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ADSORPTION RESEARCH OF PEA PUREE SOUP

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Today, the direction of research and production of "Functional Food Products" is intensively developing, which are purposefully created as products with certain properties aimed at supporting and strengthening human health [1].

One of the important indicators in the development of thermal technology for the production of pea soup puree is equilibrium humidity, which indicates the final moisture content of the material during drying, determines storage conditions and makes it possible to reduce energy consumption for the process. Therefore, the aim of the work is to determine the equilibrium moisture content for both monopowders, functional powders, and instant products based on them.

To determine the equilibrium moisture content of pea puree soup and its components depending on the relative humidity of the air, the Van Bamelen strain gauge (static) method was used. The essence of the Van Bamelen method is covered in previous publications [2].

On the basis of the conducted studies, isotherms of water vapour adsorption of functional powders and pea puree soup based on them were constructed.

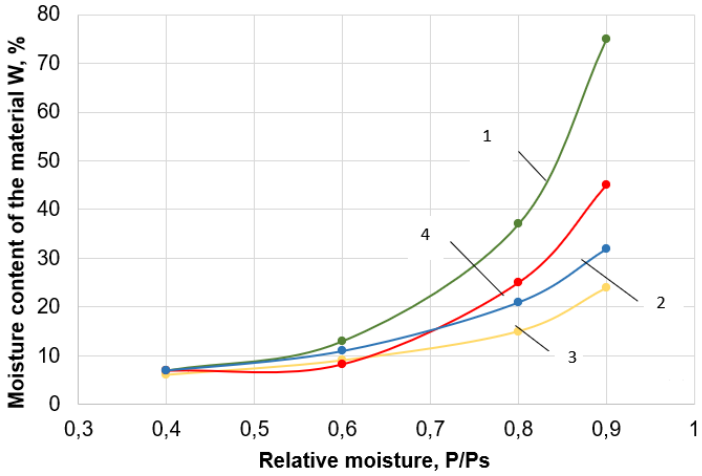

Fig. 1. **Isotherms of water vapour adsorption of mono-, combined powders and instant foods based on them:**
1 - carrot; 2 - pea; 3 - pea and carrot; 4 - pea puree soup

Figure 1 shows the water vapour adsorption isotherms of carrot, pea, functional pea and carrot powder and pea soup. Functional pea and carrot powder is the main ingredient in the recipe for pea puree soup.

The equilibrium moisture content (figure 1) at φ = 0.4 of all the tested samples is in the range of 6-7 %. The lowest value of equilibrium moisture is observed for functional pea and carrot powder at φ = 0.8 - 15 %, and at φ = 0.9 - 24 %. The isothermal curve of the pea puree soup (pos. 4) is located between the curve of the pea powder (pos. 3) and the curve of the carrot powder (pos. 1).

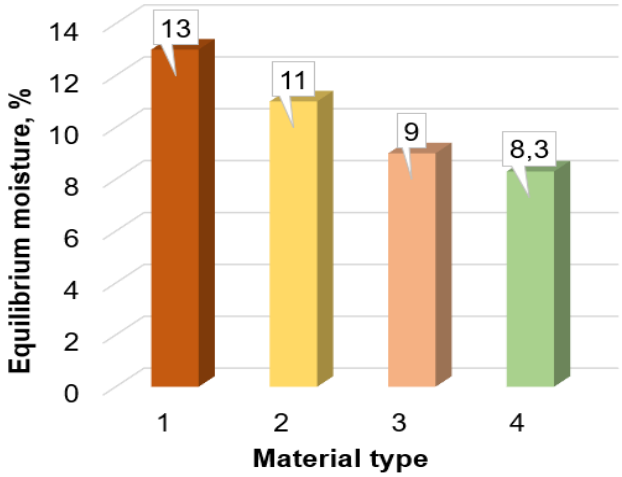

Fig. 2. **Equilibrium moisture content at φ = 0.6 of mono-, combined powders and instant foods based on them:**
1 - carrot; 2 - pea; 3 - pea and carrot; 4 - pea puree soup

Figure 2 shows a comparative characteristic of the equilibrium moisture content at φ = 0.6 of carrot, pea, functional pea and carrot powders and pea puree soup based on them. The equilibrium moisture content of carrot powder is 12 %, pea powder 11 %, functional pea and carrot powder 9 %, and puree soup based on them 8.3 %.

Conclusions. When storing pea puree and functional powders, it is recommended to maintain the following conditions in the room: air humidity 60 - 70% at a temperature of 20 - 25 °C and to pack them hermetically.

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