



# Sustainable food practices: Reducing food waste through dehydration

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In a world facing environmental challenges and increasing food demands, sustainable food practices have become more crucial than ever. One significant issue that the global food system faces is food waste. According to the food and agriculture organization (FAO), approximately one-third of all food produced for human consumption is lost or wasted each year. Food waste not only squanders valuable resources but also contributes to greenhouse gas emissions and environmental degradation. Dehydration is an age-old food preservation technique that has gained renewed attention for its potential to reduce food waste sustainably. Understanding sustainable food practices- sustainable food practices encompass a range of approaches aimed at minimizing the environmental impact of food production, distribution, and consumption. These practices prioritize resource conservation, reduced greenhouse gas emissions, and the protection of biodiversity (Bhatia et al., 2023).

Sustainable food practices also focus on ensuring food security and resilience in the face of climate change and other global challenges. The problem of food waste- food waste is a complex issue that occurs throughout the food supply chain, from farm to fork. In developing countries, much of the food waste happens during production, storage, and transportation due to inadequate infrastructure and technology. In contrast, in developed countries, food waste is more prominent at the retail and consumer levels. Food waste has significant consequences: environmental impact: rotting food in landfills releases methane, a potent greenhouse gas. Additionally, the resources used to produce, process, and transport wasted food, such as water, land, and energy, are essentially squandered. Economic loss: food waste represents a substantial financial loss for farmers, producers, retailers, and consumers alike. It affects food affordability and availability (Conrad et al.,

2018).

Food insecurity: with the world's population projected to grow, reducing food waste is essential to meeting global food demands and achieving food security. The role of food dehydration in reducing food waste- food dehydration, also known as drying, is one of the oldest methods of preserving food. The process involves removing water from food items, significantly reducing their moisture content to levels where microorganisms cannot grow, preventing spoilage. Dehydration not only prolongs the shelf life of food but also retains most of its nutritional value, making it an excellent sustainable food preservation technique. How food dehydration works- the dehydration process typically involves exposing food items to heat and airflow, which causes water to evaporate. The most common methods of food dehydration include: sun drying: the oldest and simplest method, where food items are spread out in the sun to dry naturally (Peydayesh et al., 2022).

Air drying: this method involves using natural or forced airflow to remove moisture from food. Oven drying: food items are placed in an oven with low heat and good ventilation. Dehydrator drying: specialized food dehydrators are designed to efficiently remove moisture from food items. Benefits of food dehydration in reducing food waste- extended shelf life: dehydration can extend the shelf life of food items significantly, allowing them to be stored for extended periods without refrigeration. Reduced weight and volume: dehydration reduces the weight and volume of food, making it easier and more cost-effective to transport. Nutrient retention: dehydrated foods retain much of their nutritional value, including vitamins, minerals, and antioxidants. Versatility: dehydrated foods can be used in various culinary applications, from trail mix and snacks to

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soups, stews, and baked goods (Salihoglu et al., 2018).

Preservation of seasonal produce: dehydration allows for the preservation of seasonal fruits and vegetables, reducing the need for out-of-season imports. Consumer engagement and education- promoting the use of food dehydration at the consumer level is essential to reducing household food waste. Educating individuals about the benefits of dehydration and how to dehydrate various food items can empower them to make sustainable choices in their kitchens. Collaboration and policy support- to promote food dehydration as a sustainable food practice, there should be collaboration between governments, businesses, non-governmental organizations, and research institutions. Governments can offer incentives and support to food producers and processors adopting sustainable practices like dehydration. Additionally, research institutions can conduct studies to improve and optimize dehydration techniques. Sustainable food practices are crucial in addressing global

food security and environmental challenges (Tsang et al., 2019).

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