



Fortified food. Challenges

Rinovetz A.^{1,2}, Riviş A.^{1,2}, Mişcă Corina^{1,2}, Negrea Monica^{1,2}, Rădoi P.B.^{1,2}, Velcirov Ariana^{1,2}, Stoin Daniela^{1,2}, Hegheduş-Mîndru G.^{1,2}, Megyesi Corina^{1,2}, Delia Dumbravă^{1,2}, Hădărugă Nicoleta^{1,2}, Traşcă T.I.^{1,2}

¹University of Life Sciences "King Mihai I" from Timisoara, Faculty of Food Engineering, ²Research Institute for Biosecurity and Bioengineering, 300645-Timisoara, Romania, Calea Aradului 119, Romania, Phone: +40-256-277327; Fax: +40-256-277261

*corresponding author, e-mail: alexandrurinovetz@usvt.ro

Abstract: Fortifying/biofortifying or correcting the biological value and bioavailability of a food product involves addition of micronutrients (macroelements (calcium, magnesium, sodium, potassium, phosphorus and chlorine), trace elements (iron, fluor, iodine, selenium, zinc), essential vitamins (especially B complex, vitamin A, vitamin C, D, E, K)). It is estimated that malnutrition and nutrient deficiencies cause deaths of 3÷5 million people per year globally. Statistics require, in present socio-economic context, implementation of the concept of public health policy in order to prevent diseases generated by the deficiency of sanogenic factors depending on the habitation area. Thus, the diet in a region may be deficient in particular/essential nutrients conditioned by soil with deficient response in raw materials and/or basic foods. According to WHO (World Health Organization) and FAO (Food and Agriculture Organization of the United Nations), fortification is recommended as: "the practice of deliberately increasing the content of an essential micronutrient in a food to enhance nutritional quality with health benefits", and improvement/correction is defined as "synonymous with fortification for the purpose of adding micronutrients to a food, which are lost during processing". The literature confirms that the most common fortified food raw materials are cereals/cereal products, milk/dairy products, saturated/unsaturated lipids, tea, beverages, infant formulas (Fig. 1) [1, 2].

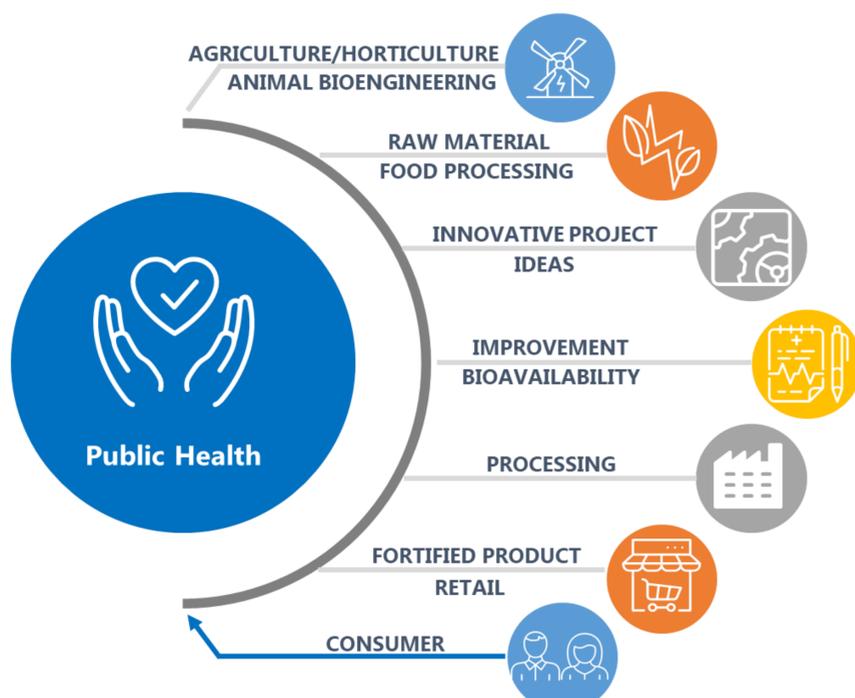


FIG. 1. Development of fortified food products and/or new nutri-product

• Conclusions

The previous statements contribute to the idea that food fortification can be achieved by capitalizing on the natural agri-food resources in the geographical habitation area through a voluntary fortification process, a process by which a local artisanal food producer chooses to add micronutrients to the food in compliance with regulations and quality standards.

• Reference

1. Liyanage, C., Hettiarachchi, M., 2011, Food fortification, Ceylon Med. J., 56 (3), p. 124–127.
2. Darnton-Hill, E., 1998, Overview: Rationale and elements of a successful food-fortification programme, Food Nutr. Bull., 19 (2), p. 92–100.

Acknowledgement: The authors are indebted to the University of Life Sciences "King Mihai I" From Timisoara, Research Institute for Biosecurity and Bioengineering, Faculty of Food Engineering, Timișoara, for financial and technical support.