

THE HEART OF vegware™

2019



VEGWARE IS A
MANUFACTURER AND
VISIONARY BRAND.

THE GLOBAL SPECIALIST
IN COMPOSTABLE
FOODSERVICE
PACKAGING.



Our award-winning catering disposables are low carbon, made from renewable or recycled materials, and can all be composted with food waste where facilities exist.

Vegware has operational bases in Australia, UK, USA and Hong Kong, manufacturing the world’s best eco products since 2006.



CONTENTS

2	The green leaf band
4	A guide to eco-terminology
6	All about PLA & CPLA
8	What Vegware products are made from
10	Composting FAQs
14	Go Zero Waste

The Green Leaf band by Vegware

We're updating the look of our stock lines. The new design will showcase your food and drink as never before and provide a key visual cue for compostability.

Look out for the Green Leaf band appearing on Vegware cold cups, single wall hot cups, soup containers and the deli range during 2019.



The function

This is the next phase of Vegware's commitment to waste management and producer responsibility. Experience has highlighted the critical role on-product messaging plays in reducing contamination.

The Green Leaf band unifies our products and provides a visual prompt that can be used on matching bin signage.



The design

We've created a repeating leaf pattern that's bold, striking and easily identifiable to waste collectors as a compostable product.

It's a contemporary, stylized version of the Vegware leaf that appears in our logo.



Clear on-product messaging and visual cue for compostability.



Repeating leaf pattern is a stylized version of the Vegware logo.



Rich green colour conveys Vegware's premium quality and environmental integrity.

A GUIDE TO ECO TERMINOLOGY

With single-use packaging on every foodie's mind, eco-friendly products are in the spotlight.

But the terminology can be confusing. Recyclable. Biodegradable. Compostable. What do these terms mean?

Cut the confusion with this handy guide by Vegware, the global specialist in plant-based compostable foodservice packaging

RECYCLABLE

Everyone likes the word 'recyclable' but in reality, conventional foodservice packaging can't be recycled.

Kept separate, dry card or paper can be recycled. So can plastic water bottles or metal drink cans. But used catering disposables are a mix of card, plastic and food, so food contamination is inevitable. This combination creates massive recycling challenges, so the result is often incineration or landfill. With compostable disposables, food isn't contamination, it's a vital ingredient in the composting process.

BIODEGRADABLE

Biodegradable means something breaks down naturally, but it can take years. Biodegradable tells us nothing about timescales – for example, wood is biodegradable, but a log cabin can stand for generations. When it comes to biodegradable, there is no guarantee it will break down in commercial composting.

COMPOSTABLE = BIODEGRADABLE, IN UNDER 12 WEEKS!

Compostable means something can break down in under 12 weeks, and is therefore suitable for commercial composting together with food waste. Commercial composting creates the perfect balance of microbes, moisture and warmth. So instead of being buried or burnt, your compostable catering 'waste' creates nutrient rich compost that helps plants thrive.

GO ZERO WASTE

It's important we divert as much as we can from landfills. For catering disposables, choose compostable to feed our future crops. Make sure your disposables supplier has compostability certification - that's the real guarantee. Vegware holds extensive compostability certification. Vegware's environmental support can help foodservice Go Zero Waste.



Vegware's plant-based disposables can break down in under 12 weeks in commercial composting.

Vegware holds compostability certification directly for all core ranges.

We work actively with the waste sector to create composting solutions.



COMPOSTABLE
IN INDUSTRIAL FACILITIES

Check locally, as these do not exist in many communities. Not suitable for backyard composting. CERT # 2122186



ALL ABOUT PLA & CPLA – COMPOSTABLE BIOPLASTICS MADE FROM PLANT STARCHES

At Vegware, we manufacture our catering disposables from a variety of plant-based materials. We use paper, board and pulp, but the big difference is that we don't use conventional plastics.

Our cups still need to be leakproof, and our clients still want clear windows, so we use compostable bioplastics – compostable materials derived from plant sources.

WHAT IS PLA?

PLA is a compostable bioplastic derived from plant sugars. PLA stands for polylactic acid. It can be made from any sugar, such as corn starch, cassava, sugar cane, or sugar beet. NatureWorks is the world's largest producer of PLA, and a key partner to Vegware.

Industrial corn is the primary source crop at the moment, but NatureWorks are working actively to diversify feedstocks, investigating other fibrous non-food crops, or even creating lactic acid from carbon dioxide or methane.

NatureWorks refer to their PLA under the Ingeo brand. [Click here](#) for more information online on how it is made, and end of life options.

HOW PLA IS MADE

Corn plants are milled to extract the starch, in the form of glucose. The glucose is then fermented to produce lactic acid. Next up, a chemical process transforms the lactic acid into a polymer, which can be made into pellets, known in the industry as resin.

Just like a conventional plastic resin, the PLA pellets can be used in a variety of ways – extruded into a sheet or film, injection moulded, cast into sheets, or spun into fibres. PLA has a huge range of applications, but at Vegware we use it for:

- PLA-coated board for paper cups and soup containers
- Clear cold cups, salad containers, deli and portion pots, and lids for a variety of products
- Clear windows in sandwich wedges, salad boxes and bags

CPLA – CRYSTALLISED PLA FOR HIGHER HEAT USE

PLA has a low melt point, so is best for cold use up to around 40°C or 105°F. Where more heat resistance is needed such as in cutlery, or lids for coffee or soup, we use a crystallised form. This involves adding chalk to the PLA to act as a catalyst, and then rapidly heating and cooling the PLA resin during production. The result is a product which is heat stable to 90°C or 194°F.

Vegware's CPLA products are still suitable for industrial composting, in either in-vessel or open windrow composting.



A compostable lunch: PLA cold cups and portion pots, PLA linings in our hot cups, and CPLA coffee lids and cutlery



PLA pellets ready for a variety of uses

CORN FOR FOOD, FEED AND INDUSTRIAL USES

The industrial corn used to make NatureWorks Ingeo PLA is non-food-grade, so it is not competing with food for human consumption. The whole plant is harvested, and every part of it is used. The protein and starch have many different uses:

- the plant-based proteins are used to make animal feed;
- the starch has many industrial uses, including in airbags, corrugated cardboard, recycled paper, pharmaceuticals, condoms, oil refining and drilling...and making PLA.

[Click here](#) for more information on food and bioplastics from NatureWorks, the world's largest producer of PLA.

SUSTAINABLE GROWING PRACTICES

The corn plants are grown using sustainable farming practices, without excessive pesticides and water use. In the same way that FSC can prove the sustainability of timber production, NatureWorks has independent ISCC PLUS certification – more info here. This in-depth scheme demonstrates the sustainable growing practices for the plants used by NatureWorks to make PLA:

1. No sourcing from land with high biodiversity, high carbon stock or from peatland (2008 as the reference year).
2. Agricultural practices (fertilizer & pesticide use, storage, disposal, tillage practices, equipment calibration, irrigation)
3. Environmental protection (protect natural vegetation & water courses, soil erosion, soil organic matter)
4. Social sustainability (child labour, workers protection, labour condition, land rights, training, water rights)
5. Greenhouse gas emissions on farm level.

Implementing this scheme has involved helping farmers to alter their growing practices for greater sustainability.

PLA – WHICH WASTE STREAM?

Vegware's compostable catering disposables can biodegrade in under 12 weeks in commercial composting, which provides the perfect balance of microbes, moisture and warmth. Our Environmental team offer our clients unparalleled zero waste support – see point 2 in our Composting FAQ.

Where there is no access to industrial composting, used Vegware should be put in general waste. Vegware's takeaway packaging is made from plants, not plastic, using lower carbon, renewable or recycled materials, and these sustainability benefits still apply no matter what happens to them after use.

- Used Vegware should NOT be placed in standard recycling bins which collect paper, plastics and metals, as those materials go to a different type of sorting facility. Another reason is that food waste harms the quality of mechanical recycling – the same applies to any used foodservice disposables.
- General waste goes to either incineration or landfill. If Vegware is incinerated, energy is produced. Incineration studies from NatureWorks, a key materials supplier of ours, show that their PLA bioplastic produces more heat than newspaper, wood or food waste; also that it produces no volatile gases and leaves little residue. Some in the waste sector prefer plant-based materials over conventional plastics as they give off fewer toxic gases.
- In landfill, studies have shown that compostable packaging is inert and does not give off methane.
- Please do not litter – compostable packaging is not expected to break down when discarded in the environment, and is not a solution to marine pollution.
- Home composting conditions vary with the skill of the householder, so we don't make any claims there, but there have been successful trials using hot compost bins.



All of the corn plant is used, creating animal feed and many industrial products

PLA – NOT A THREAT TO PLASTICS RECYCLING

Compared to conventional plastics, bioplastics currently represent a tiny fraction of packaging, so it is not currently economical to sort PLA from other waste streams. If there is a major increase in bioplastics volumes, then waste sorting facilities can be calibrated to recognise and sort bioplastics using near-infrared identification. As well as composting, PLA is suitable for mechanical recycling into new PLA, as practised by Looplife Polymers in Belgium.

Studies have shown that low levels of bioplastics do not harm plastics recycling. German and Italian researchers have found there was no reduction to quality, up to these levels:

- Up to 3% PLA in post-consumer PP plastic recyclate (1)
- Up to 10% PLA in PS plastic re-granulates (1)
- Up to 1-2% PLA in recycled PET plastic short-spinning plant (2)
- Up to 10% MaterBi in the recycling of PE plastic shopping bags (2)

This information comes from (1) the report PLA in the Waste Stream, a report initiated by the German Ministry of Food and Agriculture. And (2) from CONAI, the National Packaging Consortium of Italy: Working Group Biodegradable Packaging Recovery Project report, 2012.

We don't encourage anyone to put PLA into plastics recycling, but these studies offer comfort to plastics reproducers, who are understandably keen to maintain quality.



WHAT VEGWARE PRODUCTS ARE MADE FROM

Vegware plant-based catering disposables are made from renewable, low carbon or recycled materials, and can be composted along with food waste where accepted.

Here is a guide to what our products are made from.

PLA & CPLA

Plant-based alternatives to plastic. Clear PLA for cold use, CPLA for hot.



HOT CUP LINING ■ HOT CUP LIDS ■ STIRRERS ■ COLD CUPS & LIDS ■ STRAWS ■ CUTLERY* ■ PAPER BOWL LINING ■ PAPER BOWL LIDS ■ BAGASSE FOOD CONTAINER LIDS ■ PORTION POTS ■ LIDS ■ SUSHI TRAYS & LIDS ■ DELI CONTAINERS & LIDS ■ SANDWICH PLATTER & BOX WINDOWS ■ SANDWICH CLAMSHELLS ■ SALAD BOX WINDOWS ■ BAGS TO GO

BAGASSE

Recycled sugarcane. Sturdy & practical, for hot and cold use.



BAGASSE CLAMSHELL BOXES ■ BAGASSE TABLEWARE ■ BAGASSE FOOD CONTAINERS

NATUREFLEX

Clear film made from wood pulp. Anti-grease, heat sealable.



HOT BAGS & WRAPS ■ BAGS TO GO

PAPER & CARD

Sustainably sourced, using recycled content where we can.



HOT CUPS ■ SLEEVES ■ CARRY TRAYS ■ STRAWS ■ PAPER BOWLS ■ SANDWICH PLATTERS & BOXES ■ SALAD BOXES ■ FOOD CARTONS ■ SHEETS & WAXED DELI PAPER ■ HOT BAGS, WRAPS & CHIP CONES ■ BAGS TO GO ■ CARRIER BAGS ■ NAPKINS

INKS

Water or vegetable based, with a great print finish.



ALL PRINTED CUPS & PACKAGING ■ CUSTOM PRINT



COMPOSTING FAQ

By choosing compostables, foodservice businesses can actively drive change in recycling. Here's everything you need to know.

Single-use: we all know the challenges, but let's explore a compostable solution. Even with a major shift to reusables, some disposables will always be needed. By choosing compostables, foodservice businesses can actively drive change in Australian recycling.

WHAT IS VEGWARE MADE FROM?

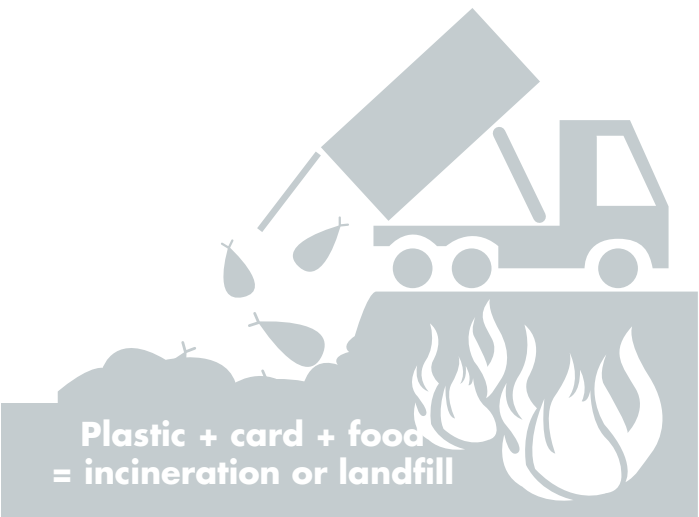
Vegware makes catering disposables from plants, not plastic. After use, they are designed for industrial composting with food waste. Vegware replaces conventional plastics with various plant-based materials. For example, PLA is a compostable material made from cornstarch. PLA replaces the plastic in coffee cup linings or sandwich windows, and it's the clear material in our cold cups and deli containers. Our hot cup lids and cutlery are made of a high-heat version of PLA. Recycled sugarcane fibre is another practical material we use for our clamshells, plates and bowls. Known as bagasse, it performs really well, keeping heat in but not trapping condensation. Plus, it's renewable, a recycled by-product of the sugar industry. Do plant-based materials work as well as plastic? Absolutely. In the early days there were limitations, but not any more. Cafés can be confident that their plant-based disposables will function perfectly. We only use water-based or vegetable-based inks for our custom printing, and the print finish is great.

WHAT'S THE POINT OF DISPOSABLES BEING COMPOSTABLE?

Compostable disposables are designed to be recycled in an industrial composting facility together with food waste. That means there's no need for sorting, and the compostable cup, lid, burger box, cutlery and napkin can all go together without removing sauces and leftover food. An extra bonus is that once food and disposables share one bin, other dry recycling bins are cleaner and easier to recycle. Compostability isn't best for all situations. For example, Vegware wouldn't make compostable water bottles, as PET plastic already has a developed recycling infrastructure. But for food-contaminated disposables, compostability is a sensible solution.

BIODEGRADABLE OR COMPOSTABLE?

Same process, different breakdown speeds. Forget the term biodegradable, as it tells us nothing about timescales (wood is biodegradable, but a log cabin can stand for generations). Compostable means something can break down in under 12 weeks and is therefore suitable for industrial composting. Make sure your disposables supplier has compostability certification – that's the real guarantee.



COMPOSTING FAQ

HOW DO COMPOSTABLES SOLVE FOOD CONTAMINATION?

Combining plastic and card in foodservice packaging creates massive recycling challenges, as highlighted by the recent coffee cup recycling debate. Food contamination is inevitable, so the result is incineration or landfill. For disposables destined for serving food, it makes sense to use materials that can be recycled together with food. With compostable disposables, food isn't contamination, it's a vital ingredient in the composting process.

WHAT ARE COMPOSTING CONDITIONS?

Compostable packaging needs to be in composting conditions in order to compost. Industrial composting creates the perfect balance of microbes, moisture and warmth, so that compostable packaging can be included in food waste recycling.

Home composting conditions vary with the skill of the householder and ambient temperatures, so we don't make any claims there, but there have been successful trials using hot compost bins.

WHAT'S WRONG WITH RECYCLABLE?

Everyone likes the word 'recyclable', but here's some news which highlights the real challenges of recycling used 'recyclable' packaging.

Australia used to export an annual average of 619,000 tonnes of materials to China, with no idea if it actually got recycled. China has been a major recycling destination for many countries, but over the years discovered the materials it receives isn't good enough quality to recycle. Since January 2018, China has banned imports of household plastics, and only accepts cardboard and paper with less than 0.5% contamination. Other Asian countries are considering similar bans, to avoid becoming

a dumping ground for unrecyclable waste. What's the learning here? That in reality, card + plastic + food isn't recyclable.

CAN COMPOSTING FACILITIES ACCEPT VEGWARE?

As you read this, there are industrial composting facilities around the world processing used Vegware, and some Anaerobic Digestion (AD) plants too. Since 2012, our environmental team has been working with composters to set up trials to make sure it works in practice. We are actively engaging with the composting sector to overcome any barriers.

WHAT ABOUT COMPOSTING COLLECTIONS?

Compostables are still relative newcomers compared to other materials, so trade collections aren't available everywhere, but Vegware is actively changing that. We are partnering with the waste sector and have now launched our own composting collections, Go Zero Waste.

DOES VEGWARE PACKAGING BREAKDOWN IN THE OCEAN?

Vegware's plant-based catering disposables are designed to break down in commercial composting. Successful composting requires warmth, oxygen, microbes and moisture – perfect conditions which are created at industrial composting facilities and in on-site composting systems.

The marine environment, however, is significantly different, and does not provide the right conditions for compostable packaging to break down. Vegware opposes littering in any environment, whether on land or at sea. We have not tested our products in the sea, and our products do not solve the issue of marine pollution.

COMPOSTING FAQ

WHAT ABOUT ON-THE-GO?

Exactly the same challenges apply to all recycling – whether that's plastic-lined cups, plastic bottles, or compostable disposables. The right 'binfrastucure' is needed, but those bins need to be used correctly. That means clear messaging and consumer education is vital to make sure what is collected is good enough to be recycled. Compostables are not the enemy. We're fighting the same challenges, with the same goal: better recycling for all.

WHAT'S THE POINT IF I CAN'T COMPOST IT?

The earth has finite resources. Disposables are used for such a short time, so it makes sense to switch to renewable materials, reserving conventional plastics for applications where they can't be easily replaced. Lots of people enjoy using plant-based materials, knowing they are a simple way to reduce carbon and help their business go green. But here's the exciting part. When the Wright brothers invented the aeroplane, there were no airports, and look at air infrastructure now.

By choosing compostables, foodservice businesses can actively drive changes in Australian recycling. The more compostables there are in use, the more we can work with the waste sector to extend collections Australia-wide.

WHY IS EDUCATION SO IMPORTANT?

We've had in-house recycling experts for many years now, working closely with the waste sector and helping our foodservice clients set up composting schemes. A key part of the switch-over is education and behaviour change, creating clear bin signage and training everyone involved – from customers to catering managers and waste operatives.

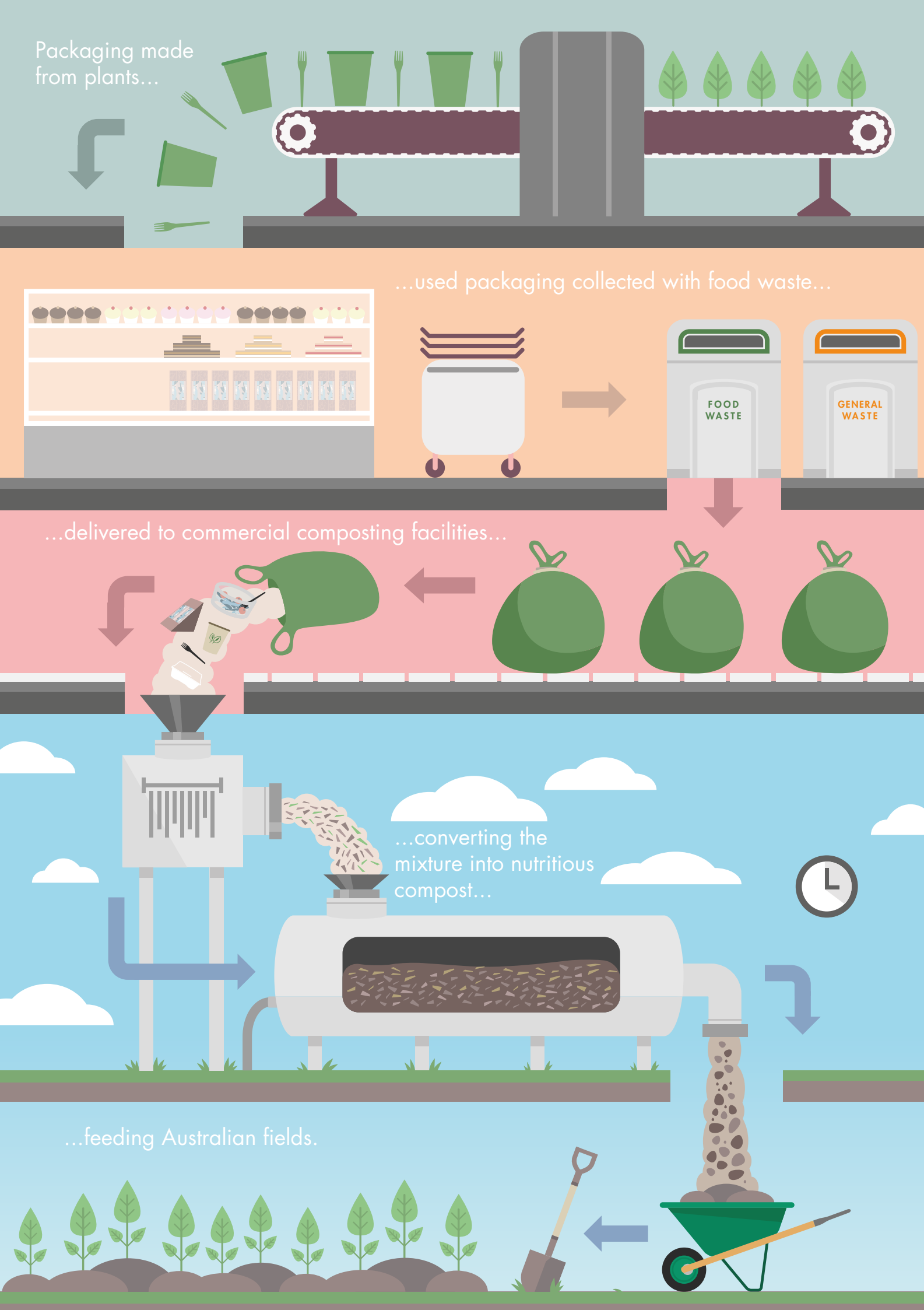
The last thing we want is to send contaminated waste to composting facilities. So education is very important, and it's something we take seriously here at Vegware.



There's a major opportunity for change in foodservice recycling right now.

Compostables are the only practical solution for food-contaminated disposables. The more businesses that go compostable, the faster we can achieve this much-needed change.





GO ZERO WASTE

Vegware's organic waste collection service

Vegware's compostable packaging is designed to be recycled with food waste. And now, we're making recycling simple by launching our own collection service. Go Zero Waste is Vegware's next step in producer responsibility, complementing our existing zero waste solutions.

Vegware is working with Organic Recycling Group (ORG) to provide Vegware customers with a closed loop service.

This service ensures that your compostable disposables are actually being used to create nourishing compost.

ORG's service is a competitively priced collection service that will collect your food waste and Vegware packaging together in one bin.

ORG has a range of collection days available to new customers referred through Vegware.

Vegware can also provide front of house display materials to tell your customers you care about the environment.

ORGANIC WASTE



Put all organic waste (food waste and used Vegware packaging) into a green bin.

COLLECTION



ORG will collect the organic waste as agreed in your contract.

COMPOST



Organic waste is taken to an industrial composting site where it is transformed into high-grade compost in less than 12 weeks. This compost will help feed Australian crops.



BEYOND PACKAGING



Text, images,
social media,
PR & more



Advice, bin
signage & Go Zero
Waste collections



Quantify
your carbon
savings



Posters, branding,
product design

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