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FACT SHEET

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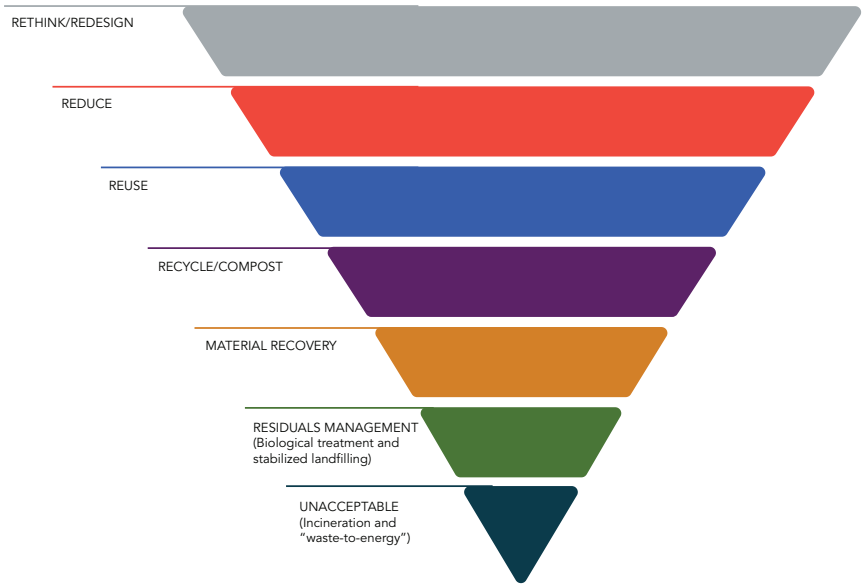
BALANCING FUNCTIONALITY AND RECYCLABILITY

There is a movement around the globe to move towards eliminating plastic waste. With 300 million tonnes of plastic waste generated each year, possibly persisting in the environment for centuries, industry and consumers widely agree that our usage of plastic cannot continue on its current trajectory. The Federal Government is supporting the Canada-wide Strategy on Zero Plastic Waste, and consumers are looking to reduce their impact; what are the best plastics available for maintaining quality while supporting a circular economy? What do all of those numbers mean on the bottom of plastic containers? How do other materials like metal, glass and paper perform? How do we continue to protect food properly and prevent food loss and waste while considering all environmental impacts of packaging? And what about the compatibility for your food type?



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CONSIDERATIONS FOR MINIMIZING THE FOOTPRINT FOR YOUR FOOD PACKAGING

The Canadian Produce Marketing Association has created a guide to preferred plastics for produce – materials like PET, HDPE, LDPE are some of the most easily recycled, and packaging containing post-consumer materials is also favourable. A direct link to the Preferred Plastics Guide can be found in the Further Reading section.

Whichever package you choose, be sure to communicate clearly to consumers whether it is recyclable or compostable and, if so, provide any applicable directions.

The following table outlines some pros and cons of food packaging functionality as well as some environmental considerations:

Packaging			Food Compatibility/Marketing		Environmental Issues	
Group	Type		Pros	Cons	Pros	Cons
Glass		Bottles or Jars	Clarity, excellent barrier to moisture and gases, suitable for high heat, often used for high-end products	Breakable, heavy, bulky	Recyclable (unlimited cycles), re-useable	High energy costs for production and transportation
		Aluminum	Excellent moisture/ gas barrier, lightweight, suitable for high heat, less expensive than tinplate steel, malleable	Limited structural strength	Recyclable (unlimited cycles) with high return rates; lightweight	Initial production energy intensive but high recycling rate brings down overall footprint
Metal		Tinplate	Excellent moisture/gas barrier, suitable for high heat, corrosion-resistant	Coating required to avoid reaction with foods; more expensive than tin-free steel	Recyclable (unlimited) and can be separated magnetically	Heavier than aluminum; increased cost of transport
		Tin-free steel	Excellent moisture/gas barrier, suitable for high heat, very strong	Slightly less resistant to corrosion than tinplate/aluminum	Recyclable (unlimited) and can be separated magnetically	Heavier than aluminum; increased cost of transport
		Foil tray	Suitable for high heat	Not microwave friendly	Recyclable (unlimited), fairly lightweight	Initial production energy intensive

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Packaging			Food Compatibility/Marketing		Environmental Issues	
Group	**Type**		**Pros**	**Cons**	**Pros**	**Cons**
Plastics			Clear, strong, good moisture and gas barrier	Current recycling rates mean it can end up in landfill	Very widely recycled globally; can be recycled for more cycles than other plastics	Winds up in environment; better recycling infrastructure needed
			Suitable for cold, excellent moisture barrier, moderately strong	Opaque or semi-translucent, poor oxygen barrier	Very widely recycled	Winds up in environment; better recycling infrastructure needed
			Translucent, very good moisture barrier, suitable for cold	Typically thin and may require other packaging for pallet stacking	Widely recycled	Winds up in environment; better recycling infrastructure needed
			Withstands high temperatures, can be microwaved, excellent moisture barrier	Opaque or semi-transparent, poor oxygen barrier, moderately strong, not suitable for freezing	Recycled in some locations and increasing	Recyclability depends on location
			Clear—ability to see food through container	Poor moisture and gas barrier, poor impact resistance	Not recommended	Recycling is limited
			Depends on type	Includes a "catch-all" for several plastics outside of other classifications	Some types are re-useable	Recycling is limited
		PLA (plant-based plastic)	Allows some moisture transfer, which may help some fresh produce items	Pre-mature degradation may affect functionality/ packaging itself may have a shelf life	Biodegradable	Only biodegrades under optimal conditions; can contaminate recycling streams; corn grown to produce packaging can displace agri-food crops
Films		Flexible packaging – Bags or stand-up pouch	Properties can be tailored for product needs; displays graphics well	Cost can vary based on packaging needs and may be on the pricier side	Reduction of source materials; lightweight; some compostable or recyclable multi-layer bags are now available	Not usually recyclable; compostable options are available but offer less protection
		Films	Can be tailored for product needs	Requires specific equipment – expensive	Can reduce materials significantly compared with rigid lidding	May not be recyclable
		Edible films	Potential to extend shelf life of produce without plastic; can provide barrier to moisture, oxygen and aromas	Food safety considerations; still under development; challenging to balance barrier and mechanical properties	Zero waste	N/A

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Packaging			Food Compatibility/Marketing		Environmental Issues	
Group	**Type**		**Pros**	**Cons**	**Pros**	**Cons**
Multi-Layer box		Tetra-Paks™	Excellent barrier properties, lightweight, convenient	Very large volumes required	Streamlines shipping, somewhat recyclable	Multi-layer includes paper, aluminum, plastic, so recycling is difficult
Paper		Paperboard (1-layer)	Keeps vulnerable foods protected, easy to print graphics, consistent supply	Limited moisture and gas barrier properties	Recyclable, compostable, and renewable	Uses more water and energy in production than some other types of packaging
		Cardboard (3-layers)	Very functional and versatile secondary packaging, consistent supply	Limited moisture and gas barrier properties	Recyclable unless waxed; renewable	Uses more water and energy in production than some other types of packaging
		Easy to print graphics, lightweight, consumer friendly	Product not visible, occasional problems with leakers	Readily recyclable and lightweight for shipping	Recyclable unless waxed; renewable	Uses more water and energy in production than some other types of packaging
		Pulpboard	Suitable for protecting odd shapes, consistent supply	Limited moisture and gas barrier properties	Compostable or recyclable; can be made with recycled paper; renewable	Uses more water and energy in production than some other types of packaging

FURTHER READING

https://www.canada.ca/en/environment-climate-change/news/2020/10/canada-one-step-closer-to-zero-plastic-waste-by-2030.html

https://zerowastecanada.ca/zero-waste-hierarchy/#1494613521423-107fd31d-9b90

https://www.cpma.ca/docs/default-source/industry/2020/CPMA_Preferred_Plastics_Guide_English.pdf