

## Moving ahead with the waste to wealth concept - novel approaches to utilize wastes (by-products) for potential food industrial applications

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**S**ustainable use of agri-food industrial wastes and by-products holds high promise for value addition. Going in-line with the global initiatives and the conspicuous concepts proposed by the WHO for food wastes, food security and food sustainability, it is worth exploring valorization of agriculture based wastes and by-products. Wastes and by-products are encountered along the entire agri-food supply chain and can ensue at the 'on farm' or 'off farm' levels. Besides, they also contribute to safe disposal issues and environmental pollution related stress. As per the recent FAO report, vegetable wastes have created a significantly higher 'carbon footprint' while fruit wastes occurs as the major 'blue water hotspot', primarily in the industrialized countries of Europe and Asia. Nevertheless, reports available indicate that these wastes/by-products to contain high amounts of bioactive compounds and functional phytonutrients. Further, to technically tap these wastes, novel biotechnological and food processing techniques needs to be adopted with a sustainable approach. As of today, considerable interest has been shown towards recovery, recycling and reuse of agri-wastes and by-products. In this regard, globally,

majority of the countries are moving forward and are effectively planning to utilize the wastes for developing value added products like bio-ethanol, organic acids or organic compost. The present paper aims to summarize the author's contributions towards supporting the 'zero waste concept' with minimal waste generation and maximal utilization of plant based agri-food raw materials. In this paper/presentation, main focus and discussions will be made on the research works undertaken on screening of vegetal wastes, identifying the nutraceutical potential (micro- and macro-nutrients, bioactive compounds, therapeutic activities, etc), standardizing the processing protocols, and the effective utilization of wastes/by-products in developing novel products for food industrial applications (biopolymers, developing new food products, as flavouring agent, as natural food colorants, etc). In this talk, apart from presenting interesting results, it is aimed to highlight the existing gaps and future potential on valorization of agri-food wastes/by-products to provide valuable market niche.

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