

# REUSING AND RECYCLING PACKAGING – R6

Eco-efficiency resources for the food processing industry

## *Make the most of your packaging*

### Reuse packaging

There may be many opportunities to reuse packaging directly without any further treatment except washing. These include reuse by suppliers, within the plant itself or by other businesses and community groups. It is important that food processors design packaging to encourage packaging reuse. Packaging should also be stored and handled carefully to avoid damage that may prevent its reuse.

#### Reuse by suppliers

Returning packaging to suppliers can reduce material and disposal costs. This opportunity to reduce waste is particularly viable for sites where suppliers are back hauling.

Some examples of packaging that can be reused include pallets, drums, intermediate bulk containers (IBC), plastic containers, crates, cardboard boxes, padding, inflatable bags and bulk bags.

Savings are often made over the life-cycle of the packaging as the table below illustrates.

**Table 1 - Value of recyclable containers<sup>1</sup>**

Type of container	Weight (kg)	Initial cost (\$AUS)	Estimated life (no. of trips)	Average cost per trip
Corrugated one way	0.7	0.8	1	0.8
Corrugated reusable	1	1.62	5	0.32
Plastic reusable	2.5	16.82	250	0.07

In some cases the use of reusable packaging is a trade off between saving on packaging costs and the energy, water and chemical costs to clean and transport packaging.

*Around 83 per cent of waste paper recycled in Australia is used to make packaging and industrial paper. The remainder is used to make printing and writing paper, tissues and newsprint.<sup>2</sup> Lower grade uses include insulation, cat litter and egg cartons.*

*One tonne of recycled paper or cardboard saves approximately 13 trees, 2.5 barrels of oil, 4,100 kWh of electricity, 4m<sup>3</sup> of landfill and 31.7 kL of water.<sup>3</sup>*

<sup>1</sup> Buckhorn Inc, 1991, How to Select Shipping Containers, Milford, OH: data from Best Practice Database.

<sup>2</sup> Council of Australia, 2005, Packaging the Statistics [www.pca.org.au/uploads/00207.pdf](http://www.pca.org.au/uploads/00207.pdf)

<sup>3</sup> Council of Australia, 2005, Packaging the Statistics.



### Reuse in the plant

There may be opportunities to reuse packaging in the plant for storage or to transfer materials around the plant.

### Reuse by other customer, businesses or community groups

Packaging could be used beyond the plant such as packing material for another business or donated to schools for art classes. Similarly, the packaging waste of one company could have a use in a food processing plant. For example, incoming cardboard could be used for outgoing padding.

### Design to encourage packaging reuse

There are a number of ways to improve the reusability of packaging:

- ensure packaging will be long-lasting, e.g. reinforced edging and corners on crates
- design packaging for easy cleaning, e.g. no inaccessible dead spaces
- use liners that are cheaper to dispose of than the product itself.

### Avoiding damage to promote reuse

Correct handling procedures by staff, for example, lifting drums at base or centre not the rim, and proper handling equipment for example, rubber covering, will avoid damage and reduce packaging waste.



*Correct handling of containers and packaging will reduce loss.*

## Recycling packaging

Recycling (which may involve reprocessing) reduces the volume of waste going to landfill and conserves valuable materials that can be incorporated into the same or another product.

The National Packaging Covenant (NPC) developed overarching targets for 2010. All signatories to the Covenant (39 per cent of which are food and beverage companies) are working towards:

1. A national recycling rate of 65 per cent for post-consumer packaging
2. A recycling rate of 25 per cent for packaging materials that are either not currently recycled or are recycled at very low rates
3. No further increase in the amount of packaging waste disposed to landfill.<sup>4</sup>

For more information refer to Solid waste overview (R1) fact sheet or visit NPC website, [www.packagingcovenant.org.au](http://www.packagingcovenant.org.au)

*Steel can be reprocessed back into steel cans. One tonne of recycled steel saves 1.5 tonnes of iron ore, 0.5 tonne of coke, 40 per cent of the water<sup>5</sup> and one quarter the energy.<sup>6</sup>*

### Increase community awareness

Information on the packaging itself can help consumers make informed purchasing choices. This can include recycling logos and classification codes with instructions.

### Maximising recycling of packaging materials

If possible food processors should try to:

- avoid composite packaging that has a number of different materials. If composite packaging is necessary, design packaging to allow separation of individual parts for recycling
- choose materials that do not interfere with the recycling process, e.g. labels, inks, colouring, adhesives, seals, handles, inserts, liners, laminates and closures
- work with packaging companies to design packaging to maximise its recyclability.

<sup>4</sup> National Packaging Covenant Council, 2007, The National Packaging Covenant 2005-2006 Annual Report, Brisbane [www.packagingcovenant.org.au/documents/File/2005\\_2006\\_NPC\\_Annual\\_Report\\_Final.pdf](http://www.packagingcovenant.org.au/documents/File/2005_2006_NPC_Annual_Report_Final.pdf)

<sup>5</sup> Lazon, C. and Wood, G., 1995, Environmentally Responsible Packing, Pira International, UK.

<sup>6</sup> EcoRecycle Victoria/Gould League of Australia, 1999, Waste Stopper sheet 8: Steel Can Recycling.

## RECYCLABLE COMPOSITE PACKAGING

Tetrapak carton-based packaging is composed of a laminate of paper (plastic for water proofing and paper for stiffness), polyethylene (clean contact surface for food) and, for aseptic packages, aluminium foil (to block out light and oxygen). Despite the many layers, up to 90 per cent of the fibres can be recovered using a hydro-pulper that agitates water and the packaging to separate the fibres from the polyethylene (the aluminium foil remains inside the layers of polyethylene).<sup>7</sup>

## WORKING WITH SUPPLIERS CAN SAVE

Honey processor Capilano worked with their packaging suppliers Amcor, LeMac and Visy to improve:

- suitability of metal closures and safety seals for recycling
- effect of ink coding information, self adhesives and wet label types on the recyclability of jars and bottles.

The business is also investigating the effect of hot melt glue, top and printed carton stickers on secondary packaging recyclability.<sup>8</sup>

### Purchasing Policy – Green Procurement

A purchasing policy can align the food processor's packaging commitments with those of their packaging and raw material suppliers, dictating which materials and products should be purchased. The not for profit Buy Recycled Business Alliance of Australia is united by a commitment to promote the purchase and use of recycled content products. For information on buying recycled packaging visit: [www.brba.com.au](http://www.brba.com.au)

### Eco-labelling

Eco-labelling is a voluntary method of environmental performance certification to help consumers identify products that have superior environmental attributes compared to similar products. Packaging is often an attribute that is considered in eco-labelling. For more information see the Current issues and future trends (G4) fact sheet.

### Separating recycled waste

Separating and segregating packaging waste ensures it does not become contaminated. Successful recycling requires clear signage, training, monitoring and space as discussed in the Recycling solid waste (R4) fact sheet. If large volumes are collected consider a compactor to maximise storage space.

## POLYSTYRENE RECYCLING

Salad processor, Harvest Fresh Cuts, recycles polystyrene boxes saving around \$1,500 in land fill costs.

<sup>7</sup> Tetra Pak, 2008, Recycling [www.tetrapak.com](http://www.tetrapak.com)

<sup>8</sup> Capilano Honey, 2002, National Packaging Covenant December 2002 – November 2003 Action Plan.

## Products from waste plastic

Making plastics from recycled materials uses only 30 per cent of the energy required to manufacture plastic products from fossil fuels.<sup>9</sup> According to the Packaging Council of Australia, the use of plastic contributes to lightweighting, reducing weights by as much as 400 per cent, potentially halving production and transport energy costs and reducing material wastage by 150 per cent.<sup>10</sup>

Plastic waste	Recycled product
Soft drink bottles	Soft drink bottles (multi and monolayer), detergent bottles, clear film, carpet fibres, fleecy jackets
Freezer bags, milk bottles and milk crates	Compost bins, detergent bottles, crates, mobile rubbish bins, agricultural pipes, pallets
Clear cordial and juice bottles and blister packs	Detergent bottles, tiles, plumbing, pipe fittings
Bags and tubing	Hoses inner core, industrial flooring
Lids of ice-cream containers	Film for builders, industry packaging and plant nurseries, bags
Potato crisps bags, ice-cream containers and drinking straws	Compost bins
Yoghurt containers	Clothes pegs, coat hangers, office accessories, spools, rulers, video/CD boxes

This series of fact sheets provides examples and suggestions to the modern food processor on how to achieve both economic and environmental benefits from eco-efficiency. Visit the project website [www.ecoefficiency.com.au](http://www.ecoefficiency.com.au) for more ideas and case studies.

<sup>9</sup> Packaging Council of Australia, 2005, Packaging the Statistics.

<sup>10</sup> Packaging Council of Australia, 2005, Packaging the Statistics.

*The eco-efficiency for the Queensland food processing industry project is an initiative of the Department of Tourism, Regional Development and Industry and the Environmental Protection Agency with technical information provided by UniQuest through the UNEP Working Group for Cleaner Production.*