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«Applying AI to teaching developers of new food products»

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# Problem statement

- AI technologies include the developments in the field of automation for solving "smart" problems, involved in the food products production. One of the top AI technologies used to create food products is photo printing. It is directly influenced by consumers' choice and taste preferences as modern customers have much higher expectations, and conceptual confectionery and culinary products, decorated to guarantee individual celebrations are in high demand now. In this regard, photo printing technology used to create various exclusive edible photographs and images in a short period of time, which are later used to design products and dishes, is very popular in food industry. Photo printing is often used to create confectionery products, since it takes years to master the skill of a confectioner, and the technology of photo printing makes it possible to produce complex figured artistic confectionery products with high organoleptic characteristics. An efficient application of digital technologies in the process of food production will improve the productivity and thereby increase the profit of the enterprise. Therefore, food market needs food developers possessing skills of creating new food products with the use of digital technologies including artificial intelligence.



# Problem statement

The aim of this study is to consider the possibility of applying AI technologies to teaching new food products developers. For this, the issue of improving the technology for creating semi-finished products balanced in basic nutrients was studied within the course of the Master's degree program "New food products for rational and balanced nutrition".



# Solution methods

- This dye, compared to the existing synthetic dyes, has high nutritional value and has been highly estimated by the experts. With this dye it is possible to exclude flavors (cognac, essences, rum) from the recipe of dishes and confectionery products, due to its pronounced aroma that gives the products a pleasant taste and flavor.
- The analysis of chemical composition of this food dye has shown that it is completely dependent on the raw material and can fluctuate quite significantly, which is proved by our findings obtained after 7-8 years research of honeysuckle berries.
- The chemical composition of the dye may vary depending on the varieties of honeysuckle and rowan berries used to obtain the dye. This chemical composition is based on the results of studying several varieties of honeysuckle and rowan berries. Using a similar technology, natural food dyes of other colors can be obtained from these raw materials.
- As a result of printing on food paper with inks obtained on the basis of a natural food dye, a product balanced in vitamins and minerals can be obtained.



# Conclusions

## Results, implementation

- Technologies developed as a part of the Master's degree program, such as technologies for producing natural food dyes from berries can be used to obtain ink for a food printer. This new product is of high nutritional value and thereby can be further used to modernize photo printing technology employing artificial intelligence. As a result, this technological solution can be used to obtain edible images that are a source of vitamins and minerals for the human body.
- **Thus, the graduates of the Master`s degree program "New food products for rational and balanced nutrition," acquire skills to apply AI technologies to create food products and to improve the existing technologies of obtaining semi-finished products for carrying out the technological process.**



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