

TRANSFORMING TRASH TO TREASURE

**DID YOU KNOW THAT
YOU CAN MAKE MONEY
FROM YOUR OWN FOOD
WASTE?**

WHAT IS FOOD WASTE?

Food waste is any leftover food materials that has been discarded or inedible. Generally, food waste is organic materials, that can be decomposed or converted into value-added products. Technically, food waste is made up from 30-60% of starch, 5-10% of protein, 10-40% of lipids and many macro- and micronutrients such as calcium, dietary fibre, potassium, and phosphorus¹. Instead of being discarded and wasted, all these valuable components can be recovered and converted into monetized products. Studies have shown that food waste can be turned into green fuel or biofuel, enzymes, bioactive compounds such as antioxidants, sugars, alcohols, animal feeds, fertilizers and many more^{1,2,3}. This process not only can reduce waste products, but it also generates economic benefits.



ANAEROBIC DIGESTION: A VIABLE SOLUTION FOR FOOD WASTE

In regards with above mentioned high value-added products, anaerobic digestion is a common process for food waste treatment. It refers to the use of bacteria to degrade or break down food wastes with minimal or absence of oxygen⁴. The bacteria work harmoniously to break down the complex structures of food waste into simple organic compounds. For example, the large protein molecules will be disintegrated into smaller amino acids molecules. Usually, it occurs in a sealed vessel called a digester and produces biogas, primarily composed of methane, and digestate, which is the solid and liquid end-products of the anaerobic digestion process. By manipulating anaerobic digestion processes, all those mentioned high value-added products can be produced and recovered efficiently.

Having said that, food waste can be transformed into bioactive compounds, nutrients, biofuels, and other valuable products, offering economic opportunities while contributing to sustainable waste management and environmental conservation. This approach shows the potential for converting food waste into monetized products, thereby promoting a circular economy and resource efficiency.

References

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