decreased, the water solubility and expansion of the soybean by-products were significant change. When the frequency was 30 Hz, the water solubility was 20.84 %, and the expansion was 11.03 mL/g. As the frequency decrease, the water holding capacity showed a downward trend. When the frequency was 20 Hz, the water holding capacity reached the lowest 6.53g/g, and compared with the control group (10.92g/g), the difference was significant ( $p < 0.05$ ). The oil holding capacity was no significant change. The color of the soybean by-products has a significant change, after ultrafine grinding. The brightness  $L^*$  value of the soybean by-products has been greatly improved, and it has changed from the original wheat yellow to the creamy-white. The  $a^*$  and  $b^*$  values gradually decreased. The microscopic structure of the soybean by-products was made changes to scanning electron microscopes. As the pulverization frequency decreased, the soybean by-products powder

became finer and smoother. The particle size of the bean dregs gradually reduced. When the frequency was at 30Hz, the median diameter D50 was 47.95  $\mu\text{m}$ , but when the frequency was less than 30 Hz, the particle size of the bean dregs increased, and the same as a result of scanning electron microscope.

**Conclusion.** Ultrafine grinding was used to treat soybean by-products, in the physical and chemical properties has obvious changes. The water solubility and expansion was significantly improved, and much higher than the control group. The frequency of ultrathin grinding of 30 Hz is rational, and can be used for ultrafine grinding of soybean by-products and their subsequent use in the production of bakery products.

## THE EFFECTS OF HIGH PRESSURE PROCESSING ON THE MEAT AND MEAT PRODUCTS

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**Research objective.** High pressure processing (HPP) has been renewed as a best non-thermal intervention for extending the shelf-life and safety of free Ready-To-Eat meat products without altering the sensory and nutritional properties. The object of the study - the properties of meat, crushed meat products, gel and protein conformation of myofibrillary proteins treated with high pressure.

**Results.** During the high pressure processing (HPP), the pressure levels generally not less than 100MPa, the commonly used range is 100-1000 MPa and can work in the temperature range of - 20 °C to + 90 °C. The urgency and promise of the use of high pressure technology in the meat industry is proved on the basis of analysis of the principles of processing high-pressure meat and meat products; the influence of high pressure on: the properties of muscles (pH, color, water holding capacity, structure on tenderness); comminuted meat products (water and fat holding capacity, texture); gel properties and protein conformation of myofibrillar proteins (water holding capacity of myofibrillar proteins, texture of myofibrillar proteins, covalent and non-covalent bonds, and protein conformation of myofibrillar proteins).

**Conclusion.** It is well established that high pressure processing will improved the properties of muscle, comminuted meat and myofibrillar