

Food processing: source reduction and waste management

As landfill and wastewater treatment costs increase, reducing and managing food processing by-products can save your company money.

Source reduction, decreasing the volume of waste material and by-product generated, is the most effective method to reduce your disposal costs. Source reduction can be achieved by:

- Dedicate mixing lines to specific products to reduce product loss and the cleanup required for product change-over.
- Use dry cleaning methods, such as brooms and scrapers to clean floors and equipment, before using wet cleanup.
- Use high-pressure spray washes during cleanup.
- Minimize spills and leaks on the production line.

Management Alternatives

After source reduction practices are in place, waste management alternatives may be needed. For example, use food by-products as animal feed, or for composting or landspreading.

Animal Feed

Feeding food by-products directly to livestock allows them to be useful again*. It offers several advantages over composting and landspreading.

- By-products may be fed to livestock in their original form.
- By-products can be fed in liquid and solid form to livestock.
- By-products can be fed year round. Feeding is not limited by weather conditions.

**Note: Before any food material can be used as livestock feed, the livestock producer is required to obtain a permit from the Minnesota Board of Animal Health. To request a permit application, call 651.296.2942.*

For more information on feeding food by-products to livestock see MnTAP's fact sheet, *Feeding Food Processing By-products to Livestock* [#67], available online at <mntap.umn.edu>.

Composting and Landspreading

When feeding by-products to livestock is impractical, composting or landspreading the food waste are reuse alternatives. These methods degrade food by-products into a useful soil additive called humus. Composting degrades

by-products above ground in a concentrated area, and landspreading degrades by-products beneath the soil in a cultivated field.

Composting

With proper management, food by-products can be composted and added to the soil at appropriate rates. Composting has the following benefits:

- Low transportation costs. The by-products can be composted on-site and the resulting humus can have a volume and weight reduction of up to 40% of the original by-products.
- Low capital investment. Composting is a batch process that can be done by using a mound or a windrow system. In both systems the by-products are managed to accelerate biological breakdown.
- Good for seasonal processors. For a company that only processes food for several months a year, such as a cannery, composting may be a suitable alternative to animal feeding or landfilling. Livestock producers may be unwilling to switch to a livestock feed that is only available for a short period.
- Long shelf-life. Humus can be stored without spoiling and applied to enrich the soil as needed.

Landspreading

If your company has sufficient land, it may be able to incorporate food by-products directly into the soil on site. Also, a farmer could be paid to take the by-products to a suitable field. With proper management, by-products are used to enhance the soil. Landspreading has the following benefits:

- A separate compost facility is not needed.
- The finished product does not need to be transported or stored; it is left in the soil as a plant nutrient.

More Information

For more information about composting and landspreading food by-products, see MnTAP's fact sheet *Composting and Landspreading Food Processing By-products* [#78], available online at <mntap.umn.edu>.



For More Information

MnTAP has a variety of technical assistance services available to help Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, prevent pollution, increase energy efficiency, and reduce costs. Our information resources are available online at <mntap.umn.edu>. Please call MnTAP at 612.624.1300 or 800.247.0015 for personal assistance.