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HOW SUSTAINABLE IS SUSTAINABILITY? RECOVERY OF BIOACTIVES FROM FOOD PROCESSING WASTE

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SPOKE, WP E TASK DI APPARTENENZA

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The agri-food industry generates significant by-products, often seen as waste. These by-products, such as coffee silverskin and tomato seeds, contain valuable bioactive compounds. Traditional disposal methods, like incineration or landfilling, contribute to environmental pollution. Revalorizing these materials can lead to high-value products for biostimulation, green pesticides, and nutrition. Challenges remain in extracting and utilizing these compounds due to matrix effects. Turning by-products into useful resources offers sustainable solutions and reduces waste.



Valorization of by-products is strongly hampered by matrix effects caused by macromolecular conformational changes and interactions during processing. Unlocking bioactivities in agrifood by-products and fostering sustainability through interdisciplinary collaboration requires biochemical strategies and enzymatic treatments.

Okara from soy

Tomato seeds C

Coffee Silverskin



CONCLUSIONS

The recovery of bioactives from food processing waste highlights critical challenges for the agri-food sector. Matrix effects impede the exploration of biological activities such as biodefense or biostimulation, stemming from molecular changes that occur during processing.

Overcoming these challenges requires innovative biochemical strategies and enzymatic treatments.

