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Development of an integrated strategy for reducing the carbon footprint in the industry sector

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Statement of the Problem: The food industry is a major emitter of CO₂, which is produced during the stages of food processing, storage and transportation. The LIFE FOODPRINT project's main goal is to identify, quantify and implement measures to reduce the carbon footprint (CF) of the pastry and flour industry sector along the supply chain while increasing competitiveness through the development of an innovative software tool.

Methodology & Theoretical Orientation: National Technical University of Athens (NTUA) has developed an interactive software tool which can determine and evaluate the CF of pastry and flour food product considering direct and indirect activities (energy consumption, water, waste water, etc.) using data from six food industries (production, distribution, storage/warehouse, organic cleaning company). Yiotis S.A. from Greece has been used along with other industry players in Italy AB Mauri and Molino, as case studies, in which different measurements were held such as evaluating the products' CF along the supply chain, identifying the carbon hotspots contributing in raising the products' CF along the value chain and developing GHGs emissions mitigation programs for the participating food industries by incorporating appropriate set of offsetting measures. The software was evaluated and further improved by using it and performing further measurements in 6 more pastry and flour industries in Greece and Italy. The main unresolved issue as environmental contaminant so far, is packaging, for which the only solution so far is the recycling. A biodegradable packaging material has been developed and printed in the original way demonstrating an attractive film similar to the normal plastic materials; extensive study is underway to determine migration of contaminants from ink, glue and plasticizers. When this is confirmed there will be huge impact on the environment.

Results: Yiotis S.A. achieved a 10-15% reduction of CO₂ emissions. The biodegradable material is almost ready to be tested in its primary and colorful edition. The program is currently being disseminated. A leaflet is under preparation to accompany various products of Yiotis and inform consumers regarding FOODPRINT program, as well as the product manufacturer's GHG emissions.

Conclusion & Significance: Through LIFE FOODPRINT Yiotis S.A., in collaboration with SEVT, tries to develop a national recommendation plan considering the reduction of GHG emissions of pastry and flour food industries in Greece and Italy and increase their competences in the future.



Biography

Evangelia Karvela is a Food Technologist with a PhD degree in winery byproducts and their use as food additives due to their antioxidants effect. The last 5 years, she has been working at Yiotis Company in R&D departments. She has more than 10 publications, participated in international conferences and she collaborates with Harokopio University as a Researcher. The main aim of her job is how different by-products could be treated and incorporated in foods, giving an additive nutritional value in the final product, reducing at the same time the amount of the food industry wastes.

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