

RISK-BENEFIT ASSESSMENT:
A TOOL FOR A BETTER FOOD AND HEALTH POLICY IN EUROPE



Assunção R^{1,2}, Martins C^{1,2}, Brazão R¹, Fernandes P¹, Carvalho-Oliveira I¹, Torres D³, Lopes C³, Carvalho C³, Vasconcelos F⁴, Monteiro S⁴, Nabais P⁴, Carmona P⁴, Persson M⁶, Thomsen S⁶, Jakobsen L⁶, Pires S⁶, Poulsen M⁶, Membré JM⁵, Boué G⁵, Alvito P^{1,2}
¹National Institute of Health Dr. Ricardo Jorge (INSA), Lisboa, PT; ²Centre for Environmental and Marine Studies (CESAM), University of Aveiro, Aveiro, PT; ³University of Porto, Faculty of Food Sciences and Nutrition (U.PORTO), Porto, PT; ⁴Economic and Food Safety Authority (ASAE), Lisboa, PT; ⁵Institut National de la Recherche Agronomique (INRA), Paris, FR; ⁶National Food Institute, Technical University of Denmark (DTU), Lyngby, DK.
paula.alvito@insa.min-saude.pt

State of the art

Data from a recent Portuguese national project that studied the toxic effects of children exposure (under 3 years old) to multiple mycotoxins in infant foods (MYCOMIX) reported the co-occurrence of 21 mycotoxins and metabolites in breakfast cereals primarily marketed for children. This study showed that 96% of the analyzed breakfast cereal samples were contaminated with mycotoxins^{1,2}. The output of this project also highlighted the knowledge gaps on beneficial health effect of these foods, and the need to determine the risk-benefit balance, since the evaluated food products, namely breakfast cereals, are simultaneously recognized vehicles of food components, like nutrients, vitamins and water soluble and insoluble fibers, which can be assumed as beneficial for children health.



Question to brainstorm at EFSA Conference?

Health risks associated with consumption of cereal-based foods, an important source of nutrients with beneficial health effects, could increase in the near future due to climate changes in Europe³ (dry conditions and increased ambient temperatures) while it is also an important source of nutrients with beneficial health effects.

Health risks:

- chemical hazards (e.g. mycotoxins)
- microbiological hazards (e.g. Bacillus cereus)

Beneficial ingredients:

- Dietary fiber (e.g. prevention and treatment of childhood obesity, maintenance of normal blood glucose and lipid values and blood pressure, risk reduction for future chronic diseases, such as cancer, cardiovascular disease (CVD), and type 2 diabetes)

RISK BENEFIT 4EU

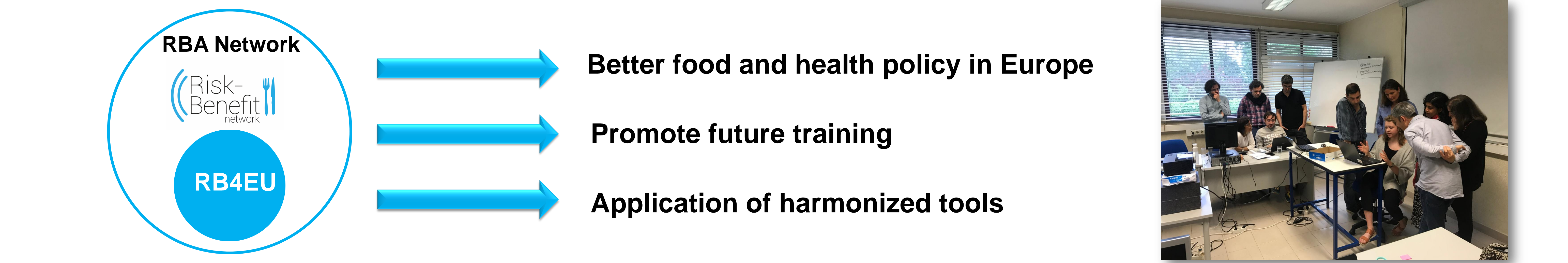
(https://riskbenefit4eu.wordpress.com/)

Can we have a quantitative tool that enable food and health authorities to estimate the balance between risks and benefits of foods usually contaminated by mycotoxins, as cereals-based products?

RiskBenefit4EU – Partnering to strengthen the risk-benefit assessment within EU

“RiskBenefit4EU – Partnering to strengthen the risk-benefit assessment within EU using a holistic approach” is a recent European project funded by EFSA (GP/EFSA/AFSCO/2017/01-GA02) in a joint initiative of 5 organizations from 3 EU member states: National Institute of Health Dr. Ricardo Jorge (INSA), Portugal, Economic and Food Safety Authority (ASAE), Portugal, Faculty of Food Sciences and Nutrition, University of Porto (U.PORTO), Portugal, Institut National de la Recherche Agronomique (INRA), France and National Food Institute, Technical University of Denmark (DTU), Denmark. This project aims to strengthen the EU capacity to assess and integrate food risks and benefits in the areas of microbiology, nutrition and toxicology through the development of a harmonized framework that will be available to EU member states organizations. Recently this project joined the International Network for Risk-Benefit Assessment (RBA) of Foods launched to facilitate future activities proposed in the workshop, and to help partners consolidate and further develop their work.

Both RB4EU and RBA network intend to expand research among young students and early stage researchers in order to contribute for a better food and health policy in Europe promoting training and the application of harmonized tools in Member States.



Kick-off meeting RB4EU
17th January 2018, EFSA (Parma, Italy)

Expected Results

The expected impact of RiskBenefit4EU stands to help further developing and establishing RBA as a tool, collaborating with other international networks, to provide scientific evidence to inform decision-makers in the area of food safety and nutrition at a national, regional and international level. RiskBenefit4EU will create a harmonized framework that different EU institutions could use and apply for their realities and food problems. Furthermore, the collaborations to be settled will provide a unique opportunity to establish critical mass thinking for this research area namely among early stage researchers.

Acknowledgements: Projects GP/EFSA/AFSCO/2017/01-GA02 (EFSA), BioMAN/DAN/01 (INSA), UID/AMB/50017/2013 (CESAM).
References: ¹Assunção R, Vasco E, Nunes B, Loureiro S, Martins C, Alvito P (2015). Food and Chemical Toxicology, 86, 274-281. ²Martins C, Assunção R, Cunha SC, Fernandes JO, Jager A, Petta T, Oliveira CA, Alvito P (2018). Food Chemistry, 239, 132–140. ³Assunção R, Martins C, Viegas S, Viegas C, Jakobsen L, Pires S & Alvito P (2018). Food Additives & Contaminants: Part A, DOI: 10.1080/19440049.2018.1447691.