

TIP TOP BAKERIES – CLEANER PRODUCTION INITIATIVES

Tip Top Bakeries is committed to continuous environmental improvement and has implemented cleaner production improvements on an ongoing basis as part of its environmental management system. It has set and achieved targets for improvement in energy and water efficiency, and in waste reduction.

Background

Tip Top Bakeries is the bakery division of George Weston Foods Limited which has bakeries around Australia and New Zealand.

In Western Australia the division has manufacturing sites at Canning Vale and O'Connor which together employ over 360 people. The Canning Vale main bakery site produces a variety of bread products, including bread, rolls, speciality products and cakes. The O'Connor site produces hot plate products (crumpets, pikelets and hot cakes). Via five depots and using over 120 trucks, these bakeries serve the whole of Western Australia. Most customers receive fresh daily deliveries. Products for the northern part of WA, and for export, are chilled or frozen.

In line with Company policy the WA operation is committed to quality, food safety and environmental improvement. The Canning Vale and O'Connor sites have been certified to ISO 9002 since 1996, HACCP 9000 since 1997 and ISO 14001 since 1999.

The process

Flour, salt, oils and other ingredients are received to store in bulk. Ingredients for specific products are drawn from store using an automated mixing system, and formed or placed in steel moulds as appropriate.



Storage area



Silos and view of bakery

In most bread making, baking moulds containing the bread dough pass through low temperature proofing equipment, triggering the yeast and other ingredients. The dough then passes through another, much hotter, baking system. Non-yeast products do not require the proofing process. Gas ovens are used for baking and hot plate cooking processes.

After baking, the products are cooled, sliced and packed for fresh, chilled or frozen delivery. Low-density polypropylene is used for packaging most products, along with cardboard for chilled and frozen

deliveries. Cellophane is used for wrapping cakes. High-density polypropylene is used for bread wrapper clips. Products are shipped on returnable bread crates and pallets.



Loading area

Water is used in the products and for cleaning purposes. Wastewater from the plant goes to the sewer. The truck cleaning bay has a water-recycling plant installed.

Cleaner production initiatives

The Company has carried out various initiatives and is constantly looking for improvements.

Energy efficiency

Energy surveys have been carried out and these have contributed to energy efficiency and air pollution reduction programs. The ovens have been the main focus, for example in ensuring they are well insulated and maintained, and that oven burners are monitored and calibrated.

Water efficiency

Reviews of water use have been carried out and targets set for improvement.

The main measures to reduce water use have been through good housekeeping, for example avoiding leaving taps or hoses running and unnecessary use of water, dry rather than wet cleaning where possible, regular maintenance checks for leaks and repair where necessary. Cooling water and chiller condensate is recycled for non-product uses.

In addition, a process initiative has been to install an automatic system for cleaning and sanitising the production equipment. This optimises water use.

Materials use and waste

Various improvements have been made and investigations are continuing. These include the following:

- The production process is optimised to minimise waste due to quality control of errors and process residue

- Bulk purchasing has reduced drum and other materials packaging waste
- The automated dosing and cleaning systems are designed to optimise use of cleaning materials
- Bags and other packaging are designed to be biodegradable and recyclable where possible.
- Trays and pallets are returnable.
- Input material containers, such as jam buckets, etc are returned to the suppliers where possible
- Production packaging waste is recycled.
- Production food waste goes to animal feed or composting.
- Product over runs and fresh damaged stock are re-used for making breadcrumbs. The bags are recycled (they may not be re-used).
- Further investigations and initiatives into recycling returned product (which presently goes to landfill) are continuing (see Further Developments –below)
- Truck consumables such as filters and waste oils are recycled where possible.



Vehicle maintenance workshop



Vehicle wash with water recycling

Other environmental initiatives

Various measures have been undertaken to reduce the risk of river or ground and groundwater pollution, for example bunding all tanks and removal of all underground tanks.

Benefits

The Company has achieved savings as follows:

- ◆ 14% reduction in water use at the O'Connor site
- ◆ 8% solid waste reduction due to recycling initiatives.

Energy saving is currently being estimated and reviewed.

Besides the environmental benefits, cleaner production initiatives have contributed to improved productivity as well as enhancing the image of the Company.

Further developments

Tip Top has considered and trialed various options for dealing with the waste, including composting and worms farming. It is presently considering options and trialing a scheme with the WA Ministry of Justice under which prisoners carry out the bag/bread separation task as part of their work requirement.

Besides being practically unsuitable for the worm farming options unless diluted with other organic waste, composting is an unsatisfactory option for this valuable and nutritious material. It is therefore Tip Top's aim for as much as possible of this waste to be diverted to animal feed, especially milk cows and beef cattle. Tip Top is presently supplying farms belonging to WA Ministry of Justice.

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