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LATEST NEWS

Functional Foods – Innovation for Health and Sustainable Nutrition

Functional foods have evolved from niche products to mainstream dietary staples, driven by global emphasis on preventive nutrition and mounting scientific evidence linking bioactive compounds to chronic disease risk reduction. While the concept of "food as medicine" traces to Hippocrates, the modern scientific framework emerged in 1980s Japan, culminating in the formalized European definition established in 1999.

Defining and Driving the Market

Functional foods are consumed as part of regular diets while delivering demonstrable physiological benefits beyond basic nutrition—including immune enhancement, metabolic regulation, cardiovascular support, inflammation reduction, and oxidative stress protection. This value proposition drives substantial market growth, with the global functional food sector estimated at USD 300 billion in 2024 and projected to reach USD 500 billion by 2033, propelled by increasing consumer awareness of nutrition's protective role.

These foods encompass three categories: conventional foods naturally rich in bioactive compounds (such as flavonoid-rich blueberries), fortified products with added beneficial ingredients, and foods with modified bioavailability. All represent dietary components providing health benefits beyond fundamental nutritional requirements.

Functional foods developed through research projects at the National Institute of Research and Development for Food Bioresources, Bucharest

Romania contributes significantly to this research landscape through institutions like the National Institute of Food Bioresources in Bucharest, part of the Food Section within the Romanian Academy of Agricultural and Forestry Sciences. Current Romanian research priorities align directly with global public health needs, focusing on developing novel functional foods tailored to specific health outcomes, as presented below:

I. Increasing the shelf life and durability of foods through fermentation processes

Project title: PN 19 02 02 01 "Research on the valorisation of Jerusalem artichoke (*Helianthus*

tuberosus) for the development of low-carbohydrate food products with antioxidant potential, intended for the diet of people with diabetes mellitus" (2023-2026).

1. Natural starter culture enriched in phenolic compounds and inulin



II. Improving the health of the gastrointestinal tract

Project title: PN 19 02 02 01 "Research on the valorisation of Jerusalem artichoke (*Helianthus tuberosus*) for the development of low-carbohydrate food products with antioxidant potential, intended for the diet of people with diabetes mellitus" (2023-2026).

1. Low-carbohydrate Jerusalem artichoke and apple jam with antioxidant potential



III. Reducing the risk of foodborne diseases, such as obesity, cardiovascular disease, type 2 diabetes, arteritis, osteoporosis, and cancer, to prevent obesity

Project title: PN 19 02 02 01 "Research on the valorisation of Jerusalem artichoke (*Helianthus tuberosus*) for the development of low-carbohydrate food products with antioxidant potential, intended for people with diabetes mellitus" (2023-2026).

1. Pastry filled with low-carbohydrate Jerusalem artichoke and apple jam, with antioxidant potential





"Research in the Food Industry" award at the "Ora de bun gust 2022" national competition, for the product *Croissant with low-carbohydrate Jerusalem artichoke and apple jam, with antioxidant potential*

2. Low-carb bread with antioxidant potential, fortified with Spirulina

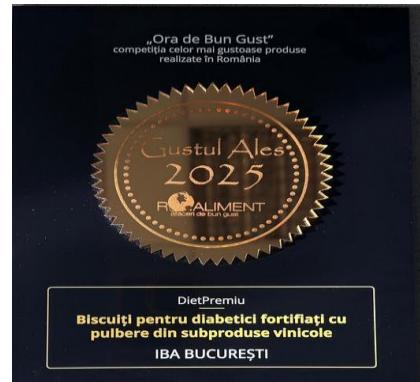


3. Low-carb cookies with antioxidant potential, fortified with Spirulina



Project title: ADER 6.5.2 "Evaluation of the agronomic and oenological characteristics of high-nutraceutical-value grape varieties to increase the added value of wine products and by-products" (2023-2026).

Diabetic biscuits fortified with wine by-product powder



Diet" award at the "Ora de bun gust 2025" national competition, for the product "Diabetic biscuits fortified with wine by-product powder"

III. Provide well-being and body's resistance to disease; to provide a proper diet for the aging process.

Project title: PN 23 01 02 01 "Research on the enhanced valorisation of nutrient- and bioactive compound-rich plant waste, in the context of the circular economy and the promotion of 'green technologies" (2023-2026).

Cookies fortified with broccoli leaf powder



Cookies fortified with broccoli leaf powder – "Chosen Taste 2024 – INOVA" award

Conclusion

Innovations – new foods that will include the addition of protein, fiber, probiotics, and the use of plant-based ingredients are clear evidence of the direction this industry is heading, which redefine the concept of nutrition. For long-term success, continued research is crucial to clarify specific benefits and interactions, ensuring these products remain not only healthy but also appealing in taste and texture.

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