

Preventing Plastic Pollution

30 November 2022

Compostable plastics experiment

Have you got a compost heap or muck heap at home or work?



Organic material, including:

- garden waste
- fruit and vegetable peelings
- straw bedding
- animal waste



will be decomposed by the micro-organisms (including bacteria and fungi) that live in a muck or compost heap.

Compost or well-rotted muck can be added to gardens or fields to fertilise the plants.



Most plastic will not decompose in a compost or muck heap. When plastic is added to the heap by mistake it can end up being spread on gardens or fields, and pieces of plastic can build up in the soil.



Common sources of plastic in compost heaps include teabags, which often contain plastic and sticky labels left on fruit skins.

Compostable plastics experiments

Experiment one

How much plastic is in your compost or muck heap?

Remember, micro-organisms in muck and compost could make you ill. Wear gloves whilst handling compost or muck and wash your hands afterwards. Always ask the house holder's permission before rummaging through their muck.



- Find a bucket, work out the volume of the bucket by pouring water in from a measuring jug and see how many litres of water are needed to fill it.

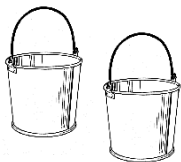


- Fill the bucket with compost or muck.
- Pour the measured bucket full of compost/muck onto a clean sheet or patch of ground.



- Spend five minutes looking through the compost or muck. Count the number of plastic pieces you find. Some plastic will be too small to see but you should make out the larger pieces. **Remember to clear up afterwards.**

- Divide the number of plastic pieces by the volume of the bucket (in litres) to calculate the number of plastic piece per litre in the heap.



- You can repeat this with more buckets and take the average number of pieces per litre to get a better estimate.

Discussion activity

How did the percentage of plastic remaining compare with classmates, friends or family? Whose heap was best for composting plastic? Why do you think this was?

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Experiment two: How compostable is compostable?

Some plastics claim to be biodegradable. This means they can be decomposed by micro-organisms. The speed taken to decompose will depend on the environment they are in.

There are no rules about how quickly, or under what environmental conditions, plastic should decompose for it to be called biodegradable.

A plastic that claims to be compostable should biodegrade in a specific time scale.



Item with this logo on is industrially compostable. It can only be composted at special industrial composting sites. If it gets into the environment it will persist, like regular plastic.



Item with this logo on is home compostable. It can be composted in standard home compost bins and should break down in 12 weeks.

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- Find an item of home compostable plastic. It could be some packaging or a shopping bag from a food shop, or a disposable cup from a café.
- Weigh the item using kitchen scales.
- Bury the item in your compost or muck heap. Tip: tie some string to it and leave the string clearly marked on the outside of the heap to help you find it again.
- After three weeks, retrieve the object and re-weigh. Remember to wash your hands and disinfect all objects that the decomposing plastic has touched.
- Repeat the step above after 6 weeks, 9 weeks and 12 weeks.
- Has the item broken down in 12 weeks? Divide the weight of any remaining plastic by the weight of the original item, then multiply by 100 to get the percentage of plastic that remains.



Meeting activity

Discuss how did the percentage of plastic remaining compare with other YFC members from your club? Whose heap was best for composting plastic? Why do you think this was?