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The potential to prevent 280,000 tonnes of food waste in Sweden

Over a third of all food waste in Sweden is avoidable, according to new research. If such waste minimisation were achieved, there would be less potential for biogas production, but the researchers suggest that this does not represent a compromise because it is currently performed on only a very small amount of waste food.

The environmental impacts of food production mean that minimising food waste is a high priority in the EU. Reducing the amount of food required by reducing waste could mitigate the negative effects of land use change and CO_2 emissions from agriculture.

Food waste can be categorised as either avoidable or unavoidable. Avoidable food waste consists of products that could have been eaten, such as leftovers, food left to go bad and food past its sell-by date. Unavoidable food waste consists of non-edible waste such as peels, bones, shells and coffee grounds.

This study investigated the possibilities for preventing avoidable food waste and the potential for biogas production from the remaining unavoidable food waste. Waste composition in ten different Swedish municipalities over a period of 13 months, from a total of 2590 households, was measured in terms of the weight of avoidable and unavoidable waste per week per household.

In blocks of flats, the total amount of food waste varied between 1.8 and 5.4 kg per household per week, with an average figure of 3.2 kg. For separate houses, total waste ranged between 2.1 and 4.1 kg per household per week, but the average amount was higher at 3.8 kg. The differences in the average amount of food waste produced per household may be explained by the size of households and by different cooking and eating habits, for example, some people eat out more often than others.

For all households, an average of 34% of the food waste was avoidable. If these results were scaled up for all of Sweden, this corresponds to approximately 280,000 tonnes per year nationwide that could be prevented from entering the waste system.

The researchers also estimated that 92 m^3 of methane biogas could be produced per tonne of unavoidable waste. This is approximately 14-19% lower than estimates based on both avoidable and unavoidable waste. However, even with a completely successful food waste minimisation strategy, this would still leave 440,000 tonnes of unavoidable food waste, which is three times the amount currently collected for biogas production.

Waste prevention or minimisation is the EU's preferred strategy to reduce environmental impacts of inefficient use of resources. As such, it is important to consider food waste minimisation alongside food-waste-to-energy plans. In light of the current figures on the amount of waste treated for biogas production, food minimisation would not appear to limit current levels of biogas production.