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Short Communication

Exploring Authentication of Fermentation Production of Renewable Energy for Food Waste

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DESCRIPTION

Food waste has been a growing issue in the world. According to the United Nations, approximately one third of all food produced for human consumption is lost or wasted each year. This amounts to around 1.3 billion tonnes of food being thrown away annually [1]. Not only does this cause an immense amount of unnecessary economic loss, but it also has a significant environmental impact. Food waste takes up valuable space in landfills, where it releases methane gas as it decomposes. Methane is an incredibly potent greenhouse gas that contributes significantly to climate change [2]. The resources used to produce food such as water and energy are also wasted when food is thrown away and not consumed. There are now innovative solutions that can help reduce the amount of food waste generated each year while simultaneously generating renewable energy sources for communities around the world [3]. One such solution is fermentation a process which transforms organic matter into electricity and other forms of renewable energy. Increasingly aware of the environmental and economic impacts of food waste, finding solutions to this global problem has become a priority [4]. One potential solution lies in the process of fermentation, which has been used for centuries to preserve food and produce energy. By harnessing the power of fermentation, we can transform food waste into renewable energy sources that can reduce our reliance on fossil fuels [5].

The benefits of fermentation are numerous. It is an efficient way to recycle organic material that would otherwise be wasted. Through the process of anaerobic digestion, organic matter is broken down into carbon dioxide and methane gas, which can then be used as an energy source [6]. This biogas can be burned to generate electricity or compressed and used as vehicle fuel. This reduces our dependence on fossil fuels, but it also helps to reduce greenhouse gas emissions and combat climate change [7]. Fermentation also has the potential to create new products from food waste, such as bioethanol and biobutanol. These renewable fuels can be used in place of traditional gasoline or diesel in cars, trucks, buses, boats, planes and even lawn mowers by products from fermentation can be used as fertilizer for agricultural purposes or even converted into bioplastics for use in packaging materials or consumer products [8]. There is the potential for economic growth through the use of fermentation technologies. By creating new forms of renewable energy from food waste materials that would have otherwise gone to landfill or been incinerated, businesses can save money on fuel costs while also reducing their environmental impact. This could lead to increased profits for businesses while also creating jobs within the renewable energy sector–a true win-win situation. In conclusion, it is clear that fermentation offers a promising solution for transforming food waste into renewable energy sources that are both environmentally friendly and economically beneficial [9]. By investing in this technology now we will ensure that future generations are able to reap the rewards of a sustainable planet with reduced dependence on fossil fuels.

The process of fermentation is a powerful way to turn food waste into a renewable energy source. This process has been used since ancient times to make various foods and drinks, but only recently has it been explored as a viable source of renewable energy [10]. In this blog post, we'll explore the different steps involved in turning food waste into renewable energy through fermentation. The first step in the fermentation process is to prepare the food waste for fermentation. This can be done by shredding or grinding the food waste into small pieces and then adding water and other nutrients to create an ideal environment for the bacteria. Once the environment is ready, bacteria are added which will consume the organic matter and produce biogas as a by-products. This biogas can then be stored and used as a fuel source for heating or electricity generation.

REFERENCES

1. Modler HW, Larmond ME, Lin CS, Froehlich D, Emmons DB. Physical and sensory properties of yogurt stabilized with milk proteins. J Dairy Sci.1983; 66(3):422–429.
2. Lucey JA. Formation and physical properties of milk protein gels. J Dairy Sci. 2002;85(2):281–294.

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3. Sodini I, Remeuf F, Haddad S, Corrieu G. The relative effect of milk base, starter, and process on yogurt texture: A review. Crit Rev Food Sci Nutr. 2004; 44(2):113–137.
4. Marafon AP, Sumi A, Alcântara MR, Tamime AY, Nogueira de Oliveira M. Optimization of the rheological properties of probiotic yoghurts supplemented with milk proteins. LWT - Food Sci Technol. 2011;44 (2):511–519.
5. Uduwerella G, Chandrapala J, Vasiljevic T. Minimising generation of acid whey during greek yoghurt manufacturing. J Dairy Res. 2017;84(3):346–354.
6. Clark S, Michael M, Schmidt KA. Rheological properties of yogurt: Effects of ingredients, processing and handling. In Rheology of Semisolid Foods; Joyner, Food Engineering Series; Springer International Publishing: Cham, 2019; 203–229.
7. Mistry VV, Hassan HN. Manufacture of nonfat yogurt from a high milk protein powder. J Dairy Sci. 1992;75(4):947–957.
8. Le TT, Bhandari B, Deeth HC. Chemical and physical changes in milk protein concentrate (MPC80) powder during storage. J Agric Food Chem. 2011; 59(10):5465–5473.
9. Havea P. Protein Interactions in Milk Protein Concentrate Powders. J Dairy Sci. 2006;16 (5): 415–422.
10. Mimouni A, Deeth HC, Whittaker AK, Gidley MJ, Bhandari BR. Investigation of the microstructure of milk protein concentrate powders during rehydration: Alterations during storage. J Dairy Sci . 2010; 93 (2):463–472.