



Good Food Oxford Report:

Current Food Waste Practices and Potential Improvements across the Colleges of the University of Oxford

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1. PURPOSE OF REPORT

This report is intended to be a practical document. It aims to provide practical support and recommendations which can be implemented by domestic bursars, head chefs, catering managers and other relevant college staff. The purpose is therefore twofold:

- i. to provide a general overview of current practices relating to how colleges deal with food waste generated on their premises, thereby providing a 'base-line' for colleges to know how they stand in comparison to one another;
- ii. to identify common weaknesses, strengths and room for improvement; and to compile and rate a variety of recommendations to enable colleges to enact the improvements suggested.

Ideally, the end-goal of the report is action on the part of the colleges to reduce the overall quantity of food waste going to landfill/incineration, whether by reducing total quantities or by increasing the extent of food waste which is recycled and re-used in various ways. This should build on the good work which Oxford's colleges have already undertaken to improve the environmental sustainability of their operations. It is hoped that the report will contribute to this through both facilitating and encouraging colleges to take appropriate actions.

The report begins by laying out the broader picture and motivation for the report, before going on to explain why Oxford University's colleges were chosen as the specific focus. The method by which information for the report was gathered is then discussed, along with associated limitations in its scope. This is followed by an overview of current practices across the colleges and then a discussion of possible improvements to be implemented. The report concludes with advice on the legal aspects of the various practices discussed and recommended.

2. BACKGROUND AND MOTIVATION:

why is food waste a problem in the first place?

ENVIRONMENTAL IMPACT

Approximately one third of food produced for human consumption is either lost or wasted throughout the food system.¹ Food systems contribute a substantial proportion to a variety of environmental problems, principally climate change; current practices put enormous strain on the natural environment, and therefore ultimately on the resources upon which everyone depends.

Food waste contributes to this problem in different ways. When it is sent to landfill, it degrades in a manner which produces methane, an important contributor to climate change. More generally, food waste contributes to environmental problems in that it represents a lot of energy burned, resources used up and ecosystems damaged for *no positive return or benefit*. If the production, consumption and disposal of food causes environmental problems, then making sure to produce no more than is needed is one obvious means of mitigating such problems. By way of illustrating this, one report on changes in British households' food waste levels between 2007 and 2012 found that the associated reductions in GHG emissions which had been achieved were equivalent to taking 1.8 million cars off British roads.²

According to a 2013 report commissioned by the City Council, *Foodprinting Oxford*, Oxford's food system accounts for twice the CO₂ emissions of all of the city's cars put together.³ Although the report found that Oxford performs better than the national average in terms of food waste, it concluded that reducing food waste is the most effective way of reducing the overall environmental impact of Oxford's food system.⁴

FOOD POVERTY

In addition to the environmental problems associated with food waste, the moral failure which it constitutes is made all the more stark by the existence of food poverty. Between the financial years 2011/2012 and 2016/2017, the number of emergency three-day food packages given out by Trussell Trust foodbanks rose by over 800% from 130,000 to nearly 1.2 million.⁵ Provisional estimates from a 2014 survey indicated that about 4.7 million people in the UK had such limited access to food that they had experienced hunger and/or went entire days without food at points throughout the year.⁶

Closer to home, nearly a quarter of children in Oxford live in homes with incomes below the poverty line,⁷ and the Oxford Food Bank provides over 5,000 meals each week to people in food

¹ Food Ethics Council (FEC), Sodexo and WWF 2016: 10

² WRAP 2013: 6

³ Curtis 2013: 22

⁴ *ibid.* p.36

⁵ Own calculations, derived from stats available at: <https://www.trusselltrust.org/news-and-blog/latest-stats/end-year-stats/#fy-2016-2017> [accessed 31/8/17]

⁶ Taylor & Loopstra 2016: 3-4

⁷ Fransham 2015: 4-5

poverty via a network of local charities.⁸ Although sending surplus food to those who need it does not address the deeper societal problem – the fact that they are by themselves unable to secure access to a stable food supply in the first place – it is a temporary, front-line fix worthy of consideration.

COMMERCIAL INCENTIVES

Finally, there is a commercial case for both reducing and properly dealing with food waste. WRAP research estimates that each year 1.3 billion meals are wasted in the British catering and hospitality industry, at a cost of £2.5 billion in 2011.⁹ Food which is bought, prepared, placed on the counter and then thrown into the bin unsold represents lost money for a catering organisation. Food waste data from one organisation which is part of the University of Oxford showed that in June (2017), approximately £2,000-worth of food was prepared for sale through its catering operations but ended up unsold.

Even food which is sold and then left uneaten represents a cost to caterers who must pay for its disposal, with the type of disposal having a considerable impact upon costs: information from both Oxford City Council and private companies shows that the commercial fee for disposing of food waste along with general waste (which goes for incineration in Oxfordshire) may be as much as three times the cost of disposing of it through other means such as industrial composting.¹⁰ On top of this, there is the fact that, with the Scottish government planning to ban food waste going to landfill by 2020, regulatory pressure in this direction could increase in coming years elsewhere in the UK.¹¹ There is therefore potential for institutions to save money by altering the way in which they deal with food waste while at the same time reducing their environmental impact and leading positive change rather than catching up with it.

3. RATIONALE FOR FOCUSING ON COLLEGES

With one third of British households' food budgets being spent on eating out, there is tremendous potential for both private and public catering organisations through their purchasing power and scale to positively impact how food is dealt with – both before it reaches the plate and after it leaves it.¹² It is estimated that for every meal eaten in a British restaurant, an average of half a kilo is wasted, with uneaten leftovers accounting for nearly a third of this.¹³ It is reasonable to suggest that similar figures apply to the catering operations of universities.

However, based on a meeting with Harriet Waters, Head of Environmental Sustainability at the University's Estates Offices, it was concluded that it would be more effective to focus on the University of Oxford's colleges rather than the various catering operations of the University itself. This was due not least to the fact that the University's waste management operations have become

⁸ <http://oxfordfoodbank.org/about-us/>

⁹ FEC, Sodexo and WWF 2016: 32

¹⁰ See, for example, <http://andigestion.co.uk/the-benefits/the-benefits-for-food-waste-producers/>

¹¹ Scottish Parliament Information Centre 2012: 3

¹² The Food Foundation 2016: 11

¹³ <http://www.toogood-towaste.co.uk/oxfordshire/the-campaign/overview/>

centralised in the last few years, and to the fact that all of the University's venues with larger catering facilities already send their food waste for recycling separately. Moreover, certain aspects of the colleges' food operations are not entirely applicable to the University – student kitchens, for example.

Finally, they account for the bulk of food served to the University's students and staff. Between them, the colleges – 38 in total in addition to six Private Permanent Halls (PPH) – are estimated to spend over £20 million per annum on food, providing a considerable proportion of the catered meals eaten in the city.¹⁴ Improving associated food waste policies at these institutions will thus contribute effectively to reducing the city's environmental footprint, as outlined in *Foodprint Oxford*. Moreover, catering and food operations at the colleges are by nature fragmented on the one hand in terms of *who* oversees and manages them, yet on the other hand are extremely similar in terms of the challenges and circumstances faced by those who manage them. These two facts indicate the potential benefits to be gained from collating and assessing the experiences and practices of all the colleges, in order that individual colleges' staff may gain an idea of how others operate and how they could emulate the most enterprising and effective: imitation is the sincerest form of flattery.¹⁵

4. RESEARCH METHODOLOGY AND LIMITATIONS

The starting point for this report was the Trinity Term report of The Student Consultancy (SC), which reviewed food waste practice at Lady Margaret Hall. Off the back of some of the practices reviewed and recommended in the report, a database was created and filled in on the basis of responses from college staff to a set of survey questions sent by e-mail (see Table III in Appendix). The responses from staff of sixteen colleges and PPHs (at the time of publishing), as well as the SC report and what was available on colleges' websites, constitute the core of information on which this report is based.

In addition to this, the author corresponded with staff from University institutions, the City Hall, students from a number of colleges – including environmental representatives from both JCRs and MCRs – and met with several college/University staff. Overall, the report incorporates information with varying coverage-levels on 22 colleges and PPHs. As such, it does not give a *fully* comprehensive overview of practices across all of Oxford's colleges – research was inevitably limited by time-constraints and the prohibitive effort required to chase down and collect responses from *every* college – but nonetheless it can be understood to provide a broadly accurate picture which should be useful to college staff. Some colleges' responses had to be anonymised due to lack of explicit permission to share information from college staff; however, information on these colleges provided by students or from websites was not treated as being under the same restriction.

¹⁴ Bradley & Pike 2017: 12

¹⁵ On a personal note, part of the rationale for focusing on colleges derives from the author's frustration at the experience, occasioned by the lack of composting facilities, of having to dry banana skins etc. on his window-sill before taking them to a not-very-nearby community garden whilst studying at Oxford University as an undergraduate.

5. OVERVIEW OF CURRENT PRACTICES

The purpose of this section of the report is to give an idea of general trends across the colleges, highlighting areas of weakness as well as innovative and effective practices. It will also examine the rationale behind the approaches adopted, their effectiveness, and the constraints impeding the adoption of better practices, such as regulatory tape, cost considerations and student opinion. There are two key challenges relating to food waste management:

1. the *reduction* of overall levels of food waste generated; and
2. the appropriate *management or processing* of whatever food waste is generated.

Furthermore, it is useful to distinguish between waste generated *before* it reaches the plate, and waste generated *after* it has left the plate, as the challenges relating to each may differ. Finally, food operations at the colleges may be split into two categories: production undertaken directly by colleges to feed students and staff in halls (referred to as ‘catering kitchen operations’), and food prepared privately by students (in ‘student kitchens’).

CATERING KITCHEN OPERATIONS

The primary – and encouraging – finding regarding food waste *processing* is that the majority of colleges (over 75%) either send food waste from hall to be recycled separately (i.e. sent via waste services to composting or anaerobic digestion (AD) facilities) or recycle this waste on-site. Less than one quarter of colleges for which information was available disposed of food waste along with general waste. Still, this figure is disappointingly high given the fact that separate food recycling is relatively straightforward and painless to arrange with waste-service providers – as indicated by the fact that most colleges have done so.

A number of colleges (over 1/3 of those applicable) have already, or will soon be trialling, various on-site methods of recycling the food waste generated by the catering kitchen operations. Several send kitchen scraps to compost heaps managed by their grounds staff; this practice is viable since only selected pre-plate waste is used – specifically, vegetable scraps left over from production – which does not attract pests. A couple of colleges have begun to use a ‘[Garbage Guzzler](#)’, a piece of technology which uses aerobic digestion to turn everything from food waste to cellophane and coffee cups into either biomass pellets or high-grade compost. One of the colleges using this equipment – Mansfield College – reported that hiring it cost only slightly more than its previous food waste collection costs. St. Anne’s College is trialling a ‘[HOTBIN](#)’, a high-grade compost bin which enables quick and hygienic composting of food waste. These methods contribute (or hold the potential to do so) to efficient ‘closed-loop’ systems (as put by one domestic bursar) whereby colleges are able to reduce the amount of compost for use in their gardens by substituting in domestically produced material.

As regards food waste *reduction*, the main finding – again, a positive one – is that the vast majority of colleges for which information was available (83%) re-use at least some of their unserved food in a variety of ways:

- hygienically ‘super-freezing’ and storing meals using appropriate technology;

- selling leftover meals at a discount ('chef's specials');
- using bones to make stock;
- using meat for jacket fillings or curries;
- using stale bread for croutons;
- using leftover vegetables to make soup;
- donating unserved meals to local charities.

Careful measures are taken to ensure that such practices are consistent with colleges' legal obligations regarding food safety (see Section 7 for details).

Furthermore, colleges tend to report efforts taken to predict and stay in line with demand (e.g. using student surveys to understand which meals are un/popular), which is motivated at least in part by the potential cost-savings. Some colleges have the equipment to cook in batches which means food can be prepared at the time of serving as numbers require, rather than having to be made in advance based on what may end up as over-estimates. Preparing food in batches also means that minimal amounts can be kept on servery counters and more sent up as needed – this minimises the amount which is exposed to customers and must therefore be thrown away for hygiene reasons. Meal-booking systems are generally used for formal dinners, thus minimising the extent of uneaten meals – or at the very least, *unsold* meals for which the college must pick up the bill – although obviously this does not *eliminate* the problem as students may simply not like what is served given the reduced choice for formal dinners. One college introduced a booking system for meals which it identified were being wasted the most, and as a result has considerably reduced the associated waste.¹⁶

STUDENT KITCHENS

Student kitchens present different challenges from catering kitchens – most obviously, given that whereas catering kitchens are centrally managed, student kitchens are not directly operated by the college such that the implementation of any scheme requires the co-operation of students. For all intents and purposes, there is little point in distinguishing between pre- and post-plate waste in the case of student kitchens. Moreover, while there are potential means of encouraging students to reduce the extent to which they waste food, the main focus in this report is on whether students have the opportunity to recycle any food waste produced.

The state of facilities for students to recycle food waste across the colleges presents a mixed picture, with a wide array of approaches and attitudes. Out of 17 applicable colleges, five have some facilities to allow students to recycle food waste separately and one is setting up facilities this coming Michaelmas (2017). Of the remaining ones who do not yet have such systems in place:

- two have trialled them in the last term;
- one will be trialling them this Michaelmas;
- four are considering setting them up conditional on student co-operation;

¹⁶ <http://lincolnmcr.weebly.com/environment.html>

- two said they had tried and failed to set up such facilities due to lack of student co-operation; and
- one has not considered such facilities.

By reason of these disparate situations, food waste in student kitchens is arguably one of the areas in which there is greatest potential for colleges to benefit from sharing information about their experiences and the approaches which they have tried, whether successfully or unsuccessfully. Typically, those colleges which do enable students to recycle food waste do so by placing compost caddies or food caddies in kitchens, which are regularly emptied into the central college food bin(s). In some cases, this responsibility is delegated to scouts, and in others to the students. A couple of colleges operate using an opt-in system whereby students must ask to receive a food caddy which becomes their responsibility to regularly empty: this approach is used to ensure that bins are not misused. The experience – or anticipation – of their misuse by un-cooperative students has been the principal reason behind failed and uninitiated attempts. The most common concerns cited by college staff were:

- contamination of the caddies by non-food items, necessitating their being emptied into general waste;
- caddies not being emptied regularly and attracting pests; and
- inadequate care leading to unpleasant odours throughout student accommodation.

6. RECOMMENDATIONS FOR IMPROVEMENT

The purpose of this section is to provide college staff with a *range* of recommendations for making improvements in food waste practice, evaluating and comparing these (in terms of *feasibility* and *effectiveness*) in order that colleges may select those which are most suited to their specific circumstances and challenges. Improvements can be made by (i) reducing food waste, and by (ii) dealing with any food waste generated in a more sustainable manner.

CATERING KITCHEN OPERATIONS

- Following on from the discussion in Section 5, one of the easiest, most low-cost improvements to be made is to **set up a food waste service for central kitchen operations**. The spatially concentrated nature of the operations means that food waste can be collected with minimum hassle – by placing a bin beside tray-racks in hall for students or staff to empty leftovers into, for instance. Central kitchens must dispose of their waste anyway: all that is needed is to switch the type of bin into which food waste goes. Most local providers of waste services already offer this service – which tends to be cheaper than general waste services – and colleges can easily avail of something suited to their scale given the variety of options (see Table I in Appendix for details of local food waste service providers).
- **Invest in suitable technology for re-using leftover food**, such as a blast chiller which enables food to be cooled down quickly to ensure legal compliance (see Section 7). Conditional on the cost of the particular technology, this step will tend to be more suitable for colleges with

greater financial resources and/or larger catering operations. However, less expensive and more innovative methods of cooling food quickly are fine as long as they fulfil legal requirements; for example:

- i. running cold water over pasta;
 - ii. 'Keeping the food portion size small';
 - iii. 'Immersing the cooking vessel in clean cold water and stirring the contents frequently';
 - iv. 'Spreading the food out into large shallow trays so that heat is lost more quickly';
 - v. 'Placing the food in a room that is cooler than the kitchen'.¹⁷
- For colleges with gardens – most of them – there is potential to **divert some or all waste to be composted and used in on-site gardens**. The different methods discussed in Section 5 correspond to differing levels of size capacity, labour required, cost (See Table II in Appendix for a comparison of several methods), so there is range of options for colleges with different capacities and requirements. Grounds/garden staff should be consulted regarding the suitability of these various options.
 - One suggestion which emerged from the SC report for LMH was that food waste could be reduced by **reducing the presence of unpopular dishes** (principally fish-based dishes, though this may vary across colleges).¹⁸ Another way of doing this is to **introduce a booking system for unpopular dishes**, as Lincoln College did. However, the downside is that following student opinion too closely may lead to unhealthy/unbalanced diets or other problems such as excessive meat consumption. This is therefore one option which may be worth trying out but which has drawbacks.
 - Consider offering **discounts for booking cooked meals in advance** (e.g. before 10am for dinner) if numbers at dinner/lunch tend to be erratic. This scheme can obviously be easily introduced where colleges already have meal-booking systems. Although revenue from meals sold may be lower, this must be weighed against the money saved by *not* preparing meals which are not bought (hard as that may be to quantify!).
 - A relatively low-impact yet low-cost option for colleges with no current food recycling, is to work with **'The Coffee Run'** to **have coffee grinds from any college cafes or coffee machines collected**. The Coffee Run is an initiative run by the Oxford Hub which transports used grounds from cafes throughout the city to local allotments to be used as fertiliser. The initiative is run by students, so being able to collect grounds from their own colleges should be more convenient for them. Those organising the scheme are also currently considering extending it to the University's colleges, so any interest expressed on the part of college staff would likely encourage this potential development.
 - Consider sending surplus meals to a local charity helping to alleviate food poverty in Oxford.

STUDENT KITCHENS

Given that any student-kitchen initiatives require at least *some* co-operation from students, recommendations will tend to be less 'fool-proof' (or, to be precise, 'student-proof') than those under

¹⁷ <http://www.northampton.gov.uk/info/200127/food-safety/1126/commerical-food-safety>

¹⁸ The Student Consultancy 2017: 10

more direct management of college staff. However, this report aims to provide a variety of suggestions based on comparison of successful and unsuccessful attempts at different colleges thus far:

- Operate student kitchen caddies using an **opt-in system** whereby students are only given a food caddy if they ask for one, and must take personal responsibility for emptying and maintaining their caddy. This approach has been adopted in several colleges, primarily because it means that only those students who are sufficiently motivated to use food caddies properly are able to use them at all. Problems such as contamination of the bins with non-food waste are thereby avoided.
- **Place caddies not directly in kitchens but in an intermediary location between kitchens and the central food bins**, or in an out-of-the-way location: this is in order to both (i) reduce distance which scouts/students must go to empty them and (ii) reduce likelihood of unmotivated students misusing them since they are more inconvenient to access. An alternative is to not use caddies at all, and instead inform students (e.g. via the Student Handbook) that if they wish to they can directly empty waste into the central food bins/compost heap/etc. which would typically be in a secluded location.
- To minimise the risk of caddies being neglected and thereby creating hygiene problems, it may be appropriate for scouts to collect them on a regular basis, as in some colleges, or to **provide kitchens with caddies only if a student from the accommodation block in question volunteers and is designated responsibility to empty**. This could be co-ordinated with college environmental student officers/JCR. If scouts collect, the service could be more reliable than if students do so, although on the other hand the delegation of responsibility to specific students may incentivise them to ensure they are looked after properly.
- **Begin with small-scale trials** e.g. of a few accommodation blocks, as a number of colleges have done or are planning to do. This ensures that any problems which may arise are limited in scale, and potentially enables multiple approaches to be tried simultaneously.

An important dilemma worth highlighting here is between breadth and effectiveness. While it would be ideal for all students to meticulously sort out their rubbish and put the correct items in the correct bin, the overall amount of food waste successfully recycled may actually be greater where food-recycling facilities are only extended in line with student interest or participation. This may require flexibility: student participation will inevitably fluctuate, but food caddies from the City Council cost as little as £12, and it should be easy to keep spare ones in storage when interest is low. Any schemes should be advertised and explained to students in Student Handbooks, induction events and so on. Anecdotal evidence from work by Oxford City Council setting up food waste recycling in flats suggests that education and awareness-raising is important for encouraging responsible use of food caddies.¹⁹

Given the importance of student co-operation, it is also advisable for college to liaise with the JCR/MCR and involve them in the implementation of any policy – for example, they could be responsible for handing out caddies to interested students during freshers' week, or the environmental officer could keep a list of students with responsibilities for food caddies and ensure they maintain them properly as part of his/her role. Prizes could also be awarded to individual

¹⁹ Discussion with James Baughan, Oxford City Council 25/9/17

students or kitchen/accommodation blocks which recycle the most food each term, in the style of the [Blue Bin Recycling League](#).

7. ADVICE ON LEGAL COMPLIANCE IN RELATION TO RECOMMENDATIONS

DISCLAIMER: Please note that the advice below should not be taken as final or authoritative – not least in so far as it is based on EU-derived law and may therefore become inapplicable in the future – and hence that the author cannot be held responsible for any offence or breach of law which might be committed in the course of following it.

There are a number of points to bear in mind regarding the legality of various practices discussed and recommended above. In general, the key thing to remember is that carrying them out should not place an onerous legal burden on colleges: it should be possible to incorporate or add any additional requirements to existing compliance activities and checks which colleges are already obliged to undertake.

TRANSFERRING FOOD TO OTHER PARTIES

- Under the Environmental Protection Act 1990, colleges are legally obliged to only hand over waste to authorised bodies, which typically means that they must hold a waste management license.²⁰ The main providers of food-recycling services in Oxford hold such licenses (see Table I in Appendix).
- The Coffee Run is also licensed as a waste carrier via Student Hubs ([registration number CBDL148996](#)), and so colleges can hand over coffee grinds to it while remaining legally compliant (insofar as they have no duty to ensure that the Coffee Run in turn passes on grinds in a legally compliant manner).
- Colleges must fill in waste transfer notes upon transfer of any waste and keep them for two years.²¹ This can be done using a paper form or online using [edoc](#). Given that colleges must already do this for non-food waste, an extra invoice from the same service provider for food waste should cause minimal inconvenience.
- Certain health and hygiene regulations may need to be followed if colleges are passing on surplus food to charitable organisations. The Gatehouse, a charity in Oxford, has published a [guidelines document](#) for organisations donating food to it, which is a good place to start.²²

LEFT-OVER FOOD AND FOOD SAFETY

- In relation to food safety colleges are obliged under the Food Safety Act 1990 *‘to ensure you do not include anything in food, remove anything from food or treat food in any way which*

²⁰ Environmental Protection Act 1990 s.34(1)-(3)

²¹ <https://www.gov.uk/managing-your-waste-an-overview/waste-transfer-notes>

²² Also available at the ‘Providing Food’ section here: <http://oxfordgatehouse.org/volunteer/>

means it would be damaging to the health of people eating it'.²³ Accordingly, the law requires that as a default hot food be kept at 63°C or above, and cold food at 8°C or below (though see below).²⁴

- Food which has been exposed to the public in such a way that it could become contaminated *must not be re-used*: for example, food at self-service counters or serving counters without full sneeze guards. For this reason, cooking in smaller batches and topping up serving counters as and when necessary is the practice used by some colleges.
- Food which is stored for re-use must be brought to below 5°C in under 90 minutes from the point of leaving the serving area; if this is done, it can legally be re-heated once. College staff should be aware that if hot food is *initially* served or displayed below 63°C, or cold food above 8°C, this should only be done once i.e. any such food *when it is re-used* should not, for example, be served at a counter which is outside the relevant temperature limit.²⁵ In this case, hot food may only be re-used if it was kept below the temperature limit for *up to two hours*, and cold food if it was kept above the temperature limit for *up to four hours*; if these limits are breached, food must be thrown out.²⁶

STORING, PROCESSING AND USING FOOD WASTE ON-SITE

- Food waste must by default be put into containers which can be closed, and must be stored in such a way which prevents them from either causing direct or indirect contamination; the food bins provided by waste-collectors should meet these criteria.²⁷
- Colleges which wish to (aerobically) process and/or use food waste on-site must apply for certain Waste Exemptions. The good news is that it is **free** and relatively painless to do so [on the internet](#); colleges need only ensure that their waste operation:
 - i. 'meets all the limits and conditions of an exemption'; and
 - ii. 'doesn't harm the environment or human health'.²⁸
- For (aerobic) processing of food waste – for example, using a HOTBIN – colleges must acquire [Waste Exemption T23](#) ('aerobic composting and associated prior treatment'), which would be suitable if they wish to just compost vegetable offcuts and similar low-grade waste from kitchen operations.
 - College *may* also need to acquire [Waste Exemption T13](#) ('treating waste food'), which allows organisations to unpack/decant/bulk/sort food waste *prior* to composting or putting in a food bin for collection. This would be relevant for food which has gone out of date before having actually been used or taken out of its container.
- If colleges wish to compost *all* food waste, where this includes 'animal by-products' (likely to be a constituent element of most leftover meals), they should check whether they need separate authorisation from the Animal and Plant Health Agency (APHA), though this is less

²³ Food Standards Agency (FSA) 2009: 7

²⁴ FSA 2013: 15-16

²⁵ Ibid.: 16

²⁶ FSA 2016: para. 42, 44, 57-58

²⁷ Ibid.: 11

²⁸ <https://www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits>

likely to be necessary if any compost produced is used by a college on the site at which it is produced (see 'Animal by-products' in Appendix for further details).

- If colleges wish to use any compost or similar product derived from waste on their grounds, they must acquire [Waste Exemption U11](#) ('spreading waste to benefit non-agricultural land'). Records must be kept for two years of the amount, nature and origin of all waste spread.

8. APPENDIX AND SOURCES

APPENDIX

Disclaimer: please note that the information in these tables is not intended to be comprehensive or definitive and should be taken as a guide only.

TABLE I: LOCAL FOOD WASTE COLLECTION SERVICES (Registration/licenses can be checked at this website)				
Company	Weight/bin size range	License status/number	Charge	Contact
Olleco	120L – 240L	Yes/ CBDU67998	Based on agreed maximum weight per collection	08448 200 200 / foodwaste@olleco.co.uk
Select Environmental Service	120L – 660L	Yes/ CBDU161173	-	0118 975 9000
Oxford City Council/Oxford Direct Services	240L	Yes/ CBDU97378	£40/ton	01865 684988 / tradewaste@oxford.gov.uk (do not accept cooking oil)
Grundon	120L	Yes/CBDU147323 (Oxford branch)	-	01491 839 212 / sales.oxford@grundon.com
Agrivert	-	Yes/ CBDU41954	-	07702 700 970 / jtaylor@agrivert.co.uk
Andigestion	20kg – 1 ton	Yes/ CBDU165474	-	0800 141 141 / andigestion.co.uk/contact-us
Wastecare	-	Yes/ CBDU84992	Quotes available here	0800 091 0000 / recycling@wastecare.co.uk

TABLE II: DOMESTIC FOOD WASTE TECHNOLOGIES COMPARISON						
METHOD	Capacity	Food/input range	Cost	Speed	Labour	Output
Garbage Guzzler	High: 400kg/day	- All food - Oils/fats - Cellophane	Different options	1 – 3 days	Low	- Biomass fuel - Soil improver
HOTBIN	Low: 500 – 1500L/year	- All food - Oils/fats	£185	30 – 90 days	Low	- Compost
Compost heap	High	- No oils/fats, - No food containing animal products - Cooked waste not advised	Low/ variable	6 months – 1 year	Low – high (dependent on size)	- Compost

TABLE III: COMPILATION OF COLLEGE FOOD-WASTE PRACTICES

College	"In-house" composting/processing	Catering kitchen recycling	Student kitchen recycling	Re-use leftover food	Surplus food donated	Booking system	Batch cooking
Brasenose	No	Yes	Recently trialled	Yes		No	
Campion Hall		No	N/A	No		No	
Keble	Vegetables scraps composted	Yes	From Michaelmas 2017				
LMH		Yes	Considering	Yes		Formal	
Mansfield	Garbage guzzler	Use GG instead	Considering	No		Formal (as of 2015 at least)	
New		Yes	N/A	Yes		Some meals	
Nuffield		Yes	No	Yes			
Somerville		Yes	Considering	Yes			
St. Anne's	Trialling HOTBIN	No	Trialling soon	Yes		Formal	
St. Cross		Yes	Yes	Yes		All evening meals	Yes
College 1		Yes	Yes	No		Formal	
College 2		No	No				
College 3	Some (off main site)	No	Recently trialled (opt-in)	Yes		For specific meals	
College 4	Vegetables scraps composted	Yes	Unsuccessfully attempted	Yes		Formal	Yes
College 5				Yes		For specific meals	
College 6	Garbage guzzler						
College 7			Yes				
College 8		Yes	Considering	Yes			
College 9		Yes	Unsuccessfully attempted	Yes			
College 10		Yes	Yes	Yes	Yes		Yes
College 11					Yes	Dinner	
College 12		Yes	Yes (Opt-in)	Yes			

ANIMAL BY-PRODUCTS

“Animal by-products are defined in Article 3 of Regulation (EC) 1069/2009 as “entire bodies or parts of animals, products of animal origin or other products obtained from animals that are not intended for human consumption”. This includes catering waste, used cooking oil, former foodstuffs, butcher and slaughterhouse waste, blood, feathers, wool, hides and skins, fallen stock, pet animals, zoo and circus animals, hunt trophies, manure, ova, embryos and semen not intended for breeding purposes.”²⁹

The animal products with which colleges deal would typically fall under Category 3 Material, which is **low-risk material**: *“Catering waste, including domestic kitchen waste is category 3 material, though it is only in the scope of the Regulations in certain situations, to prevent it from being fed to livestock (which is banned under the Regulation) or such as when it is intended for composting or anaerobic digestion”.*³⁰ The closest Local Animal Health Office, which can confirm whether colleges will need separate authorisation for the aerobic processing of animal by-products, is:

APHA Field Services
Worcestershire County Hall
Spetchley Road
Worcester
WR5 2NP
Fax: 01905 764 352

Alternatively, contact details for APHA’s animal by-products (site approval and registration) service are:

Telephone: 0300 200 301
E-mail: CSCOneHealthABP@apha.gsi.gov.uk

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