

Item 3.2

Insect Farming Trial for Food Waste

File No: S051491

Minute by the Lord Mayor

To Council:

Councils are at the end of the line when it comes to waste. We don't cause the problem: we don't make plastic packaging or products that need replacing every few years, but we are responsible for cleaning up the mess.

In NSW, 4.1 million tonnes of waste is generated each year, with around 55 per cent going to landfill. Across all of Sydney, disposing of this waste costs residents more than \$1 billion annually.

The City of Sydney local government area alone produces 5,500 tonnes of waste every day which contributes to about eight per cent of the City's total greenhouse gas emissions.

While recycling our waste is important, the market for recycled products hasn't kept up with demand. We collaborated on the Southern Sydney Regional Organisation of Councils (SSROC) Paving the Way program and together created a market for one-third of our domestic glass collections. Let's use this as a model to continue to work together.

We need innovative solutions to reduce waste, as well as to reuse and recycle more, and to recover energy from what is left over.

Food Waste Collection

Food scraps make up one-third of household waste. From July 2019 to October 2021, the City ran a food scraps collection trial for 20,000 selected households, and we have continued to deliver this service to existing participants. In the trial period alone, we saved 738 cubic metres of landfill space and 1,284 tonnes of greenhouse gas emissions. At the same time, we produced 64,500 kilowatt hours of energy through anaerobic digestion, 7.9 tonnes of fertiliser and 239 tonnes of compost.

Staff have evaluated the trial results and analysed the different ways that a food organics service could be delivered to all residents. Key factors that need to be determined include whether the City provides a food organics only or a combined food and garden organics service and then how this waste is processed.

One of the benefits of keeping food organics as a separate waste stream is that we can deliver superior environmental benefits and there is greater flexibility to adopt emerging processing technology options as they become available.

Insect Farming Trial

Insect farming is a relatively new food waste processing technique which uses insects to process food waste. We expect this processing technique to deliver superior environmental benefits as it should result in net positive carbon emissions by producing sustainable animal feed and fertiliser. In addition, the processing infrastructure required for insect farming is modular, scalable, and cost effective compared to other food organic processing technology, making the cost per tonne very competitive.

As it is an emerging technology, insect farming has not yet been used by the City to process food organics. To date, the City has used anaerobic digestion and composting to process food scraps from the residential food scraps trial. However, there are increasing opportunities to use insect farming to process food organics. For instance, a local insect farming processor, uses black soldier fly larvae to consume food scraps and converts them into a sustainable protein and fertiliser at a commercial scale which can be used for animal feed and a soil conditioner.

It is recommended that the City investigate how insect farming can be trialled to process the residential food organics that are currently being collected through the food scraps recycling service. Results of this trial can be used to inform how the City will deliver a food organics service to all of our residents.

Recommendation

It is resolved that:

(A) Council note:

- (i) the City of Sydney produces 5,500 tonnes of waste every day, which is around eight per cent of the City's total greenhouse gas emissions;
- (ii) food scraps make up one-third of household waste;
- (iii) the City's food scraps collection trial with 20,000 households allowed us to save more than 738 cubic metres of landfill space and 1,284 tonnes of greenhouse gas emissions, while also producing 64,500 kilowatt hours of energy, 7.9 tonnes of fertiliser and 239 tonnes of compost; and
- (iv) insect farming is a relatively new food waste processing technique that delivers superior environmental benefits; and

(B) the Chief Executive Officer be requested to investigate how the City can trial the use of insect farming technologies to process the City's food organics from the residential food scraps recycling service and brief Council on the result via a CEO Update.

COUNCILLOR CLOVER MOORE

Lord Mayor