GUIDELINES ON **THE ADVERTISING OF FIBRE AND BIOMASS BASED COMPOSTABLE PRODUCTS AND PACKAGING**

SECTION 1. INTRODUCTION

The purpose of this guideline is to:

- give brands, collectors, processors, retailers and consumers certainty about the meaning of different claims made about fibre-based and biomass compostable products and packaging.
- influence the terms brands choose to advertise their products in such a way that consumers are fully informed and greenwashing is avoided.
- clarify what different types of fibre and biomass packaging contain in the absence of a requirement to fully label the contents of packaging.

This guideline refers to single-use packaging, which can be convenient but is further down the waste hierarchy than reusable packaging. The waste hierarchy ranks the management of waste according to their impact on the environment. When making decisions about packaging and products it is recommended that the waste management hierarchy (set out in the latest New Zealand Waste Strategy and relevant waste legislation) is followed, as those further up the hierarchy use fewer virgin resources than those lower down.

The composter's perspective

Compostable packaging and products are only of value to a composter if they bring with them food nutrients, break down adequately and are free of contamination. A Composters' Position paper produced by WasteMINZ's Organic Materials Sector Group notes a limited range of situations where compostable packaging may be helpful, such as those that assist in the diversion of waste from landfill within a closed loop system (for example, at an event with food stalls) where all packaging is compostable and is sorted before being sent to a composter who has agreed to accepting it.

It is up to individual composting facilities to accept or decline compostable packaging. Composting systems are diverse and different systems are used to achieve different end products. Highly processed fibrous materials take a relatively long time to break down, and this may be longer than the facility's typical composting cycle.

A facility may also decline to take compostable packaging due to concerns about contamination from either non-compostable packaging being accidentally included amongst the compostable packaging, or caused by intentionally or unintentionally added chemicals and toxins such as per- and polyfluoroalkyl substances (PFAS).

The Ministry for the Environment's factsheet on council food scraps collections

The Ministry for the Environment now requires all councils with main centres within 150 kilometres of an organics processing facility to collect food scraps by 2027. The Ministry has also included a list of acceptable materials for these food scraps collections. The factsheet states:

> *Through the new collections, councils can only accept food scraps or food and garden waste – not paper, cardboard, compostable packaging, or other materials that can contaminate soils and the food chain. Councils will have some discretion over a few materials, such as compostable bin liners.*

Per- and polyfluoroalkyl substances (PFAS) and other chemicals of concern

PFAS is a group of an estimated 10,000 chemicals used in a wide range of consumer products including packaging (to provide oil and moisture barrier properties). PFAS do not break down in the environment as they are not biodegradable and can move through soils and contaminate drinking water sources, build up (bioaccumulate) and bio-magnify in the food chain, and harm human and animal health. Therefore, any

product with intentionally added PFAS could be seen to be breaching the Fair Trading Act by claiming to be compostable (ie biodegradable in a composting environment). PFAS can be long-chain (such as PFOA) or short-chain (such as PFBA) but due to the phasing out of long-chain PFAS, if PFAS are intentionally added or found, it is more likely to be the short-chain version. The manufacturing process may also result in PFAS being in compostable packaging in low levels as a non- intentionally added substance (NIAS). For more on PFAS in food packaging read the Packaging Forum's Report.

A study by the European Consumer Organisation of compostable packaging on the market in Europe, including those carrying a third-party certificate for compostability, found chemicals of concern were detected above the recommended limits in 100% of the samples of moulded natural fibres, mainly bagasse, 45% of the paper straws and 0% of the palm leaf bowls and plates.

Aqueous (or water-based) dispersion coatings (WDC) are an alternative water and oil barrier to polymer linings or PFAS but can include chemical additives including copolymers. For more on these see "plastic-free" claims under Section 3.

Compostability certification

There are no separate certifications for fibre-based compostable products and packaging. However, standards for assessing the compostability of plastics (such as AS 4736, EN 13432) are also used to certify fibre-based compostable products and packaging.

What do compostability certifications test for?

- biodegradability in a specific composting environment (ie in "home" composting conditions or in "commercial" composting conditions)
- disintegration
- heavy metal and intentionally added total fluorine (such as PFAS) residues
- ecotoxicity (which means they ensure there is no toxic effect on the plant ecosystem from the materials when they break down) – the Australian standards (AS 4736 and 5810) also test for earthworm ecotoxicity.

What don't compostability certifications test for?

- human toxicity
- bioaccumulation - which is when a harmful substance (pesticides or organic chemicals) gets absorbed and stored by an organism at a higher rate than it can be excreted
- long term impacts on soil health.

In addition, certifications allow for the inclusion of individual non-biodegradable components of 1% by mass, and in combination these individual non-biodegradable components could make up a total of 5% by mass of the packaging (such as, for example, plastic, adhesives, ink).

Standard	Test products with intentionally added PFAS	Level of unintentional PFAS allowed	Requires self-declaration that PFAS has not been intentionally added	Other requirements
EN 13432	No	Up to 100ppm (total organic fluorine)	Yes	No
AS 4736 and AS 5810	No	Less than 100ppm (total organic fluorine)	Yes	No
ASTM D 6400 and 6868	No	Less than 100ppm (total organic fluorine)	Yes	Safety data sheets for all ingredients must show that the product formula does not contain fluorinated chemicals

Does a compostability certification mean there is no PFAS in the product or packaging?

Compostability certification should mean there is no intentionally-added PFAS, but it does not mean the product is free of PFAS. The table above demonstrates how PFAS is measured within different compostability standards.

RECOMMENDATION: It is recommended that, where possible, compostability certification is sought for fibre and bio-mass compostable packaging and products. This provides some reassurance that PFAS has not been added intentionally and that all non-biodegradable components do not exceed 5% mass of the overall product. By providing a list of all materials used in the packaging or product a brand allows the customer to make an informed decision about what they are buying or accepting at their facilities.

SECTION 2. **"FIBRE", "FIBRE-BASED" OR "BIOMASS-BASED" MATERIAL USED IN COMPOSTABLE PACKAGING THAT ARE CLAIMED TO BE COMPOSTABLE**

Fibre and biomass based compostable products and packaging are generally made from **wood** (ie paper, cardboard, and wood), **grass** (ie bamboo, sugarcane, wheat, rice) or other **biomass** such as potato starch or leaves. They are grouped below in terms of characteristics and applications.

Bamboo and wood

Single use wooden cutlery is generally uncoated but can also be coated with plant-based wax such as carnauba.

- Not certified home or commercially compostable (as they take longer than the 6-month time limit to biodegrade)
- Brings structural aeration and carbon material to compost systems
- Not recyclable
- Look for FSC certification

For more information on bamboo used in single-use applications see the **moulded fibre packaging** section.

Durable bamboo products such as uncoloured toothbrushes, pegs etc. These are generally 100% bamboo but may have other components such as nylon bristles or stainless steel springs. The bamboo components are:

- Not certified home or commercially compostable (as they take longer than the 6-month time limit to biodegrade)
- Not recyclable

Reusable bamboo products such as colourful tableware or cutting boards are made of a composite plastic (such as a melamine-formaldehyde resin) mixed with bamboo fibre (plus dyes). As reusable items they are a good option for long-term use. However, they will still need to be disposed of to landfill once they are broken. Any claims that they are compostable need to be backed up with certification, which they are unlikely to have.

- Not home compostable or commercially compostable
- Not recyclable

Pine boat serviceware is made from timber shavings. Typically without coatings or additives.

- Not certified home or commercially compostable (as they take longer than the 6-month time limit to biodegrade)
- Brings structural aeration and carbon material to compost systems
- Not recyclable

Cardboard and paper

Bags (or paper wraps) used for serving food can have a greaseproof coating (made of silicon) added to them or have PFAS added to make it grease resistant. Silicon coated greaseproof bags and wraps are not compostable. Look for vegetable wax ("biowax") coated or uncoated bags/paper (where the greaseproof attributes are created by intensively refining the wood pulp).

- Home compostable (probably not certified) – vegetable wax lined bags/paper only
- Commercially compostable (probably not certified) – vegetable wax lined bags/paper only
- Not recyclable (due to contamination from food and potential for silicon to be included)
- Look for FSC certification

Kraft paper is stronger than normal paper, due to the way it is manufactured. Compostable kraft paper packaging can be 100% paper or have a thin plastic lining or coating or have PFAS added to make it grease resistant. It is often used for serviceware, such as takeaway containers. Plastic linings are either made from fossil fuel-based linings (such as PET) or from plant-based plastic (such as PLA).

- An aqueous (water) dispersion coating (WDC) is sometimes used instead of a lining. For more on these see "plastic-free" claims under Section 3
- Home compostable (look for certification)
- Commercially compostable (look for certification)
- Not recyclable (if contaminated from food and potential for lining to be included)
- Look for FSC certification

Pizza boxes are generally made from corrugated cardboard (OCC) or kraft cardboard but PFAS may have been added to make the cardboard grease resistant. See above for more information on PFAS. Some pizza boxes are fibre only and certified compostable.

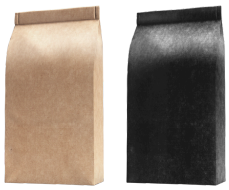
- Home compostable (look for certification)
- Commercially compostable (look for certification)
- Recyclable if clean
- Look for FSC certification

Serviettes are made from paper and may be bleached, unbleached, or have dyes or wet-strength additive.

- Home compostable (probably not certified)
- Commercially compostable (probably not certified)
- Not recyclable (due to contamination from food)
- Look for FSC certification

Straws can be made from paper or cardboard and may have dyes, often soy-based, added.

- Home compostable (probably not certified)
- Commercially compostable (probably not certified)
- Not recyclable
- Look for FSC certification



Modified paper or "paper based" packaging is a new form of packaging being embraced by some brands. The majority of the packaging (around 86%) is made of paper with the rest of it being made up of a plastic barrier, seals and inks. The plastic barrier can be made from fossil-fuel based plastic or bio-based plastic. Producers may claim this packaging is recyclable or biodegradable/compostable but in New Zealand it is not compostable, kerbside recyclable or accepted in soft plastic collections.

- Not home compostable
- Not commercially compostable
- Not recyclable

Moulded fibre packaging

Moulded fibre packaging is made from pulp from a variety of sources, then moulded into the required shape. It can be made from bagasse (material left over from sugar cane processing), bamboo, wood, wheatstraw (straw that is left over after wheat is harvested) and rice. It may have PFAS added to it make it grease and liquid resistant. Moulded fibre packaging is used for a variety of applications including compostable serviceware.

- Home compostable (look for certification)
- Commercially compostable (look for certification)
- Not recyclable

Other plant material

Palm leaf tableware is made from Areca nut palm leaves in Kerala, Southern India, which are soaked in water, heat pressed into shape and then dried. While designed to be single-use they can be reused if looked after.

- Not certified home or commercially compostable (as they take longer than the 6-month time limit to biodegrade)
- Brings structural aeration and carbon material to compost systems
- Not recyclable

Potato packaging is a Kiwi invention made from potato starch (from a byproduct of potato chip processing), cellulose and water. Cellulose is the main substance in the walls of plant cells, helping plants to remain stiff and upright, and starch is a carbohydrate produced by plants.

- Home compostable (in process of being certified)
- Commercially compostable (in process of being certified)
- Not recyclable

SECTION 3. **CLAIMS MADE ABOUT FIBRE COMPOSTABLE PRODUCTS AND PACKAGING**

Compostable: A claim of compostability means that the packaging or product in its final form (ie not just one layer of it) passes testing for disintegration, ecotoxicity, characterisation (ie heavy metals) and biodegrades (ie breaks down into water, carbon dioxide and biomass within a defined period of time) in a composting environment. It is recommended that all fibre and biomass based compostable products and packaging are certified compostable (see WasteMINZ guides on Compostable Packaging which includes detailed information on the recognised certification schemes), so the customer and composter knows that certain standards have been met.

Compostable and recyclable: Some fibre and biomass-based products and packaging may be claimed to be both compostable and recyclable. The list in section 2 clarifies which types of materials may be both. However, it is important to note that serviceware or food packaging that claims to be recyclable but is covered in food residue should not be put in recycling systems, as the food will be a recycling contaminant. For this reason, the claim of 'recyclable' should be made with caution.

PFAS free: It is not recommended that a claim of 'PFAS free' is made as even if no PFAS is intentionally added to a product, there may be traces of PFAS due to the manufacturing process or it already being in the material the product is made from.

There are some "PFAS-free" certification schemes popping up internationally, however it is not recommended that brands seek this certification but instead get one of the recognised compostable packaging certifications to ensure all standards needed for compostability are met.

Plastic Free: Some fibre-based packaging with a plastic liner made from plant-derived polymers such as PLA, or with an aqueous (or water) dispersion coating (WDC), are sometimes claimed to be plastic free (see the paragraph regarding chemicals in section 1). There are some plastic-free certifications internationally, but their criteria for "plastic free" differs from the European Union's definition of plastic free. It is therefore recommended that, as above, brands seek compostable packaging certification rather than seeking other certification such as plastic free.

SECTION 4. **FURTHER READING**

APCOs' Sustainable Packaging Guidelines

European Consumer Organisation "Towards safe and sustainable Food Packaging"

OECD "Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance"

Packaging Forum's Report on PFAS

WasteMINZ Guidelines on Compostable Plastic Packaging