Report of the Strategic Director

HOME COMPOSTING

1. Purpose of report

To update Members on the subject of home composting.

2. Background

The Council provides a kerbside garden waste collection service with around 20,000 residents subscribing to the scheme. The materials collected as part of the garden waste collection are composted using an outdoor windrow system. Due to biosecurity, food waste collected on a commercial scale (not individual households) can only be composted using enclosed in vessel systems. Consequently, the Council does not provide a kerbside collection service for composting of food waste.

There is an alternative way to disposing of certain food wastes as opposed to putting the waste in the black lidded bin. Home composting provides residents the opportunity to dispose of food waste in an environmentally friendly way. At the end of the process a nutrient rich product is produced, thereby creating a closed loop circular effect from waste product to new product within the home environment.

As well as certain food waste, garden waste can also be home composted. Further information relating to the value of home composting is shown in the appendices.

3. Financial implications

There are no financial implications.

Recommendation

The Committee is asked to APPROVE the actions outlined in the recommendations for inclusion in the Climate Change and Green Futures action plan.

Background papers

Nil

APPENDIX 1

1.What is Composting

Composting is the use of organic matter such as garden waste or uncooked kitchen vegetable scraps which decompose to form a dark brown soil-like material rich in plant nutrients.

2. Why Home Composting

Composting is an inexpensive, natural process that transforms kitchen and garden waste into a valuable and nutrient rich food for the garden. Research suggests one third of household waste could be suitable for composting at home. Composting is one of the most effective actions that can be taken at home to reduce the amount of waste in the black lidded bin.

Waste analysis undertaken by Measurement Evaluation Learning (M.E.L) in 2014 suggested that 38.7% of the residual waste collected in the black lidded bins is food waste with up to two thirds (67.2%) of this food waste being raw fruit and vegetable matter which could potentially be home composted. In Broxtowe during 2019/20 this would equate to approximately 6232 tonnes of waste.

Whilst home composting itself would not contributed directly towards the Council's recycling rate it is calculated that if the 6232 tonnes of residual waste where to be diverted away from the collection rounds, this would result in an overall increase in the recycling rate to approximately 45%. This is an increase of around 6%. This is based on all the other tonnages collected remaining the same.

3. Nitrogen and Carbon mix

The composting process relies on the right mix of ingredients to make it work. The recommended ratio is commonly referred to as a 50:50 mix of green 'wet' (Nitrogen rich materials) and brown 'dry' (carbon rich materials) organics.

The green items are quick to rot and provide important nitrogen and moisture whereas the brown are slower to rot. They provide fibre and carbon and also allow important air pockets to form in the mixture. Examples of the green and brown materials are shown in Table 1.

Table 1: Example of items which can go in a home composter

Greens	Browns
Vegetable peelings	Cardboard egg boxes
Fruit waste	Scrunched up paper or newspaper
Teabags	Fallen leaves
Plant prunings	Crushed eggshells
Grass cuttings	Twigs

In order to establish the correct balance, it is it recommended that the organics should be added in layers starting with a brown dry layer followed with a green wet layer, followed by a brown dry layer and so on.

For a normal home composting set up it is recommended that the following materials are not put in the composter:

- cooked vegetables
- meat
- dairy products
- diseased plants
- dog poo or cat litter

Putting these in the bin can encourage unwanted pests and can also create odour issues. It is also advisable to avoid composting perennial weeds (such as dandelions and thistle) or weeds with seed heads. If the temperature does not rise enough these may not breakdown fully in the composting process and therefore weeds could be spread and dispersed around when applying the compost to the garden.

The contents of the compost bin need to be aerated and this can be achieved by turning the organics inside the composter periodically. The composting process can take between 6-12 months. The breaking down process can be aided by chopping up the materials into small pieces as it is added to the compost bin.

4. Placing of the compost bin

A compost bin should ideally be located on a level, well-drained area. This allows excess water to drain out and makes it easier for creatures such as worms to get in and get working on breaking down the contents. Placing the bin in a partially sunny spot can help speed up the composting process.

5. The composting process

The composting process involves microorganisms. Three types of organisms – fungi, bacteria and actinomycetes – begin to grow all over the material and break down the waste. This produces heat, further increasing the activity of the bacteria.

Once the bacteria have used up all the starch and sugars, the temperature falls again, creating a better environment for the fungi, which then begins breaking down any woody material.

The compost is ready to use when it is crumbly in appearance and has a slightly earthy smell. Compost will help improve soil structure, maintain moisture levels, and keep the soil's pH balance in check while helping to suppress plant disease. The compost will have everything plants need including nitrogen, phosphorus and potassium and it will help buffer soils that are very acidic or alkaline.

6. Limitations to home composting

Unfortunately, there are limitations with regards to home composting. Space can be an issue both in and outside of the home. Most households who participate in home composting have some sort of kitchen caddy, which as the name suggests is kept in the kitchen, to store all the peelings and scraps of food. Whilst caddies specifically designed for home composting can be purchased a simple container with an air tight lid will suffice.

The process can be a lengthy one. This in itself can be problematic. Unless there is a large area to make the compost the turnover in to a usable product may not be quick enough if large amounts of garden waste, for example, are being produced on a regular basis.

7. Common problems with home composting

Whilst the process is a natural one there are often common problems associated with home composting. The examples in appendix 2 show common problems and the possible resolutions to aid the composting process.

8. How the Council promotes home composting

The Council has a dedicated webpage to Food Waste and Composting. The page gives tips about reducing food waste and some basic facts about composting. This page is in the process of being reviewed and updated to provide more information to residents on how they can participate and benefit from home composting.

For those that are interested in purchasing a home composter the webpage also signposts people to getcomposting.com. All districts Councils in Nottinghamshire signpost and work in partnership with 'getcomposting'.

9. Different types of home composting system

There are a wide variety of different composter type products on the market. These products vary in price and do not all serve the same purpose. The information in Table 2 identifies some of the main types and the differences in the products.

Table 2: Different types of home composter and their purpose

Composter	Purpose
Traditional style composter bin either made of plastic or wood for example	Used to compost green and brown materials within the garden setting.
HotBin	Self-contained unit which can be located on hard standing. Suitable for composting all food waste including cooked food, meats and fish.
Green Johanna	Located within the garden and has a sealed bottom. Is suitable for composting all food waste including cooked food, meats and fish.

Composter	Purpose
Wormery	Use a special type of worm (often Tiger Worms) to break down kitchen waste in a container and turn it into compost and a concentrated liquid feed.

10. Recommendations

To ensure the value of home composting is recognised it is proposed that a number of actions to promote this topic are included within the Recycling Strand as part of the Climate Change and Green Futures programme.

The proposed actions to be included in the Climate Change and Green Futures action plan are:

1) Provide improved guidance aimed at influencing behaviours in relation to home composting
2) Publicise to the community examples of individuals who home compost and the benefits of home composting through the various media channels
3) Identify community champions or work with Allotment Associations to provide one to one guidance or open day events to provide hints and tips on composting
4) Consider ways in which we can promote waste reduction through home composting, for example, competitions targeted at households reducing the amount of waste they produce through home composting

APPENDIX 2

Common problems associated with home composting

Common Problem	Remedial action
Compost pile won't heat up	The materials may be too dry. This can happen quickly during the summer months. Try to keep the compost materials moist to the touch. Cover the pile. Another possibility is that the pile may be low in nitrogen. Fast-working microorganisms can quickly consume all the nitrogen and leave undecomposed carbon materials behind. Replenish the nitrogen content of the pile with fresh green grass clippings, kitchen scraps, manure. Another possible cause is that the pile is too small. Collect more materials and mix everything into a pile that measures 3 feet on each side, and is at least 3-feet high.
Soggy Compost	Dense or water-logged compost piles don't contain enough oxygen for the microorganisms to survive. Often these piles give off an unpleasant odor. The solution is to aerate the pile and add more dry materials.
Smelly Compost	If the pile smells like ammonia, it may contain too much nitrogen. Add carbon materials such as straw, leaves, or hay to correct the balance.
Finished product is too coarse.	Some materials, such as eggshells and corncobs, take a long time to break down. To produce finely textured compost such items can be shredded or chopped up before they are put in the compost bin. These item can also be sifted out and put back in the compost for further decomposition