Improving Performance and Reducing Waste in In-Store Bakeries: Key Insights

Introduction

Reducing food waste is a key priority for Tesco. As part of a major project to map food waste arising in the business, it was found that 41% of waste was within their bakery departments. Tesco therefore undertook a programme of waste prevention measures which has resulted in a significant reduction in bakery waste.

To reduce waste in your in-store bakery operations, use this Insight Guide to:

- Find out what actions Tesco has taken to cut bakery waste;
- Follow WRAP’s recommended steps for waste prevention, with bakery specific hints and tips;
- Access tools and templates to make the process easier.

"Tesco are once again delighted to have worked with WRAP to deliver some science and understanding into bakery waste. We now have a much better understanding of how behavioural change in our in-store bakeries can help us to reduce waste."

Mark Caul, Technical Manager – Packaging, Tesco Group Foods
How Tesco targeted their bakery waste ‘hot spot’

The Tesco group implemented a strategy to reduce bakery waste over a two year period, successfully achieving a significant reduction in waste. The manufacturing process of preparing bakery goods from scratch or bake-off products was found to create very little waste, therefore improvements focussed on other areas such as production planning, improved communication and training.

Production planning
- Bakery teams were encouraged to bake less bread more often, rather than larger volumes in one go.
- To help embed this, KPIs for bakery managers are balanced between achieving sales and minimising waste rather than focussing solely on sales.

Collaborating with suppliers
- Tesco worked with suppliers to extend code life on a range of breads and sweet products.

Practising flexible merchandising
- Bakery and store managers now review and allocate excess bakery space to other categories so that bakery shelves still look full but with much lower waste levels.

Sharing best practices
- A bakery ‘centre of excellence’ was established to facilitate knowledge sharing across the business.
- Various communication channels were set up between stores and the central bakery team such as using social media and a dedicated email address.
- Waste minimisation guidance is now included in a range of different bakery training materials.

Reducing bakery waste in the home
- A 600g loaf was developed with extended product life.
- A reduced pack size of the leading butter croissant is now available.
- Tesco have reduced the number of multi-buys offered in favour of a long term lower price strategy, reducing the temptation to buy unwanted extra product.

Where surplus bakery goods can’t be prevented...
- ...they are diverted to animal feed. This avoids disposal costs to Anaerobic Digestion and achieves a small revenue.
- Tesco has had a zero food waste direct to landfill policy since 2009.
Further action on Tesco’s higher waste in-store bakeries

Following the success of Tesco’s bakery waste strategy, a number of in-store bakeries (ISBs) have experienced difficulties making the necessary changes and the central team recognised that a different, more specific and hands-on approach was required in some stores.

Working with WRAP, a project was undertaken to investigate the reasons behind why some ISBs were performing better than others in terms of waste. A range of techniques were used to understand and quantify the amount of ingredient, work in progress and end-product waste arising across Tesco’s in-store bakery network. This information was then used to identify and implement a range of solutions aimed at significantly reducing bakery waste.

The following bakery Insight Guide can be used, along with direct face-to-face intervention, to help promote behaviour change at a store level.

WRAP’s W.A.S.T.E. process

The approach taken in this project follows the stages described in WRAP’s W.A.S.T.E. problem solving process that is based on Continuous Improvement and Lean manufacturing concepts.

This workbook describes the steps in the W.A.S.T.E. process, and highlights the key insights drawn from this project with specific bakery hints and tips.

Links are provided to the free resources available from WRAP to help you identify waste, and to prevent and reduce it in your own operations and across your supply chain.
Key to any efforts to reduce waste is having an understanding of what waste is being produced, where waste is occurring, and the scale of waste generated. Data needs to be collected, from a wide range of sources, to help inform this analysis.

- All types of waste i.e. ingredients, work in progress and end products should be analysed, measured and monitored.
- The true cost of the waste should be calculated to provide an accurate business case for change.
- Different waste recording practices e.g. writing products off at cost or retail price can impact the value of recorded waste and a standardised approach should be adopted wherever possible.
- The waste profile across the product range should be considered to understand whether there is a long tail of slow selling/ high waste lines or whether waste is occurring elsewhere in the range e.g. on mid-range products.
- Site visits and face-to-face discussions can generate significant insight into waste levels, root causes and potential interventions.

The true cost of bakery waste is much greater than just the cost of the product being thrown away. In order to calculate the **true cost of waste**, disposal costs and lost labour, utilities and packaging costs should be included, as well as the cost of ingredients/ products, as these costs have been incurred by the bakery as a result of the waste item.

**WRAP’s true cost of waste formula**

\[
\text{Cost of ingredients} + \text{Cost of packaging} + \text{Cost of overheads} + \text{Cost of disposal} + \text{Lost margin}
\]

\[\text{tonnes of production} \times \text{tonnes of waste}\]
Waste definition – communicating performance

The drivers of waste, and where it occurs in the production process, should be clearly articulated and supported by messaging to prioritise action. When communicating the waste performance of an ISB, there are some key points to consider:

- Waste performance information needs to be easily understood by the intended audience, e.g. the store and ISB teams, in order to inspire action.
- For example, waste could be articulated in terms such as lost resource time, percentage of sales or in production terms, e.g. ‘for every x loaves made, y were thrown away’.
- Waste statistics should be presented with a reasonable comparator of good performance i.e. “what good looks like”.
- If different ISBs are to be compared, the relative size of each should be considered in order to “compare apples with apples”; e.g. by evaluating waste as a % of sales.

The Tesco specific template for communicating bakery performance is provided on the next page, which can be adapted to your business needs.

See the W.A.S.T.E tip sheets for:
- Forming Teams and Champions
- Scoping Project for Focus
## Template for communicating bakery performance summaries

<table>
<thead>
<tr>
<th>Metric</th>
<th>&lt;SPECIFIC STORE LOCATION (PERIOD e.g. Q1)&gt;</th>
<th>&lt;COMPARISON AGAINST AVERAGE IN STORE GROUP (PERIOD e.g. Q1)&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales – Gross turnover</td>
<td>£X</td>
<td>£X</td>
</tr>
<tr>
<td>Waste as a % of sales (i.e. cost of goods for waste compared to sales value)</td>
<td>X%</td>
<td>X%</td>
</tr>
<tr>
<td>Waste – sales value of the units written off</td>
<td>£X</td>
<td>£X</td>
</tr>
<tr>
<td>True cost of waste (including product, time, packaging, power/water and disposal costs)</td>
<td>£X</td>
<td>£X</td>
</tr>
<tr>
<td>Contribution (i.e. how much of your bakery sales value benefits the business)</td>
<td>X%</td>
<td>X%</td>
</tr>
</tbody>
</table>

### Summary

Bakery waste at <STORE> during <PERIOD> amounted to approximately:

- £X items weighing £X tonnes
- i.e. for every £X items made, £X was/were thrown away
- If this is reduced by X%, you would save £X in waste product and a true cost saving of £X

### Key cause(s) of waste

<Brief description of key wasting line types and reasons for waste (e.g. process damage or over production)>

### Key actions

<Overview of key actions to prevent waste>
When measuring bakery performance it is critical to identify and differentiate between the activities that drive waste and where the greatest impacts occur in the production process. These can be measured by:

- **Mapping out each stage** in the production process for the ISB from the receipt of ingredients into the bakery to the sale of products to the customer. An example of this process is presented below.

- Monitoring the production process stages, measuring waste arising for each and taking a note of the causes of waste e.g. production damage, overproduction, ingredient spill, failed quality control etc.

- Mapping waste quantities to the production processes to identify the waste “hotspots”, and identifying the root cause(s) of this waste at each stage.

- In the example below, the waste hot spot occurs at the selling stage. Bakery items are not sold as projected and this is resulting in stock spoilage. However, the root cause of this is inconsistent mixing earlier in the production process which impacts the aesthetics of the product and means that customers are less likely to purchase this item.
Bakery waste is likely to be the result of various, often inter-related factors. A fishbone (cause and effect) diagram can provide a useful framework for pinpointing, investigating and prioritising the root cause(s) of bakery waste in your bakery. This framework is underpinned by a detailed bakery waste analysis tool which outlines the potential impact of each of the root causes and suggests actions to tackle them. The tool also provides a planning template for organisations and stores to identify their own improvement areas in order to reduce bakery waste.
Assessing the suitability of solutions should take into account the likely impact, the expected benefit and the cost, effort and timeframe required to implement the intervention. Stakeholders from all teams that can influence bakery waste should be involved in the identification of interventions e.g. ISB teams/ store management/ central support function/ HR/ category team/ waste management team etc. Solutions for ISBs might include:

**Processes:** Changing and/ or introducing new processes can help to tackle bakery waste e.g. reviewing production sequencing and changeovers/ reworking dough/ tightening QA processes etc.

**Range Changes:** The waste profile of the bakery range should be used to help inform bakery range changes and to reduce end-product waste e.g. slow selling/ high waste lines should be delisted.

**Flexible Merchandising:** Baking products to fill available space rather than to satisfy customer demand can create significant waste. The amount of shelf and promotional space allocated to bakery products should be reviewed and, where necessary, reduced.

**Data & Reporting:** Accurate and timely information in an easy-to-use format is essential if bakery and management teams are to be able to understand and tackle bakery waste. Reports should be reviewed and, where appropriate, revised.

**Behaviour Change:** Typically more difficult and time consuming to deliver, however the importance of appropriate behaviours with regard to waste management should not be underestimated e.g. waste recording, cross team involvement in decision making, production decisions etc.

- Management priorities and messaging around waste need to be consistent and coherent.
- Different bakery teams are likely to respond to different approaches and there is unlikely to be a ‘one size fits all’ solution.
- A combination of central communications, focussed store-specific support and a co-ordinated management response to waste is likely to be required.

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<table>
<thead>
<tr>
<th>Introduction</th>
<th>Tesco specific insights</th>
<th>Waste definition</th>
<th>Analyse and identify</th>
<th>Solution generation</th>
<th>Trial, evaluate and measure</th>
<th>Execute change</th>
</tr>
</thead>
</table>

See the Checklist for production plan change considerations on the next page.
Checklist for deviations from the production plan

There are a range of valid reasons for deviating from an agreed production plan. However, care should be taken to avoid unnecessary overproduction which can lead to waste. Available bakery reports and the production plan should be reviewed to help ensure that the right decisions are being made and that, for example, seasonal variations and demand factors are not being missed or applied twice. It is suggested that the following checklist be considered before any decisions to change the production plan are made.

<table>
<thead>
<tr>
<th>Consideration</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Before responding to recent trends in sales or a seasonal event, check how/</td>
<td>✓</td>
</tr>
<tr>
<td>if the production plan has compensated for these</td>
<td></td>
</tr>
<tr>
<td>Consider if the need is based on actual sales or merchandising – if</td>
<td>✓</td>
</tr>
<tr>
<td>merchandising, do not bake</td>
<td></td>
</tr>
<tr>
<td>Check the ISB reporting for waste on the product line, to review</td>
<td>✓</td>
</tr>
<tr>
<td>recent performance (including revenue lost via products that are reduced to</td>
<td></td>
</tr>
<tr>
<td>clear)</td>
<td></td>
</tr>
<tr>
<td>Consider how confident you are the batch will sell based on: time of day,</td>
<td>✓</td>
</tr>
<tr>
<td>season, special offers</td>
<td></td>
</tr>
<tr>
<td>Consider the impact of overproduction on the sales of other lines</td>
<td>✓</td>
</tr>
</tbody>
</table>
Whilst the timing of any trial is dependent on the solution(s) being implemented, trials should run for at least 12 weeks to allow sufficient information and insights to be captured. **Key considerations for running successful trials** include:

- The impact of any trial should be assessed in at least 3 stores to maximise learnings and to provide sufficient data points for analysis and comparison.
- Running multiple trials within the same store(s) can increase the reduction in overall waste levels however it may also make it more difficult to pinpoint the impact of a single solution.
- Stakeholders from all teams able to influence bakery waste should be involved in developing and delivering trials and in reviewing the performance of those trials.
- One-off changes in store circumstances can have a significant impact on waste levels and can skew the results of any analysis and/or impact the suitability of the trial stores e.g. a new bakery manager/ significant resource changes/ equipment failure/ reclassification in bakery operations (i.e. from scratch to bake off) etc.
- The potential complexity associated with conducting trials within large-scale and rapidly changing retail environments should be recognised and a realistic approach adopted.
Once an organisation has taken the decision to use a problem-solving approach to bring about change in their business, and has trialled and accepted new working practices, the next step is to fully implement these changes so activities do not revert to 'old ways' of working.

Embedding the changes you have made into your bakery operating practices will help you to realise further benefits; importantly, it will ensure that the efforts you put into positive changes are maintained in the long term.

**Steps for embedding change**

1. Create an implementation plan, tailored to your business. What is your approach and what are you trying to achieve?

2. Change or develop your Standard Operating Procedure (SOP) documents to standardise and embed the new waste prevention practice(s).

3. Develop a set of indicators to measure change.

4. Communicate changes and encourage others to get involved.

5. Reinforce the benefits of the changes you have made – importantly, don’t forget to celebrate success!

See the W.A.S.T.E tip sheet for:

[Embedding Change](#)
WRAP’s vision is a world where resources are used sustainably. It works in partnership with governments, businesses, trade bodies, local authorities, communities and individuals looking for practical advice to improve resource efficiency that delivers both economic and environmental benefits.

Our mission is to accelerate the move to a sustainable resource-efficient economy through:

- re-inventing how we design, produce and sell products,
- re-thinking how we use and consume products, and
- re-defining what is possible through recycling and re-use.

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