

**EAT**   
*functional*

**FUNCTIONAL  
FOOD  
TECHNOLOGY**

## CURRENT SOLUTIONS FOR ADDING BIOLOGICAL ACTIVE INGREDIENTS (BAI) TO FOOD PRODUCTS

### FORTIFICATION, BIOFORTIFICATION AND ENRICHMENT

Fortification and enrichment of foods are usually lumped together, but they mean something slightly different. **Enrichment** involves replacing vitamins and minerals stripped away when a food is refined or processed, while **fortification** is adding extra vitamins or minerals or any other compounds to a food product that would not normally be there. True fortification is when vitamins and minerals are added **during the food processing production phase** to make a processed food more nutritious and to give it a more favourable nutritional profile.

By contrast, **biofortification** can be reached through agronomic measures (such as fertilizers, or feed), genetic engineering, or breeding approaches. In case of biofortification, certain parameters of the end product's quality (e.g. fatty acid composition in milk) are influenced through the diet of animal and no bioactive substances are added during the processing procedure.

However, growing demand for „natural“ food production (clean labelling) negatively influences the consumer acceptance of fortified foods.

### Limitations of fortification

One factor that limits the benefits of food fortification is that isolated nutrients added back into a processed food (that has had many of its nutrients removed), does not always result in the added nutrients being as **bioavailable** as they would be in the original whole food. An example is skim milk that has had the fat removed, and then had vitamin A and vitamin D added back. Vitamins A and D are both fat soluble, so a person consuming skim milk in the absence of fats may **not be able to absorb** enough of these vitamins as one would be able to absorb from drinking whole milk.

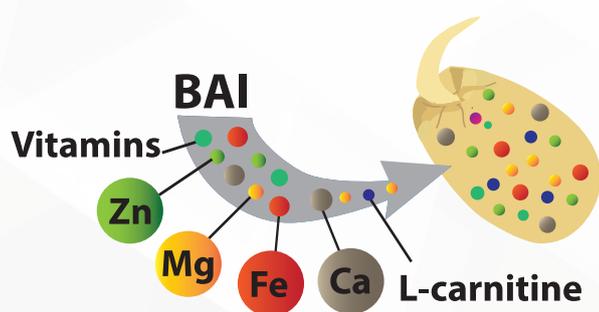
### WHAT ARE FUNCTIONAL FOODS?

**Functional Foods are foods with biologically active compounds and ingredients that improve health or lower the risk of disease.** These ingredients are not just vitamins and minerals but may include antioxidants, phytonutrients, enzymes or live cultures. Functional foods and beverages usually offer a specific health benefit or health promoting effects.

**A major difference between fortified foods and functional foods is the quantity of vitamin and mineral added to a product.** In fortified foods the BAI is not necessarily enough to provide a major health benefit, it's mostly there to prevent deficiency or create a more favourable nutritional profile. In contrast, functional foods contain enough of some component to have a specific health benefit. For example, plant sterols lower cholesterol for heart health, and yogurt supplies your intestines with gut-friendly bacteria.

## OUR SOLUTION FOR FUNCTIONAL FOOD

We have further developed and extended our germination process by **incorporating any biological active ingredients (BAI)** (Vitamins, minerals, antioxidants, L-carnitine, Q10, etc.) **into sprouted seeds and grains in optimal amount by natural/holistic way.**



1 Figure: Incorporation of bioactive ingredients into sprouted seeds

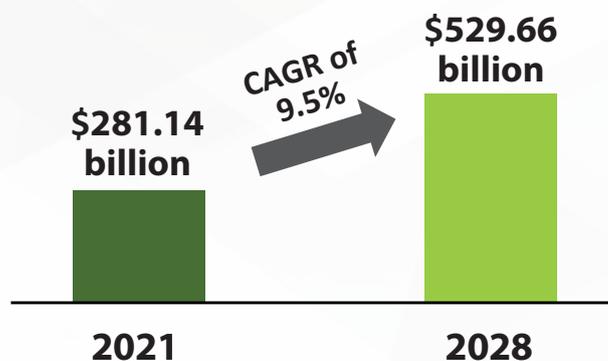
From these new sprouted raw materials (YASO®, rice, lentil, chickpea, etc.) which are rich in ideal combination of biological active ingredients possible develop **novel functional food lines** (healthy aging, sport nutrition, weight management, well-being, medical nutrition etc.) especially **to reduce different disease risk for a certain group of people** for example for seniors.



2 Figure: Food supplements vs. sprouted pulses

## COMPETITIVE ADVANTAGES OF OUR SOLUTION

- **Natural/holistic process**
- **All in one – tailor made complex solution for functional foods**
- The big advantage compared to current solutions is that the **bioavailability** of the incorporated biologically active components (“organic” form) in foods is **significantly improved compared to dietary supplements or fortified foods with the same component.**
- **Arbitrary bioactive material composition can be achieved, for any selected functional food consuming groups.**
- The solution also makes it possible that independently from the original composition of the used sprouted raw materials and compositions carrying the given function contain all scientifically approved active materials (vitamins, minerals etc.) **in optimal quantity and quality** (or in justified case, even in higher concentration) could be obtained by incorporation.
- **Patented** (Novel raw material for Functional Foods and process for the preparation thereof EP Patent No: EP 2 908 664)
- **Growing market** (CAGR 9.5% between 2021-2028 Fortune business insight, 2021)



3 Figure: Fortune business insight, Global functional food and beverage market, May 2021

## EXPERTS ON THIS TOPIC



**PROF. DR. ANDRAS SALGO,  
DSC,  
PROFESSOR EMERITUS**

- Former head of Department of Applied Biotechnology and Food Science, Budapest University of Technology and Economics
- 48 years experience in education and research in food science
- More than 150 scientific articles, 2000 citations, Hirsch index=22



**DR. JENO SZILBEREKY,  
PHD**

- Chemical engineer and pharmaceutical researcher
- Significant experience in research, product development, commercialization of products and innovative company management
- Owner of Sinnex Ltd. a producer of natural health products
- 21 scientific publications, 34 patent and patent applications



**DR. ANDREA JEDNAKOVITS,  
PHD**

- Pharmacist and pharmaceutical researcher
- She directed the research and development activity of Biorex pharmaceutical research company.
- Expert in research coordination, product development and IP
- 21 scientific publications, 15 patents



**DR. JANOS ADAM,  
PHD**

- Plant production and plant physiology expert with over 10 years of professional experience
- Horticultural Engineer, Expert in Plant Protection, with a PhD from Crop and Horticulture Science
- Vertical farm technology specialist, experienced project manager in the fields of R&D, innovation and AgriTech
- Experienced in food safety and food security topics and quality systems

## ABOUT EATFUNCTIONAL

EATfunctional is created by seasoned researchers, entrepreneurs, and professionals to revolutionize food industry with making available the benefits of breakthrough patented technologies developed by two of our funders.

The first technology is industrial-scale high yield sprouting process of soybean (YASO®), pulses, and seeds. This solution can create healthy, sustainable, and affordable new plant-based protein source that eliminates all the issues around human consumption of traditional soybean-based food.

The second technology enables us to incorporate any Biological Active Ingredients (BAI) (vitamins, minerals, antioxidants, L-carnitine etc.) into sprouted seeds (wheat, rice, corn, legumes etc.) in optimal amount. This way food producers can create novel functional food lines to reduce disease risk for specific groups of consumers.

We are offering the technologies and the knowledge we accumulated over the past decades for food industry players and can support them to introduce exciting high business potential new product lines that are addressing the latest trends of the industry. We are also looking for partners who are representing us in certain markets.

For more information, contact us on [info@eatfunctional.eu](mailto:info@eatfunctional.eu) or visit our website: [www.eatfunctional.eu](http://www.eatfunctional.eu)

