

20th July 2021

Big Compost Experiment - 18 month report (07/11/19 – 08/06/21)

This report contains summary figures of 18 months' data (07/11/19 - 08/06/21) from the Big Compost Experiment UK-wide citizen science study (UCL Plastic Waste Innovation Hub). The study is ongoing, so far with;

- 9590 survey responses submitted
- 1,585 home compost experiments underway or finished
- 1126 home compost results submitted
- New 'TEABAG TRIALS' item focus launched Spring 2021, testing compostable/biodegradable teabag performance in home composters across the UK

See website for experiment details: www.bigcompostexperiment.org.uk

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EXECUTIVE SUMMARY

Teabag experiment results;

- 105 teabag experiment results so far
- Overall 43% of teabag home compost experiments results report teabag remains still visible (Level 0-3) and 57% no longer visible / not found (Level 4) (**Fig. 01**)
- Highest number of teabag results reported for '6 months' composting duration. 37% of results report teabag remains still visible (Level 0-3) and 63% no longer visible / not found (Level 4). Similar distribution of results for 3/6/9/12/15 months composting duration indicates that composting duration does not greatly affect teabag degradation. (**Fig. 02**)
- Highest number of teabag results reported for 'outdoor closed bin composter'. 54% of results report teabag remains still visible (Level 0-3) and 46% no longer visible / not found (Level 4) (**Fig. 03**)
- Majority of teabags tested so far do not display compostable certification on packaging (TUV Home, TUV Industrial, Seedling Logo) (**Fig. 04**)

Survey responses;

- 85% of participants responded they are more likely to buy products with packaging marked 'compostable' or biodegradable' (**Fig. 05**)
- 91% of participants responded they separate food waste from general waste or recycling (**Fig. 06**). Lack of council food waste collection most popular reason for not separating food waste (**Fig. 07**)
- 84% of participants who separate food waste use home composting, 50% use council organic waste collection (**Fig. 08**)
- 42% of participants who separate food waste use home composting to dispose of compostable plastics, 16% use council organic waste collection (**Fig. 09**)
- 92% of participants who compost do so at home (**Fig. 10**)

- 64% of participants who compost use an 'outdoor closed-bin composter' i.e. 'Dalek' style composter (**Fig. 11**)
- 83% of participants who compost use their compost to fertilise soil for edible plants, 78% use their compost for non-edible plants (**Fig. 12**)
- Participants report a wide range of organisms present in their composters, including worms (89%), slugs (69%) and woodlice (64%) (**Fig. 13**)

Home compost experiment results (all categories):

- 1126 home compost experiment results reported so far.
- Overall 68% of home compost experiment results report item remains still visible (Level 0-3) and 32% no longer visible / not found (Level 4) within participant home composting timeframes (**Fig. 14**)
- Highest number of results reported for 'outdoor closed-bin composter' category ('Dalek' style bin). 71% of results report item remains still visible (Level 0-3), 29% of results report item no longer visible / not found within participant home composting timeframes. Similar % distribution of results over three other most frequently used composters 'outdoor open-slatted', 'multi-stage', and 'hot-bin' (**Fig. 15**)
- Highest number of results reported for 'newspaper and magazine wraps' category. 70% of results report item remains still visible (Level 0-3), 30% of results report item no longer visible / not found. Similar % distribution of results over frequently reported item categories 'caddy and bin bags', 'shopping bags', 'fruit and vegetable films' (**Fig. 16**)
- Nationally, England and Scotland show similar results despite their different climates (further breakdown per region does not show much difference either); the North West and Wales shows improved composting effectiveness overall; and there is very little data for Northern Ireland (**Fig. 17**)
- Highest number of results reported for '12 months' composting duration. The composting time periods (3/6/9/12/15/18 months) do not seem to greatly affect the results, indicating perhaps that it's the health and dynamics of an individual's composter that is more important. For instance, 72% of experiments using 3 month composting duration report item remains still visible (Level 0-3); 67% of experiment using 6 month composting duration report item remains still visible (Level 0-3); 63% of 9 month composting duration report item remains still visible (Level 0-3); 72% of 12 month composting duration report item remains still visible (Level 0-3); 65% of 15 months composting duration report item remains still visible (Level 0-3); 83% of 18 months composting duration report item remains still visible (Level 0-3) (**Fig. 18**)
- TUV Home compost certification is the most common certification mark for compostability displayed on items tested. 75% of items displaying TUV Home remain still visible (Level 0-3) (**Fig. 19**)
- Highest number of results for items displaying TUV Home compost certification for Newspaper and Magazine Wraps. 73% of reported items remain still visible (Level 0-3) (**Fig. 20**)
- Highest number of results for items displaying TUV Home compost certification for 'outdoor closed-bin composter'. 79% of reported items remain still visible (Level 0-3) (**Fig. 21**)

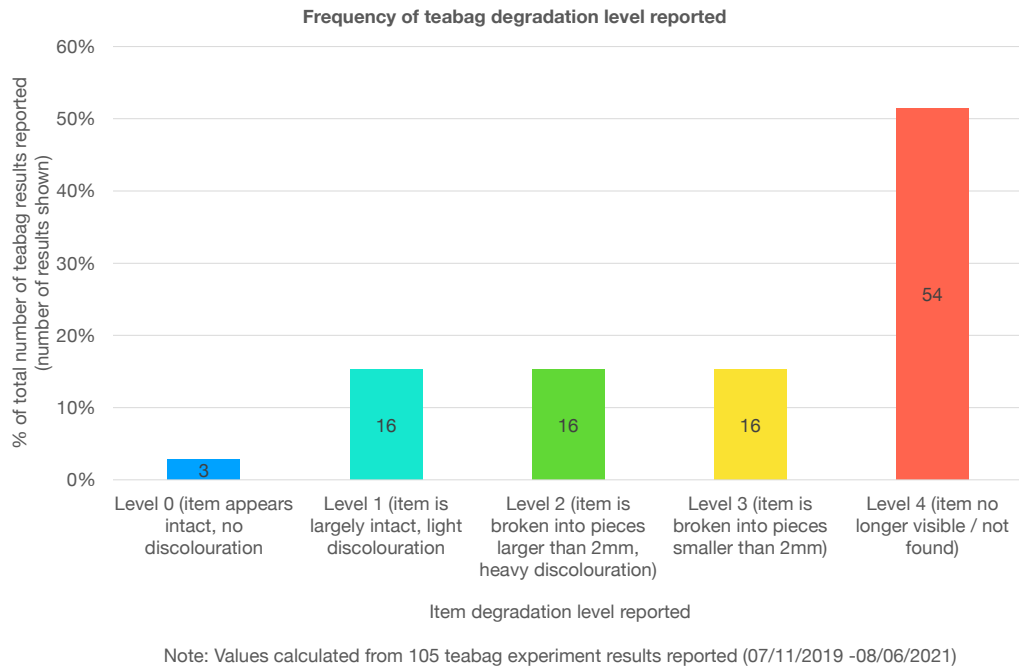


Figure 01. % item degradation level of teabag experiments reported

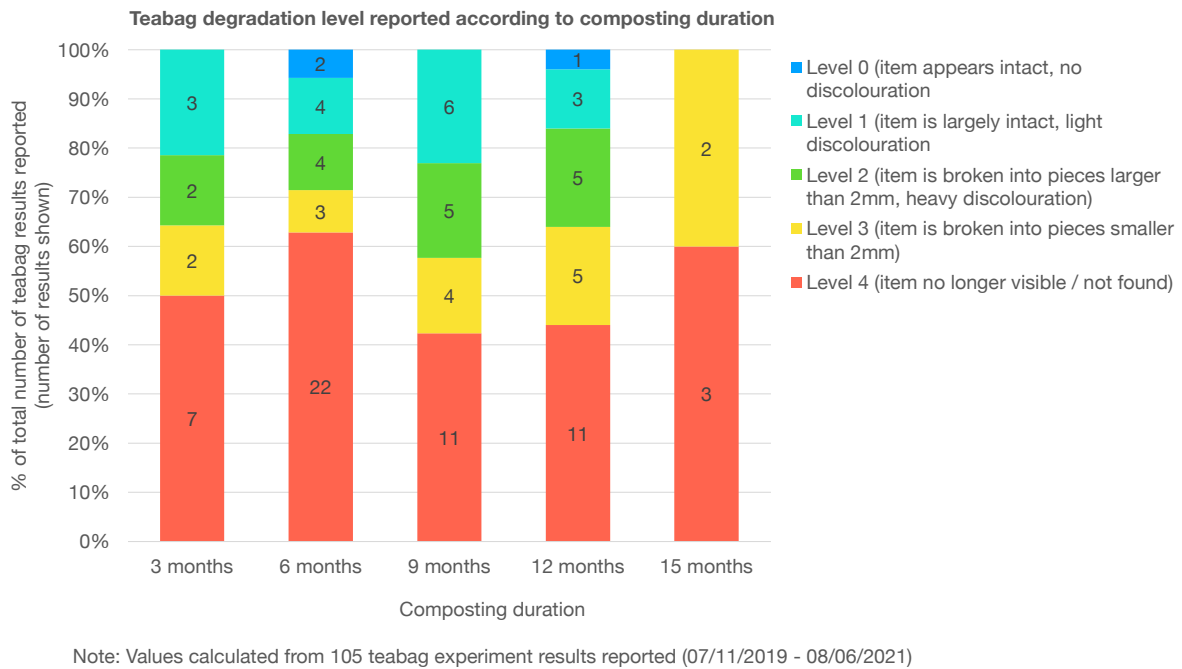
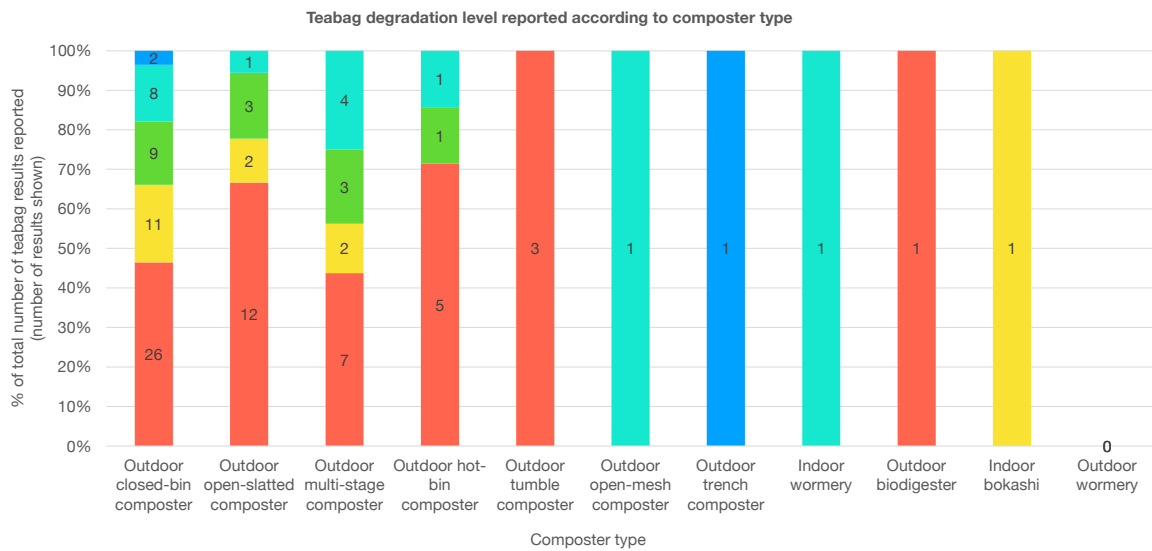


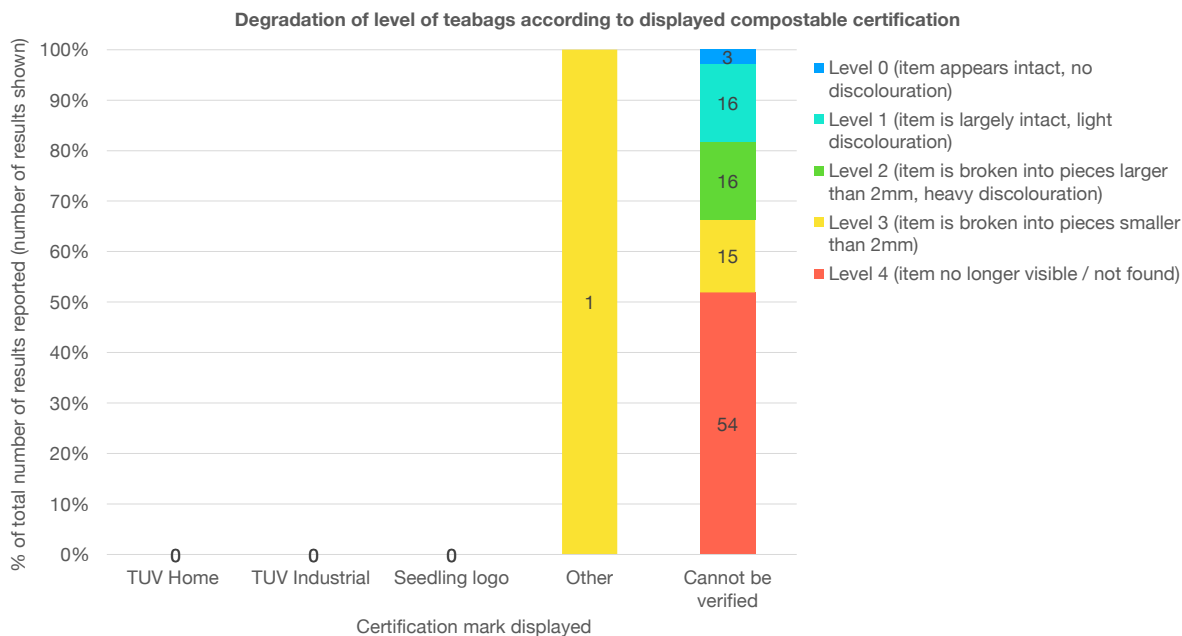
Figure 02. Teabag home compost experiments % item degradation level reported according to composting duration



Note: Values calculated from 105 teabag experiment results reported (07/11/2019 - 08/06/2021)

- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

Figure 03. Teabag home compost experiments % item degradation level reported according to composter type



Note: Values calculated from 105 teabag experiment results (07/11/2019 - 08/06/2021)

Figure 04. Teabag home compost experiments % item degradation level reported according to compostable certification displayed



Are you more likely to buy products with packaging marked 'compostable' or 'biodegradable'?

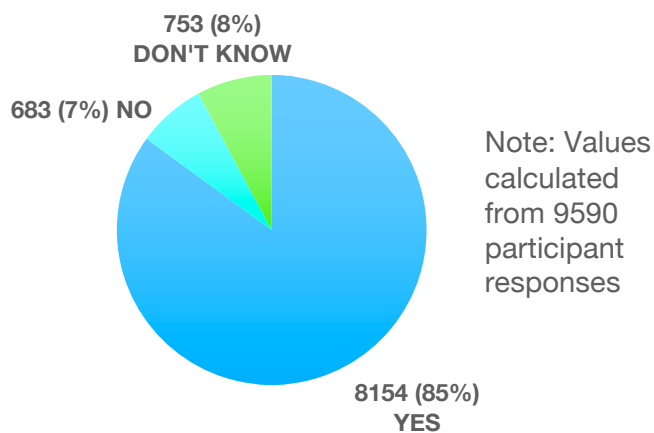


Figure 05. Responses to survey question 'Are you more likely to buy products with packaging marked 'compostable' or biodegradable?'

Do you currently separate food waste from general waste or recycling?

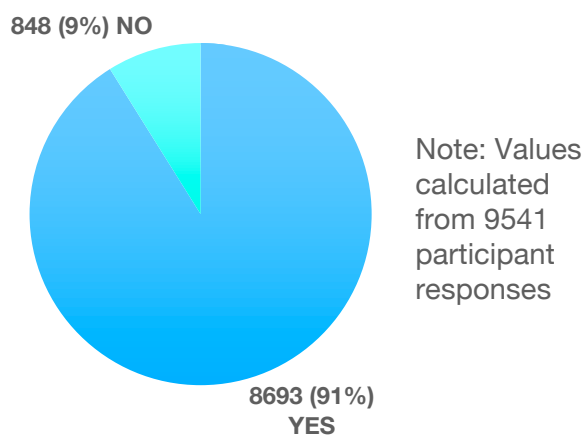
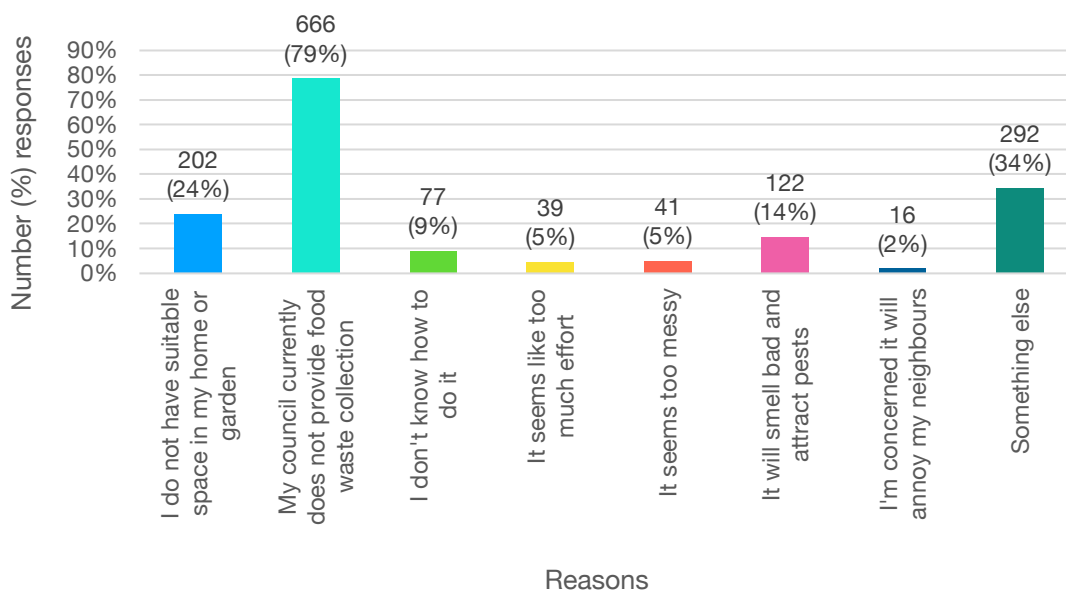


Figure 06. Responses to survey question 'Do you currently separate food waste from general waste or recycling?'

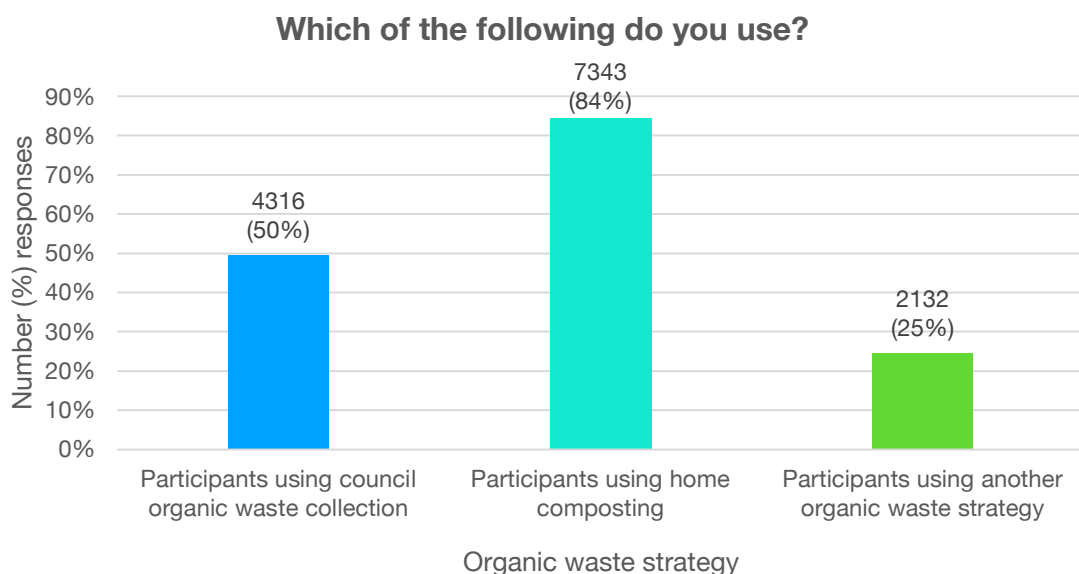


You selected NO. Please tell us more.



Note: Values calculated from 848 participants that do not separate food waste. Multiple responses included.

Figure 07. Reasons why participants do not separate food waste.

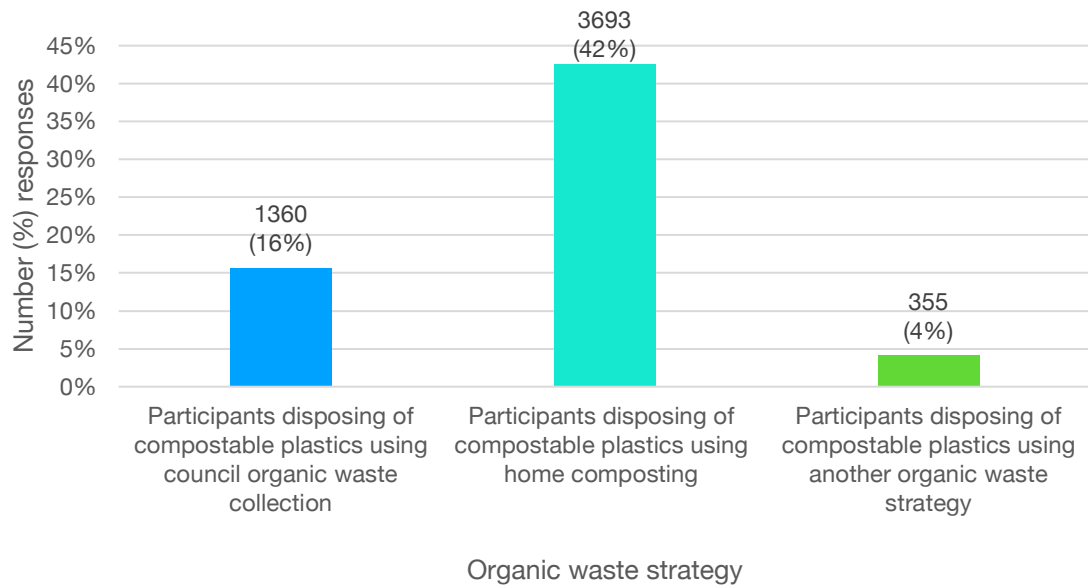


Note: Values calculated from 8693 participants that separate food waste. Multiple responses included.

Figure 08. Responses by participants who do separate food waste to survey question 'Which of the following do you use?'



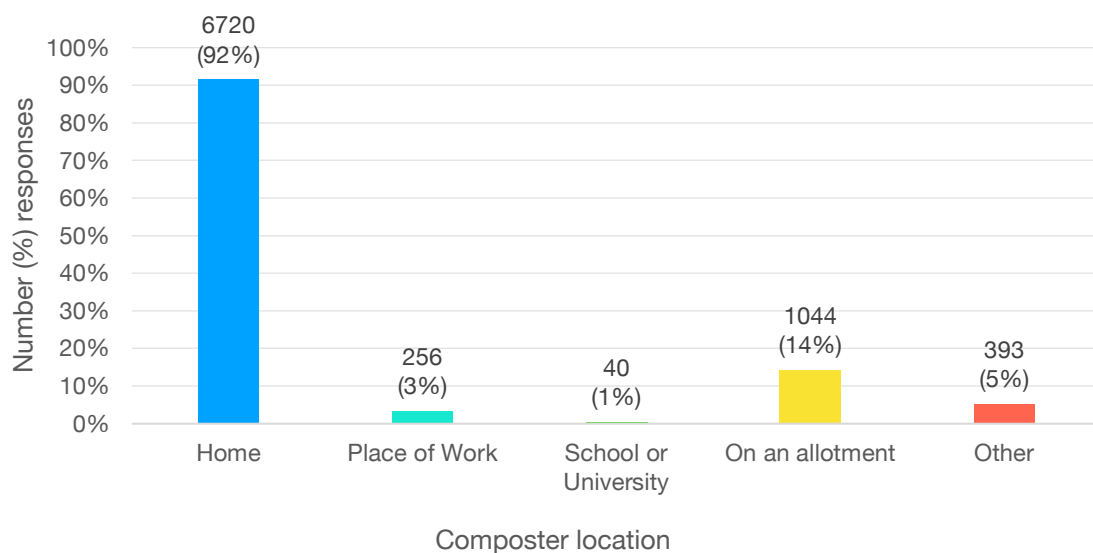
Which of the following do you use to dispose of biodegradable or compostable plastics?



Note: Values calculated from 8693 participants that separate food waste. Multiple responses included.

Figure 09. Responses by participants who do separate food waste to survey question ‘Which of the following do you use?’

Where do you compost your food waste?

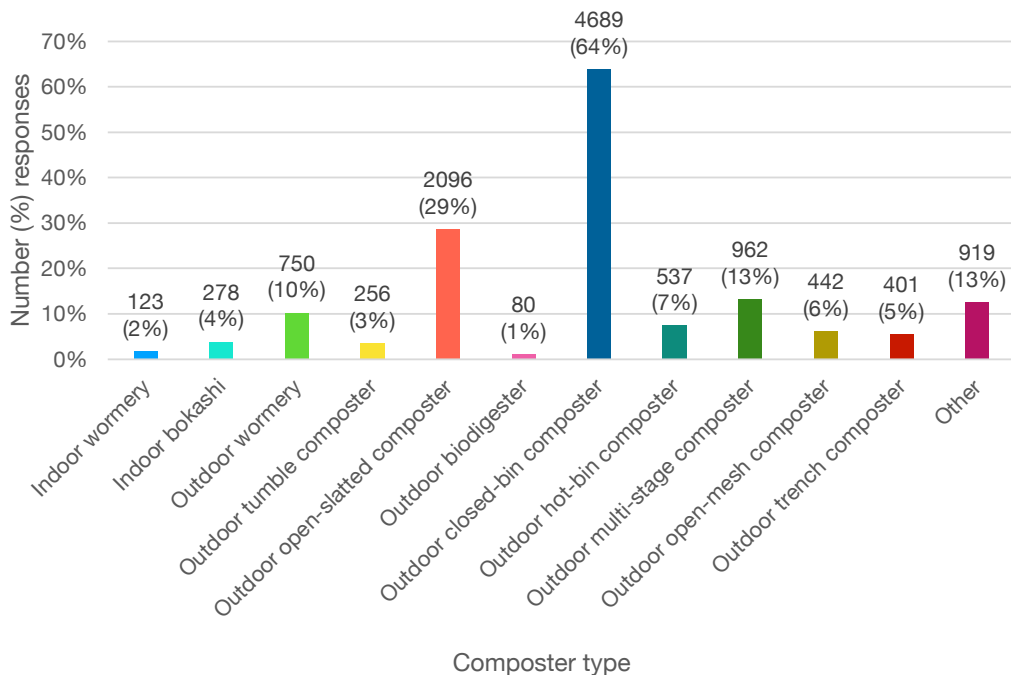


Note: Values calculated from 7343 participants who home compost. Multiple responses included.

Figure 10. Survey responses to question ‘Where do you compost your food waste?’



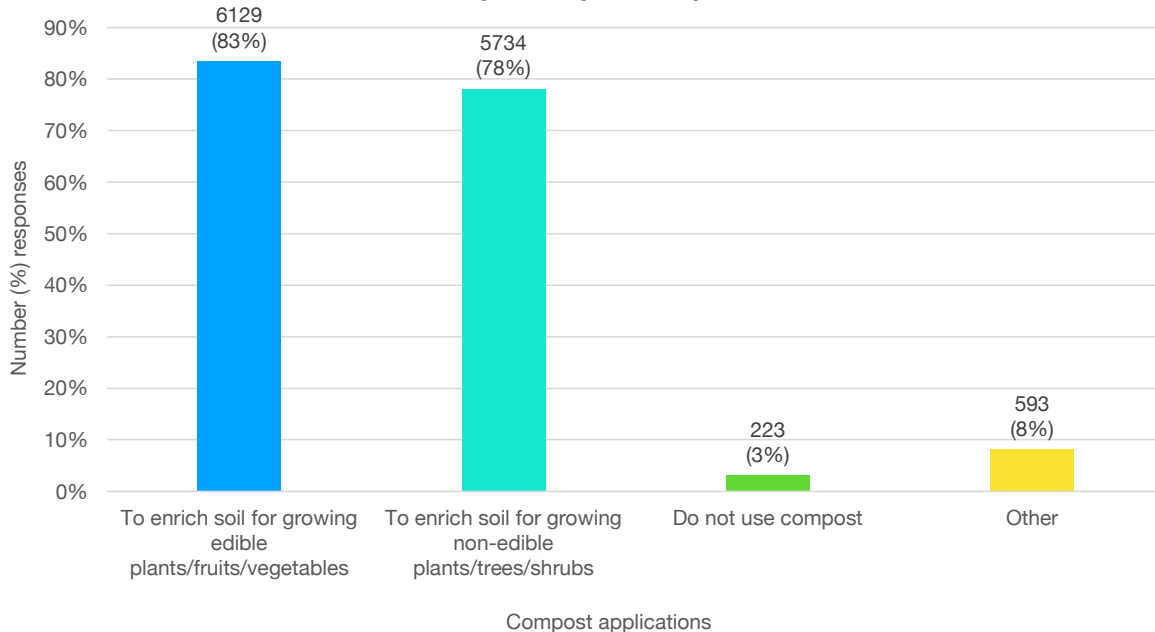
Which types of composter do you use?



Note: Values calculated from 7343 participants who home compost. Multiple responses included.

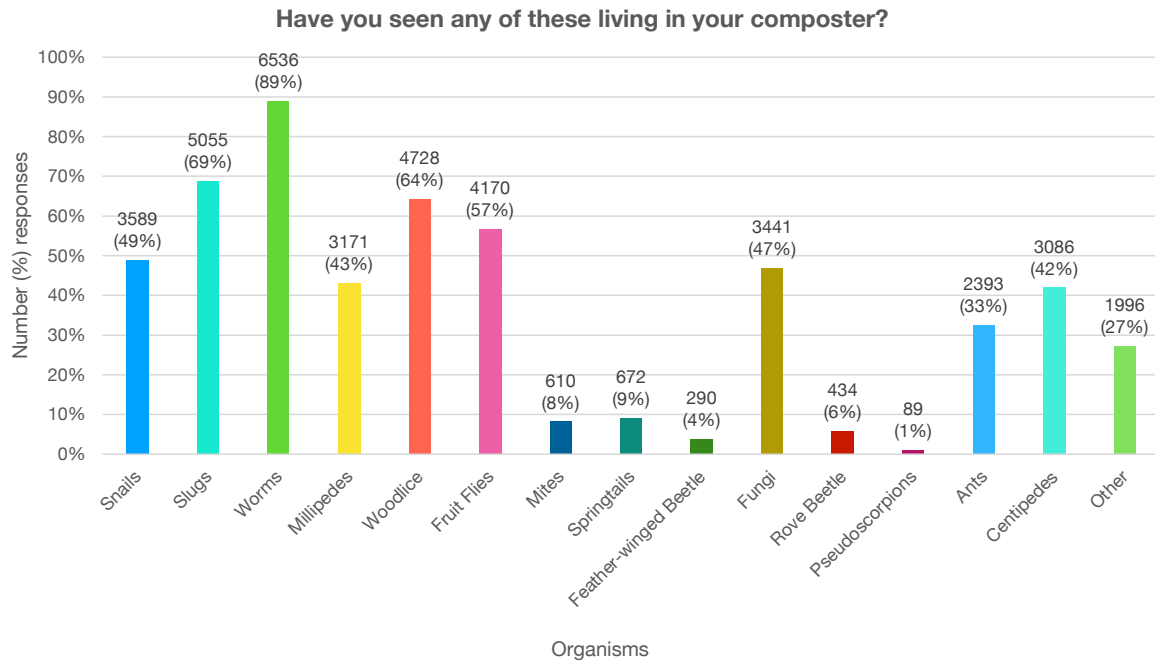
Figure 11. Survey responses to question ‘Which types of composter do you use?’

What do you use your compost for?



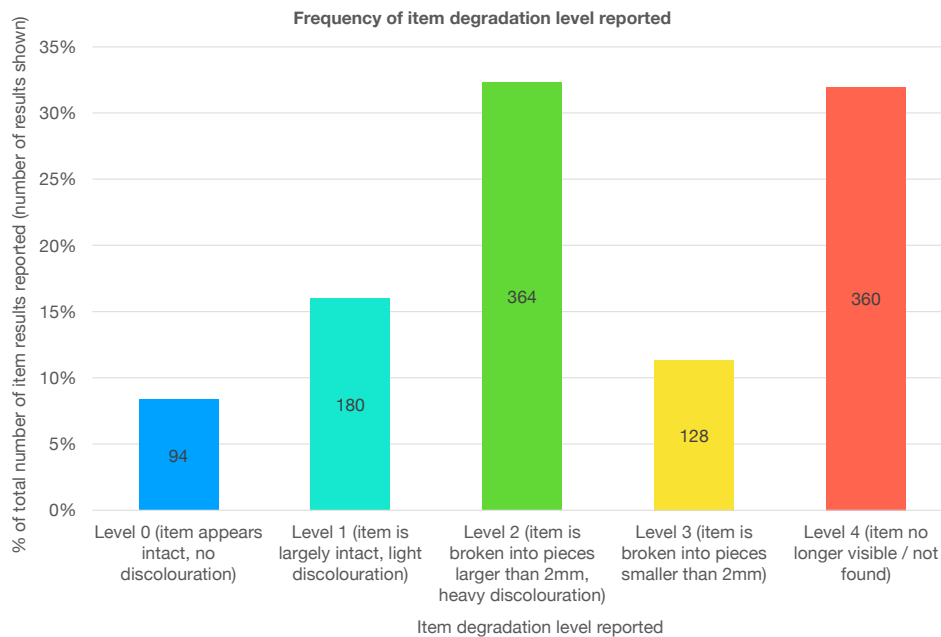
Note: Values calculated from 7343 participants who home compost. Multiple responses included.

Figure 12. Survey responses to question ‘What do you use your compost for?’



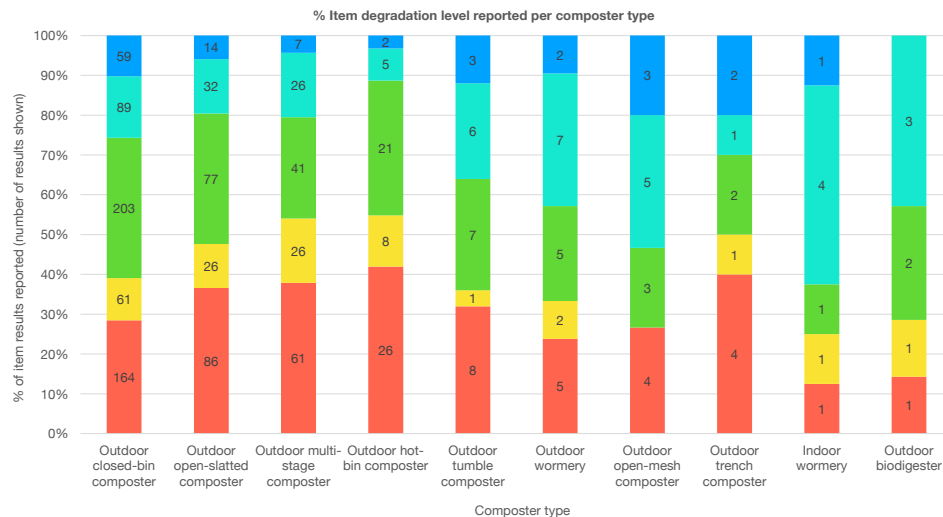
Note: Values calculated from 7343 participants who home compost. Multiple responses included.

Figure 13. Survey responses to question ‘Have you seen any of these living in your composter?’



Note: Values calculated from 1126 item results reported (07/11/2019 - 08/06/2021)

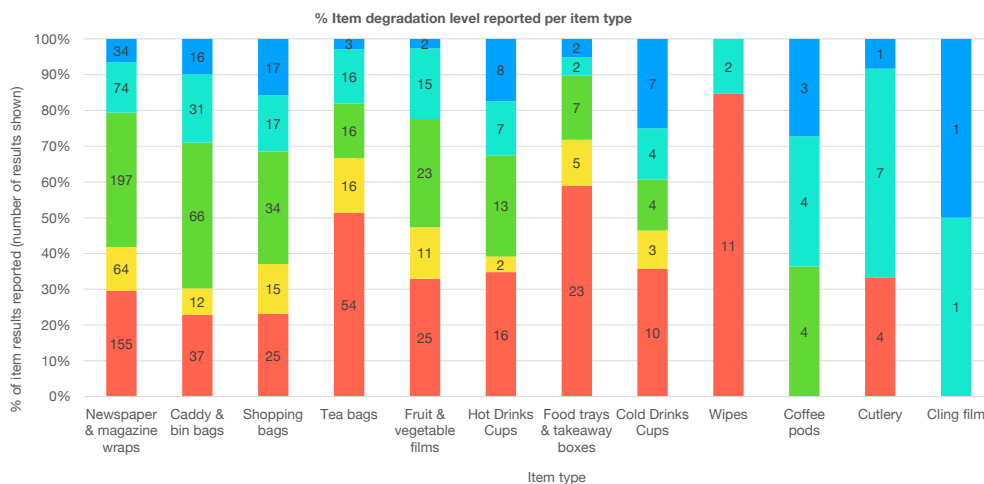
Figure 14. % item degradation level reported



Note: Total number of item results 1126 (07/11/2019 - 08/06/2021)

- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

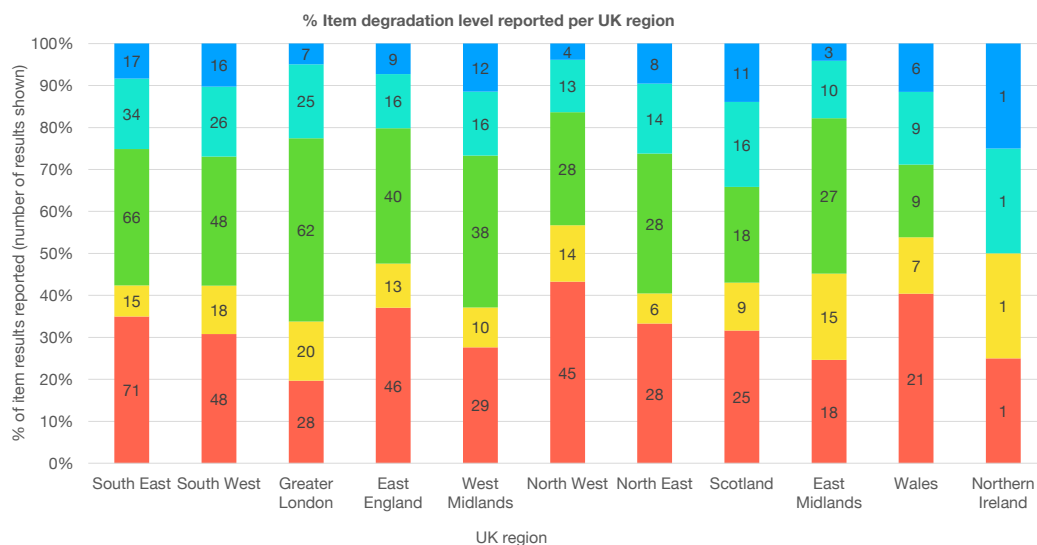
Figure 15. Home compost experiment % item degradation level reported per composter type



Note: Total number item results 1126 (07/11/2019 - 08/06/2021)

- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

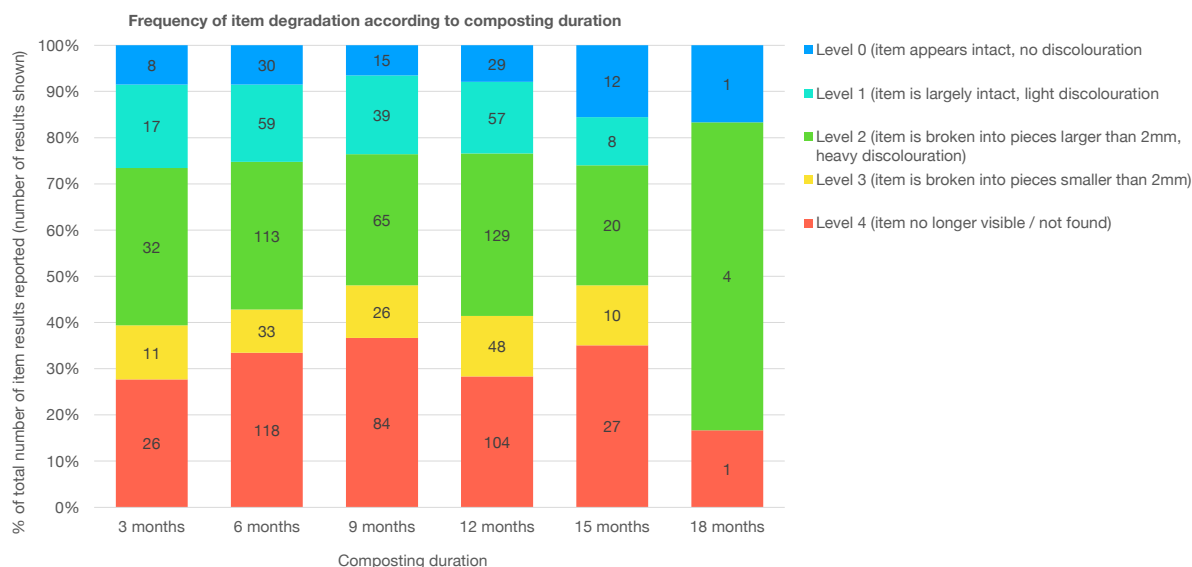
Figure 16. Home compost experiment % item degradation level reported according to item type



Note: Total number of item results 1126 (07/11/2019 - 08/06/2021)

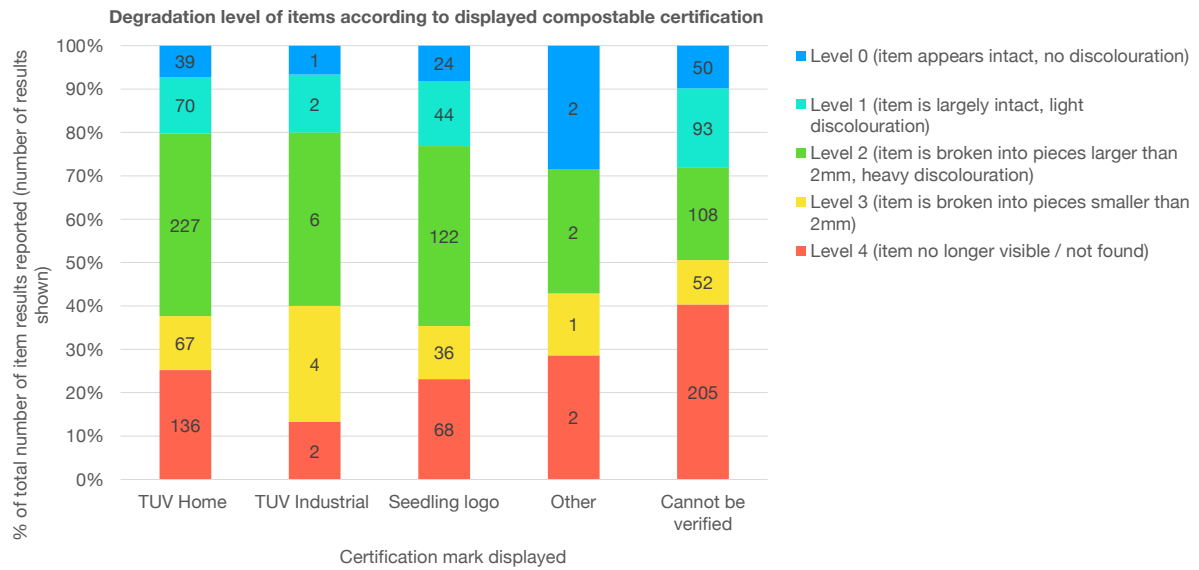
- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

Figure 17. Home compost experiment % item degradation level reported according to UK region



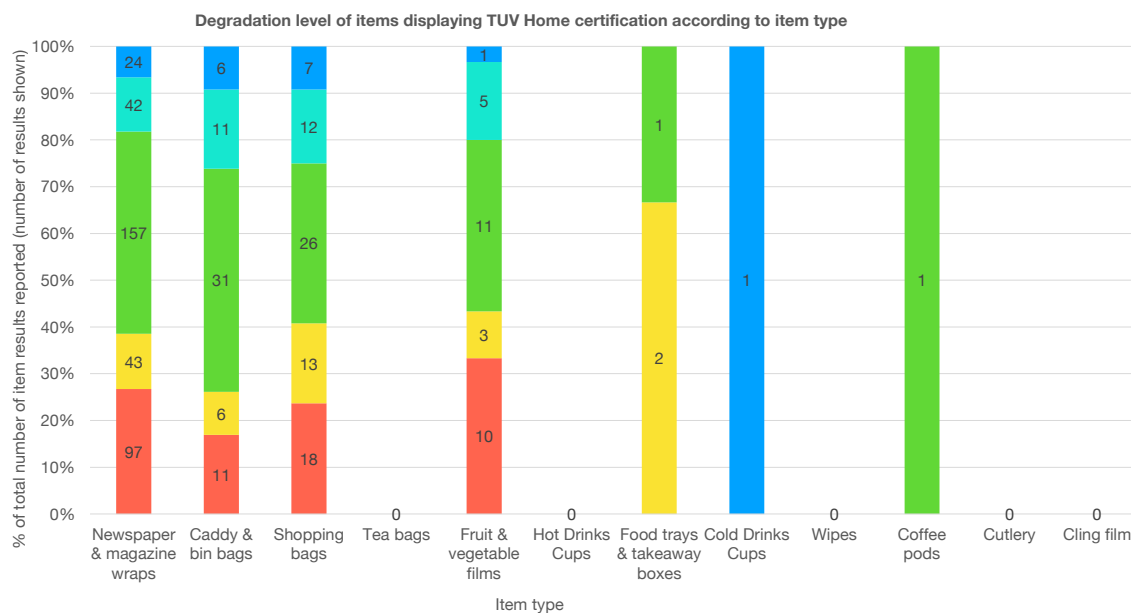
Note: Values calculated from 1126 item results reported (07/11/2019 - 08/06/2021)

Figure 18. Home compost experiment % item degradation level reported according to composting duration



Note: Values calculated from 1126 item results reported (07/11/2019 - 08/06/2021). Items displaying multiple certification marks included.

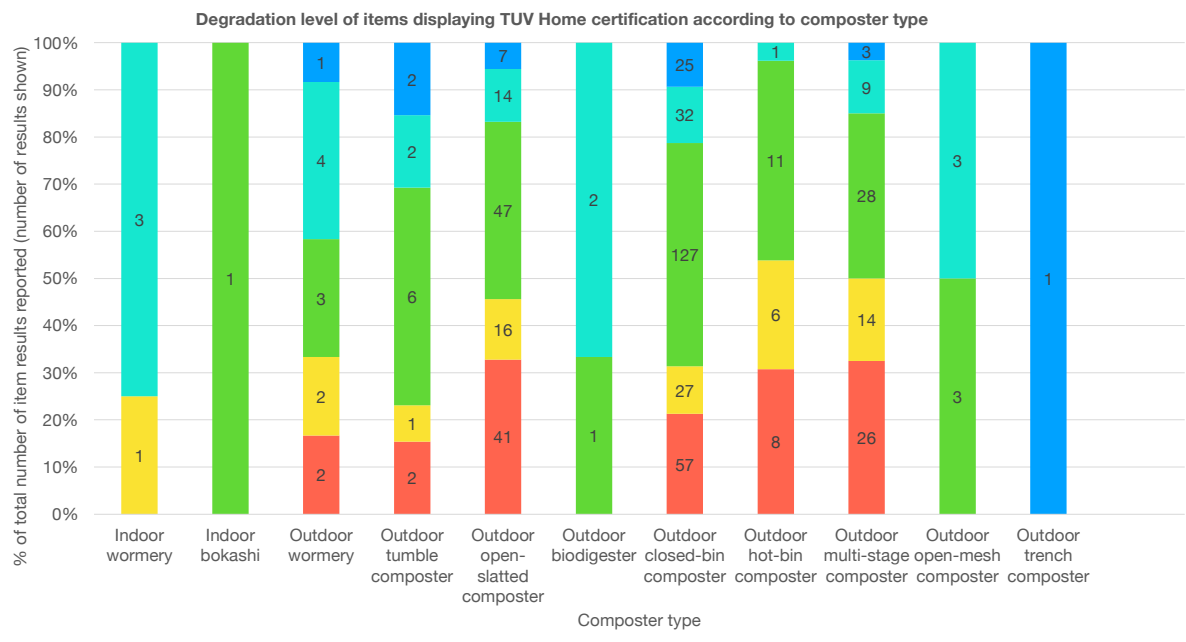
Figure 19. % degradation level of items according to displayed compostable certification



Note: Values calculated from 539 item results displaying TUV Home certification (07/11/2019 - 08/06/2021)

- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

Figure 20. % degradation level of items displaying TUV Home certification according to item type



Note: Values calculated from 539 item results displaying TUV Home certification (07/11/2019 - 08/06/2021).

- Level 0 (item appears intact, no discolouration)
- Level 1 (item is largely intact, light discolouration)
- Level 2 (item is broken into pieces larger than 2mm, heavy discolouration)
- Level 3 (item is broken into pieces smaller than 2mm)
- Level 4 (item no longer visible / not found)

Figure 21. % degradation level of items displaying TUV Home certification according to composter type