

CLEAN & GREEN

WINTER NEWSLETTER

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Wineries, Breweries
& Distilleries?**

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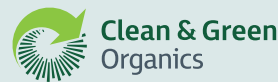
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www.cleangreenrecycling.com.au

Lavender

Survivors of the Hardy Winter Chill!

These purple beauties are an all-year-round bloom that can survive the hot, dry summers and the cold hardy winter seasons.

However, these plants do not like the humidity! So for a wet la nina winter, best to plant Italian Lavender which can tolerate mild humidity. Plant lavender in full sun away from strong winds in well-draining and pH balanced compost soils.



Broccoli

Serving the Goods from Autumn through Winter!

This cool weather crop loves the cold! In fact broccoli plants taste much sweeter when grown in winter! Sow your broccoli seeds in Autumn to grow throughout the winter months, make sure to plant in full sun and slightly acidic, nutrient-rich compost soil. Broccoli plants are easy to grow and yield quickly.

Cauliflower

The Perfect Winter Veggie for your Garden!

Brother to Broccoli plants, this frost tolerant veggie is a great plant to have in the garden for those home-cooked winter soups! Like above, make sure to plant cauliflowers in late Autumn or early winter in a sunny spot away from strong winds. Use compost soils with high organic matter and good drainage properties.





What About Wine Waste?

The wine industry is one of the most important agricultural activities in the world, but it is also one with high waste. Repurposing grape pomace and winery wastewater is key to a sustainable future.

Of the total wine grapes crushed for wine production each year, around 20% is leftover grape marc (grape skins and seeds). Around 70% of this grape marc is aggregated and repurposed.

In 2019, Australian wine industry crushed 1,730 kilotonnes of wine grapes for wine production.

Sustainable wine production repurposes organic and inorganic by-products of the wine making process. These by-products include grape pomace, seeds, stems, skins, yeast, bacteria, lees, organic acids (tartrate), CO₂ and wastewater.

For every 6L of wine produced, there is 1kg of grape pomace generated.

Organic by-products, such as grape pomace and grape marc, can be composted into soil ameliorants and fertilisers or recycled into animal feeds.

Inorganic or mixed by-products, such as grape lees and even pomace, can be repurposed into functional ingredients or bioactive phytochemicals used for pharmaceutical, cosmetic and nutraceutical products - such as collagen supplements or antioxidants.

Winery wastewater generated during production, can be anaerobically decomposed into biogas and re-used as energy to power winery facilities.

Similarly, brewery and distillery waste is repurposed into fertilisers, functional ingredients for pharmaceutical or nutraceutical products, or used as biogas energy sources.

By-Product Created in the Wine-Making Process

Wastewater produced in wineries (as well as breweries and distilleries) are anaerobically decomposed into biogas - repurposed energy to power production and operations. Solid residuals can also be composted and used as soil ameliorant.



What happens to my drink at the...



Winery

For each tonne of grapes that is processed, 3000-4000L of wastewater is generated.

Winery wastewater is sustainably repurposed in many ways. Converted into biogas energy used to power wine production operations. Alternatively, WW can be recycled for vine irrigation; managed sustainably to ensure vine and soil health.

Wine lees - residue from filtration or fermentation tanks, and usually consisting of yeast, tartaric acid, phenolic compounds and other materials - is repurposed for food, nutraceutical and pharmaceutical industries, as is grape pomace. However grape pomace can also be composted into soil ameliorant.



Brewery

Millions of litres of beer in Aussie pubs, clubs and bars was wasted amid the covid pandemic.

In 2020 alone, 150,000L of expired beer was wasted each week - enough to power 1,200 houses in total!

However key companies around Australia repurpose expired beer into renewable energy sources, known as biogas, which powers wastewater treatment plants and brewery production processes.

Small grains from malting as well as spent grains and protein waste from brewing are repurposed into animal feeds which are high in fibre and protein. It can also be composted into soil fertilisers.

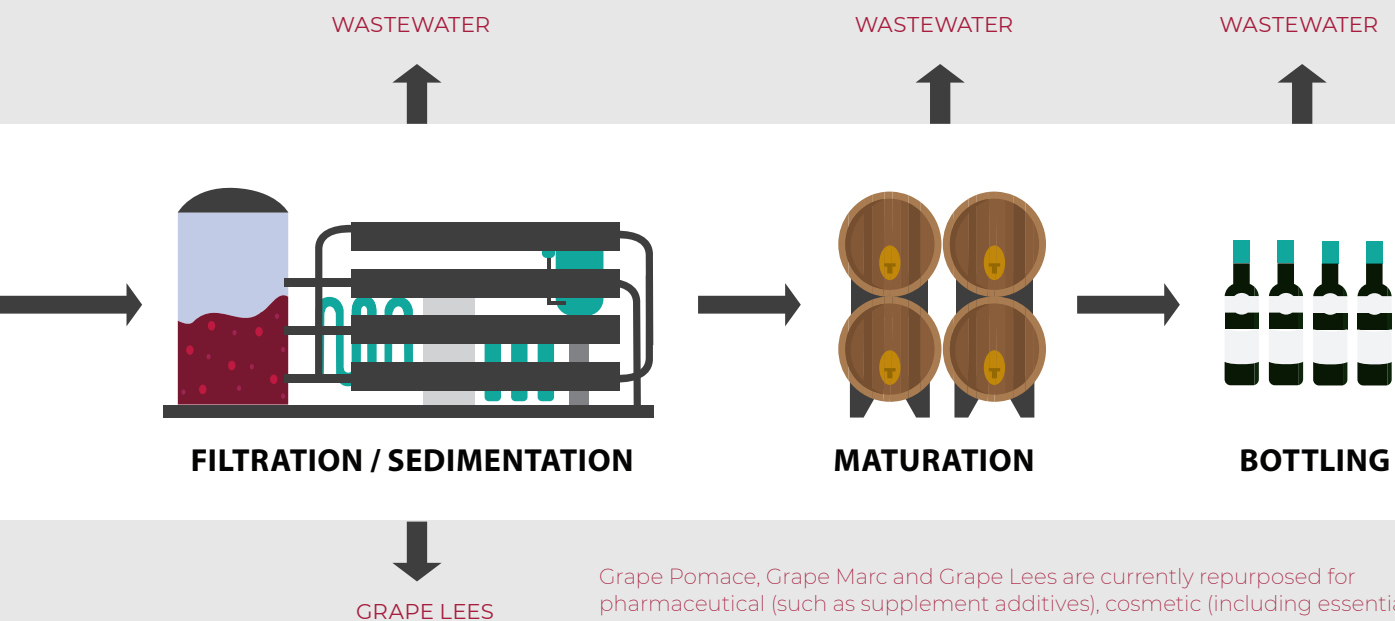


Distillery

Wastewater generated at distilleries is treated and returned to sugarcane crops via irrigation. Many sugar cane distillers (including rum factories) burn spent sugar cane stalks to heat steam engines that powers the distillery operations.

Spent grains during the harvesting or extraction phases are also repurposed into animal feeds or composted into fertiliser soils for new crop production.

The heads and tails (distillery waste products usually made up of alcohol, water and undesirable flavour compounds), as well as grain lees, are repurposed into pharmaceutical, cosmetic or nutraceutical industry products.



Grape Pomace, Grape Marc and Grape Lees are currently repurposed for pharmaceutical (such as supplement additives), cosmetic (including essential oils), and nutraceuticals (such as food ingredients and additives).

BIO-DEGRADABLE VS COMPOSTABLE

Zero waste is ideal, but not always possible. So eco-friendly packaging and products are the next best way! But how can we know what is actually environmentally-friendly and what is *not*?

DEGRADABLE

Is there a difference between degradable and biodegradable? **Absolutely!** Degradable materials are **not** biodegradable.

What does this mean?

Well, degradable simply means that the product will break down in time, but not necessarily in an environmentally-friendly way...

Often products labelled "degradable" are greenwashing the market to appear more eco-friendly.

However most of the time, degradable materials are coated with chemicals and toxins that break down anaerobically in landfills (releasing methane gases into the atmosphere) and leave microplastic or contaminated particle remnants behind, making it harmful for the environment.

BIO-DEGRADABLE

Biodegradable products on the other hand can be broken down with the help from living organisms and bacteria via aerobic decomposition processes.

In theory, these products fully decompose, leaving behind no toxins or harmful microplastics (ensuring the product is free from petroleum-based materials).

However biodegradable products are often mismanaged by waste facilities due to their specific recycling requirements and usually landfilled due to contamination.

When in landfill, biodegradable products cannot break down due to anaerobic conditions causing a lack of essential micro-organisms, bacteria and oxygen, therefore no better for the environment.

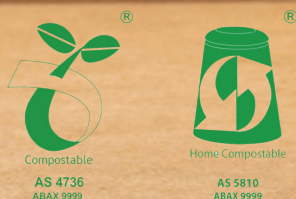
COMPOSTABLE

Alternatively, certified compostable products can be fully decomposed into a nutrient-rich additives for compost soils, creating high-quality fertilisers for the earth.

Usually made from plant-based starches and organic materials, such as corn-starch or sugar-cane, rather than petroleum-based materials.

Certified compostable products aerobically decompose back into fertile soil additives, with the help from micro-organisms, bacteria and oxygen.

Compostable products can be composted at home or via commercial composting facilities, just make sure it's certified compostable - meaning it meets accredited standards for sustainability.



Australian Standard Compostable Certifications

Compost Gold Underwater

Seaweed is a unique aqua species that provides nutrient value to the oceans and beach habitats, but did you know it's also a miracle ingredient for our composts?

Seaweed is a type of algae and produces 70% of the oxygen we breathe.

Seaweed in Compost

Less commonly found in home or commercial composts because of its seaside nature, doesn't mean it can't be done! Naturally rich in macro/micro nutrients, moisture-wicking and quick to decompose, seaweed is an excellent organic source to compost. However laws restrict seaweed removal from beaches.

Seaweed for the Beach

Seaweed is invaluable for the beach! Acting as a buffer against ocean acidification, reduces coastal erosion, cleans waterways by absorbing excess nutrients from wastewater, dampens wave action and provides habitat for shore life - it's no wonder seaweed is a protected seashore species.

Seaweed for the Garden

As liquid fertilisers, seaweed can be highly beneficial for your plants in the garden! Rich in organic matter and essential minerals, high moisture retention capabilities and a natural pesticide and disease neutraliser, seaweed can increase yield, amend soil and sweeten veggies!

Australian Horticulture Stats 2019-20

FRUIT

\$4.7 billion of fruit grown and sold in Australia.

\$1.4 billion fruit exported overseas.

98% of Australian households purchased fruit.

2.57 million tonnes of fruit grown in Australia.

TOP 3 LARGEST FRUIT CROPS

ORANGES
NSW - 51%

APPLES
VIC - 46%

BANANAS
QLD - 94%

TOP 3 LARGEST VEGGIE CROPS

TOMATOES
QLD - 57%

POTATOES
SA - 38%

CARROTS
WA - 39%

\$275 million veggies exported overseas.

\$4.2 billion of veggies grown and sold in Australia.

3.69 million tonnes of veggies grown in Australia.

VEGETABLES

NUTS

\$942 million nuts exported overseas.

54% of Australian households purchased nuts.

194,463 tonnes of nuts produced in Australia.

TOP 3 LARGEST NUT CROPS

MACADAMIAS
QLD - 54%

WALNUTS
NSW - 80%

ALMONDS
VIC - 53%

Australia's horticulture industry is a highly competitive domestic and international market. In 2019-2020 the horticultural sector exceeded \$15 billion in production value and employed over 60,000 people.

awe.gov.au, DAWE 2022



Clean & Green Organics



Composting Organic Waste Streams into Australian Standard Compost Soils.

Completing the Circular Economy!



GROWING VEGGIES DOESN'T NEED TO BE ROCKET SCIENCE!

In fact it's really easy if you use the right soil!

Soil is the life source of your plant's health, so make sure it's the best quality!

Clean & Green Organics high-quality composts and soils are made from 100% recycled organic materials at our Australian composting facility in Bringelly, NSW.

Certified made to Australian Standards, Clean & Green soils and composts are bursting with minerals essential for healthy plant growth with proven results!

All soil products are tested in our own veggie garden onsite each season, growing a variety of different foods, with successful delicious results!

Happy customers absolutely love using Clean & Green Soils, gloating about how full, healthy & delicious their veggies from their own gardens look and taste, just from using our soil!

Try our compost soil in your garden!

If you're interested to know more, send an enquiry online today!

www.cleangreenrecycling.com.au/contact/



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