

ABSTRACT BOOK

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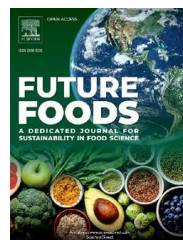
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diet wherein there is overconsumption of high-energy, low-nutrient-dense foods with added sugars is involved. Besides that, supplements available in the global market are extremely expensive and therefore may not reach the underprivileged population where they are needed the most. While the practice of compositing/blending of foods has been applied for centuries at a household level to enrich grain foods with key macronutrients, food-to-food fortification (FtFF) is now viewed as an emerging strategy wherein micronutrient-dense foods are added to food recipes (household level) to increase the micronutrient quality. Therefore, present research aimed to develop a vegan sprinkler formulation that can be used as an add-on to home cooked recipes. Sprinkler has excellent amount of macro and micronutrients present to support required amount of growth and development in children. Moreover, the sprinkler is shelf-stable for 6 months in standard environmental conditions and in extreme conditions as per accelerated shelf-life studies. The sprinkler does not contain any additive chemicals or preservatives. Since sprinkler is a vegan product, antinutrients have been reduced to obtain greater mineral bioavailability. Also, Sensory analysis has been completed with the target population. Metabolic simulation study indicates that the sprinkler is capable to improve anthropometric parameters in the children if consumed on regular basis.

Identification of Soft Wheat and Minor Cereals with Low Sanitary Risk for Bakery Products Supply Chain

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Abstract:

The study investigates the content of the mycotoxin deoxynivalenol (DON) and asparagine (ASN), precursor of acrylamide (AA) formed during baking, considering 25 cultivars of soft wheat with different breadmaking aptitude and 15 cultivars of minor cereals (durum wheat, emmer, spelt, rye, triticale, barley, tritordeum). All genotypes were cultivated in 3 growing seasons (2020, 2021, 2022) in an experimental field, by applying the same agronomic practices. Cereal grains were milled in a pilot scale plant and wholemeal flours analysed for ASN and DON contents. The average ASN content in rye (1017 mg/kg) is the highest and more than 3 times higher than soft wheat weak flour (307 mg/kg). DON contamination is remarkable in tritordeum (3910 µg/kg) and with an important variability within the soft wheat cultivars (from 667 to 6253 µg/kg). Selected whole flours based on ASN content were used for biscuit production and then analysed for AA content. AA in biscuits reach the highest concentration in a rye flour formulation (1121 µg/kg), decreased 2 times in triticale and shows the lowest value in some varieties of soft wheat without significant differences respect to other minor cereals. Considering simultaneously DON and ASN accumulation, we discriminated varieties of soft wheat and spelt with a low overall sanitary risk, while some varieties of tritordeum, durum and soft wheat were reported as particularly susceptible to DON accumulation. This study affirms the importance of variety selection as key component in the cropping system to minimize sanitary risks respecting standards of cereals supply chain.

Evernia prunastri Biopolymer Matrices for Potential Food Applications

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