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Biodynamics

Ecological Farming

Organics

Regeneration Farming,

Permaculture

Agroecology

June

2023

# Dirty Diggings

## June in the garden

### What to Sow

Silverbeet, lettuce, parsley, Asian greens and radish can be grown all year round, even in winter. Divide and plant out asparagus crowns, rhubarb, Jerusalem artichokes, garlic chives, comfrey, yarrow and yacon.

### What to do:

Check on your young brassicas for cabbage white butterfly. Squash small caterpillars and eggs. Large caterpillars are a great high protein treat for the chooks. Feed brassicas with seaweed solution every couple of weeks. Train up your climbing beans. This cool time of year is a great time to tackle garden building projects like chicken houses, frog ponds and native bee hotels. It's also a good time to mulch wood-chipped garden paths. Old broken down mulch can be spread around fruit trees, and fresh wood-chip mulch laid onto the paths. Harvest some bamboo to dry out and use for tomato and bean stakes in the summer.

### June Plantings

Asparagus (crown), Broad Beans, Beetroot, Broccoli, Cabbage, Cauliflower, Chinese cabbage, Collards, Corn Salad, Cress, Endive, Kohl Rabi, Lettuce, Mustard Greens, Onion white, Onion brown, Orach, Peas, Radish, Rhubarb Crowns, Shallots, Spinach

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# Ecological Gardening: Creating Beauty & Biodiversity

DECEMBER 2, 2021 Joe Lamps'

Feature

For centuries, the objective of gardening has been to tame the wild, and that led to many horticultural practices that are disastrous for wildlife and the ecosystem at large. The objective of ecological gardening, a new movement, is to create beautiful spaces in concert with nature rather than trying to overcome nature. To explain the value of ecological gardening and how to implement it yourself to create beauty and biodiversity, my guest this week is gardener, consultant and writer Matt Rees-Warren.



Matt lives in Shepton Mallet, a sleepy little town in South West England. He's been gardening since he was a boy helping his father turn the compost pile and pull up weeds, but it became a career for him around 15 years ago. Matt learned landscaping, masonry and carpentry and spent a year working and studying in Australia, where he was a horticulturist at the Curtin University botanical gardens. He later became head gardener at Kilver Court Designer Village in Somerset, England, and worked alongside Roger Saul, the founder of the Mulberry fashion label. His recently released book is "[The Ecological Gardener: How to Create Beauty and Biodiversity from the Soil Up.](#)"



Matt is an excellent writer, and I really love his book. It's both inspirational and a practical guide to working with nature instead of trying to control it. The book teaches both novice and experienced gardeners how to make gardens and landscapes that welcome birds and pollinators and allow native plants and wildflowers to flourish — all while minimizing their carbon footprint and the need for fresh water.

*Gardener, consultant and writer Matt Rees-Warren recently released his book "The Ecological Gardener: How to Create Beauty and Biodiversity from the Soil Up." In it, he teaches gardeners how to make landscapes that have a small carbon footprint and attract diverse wildlife.*

Where Matt lives and gardens, it can be cold, rainy and windy at times, he says, and the work can be back-breaking. But he always looks toward the end goal. He knows the work and planning that's put into his garden pays off down the line.

Before digging further into ecological gardening, I want to let you know that I have a new free resource available to listeners of "The Joe Gardener Show." To help you along on your ecological gardening journey, I created a quick and handy guide on what to plant in your garden to support butterfly populations. Download [Attract Common Butterflies with Host Plants](#) and keep it for your reference when choosing plants.

## A Step Change

Matt says he was always a proponent of organic gardening practices but becoming an ecological gardener was a step change. He says a turning point was the 2019 Intergovernmental Panel on Climate Change report. The report warned of the dire consequences of climate change if greenhouse gas emissions are not curtailed.

In response to the report, Matt drew a line in the sand. It made him look at what he does as a gardener and reevaluate it. He looked at his traditional knowledge and institutional knowledge and determined what was built on sound advice and what is based on outdated ideas.

An ecological garden is aspirational, Matt says, and no one is doing everything perfectly. But gardeners can take steps to mitigate their contributions to climate change. Elements of permaculture, wildlife gardening, organic gardening and no-dig gardening all come together into one.

Creating more wildflower gardens, creating more compost, leaving areas undisturbed and recognizing the importance of soil as a carbon sink are all methods and principles of ecological gardening discussed in Matt's book. It's nice to know that we actually can play an active role in our little corner of the world in helping to nurture that along.

## Regenerative organic and agroecology. What's the difference?

[Next Issue.](#)

*What is organic farming?*

Organic farming first arose in the 1940s, as a reaction against the industrialisation of agriculture. These days, it's got a strict legal definition, and to call your produce "organic" you must be certified. In the UK, most organic goods are certified by the [Soil Association](#) or [OF&G](#) – just look for their stamps on the label.



## Traditional Gardening vs. Ecological Gardening

Matt says in his book that neatness has become a default for achievement in gardening. The desire for order goes back to the 16th and 17th century, when control over the untamed wilderness was the goal, he says. But now there is far less wilderness on the planet and far more artificially structured and manicured spaces.

*By creating more wildflower gardens with native plants, we can sequester more carbon while supporting native pollinators and other beneficial insects that are vital to the ecosystem*



But we have a new way to gauge success. Ecological gardening asks us to assess if our gardens are supporting pollinators and providing food and habitat for native birds and insects. How little supplemental water do our gardens need? How little fertilizer can we use? Can we refrain from using pesticides? How much carbon is our garden sequestering in the soil?

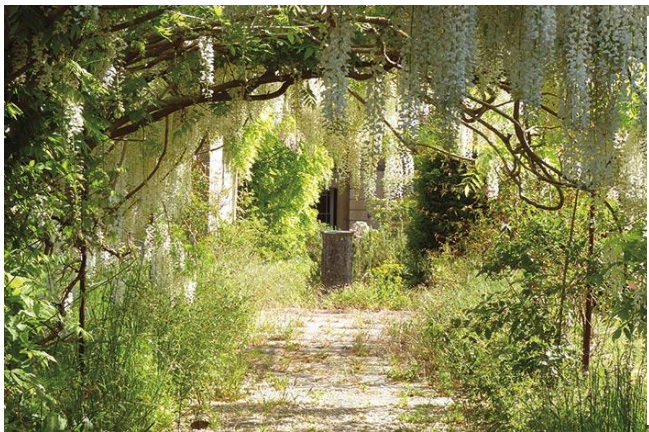
Ecological gardening adapts from and builds on other horticultural practices that have a focus on sustainability: organic gardening, **regenerative agriculture**, permaculture and others.

The aesthetic may be different than conventional ornamental gardens, but ecological gardens are still designed to be pleasing to the eye. As Matt writes in his book, regenerative landscapes can be functional, beautiful spaces full of life and vigor, robust enough to face the challenges of the future and elegant enough to beguile all those who walk among them. To me, that's the best of all worlds. Regenerative gardens can have show-stopping beauty while being a piece of nature and sequestering carbon.

"A key thread through the book was that to make a garden completely ecological doesn't need to mean that it's just wild and it's untamed," Matt says "I don't really believe in that, because it's a garden. I do believe that it's an interaction between the human hand and nature. There should definitely be areas which are left wild out in the wilderness, and we need to push towards a more wild element to our garden. But it's always going to be an interaction between the two."

That means that though you are putting nature first, you can still imprint your style and sensibilities. Your hand as the gardener is a key component of an ecological garden.

There are ecological practices that look fantastic, Matt says, such as wildflower meadows with crisp, cut-short paths. So why not take a massive lawn and convert 75 percent to meadow? "You're balancing the two," he says.



## Releasing Control

Though Americans often think of European gardens as neat and tidy with clipped hedges and straight lines, Matt's garden is nothing like that. Ecological gardening does not call for that formality. Rather than manicured perfection, ecological gardening is about releasing control. Matt says he's constantly questioning what he does: Shall I leave that grass long? Should I pull that plant?

*Matt believes an ecological garden is a mix of nature and the gardener's style. You don't have to sacrifice beauty to benefit nature, and vice versa*

There are positive benefits for wildlife when we let plants grow, well, wild. Instead of trimming hedges to make them look neat, let them grow out so they provide berries, seeds and nuts for birds during nesting season. And you can still plan a pruning schedule that will work for both you and the birds.

## Combating Ecological Decline & Climate Change

Entomologists like **Doug Tallamy** in the United States and Dave Goulson in the United Kingdom are constantly sounding the alarm about ecological declines, Matt says. If we don't adapt, it's the next generation that will suffer, he notes.

*We can support the bird population by refraining from pruning plants that produce seeds and berries that are an important part of birds' diets.*





The broad use of pesticides, the destruction of habitat and the replacement of native plants with invasive species and cultivars all contribute to insect and bird population decline. Our ecosystems are in crisis, and climate change only exacerbates these issues.

Matt's book states that it's estimated the Earth's soil holds 2,500 gigatons of carbon, which is more than three times the amount of carbon in the atmosphere and four times the amount of carbon stored in all living plants and animals. The question is, how can we keep that carbon in the soil? As gardeners, we have control over that.

Matt says soil is sometimes, to us, just the medium in which to grow. But when we add more awareness to the situation, we realize it's much more. By growing plants and trees, we are capturing and sequestering carbon.

Other gardening activities, including tilling and composting, release carbon. The good news is, refraining from tilling is easy and has a number of benefits aside from carbon sequestration.

**No-dig gardening**, also known as no-till gardening, is a practice gardeners can employ to keep carbon in the soil. Tilling disrupts the fungal networks and other beneficial microbes in soil, and it also releases carbon by encouraging rapid decomposition of organic matter.



Matt cuts down on digging any way he can. For instance, when dividing a plant, he considers whether he really needs to dig it up. There is often a less invasive approach. "Is that unnecessary digging? Can you take a cutting? Can you take seed first?" he asks. By leaving the soil untouched, he benefits from the continued service of the soil microbe community that he has nurtured.

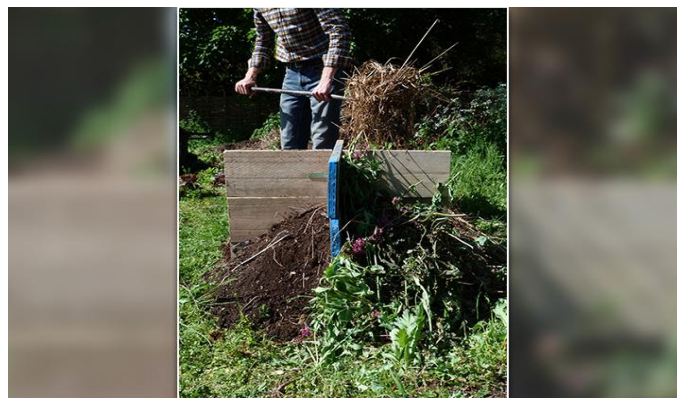
*Rather than deep tilling a garden, which releases carbon and disturbs soil microbes, you can use a broadfork to strategically loosen the soil only as much as is necessary.*

In forests and other areas that have been undisturbed by human activity, soil microbes have built up their populations over decades, creating vast mycorrhizal networks between trees and plants. Researchers are learning that those networks are among the most important reasons for the longevity of a forest. The microbes connect the root systems of trees so they can share nutrients and "talk" to each other about environmental stresses, like drought, disease and pests. ("[The Hidden Life of Trees](#)" by German forester Peter Wohlleben explains how it all works.)

When it comes to composting, the release of carbon dioxide is inevitable. It's just a natural part of the decomposition process. It occurs in nature everywhere that leaves fall. But when gardeners create compost piles at home, there are steps they can take to reduce carbon dioxide output and to stop the production of methane, a greenhouse gas that traps much more heat than carbon dioxide.

Organic matter can decompose either aerobically (in the presence of oxygen) or anaerobically (without oxygen). If your finished compost is sludgy and it stinks, it decomposed anaerobically, producing methane. You can stop this from happening by turning your compost pile regularly to introduce oxygen into the mix. Proper drainage is also important, as is **mixing compost inputs in the right ratios**.

*By mixing compost inputs in the right ratios and turning the pile to introduce oxygen, we can reduce the amount of greenhouse gases that our compost pile releases.*



### **Don't Defend Plants at All Costs**

I often advise that if you allow beneficial insects to do their work, they will help to control pest problems before they get out of hand. There are organic pesticides and biological controls that can be applied when a serious pest issue calls for them, but Matt practices great restraint. "I don't defend the plant at all costs," he says, adding that he doesn't push nature completely away just to get a perfect brassica.

Pesticides — even organic pesticides — can kill the beneficial, predatory insects that naturally keep pest populations under control. When our gardens encourage beneficial insects and we refrain from applying pesticides, many pest problems will be resolved naturally with no intervention on our part.

### **Closing the Loop**

An important principle for reducing our impact on the environment is to "close the loop." As gardeners, we should always strive to reduce our water usage and never let organic matter leave our property.



Instead of applying “drinking water” to a garden, Matt looks at ways to collect the water that falls during the year: harvesting runoff from the roof, creating ponds and constructing bioswales. Then that water can be put to use during periods of drought.



If you have trees on your property, your greatest source of organic matter each year will be fallen leaves. Instead of bagging those leaves and putting them out by the curb, use them on site as mulch or to create compost. Pile up leaves in the fall, and six months to a year later they will become what’s called leaf mold — partially decomposed leaves that make a wonderful compost input or soil amendment.

Another concern is plastic. Horticulture is drowning in plastic, Matt says. Plastic is cheap and practical — it doesn’t wear away in weather — so it is ubiquitous. Matt suggests using terracotta pots, fiber pots and hessian sacks that will go back into the earth eventually, unlike plastic containers, which will not decompose. If you already have plastic containers, endeavor to reuse them rather than buying new.

*Collected leaves will break down in time into leaf mold, which is a fantastic compost input and mulch. Keeping and using your fallen leaves on site and out of a landfill will improve your garden while reducing your impact on the environment.*

### Small Acorns Make Mighty Oaks

To conclude, I want to leave you with this brief excerpt from Matt’s book. I think it will help stick with you.

Reimagining how we garden may seem like a small way to help mitigate our ecological crisis, but it’s an important one, and it has the ability to make a substantial difference. Gardens are natural spaces after all — the great green lungs of every nation; Individual and idiosyncratic but together fundamental to their local and wider ecosystems. How we guide them will be the difference between a future in which they play a key role in restoring our nature’s health, or one in which we continue our parsimonious approach to nature’s needs. While there needs to be a collective changing of the guard, from the community scale to the planetary, small acorns, make mighty oaks, and it’s also what we do as individual gardeners, today and tomorrow, that matters.

*“The Ecological Gardener” is a well-written and inspirational guide on how we can become better stewards of land to support wildlife and the environment at large.*

I hope you have a greater understanding of ecological gardening after listening to my conversation with Matt Rees-Warren. If you haven’t listened yet, you can do so now by clicking the Play button on the green bar near the top of this post.

*How have you changed your gardening practices to benefit the environment? Let us know in the comments below.*

[Ecological Gardening | Creating Beauty & Biodiversity | joegardener®](#)

## Yacon Growing Information By Frances and Jeff Michaels

Veggie Patch



**Botanical Name:** *Smallanthus Sonchifolius* (Formerly *Polymnia Sonchifolia*)

**Common Names:** It has a variety of common names including the descriptive sweet-root, Peruvian ground apple, strawberry jicama, Bolivian sunroot, Ilacon, groundpear, pear of the earth. We prefer to call it yacon as this is the name it is mainly called in its native South America and it avoids confusion with Jicama - Climbing Yam Bean *Pachyrhizus erosus*, another uncommon but very tasty root vegetable.

**Family:** Asteraceae

### Plant Description

We have been growing Yacon for many years and it is one of our favourite vegetables, a 'winter treat'. Yacon is native to Colombia and Ecuador and is a hardy, attractive herbaceous perennial that yields a large harvest of tubers. The tubers have an appealing crunchy crispness that is a cross between apple and watermelon, with overtones of

sugarcane. It is always a bit tricky describing the taste of a new food as we are forced to compare it to familiar foods but generally it gets a very positive response, especially from children. As a member of the sunflower family, yacon can grow to 2 metres in height with small, daisy-like yellow flowers. When growing it is similar in appearance to Jerusalem artichokes but is not invasive in the same way.

### Planting Details

Yacon actually produces two types of underground tubers, reddish rhizomes directly at the base of the stem, which can be eaten when young but are mainly used for propagation and the larger brown tubers, which are mainly eaten. When harvesting we separate the reddish rhizomes from the tubers and wash off any soil, taking care not to break the skin. The brown tubers are dried in the sun and then stored. The reddish rhizomes are kept out of the sun and covered with slightly damp sand, sawdust or cocopeat to stop them drying out and put aside for replanting in a dark, dry place. As soon as the rhizomes begin to sprout it is time to plant. Prepare the soil by loosening well with a fork and working in compost. To plant, cover a large rhizome which has several sprouts, with soil to a depth of 3 cm. Mulch well, yacon will grow up through the mulch, just like potatoes. Little weeding is needed as dense shade is created as the yacon grows. Plants are large and vigorous, so space them at least 0.5 metres apart. Yacon grows fast even in poor soils but crops best in rich, friable, well-drained soil. Yacon can be planted all year round in frost-free areas as it is day-length neutral. It appears to be drought tolerant compared to other vegetable crops and so far, pest-free. For cold areas of Australia the rhizomes can be started in styrofoam boxes in a greenhouse or on a warm verandah and planted out when frost is past.



### Harvest

The plant takes 6 - 7 months to reach maturity. After flowering top growth withers and dies back and the tubers are harvested. They resemble dahlia or sweet potato tubers, on average weigh about 300 g but can weigh up to 2 kg. Once the soil starts to heave at the base of the plant, dig around to 'bandicoot' a few early tubers to extend the harvest season. The tubers continue to sweeten as the plant dies back so the main harvest should only take place once all the top growth is dead, usually by May. Don't leave it too long though, especially in areas that have mild winters, as the plant will start to shoot again as the weather warms up and the days get longer. The plant needs to be dug carefully to avoid damage to the crisp tubers. After separation from the central stem undamaged tubers can be stored in a cool, dark and dry place with good air circulation for some months. The average sugar content of the tubers increases during storage because of starch conversion. They can also be exposed to the sun for up to 2 weeks to accelerate the sweetening process.

### Eating

We prefer to eat yacon raw. First remove the outer brown skin and inner white skin by peeling with a knife as the skin has a resinous taste, to reveal the amber coloured sweet crunchy flesh. Like all tubers there are no seeds to remove, so it is quick and easy to prepare. Chop the tuber into chunks and add it to green salads where they impart a great flavour and texture. It can also be used in potato salad and Waldorf salads. When cut into long strips, they make an interesting addition to a plate of raw vegetable crudites for dipping into your favourite guacamole or cream cheese dip. It can also be boiled, steamed or baked with other vegies. In cooking they stay sweet and slightly crisp. If boiled 'in the jacket' the skin separates from the flesh and can be peeled off like a boiled egg. Yacon can also be used in a dessert crumble or pie with apples, pears or choko. The tubers juice well in an electric juicer and can be used to sweeten other juices or used in juice combinations. In the Andes, they are grated and squeezed through a cloth to yield a sweet refreshing drink. The juice can also be boiled down to produce a syrup. In South America the juice is concentrated to form dark brown blocks of sugar called chancaca. The young stem can be used as a cooked vegetable. Nutritionally yacon is low in calories but it is said to be high in potassium.



Yacon tubers store carbohydrate in the form of inulin, a type of fructose, which is a suitable food for type II diabetics. Type II diabetics are not insulin dependant and so can control their blood sugar levels through diet. Plants with the sugar inulin such as Jerusalem artichokes and yacon can be useful additions to their diet. In addition to providing living enzymes often lacking in a constricted diet there is a deep sense of satisfaction in being able to have a sweet juicy treat. We have had reports from type II diabetics in our area that eating a small piece of yacon has lowered their blood sugar levels, but we are not aware of any research that would confirm this.

With the ease with which yacon juice can be extracted there is a possible future potential as a commercial crop to make sucrose-free foods for diabetics and dieters. Just like sugar cane, the sugars can be concentrated to obtain a high-fructose sweetener. These sugars also have potential in being used to make a bio-alcohol for industry.

### Animal Forage

Yacon has potential as a forage crop for animals, the leaves have a protein content of 11-17% and when cut the foliage sprouts again from the underground stems. The tubers may be a good cattle feed, for inulin is rapidly metabolised by ruminants. Additionally, the plant may be useful in agroforestry, because it grows well beneath a canopy of trees. It is used as a soil protector because of its ability to maintain itself as a perennial species, especially in dry agro-ecological areas. In this case don't expect a yield of tubers but grow it instead for animal forage. We have numerous plants tucked into the landscape, which are attractive despite receiving no water. For best yields of tubers however, a deep rich well-drained irrigated soil is necessary.



## New Crop Potential

As a new crop yacon has potential for small crop growers. We suggest you offer your crop to a local restaurateur, take some prepared pieces and explain how it can be used. Restaurants with a desire to provide fresh ingredients and a willingness to experiment will be at the leading edge of demand for this versatile crop. By selling to the end user you will get a higher value return. Other direct selling methods to consider include selling tubers to a juice bar or health food shop with juicing facilities. Selling at the local produce markets is a sure hit if you always offer free taste samples. This will also attract people to your stall.

### Not to NORFOLK ISLAND, TAS or WA

SORRY but due to quarantine restrictions between Australian States no plants at all can be ordered by residents of **Norfolk Island, Tasmania and Western Australia**. These restrictions are very important as they prevent the spread of plant pests and diseases. No potatoes, garlic, shallots, strawberries or tube stock can be sent to **South Australia**.

[Yacon - Peruvian Ground Apple growing information \(greenharvest.com.au\)](http://greenharvest.com.au)

## Curry Leaf Tree Growing Guide

Herb Spiral



### What is Curry Leaf Tree?

The Curry Leaf Tree (*Murraya koenigii*) is a small evergreen tree. It is part of the Rutaceae family and is native to India and Sri Lanka. The Curry Leaf Tree has a spreading and rounded habit which has foliage that is mid-green and fern like in appearance. The leaves are highly aromatic and used in many Indian dishes. During Spring and Summer the tree produces clusters of small fragrant creamy white flowers.

The Curry Leaf Tree can self pollinate so after the flowers small black berry like fruit forms. The berries also contain a single large seed which is toxic and should not be eaten. The Curry Leaf Tree is a tropical to subtropical tree but does well in temperate areas and requires rich well drained soil in a warm sheltered position in the garden. When growing in colder climates keep it in a large container and move it to a warm position in Winter. They are frost tender.

### Benefits of Growing Curry Leaf Tree

They are ideal in a scented garden both for their scented leaves and flowers. They can also be used for screening or as an ornamental tree. The leaves are used in Indian cooking and will keep for up to a week if kept in a dry plastic bag in the fridge. To preserve them for longer periods, pick curry leaf leaves when they are green and full of flavour and freeze them, keep the leaves intact before freezing them.

### How to Grow Curry Leaf Tree

#### Climatic Zones

Temperate to tropical.

#### Plant Size

Height: 2-4m, Width: 2-4m

#### When To Plant Curry Leaf Tree

Plant anytime.

#### Soil Preparation

Prefers well drained soils but will adapt to most soil conditions.

### How To Plant Curry Leaf Tree

Plant in full sun to part shade, with the plant crown at soil level.

If planting in a cold climate try growing it against a north or west facing wall, which creates a warm microclimate. Other wise planting it in a pot with good quality potting mix and moving it to a warm position over Winter.

### Curry Leaf Tree Plant Care

They need only moderate watering once established.

Fertiliser in Spring with a complete slow release fertilizer.

Prune to keep bushy.

Remove any suckers that may appear.

After flowering – deadhead and remove all fruit to prevent the seeds germinating.

[Curry Leaf Tree Growing Guide - Garden Express - Online Nursery](#)



Curry Leaf Tree

## Permaculture Principle 4

Apply self regulation and accept feedback from our permaculture Systems

February 24, 2020 By Tracy Wandling

If you're anything like me, you have done a considerable amount of leaping without looking, and jumping in with both feet. It's how I roll. But, as I have learned from experience, that is quite often not so brilliant. By applying self-regulation, we just might save ourselves from making painful mistakes when setting up our permaculture system.

If we move onto a piece of property and see a lovely view that we would like to have as the view out our living room window, and decide *that's* where the house will go, well we might get lucky. Maybe it will turn out to be a good place for a house.

But it might be a terrible place for a house. If you haven't spent a year on the property, observing it in all its seasons, you might not know that the winter wind barrels through that area like a freight train. Or that this is the area that water settles on the property, making it damp and problematic.



*I leap . . . then I look.*



*Yeah, it's a great view, but . . .*

The first permaculture principle – observe and interact – is designed to set us up for success. Spending time observing and interacting with your property will give you so much indispensable knowledge. It gives you time to really think things through, and get it right the first time.

So the first bit of self-regulation you apply is taking the time to really get to know your property. Give yourself the time to try out a few designs on paper or the computer, move things around, and look at every element from all angles, in all seasons.

It is so tempting to just start building or planting – or whatever it is that you're champing at the bit to do – and throw caution to the wind. But this is your one and only chance to get it right the *first* time, so rein that pony in and take your time. It will pay off in the end.

Listen to the feedback that the land itself is giving you; but make sure that the feedback you're getting is relevant and correct. Your own observations are only useful if you know what you're looking at.

You might think that you have found the place that water runs in the rainy season – but have you actually stood outside when it's raining and watched the water flow? This is going to be your home, and it is up to you to know what's going on, and to work out the best way to build and maintain the systems you want.

Self-regulation may not be very glamorous, but it'll sure look sexy when you've finished building your permaculture system, and everything is in its proper place. *Damn* hot.

Health, Hope & Happiness

### PICKET FENCE URBAN FARM

St Mary Church 1167 South Road St Marys Open: Monday, Thursday & Friday 8am till 11.30am  
Veggies, plants, Compost, Worm or chicken poo liquid Garden Beds and more.  
Ring Rob on 0434 354 539 E: [robcollett@stmarysadelaide.com.au](mailto:robcollett@stmarysadelaide.com.au)



# Principles of Agroecology Pt 3

## Synergies

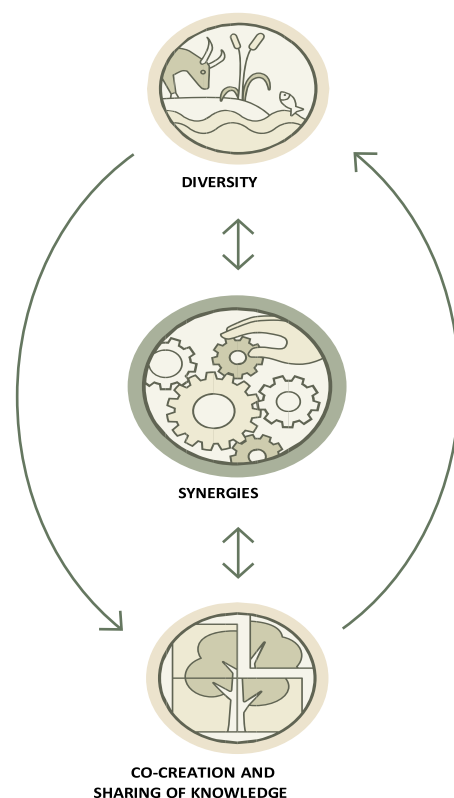
Building synergies enhances key functions across food systems, supporting production and multiple ecosystem services.

Agroecology pays careful attention to the design of diversified systems that selectively combine annual and perennial crops, livestock and aquatic animals, trees, soils, water and other components on farms and agricultural landscapes to enhance synergies in the context of an increasingly changing climate.

Building synergies in food systems delivers multiple benefits. By optimizing biological synergies, agroecological practices enhance ecological functions, leading to greater resource-use efficiency and resilience. For example, globally, biological nitrogen fixation by pulses in intercropping systems or rotations generates close to USD 10 million savings in nitrogen fertilizers every year,<sup>13</sup> while contributing to soil health, climate change mitigation and adaptation. Furthermore, about 15 percent of the nitrogen applied to crops comes from livestock manure, highlighting synergies resulting from crop–livestock integration.<sup>14</sup> In Asia, integrated rice systems combine rice cultivation with the generation of other products such as fish, ducks and trees. By maximising synergies, integrated rice systems significantly improve yields, dietary diversity, weed control, soil structure and fertility, as well as providing biodiversity habitat and pest control.<sup>15</sup>

At the landscape level, synchronization of productive activities in time and space is necessary to enhance synergies. Soil erosion control using *Calliandra* hedgerows is common in integrated agroecological systems in the East African Highlands.<sup>16</sup> In this example, the management practice of periodic pruning reduces tree competition with crops grown between hedgerows and at the same time provides feed for animals, creating synergies between the different components. Pastoralism and extensive livestock grazing systems manage complex interactions between people, multi-species herds and variable environmental conditions, building resilience and contributing to ecosystem services such as seed dispersal, habitat preservation and soil fertility.<sup>17,18</sup>

While agroecological approaches strive to maximise synergies, trade-offs also occur in natural and human systems. For example, the allocation of resource use or access rights often involve trade-offs. To promote synergies within the wider food system, and best manage trade-offs, agroecology emphasizes the importance of partnerships, cooperation and responsible governance, involving different actors at multiple scales.



## Getting Started With Gardening

### 5 plants for your coastal garden

If you live on or near Adelaide's coastline you know how hard it can be to keep a healthy-looking garden. Here's 5 native plants that were made for life around the coastline.

The salt and cool breeze of Adelaide's coastline is refreshing to feel, but not for every plant. The effects of the coast – sand, salt spray, wind – can be felt up to about 5 km away from the coast, and many plants are not built for that lifestyle.

There are some special plants though, that love life near the sea. These plants are built for the salty and cool environment. You can buy them from [local native plant nursery](#).

Here's 5 of the best native plants for your home, holiday house of business garden near the sea:

### Beginner Gardeners



### 1. The feature tree: silver banksia



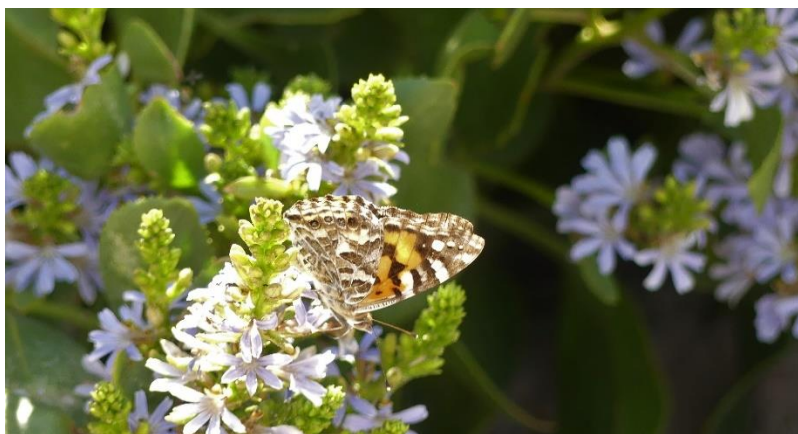
Looking for a plant that will really transform your yard? Try this striking tree out for size.

Silver banksia (*Banksia marginata*) has distinct gold and silver serrated leaves, and yellow flowers that are loved by honeyeaters, parrots, cockatoos, butterflies, moths, and native bees. It also has cool wooden seed pods that can be used for displays or nature play.

*Silver banksia*

While it's a fan of full sun, silver banksia prefers to be sheltered from direct coastal winds and salt spray. This just means you can't plant it directly on the coast.

*Silver banksia seed pods can create a stunning display.*



### 2. The alternative to a fence: cushion fanflower

Cushion fanflower is a great option for a low hedge in your garden. You can use it to section your driveway, walkway or between your house and your neighbour.

With its pale purple to bright blue fan-shaped flowers, it's a much prettier alternative to a conventional fence. It only grows to 1.5 metres, so low enough (depending on how tall you are) that you can still pop your head over to say 'hi' to the neighbours.

*Butterflies love cushion fanflower.*

Butterflies will thank you for choosing this plant over a fence – especially the beautiful Australian painted lady (*Vanessa kershaw*) – as they can't get enough of its nectar.

### 3. The one succulent to rule them all: Karkalla

Succulents are trending and if you don't have Karkalla (*Carpobrotus rossii*) succulent as part of your garden you're missing out.

Karkalla (named by the traditional Kaurna people of Adelaide) has beautiful pink flowers and helps stabilise sandy soil, can trail down rock walls and is even happy living in a pot. It has no problem with salt spray, wind or sand blasting, so it is an excellent choice if you live directly on the coast.

**Top tip:** When buying a karkalla be wary of imposters! Check that it has the scientific name of *Carpobrotus rossii*.

*Karkalla*



### 4. The blue-banded bee attractor: short-stem flax lily

For a plant with dainty-looking flowers, short-stem flax lily (*Dianella brevicaulis*) is deceptively hardy for life on the coastline. It's great as a border plant (think: creating an edge around your lawn or garden bed), looks delightful in large or small gardens, and can live happily ever after in a pot by itself.

*A blue-banded bee visiting the beautiful flowers of the short-stem flax lily.*



Short-stem flax lily is what's known as a clumping plant, meaning that it grows multiple leaves (see the picture below). You can expect it to reach about the height of your knees.

Native birds and lizards love munching on its berries and insects, including the show-stopping native blue-banded bees.

*Short-stem flax lily.*



While it is happy living in a coastal area, it prefers to be on the back streets or protected by a fence instead of smack bang on the coast.

**Bonus tip:** This plant can even live indoors!

*Short-stem flax lily is a clumping plant.*

#### 5. The #InstaWorthy climber: sweet apple-berry

If you're planning a coastal garden that stops Instagram feeds, go for the sweet apple-berry (*Billardiera cymosa*).

As a climber plant, this species is a great pick for a recycled timber feature posts, trellis or archways. It can also make a lovely shrub in your garden too.

*Sweet apple-berry.*

*Keen for more coastal plant tips?*

There are many other coastal plants around.

To learn more download [our coastal gardens planting guide](#) (PDF).

*Find out more local gardening tips*

Just beginning your gardening journey? Head to [our gardening hub](#) for more tips and tricks.

[Gardening | Green Adelaide](#)



## **Restoring The Water Cycle Understanding** **The Basics And Taking Action**

Water

By John Wilson By March 22, 2023

I am writing this on World Water Day, March 22nd. The UN's tag line for today is 'Be the change. Every drop counts.' This is very true. If we are going to return water cycles everywhere to what they used to be, then it will start with each one of us understanding the basics of the water cycle and acting to support a healthy water cycle.

The action we need to take is not that complicated. The complexities lie in the wonderful way in which Nature drives the water cycle, when the basics are in place. We do not fully understand these complexities, but we understand what we need to do.



Nearly everywhere around our African continent, water falls as rain, falling as snow in a few spots here and there. If that rainwater sinks into the ground, it is a productive force. If it runs off the ground it is a potentially destructive force. Our task is to restore ecosystems everywhere, especially our farming ecosystems, so that water sinks into the ground as soon after reaching the ground as possible. Most healthy soils, full of biological life, infiltrate water at a fast rate and once the surface is saturated sends the water downwards to recharge the water table. Wherever we see clean water running in streams and rivers we know that these are being recharged by underground water. This is a simple and clear indicator of a healthy water cycle in that catchment area.

In healthy, natural situations Nature has ensured that water enters the soil and does not run off. In our land-use almost everywhere we've created damaged landscapes where much water runs off. We now have to do everything we can to reverse that situation and get the water into the ground. There are some basic principles to guide this process. Putting these principles into practice requires everyone involved in any land-use to take part. This is because the more we can all sink water at our own source, the less chance it has to be damaging and the more we can contribute to a healthy water cycle.

For example, if we live on a slope of even a slight gradient, our task is to ensure that every drop of water that runs off the roof or any paths and roads on the land we are responsible for sinks into the ground. If not it will join forces with other run-off water and instead of helping recharge our spring, for example, it will run off, taking soil with it. Run-off water accumulates and the more it accumulates the more damage it causes. It's as simple as that.

While the UN's tagline above is good, too many of the conventional approaches to 'water' have forgotten the basics. Dams are built and boreholes dug without thinking about or doing enough to sink every drop of rainwater into the ground. In my home country of Zimbabwe, with good intentions, hundreds of dams were built at great cost after independence in the 1980s. They are full of fine silt now and only really good for growing bananas, expensive bananas at that! We hear stories everywhere of boreholes drying up – of course they will if they are not recharged.

The Water School Africa (WSA) is being set up to bring attention back to the basics of holding water in our landscapes, every drop of water in all our landscapes. Putting these basics into practice has to be driven by the families and communities living in these landscapes. Supporting this process is where our emphasis needs to be.

There is much good work going on across the continent along these lines, supporting innovative farmers and communities who understand water and who are using a range of methods and systems to hold water in their landscapes. WSA aims to find ways to share these practices more widely, giving them much more prominence. It aims to connect communities more and to stimulate and catalyse much greater spread of these methods and practices. Just about everything we do in our landscapes starts with water. If we do not manage the water we are gifted as rain we are immediately on a wrong footing. 'Be the change. Every drop counts.'

[Restoring the Water Cycle: Understanding the Basics and Taking Action – AFSA \(afsafrica.org\)](https://www.afsafrica.org/)

## **Farmings umbilical dependency on glyphosate**

Chemicals

**Patrick Holden 03.05.2023**

Imagine you are a farmer planning your cropping for the next few years to ensure everything remains healthy, productive and, especially, weed free.

While you're busy at this task, you read in a respected magazine that there is a new spray which you can apply liberally that will kill all plants, except those genetically engineered to be tolerant to it, without causing any negative side-effects whatsoever to the natural environment or human health. At the same time, the use of this spray will save you an extraordinary amount of time and money, deliver carbon benefits and bring countless other efficiencies, all at an affordable price.



If you were that farmer and had taken at face value the compelling, seemingly evidence-based, advocacy about this product's safety and efficacy which, by the way, tens of thousands of UK farmers already have, you would probably go ahead and use it.

And, if then, having incorporated it into the heart of your farming practice, some environmentalist troublemakers started concerns about potentially harmful and undesirable impacts upon the environment and human health, you might well lobby your farmers union to go on the offensive by highlighting the lack of conclusive evidence linking the product to negative health and environmental outcomes. This is exactly what has happened with a herbicide based on glyphosate, a chemical which, when mixed with so-called adjuvants, compounds which make the glyphosate more 'sticky', increases its potency by 100 times, making it remarkably effective.

When you think about it, and appreciate how difficult it can be for farmers to remove glyphosate from their current practice, it is hardly surprising that the National Farmers Union has been campaigning strongly for the last few years to prevent its withdrawal. This is despite growing evidence of glyphosate's harm throughout the world, which has led many countries in the European Union to consider banning its use.

Farmers in the UK and throughout the world, have developed an umbilical dependency on the use of Roundup and other glyphosate-based herbicides, so they are understandably anxious about any possible withdrawal by regulators. This dependency is directly related to the predominance of the continuous cropping systems that have become the norm during my farming lifetime, now spanning over 50 years.



Until the 1950s and 1960s, most farms had crop rotations with a fertility building phase, normally of grass and clover, which not only restored to the soil the carbon that was released during the arable phase of the rotation, but also reduced weed populations. With the virtual disappearance of such rotational systems, which have been replaced by continuous arable cropping, it has become almost impossible to avoid a build-up of previously controllable arable weeds. The consequence is an ever-increasing dependence on the chemical sprays that are seen as a godsend in the eyes of many farmers.

I have made it my business to pay attention to the gathering body of evidence calling into question the safety of Roundup and other glyphosate-based herbicides over the last 10 years. The first major challenge was posed by a French scientist, Professor Gilles-Eric Séralini, who undertook a **scientifically impeccable study** on rats, precisely mimicking the study that Monsanto had undertaken as a necessary prerequisite for obtaining the EU pesticide safety certificate.

Séralini's study involved feeding rats on genetically modified corn and Roundup at the prescribed minimum levels of their drinking water, not just for 90 days, which is what the regulators require, but for the full lifetime study of two years. He did this because, as a scientist who had access to the data which Monsanto lodged in the annals of the European commission, he noted that, at the end of the 90-day Monsanto trial, some of the rats were showing kidney and liver irregularities. In his replicated but longer trial, to his consternation, he observed that many of the female rats went on to develop mammary tumours and that kidney and liver irregularities worsened as the trial progressed.



Séralini was determined to publish and promote awareness of the data arising from this trial as widely as possible, but during the run-up to its launch the pesticide industry got wind of his intentions and organised a brilliant counter campaign, the result of which was to discredit Séralini as a scientist as well as to call into question the adequacy of the design of his study. This all took place in 2012 and, although the Sustainable Food Trust did its best to stand behind Séralini's evidence, organising a press conference in London and speaking publicly about our conviction that the study was in fact well designed, the counter campaign undertaken by industry bodies was largely successful. As a result, it became unwise in journalistic circles to give any credence to Séralini's study.

Fast forward another 10 years and there is a growing body of research suggesting that the use of Roundup poses long-term threats not just to the environment and biodiversity but also to the soil microbiome and human health. Some studies have gone so far as to suggest that the rising prevalence of previously uncommon diseases, ranging from **diabetes, obesity, cancers, food intolerances** and **diseases of the nervous system** is, in part, related to the capacity of Roundup to interfere with the genetic pathways of bacteria. Whether or not Roundup is eventually shown to be a causal factor in the development of these diseases and conditions, this disturbing evidence should surely be taken seriously and prompt further research.

As this newsletter goes to press, despite the cumulative evidence of Roundup's harmful effects on life, these findings are yet to be taken seriously by government. Such has been the success of the industry campaign that it is still regarded as unorthodox and fringe to side with people who consider Roundup and its use to be unsafe.

A parallel might be observed in the history of the use of tobacco. When I was young, despite the large body of evidence showing its dangers, I continued to smoke. Most of my generation ignored the calls for caution. I started smoking in my mid-teens and can still remember the guilty pleasure I experienced with smoking my first Players No6 in my bedroom! Although I never was a chain-smoker, I settled at one or two roll-ups a day in my early 20s and continued smoking into later decades until a dose of pneumonia brought that abruptly to an end around 2010. As I like to say to people, if you need to quit smoking, try contracting pneumonia – it works brilliantly and, as I reflect now, it is so often the case that dangerous substances or practices finally get their comeuppance through health shocks.

If we follow the trajectory of smoking's demise and apply the same bell curve to the use Roundup, we are perhaps still some years from the moment when, eventually, the Government steps in and either bans its use or introduces a range of measures to ensure that we reach the end of the Roundup chapter of agricultural history.

In the meantime, if you live anywhere near a farmed landscape, farmers are likely spraying Roundup to kill off grassland pastures and weeds in cereal stubbles, to enable the use of minimum-till systems and, increasingly, as the so-called 'pre-harvest desiccant'. This means that, a week or so before harvesting a crop of wheat, barley or other grain, farmers will spray the ripening field, both to kill off any grasses or weeds in the understory of the crop and to hasten the ripening of the grain, as well as speed up the drying process to enable faster combining.

The pervasiveness of these practices mean that many of us are getting a daily dose of Roundup in our food. This is especially true of **bread in the UK**, but if we look across the Atlantic to America, Roundup has been found in virtually all **rivers and water systems**, in the **rain and air**, and in human **urine**.

Should we be worried about this? In short, yes, and in response we should be calling for further research to identify the potential risks. In the meantime, if you want to take action, consider buying organic to minimise your potential exposure to Roundup residues.

[Farming's umbilical dependency on glyphosate - Sustainable Food Trust](#)

# Ground Covers and Weed Management for Regenerative Farming and Gardening

04/06/2023/by [Andre Leu](#)

Regenerative

*This excerpt is from André Leu's book [Growing Life: Regenerating Farming and Ranching](#),*

A neighbor once asked me, "When are you going to spray out all your weeds?"

I replied, "Never, because we do not have any weeds. They are all cover crops that give us multiple benefits, such as increasing soil fertility, better water infiltration, and pest and disease control."

Of course, he did not understand a word I said.



## **Nature Fights Against Bare Ground**

Bare ground is the best way to encourage weeds, as most weeds are pioneer species. They rapidly germinate to cover disturbed and bare ground. Nature always regenerates disturbed soil by rapidly covering it with plants. Weeds are nature's way of healing disturbed soil. Living plants feed the soil microbiome with the molecules of life so they can regenerate healthy soil.



Our current weed management strategies are designed to fight this powerful force of nature, and they are the reason most farmers are constantly battling weeds.

Instead, we must learn to harness this powerful force of regeneration by turning weeds into cover crops that give us multiple benefits.

Covering ground is the best way to prevent weeds, and the most logical way to do this is with ground cover species that benefit our cash crop.

*This is the cover crop on our farm after the summer rainy season. The mixture of grasses and legumes are around 10 feet (3 meters) high, producing tons of rich organic matter, nitrogen, and other nutrients—the molecules of life—to feed the soil microbiome and our cash crops. Our neighbors regard these as out-of-control weeds and wonder why we don't spray to stop them from growing so we can have "nice bare ground."*

## **The Concepts of Mutualism and Synergy**

We need to throw away simplistic, reductionist approaches to agriculture. The natural world is complex and dynamic.

The simplistic dogma that all plants other than the cash crop are weeds that compete with the crop and lower yields is not correct. This dogma originated more than 10,000 years ago in the neolithic age when farming first started. Science and technology have progressed considerably since then, yet, remarkably, mainstream industrial agriculture is still stuck in neolithic mythologies when it comes to weed management.

The current ecological and biological sciences show a very different picture. In many cases, plants are mutualistic and synergistic. Mutualism is where two species assist each other and both benefit. Synergy is when this benefit is greater than the sum of the whole. Instead of  $1+1 = 2$ —the usual result of addition—in synergy,  $1+1 = 3$  or 4 or much more. The benefits of the species working together are significantly greater than simple reductionist monocultures. Examples of this will be given later in this chapter.

The current dogma on weed management has led to some of the most destructive practices in agriculture, resulting in massive soil loss, the decline in beneficial soil biology, and the residues of toxic chemicals in our food, bodies, water, air, and environment.

Standard agronomy says that all plants that are not cash crops are weeds because they are competing for nutrients and water and therefore lead to lower yields. But instead of taking the reductionist approach of "nuking" all weeds with either tillage or herbicides, we can take a holistic, ecological approach to managing them. We can turn them into beneficial cover crops that will improve our cash crops!

## **Avoid Bare Soil**

Weeds can be one of the most significant problems in many farming systems, but weed management causes some of the biggest mistakes in agriculture.



Bare soil must be avoided as much as possible because it increases water loss through transpiration and leads to increased soil erosion due to wind and water. Significantly, bare soil wastes all the solar energy that falls onto it. Soils need to be covered with living plants as much as possible to avoid these problems.

Nature hates bare soil and will do its best to cover it with plants. When these plants are not our cash crop, farmers often regard them as weeds and perpetually fight them. Remember the basis of regeneration? When an ecosystem is disturbed, nature will regenerate it once the disturbance stops. Instead of fighting nature, let's work with it to make this powerful force work for us.

## Managing Weeds

There are numerous methods to manage weeds. Currently, the spraying of toxic herbicides is the main weed control strategy in industrial agriculture. This has replaced the range of methods used in the past. Those management systems were far broader than just tillage, however much of this knowledge has been lost to the current generations of industrial farmers.

A range of new methods is being used to manage weeds, based on the current understanding of plant physiology and ecology. These systems use applied agroecology to increase biodiversity to manage weeds.

This chapter will cover both the new and traditional methods of weed control. **It is important to understand that regenerative farming is about weed management rather than weed eradication.**

Regenerative farming not only develops an approach to minimize weed problems so that weeds do not adversely affect the crop; it can integrate weed management into the whole-of-farm management system so that weeds can become cover crops and insectaries to increase the yield and quality of the cash crop. (Insectaries are covered in Chapter 4.)

Two important concepts to introduce are cash crops and cover crops. Cash crops are those crops that can be sold, traded, or eaten as agricultural produce. Cover crops, or ground covers, are crops that are managed to increase soil fertility and health, resulting in higher yields and quality in the cash crop.

The best management systems convert weeds into useful ground covers that should be seen as cover crops. Cover crops generate numerous benefits for the main crops. We are turning weeds from plants that have negative impacts on our crops into plants that assist our crops. In fact, in our systems, the larger the weed, the more organic matter it can produce and, when properly managed, the more benefits it can generate for our soil and cash crops.

## Propagation

## How To Propagate Hardwood Edibles

[JULIE BENNETT](#) APRIL 19, 2023

Propagating plants from cuttings is super easy and now – coming into winter – is the perfect time to start off your semi-hardwood cuttings.

*With a bit of knowledge and patience you may never have to by a semi-wood or hardwood plant again*



### Semi-hardwood cuttings

Semi-hardwood plants are ones which form brown (called lignified) bark, but whose new growth is green. Plants like rosemary, lavender, [blueberries](#) and wormwood are classified as semi-hardwood, as these plants form woody older growth where green or new growth will appear from. These plants may not go completely dormant in winter, but now is the best time to collect cuttings if you want to propagate more to share with friends or spread around your garden.



To collect your semi-hardwood cuttings you'll want woody stems that have new green growth towards the tip. Cut a stem from the parent plant and trim the base of your cutting to just below a node, which is where a leaf has grown from. Strip off the lower leaves of about two-three nodes as these will be below the soil and is where roots will form.

Leaving at least two nodes above the soil, trim back any leaves which are left to about half their length and, if your cutting is still in flower, remove these too, as flowers and too much leaf growth will take away much-needed moisture and energy. Mix up some good-quality potting mix with a few handfuls of sand for assisted drainage before filling a seedling tray or pot with your [potting mix](#).

Dip the base of your cutting in a rooting hormone. This can either be in a gel, liquid or powder form and will assist in root quicker development. So as to not damage the nodes, use a dibbler or pencil to create a hole for your cutting and gently pop it into the hole. Gently push the potting mix around the cutting to ensure there are no air pockets and your cutting is nice and secure. Gently water in your cuttings.

Cut the base off a milk bottle and carefully place it upside-down over the top of your cuttings to form a small greenhouse, remove the bottle top to allow for air flow. Or if you have a [seedling tray](#) with a clear lid, place this on with vents open. Keep an eye on your potting mix, and remove the covers if the soil is staying too wet and or mildew is present. If the mix remains too moist for too long, the cuttings will rot rather than develop new roots.



Hardwood cuttings are from plants that have gone completely dormant in the winter. Think about plants like grapevines, lemon verbena, elderberries, [mulberries](#) and even [fig trees](#). The best time to take the cuttings are when these plants are fully dormant in the depths of winter.

When collecting your hardwood cuttings, cut from the parent plant just below a node just as you did with the semi-hardwood cuttings, but make sure it's from this year's growth. Also ensure the cutting is straight with no damage or disease present, and that it has at least four nodes.

### **Hardwood cuttings**

As with semi-hardwood cuttings, nodes can be seen as bumps on the cutting where a leaf has grown from in the previous season – this is where roots will grow from below the soil and where the new growth will appear from above the soil in spring.

Using the same blend of well-draining and good-quality potting mix, fill a tray or wide pot. Dip your cuttings again in a rooting hormone and use a dibbler to make a hole to place your cutting into. Water in well, cover, allow for airflow and place your pot somewhere sunny and warm.



If you're unsure as to whether you can grow a certain plant from a cutting, just give it a go. There are so many plants that you can strike from cuttings, so it's worth collecting as much plant material as you can and having a go. You might just surprise yourself.

[How To Propagate Hardwood Edibles | Pip Magazine](#)

## **Cover crops in the home garden**

**Cover Crops**

A simple organic practice that builds soil, encourages beneficial microorganisms and suppresses weeds.

Cover crops are an essential tool in sustainable agricultural systems, especially in organic or regenerative systems like we have operating at Diggers for our seed production and trials.

### **Cover crops vs. green manures**

Unlike a green manure, which is tilled back into the soil, a cover crop is simply cut back, allowing the roots to remain in situ in the soil and decompose over time. Our winter and summer mixed species cover cropping systems, usually between four and six species, provide a constant living cover over the soil. This facilitates thousands of exchanges within the root zone, whereby the plants exude various compounds in a symbiotic relationship with soil microbiology (fungi and bacteria) – a relationship that involves the transport, conversion and cycling of nutrients.



We also use our cover crops as a natural weed suppressor, eliminating the potential for soil erosion and generating significant biomass that forms a mulch (crop residue) over the soil surface when cut back. This residue assists in water retention and infiltration, as well as managing soil temperature – things that are critical through the heat of summer.



But cover crops aren't just a living mulch. Certain crop species are able to remediate soils of contaminants, behave as a biofumigant for potential soil pathogens, and can scavenge or bio-accumulate nutrients from deeper soil layers, making those nutrients available for subsequent crops. Legumes also have the benefit of fixing atmospheric nitrogen onto nodules on their roots, which builds fertility.

### **How to use a cover crop in the home garden**

Whilst the best way to use a cover crop is to broadcast sow the seed in a bed that would be rested or left fallow between crops or between seasons, as part of a crop rotation process. When we are talking about a home garden, often space is a limiting factor for systems like crop rotations, which require enough beds to allow some to be 'rested' without a crop.

In our Diggers seed production garden, we are trialling a 'crop phase' option, where we squeeze multiple crops into one bed concurrently or relay them one after another with a clear crossover period. A cover crop can also fill the gaps as an 'in between' crop, either between the crop rows or in the pathways between beds.

Some of the following options can be easily adapted into the home garden.

#### **Intercropping**



This practice is akin to the principles of companion planting whereby a combination of crops is mutually beneficial. An example of successful intercropping we have used is broad beans/flax/wheat. It has been documented that flax has benefits in reducing fungal disease in pulse crops and improves the capacity for legumes to fix nitrogen. This in turn promotes faster biomass production from wheat, allowing us to grow our own mulch. Wheat can also develop a deeper root system, bringing nutrients up to the surface and making them available for the relatively fast harvest crop of the radishes, which are also a fantastic nutrient scavenger. This system can prevent the leaching of nutrients from the soil, as the plant mass accumulates nutrients within their tissue.

Each crop combination makes use of the entire physical space, filling in gaps and maximising production in what can be a small area, especially for the home gardener. Given that we are primarily growing for seed, the root system of the harvested crop will stay in place and the entire plant becomes surface residue when it has finished. We grow other species like red clover, lucerne and oats between our cropping rows, essentially growing a cover crop and a production crop concurrently.

#### **Relay cropping**

This is the practice of planting out new crops before the previous crop has finished. As we grow our crops for seed, our production season is extended beyond that of a fruit or root harvest, so relaying is critical for us.

One successful example we have implemented was the overlap cropping of our purple podded peas and tomatoes. Peas, being a legume, will fix atmospheric nitrogen over their growing season into the root zone so around three to five weeks before the pea crop finished, the tomato seedlings were planted into the standing pea crop.

When the peas were finished and harvested the crop was cut back, providing a thick pea straw mulch around the newly established and thriving tomato seedlings, which were benefiting from the fixed nitrogen in the soil from the pea roots at the best possible time, their early vegetative stage. Between the tomato trellis rows we sowed buckwheat (great at bio-accumulating elements like iron), brown mustard (which acts as a soil biofumigant to reduce root and soil pathogens) and millet (to generate biomass for mulch and suppress weeds). Mixed combinations of species in these planting phases means we create a diversity of root exudates, which will assist in supporting a diverse population of soil biology. It's a perfect opportunity for the home gardener to easily and continually improve their soil.

Written by Jason Buchanan, Diggers trials and production.

[Cover crops in the home garden - The Diggers Club](#)



# How to Start Growing Onions MAUDE FARRUGIA MAY 5, 2023

Veggies

**Growing onions is easy, and they are one of the few things you can plant through winter in cooler areas.**

While onions may take quite a bit of time to mature, they take very little work to grow and are a very satisfying addition to a home harvest-basket.

Here we take you through a few simple onion growing tips from the *Pip* garden!



## Varieties

Getting the right onion variety in the ground at the right time can make a big difference to bulb size.

There are early, mid and late season varieties which refers to the sowing (and thus harvesting) time of the onions.

There are also long, short and intermediate daylight varieties to throw into the mix. These varieties require differing amounts of sunlight in order to form a bulb, so if planted in the wrong climate zone and the wrong time, they may fail to thrive.

As a general rule, short-day types are suited to Northern states (Queensland and NSW) while intermediate varieties are more suited to states further south. Your local nursery should be able to help you choose a variety that best suits your area.

## Sowing

Onions can be sown in trays and transplanted as young "sets", or sown directly in the ground. Onions love good drainage, and detest mulch (they rot easily in the ground), so growing in small raised mounds can be a good idea.

Sowing seeds .5mm in good, free-draining potting mix (either in trays or drilled in the ground) will give them a great start. Keep your onions well weeded.



## Harvest

You should harvest onions once the plants have begun to wither and dry off in summer. They should be hung and cured (like [garlic](#)) before storage.

[How to Start Growing Onions | Pip Magazine](#)

## July Dirty Diggings 2023

[Regenerative organic and agroecology Whats the difference?](#)

[How to Start Growing Onions](#)

[No Dig Veggie Gardens](#)

[Farmings umbilical dependency on glyphosate](#)

[Ground Covers and Weed Management for Regenerative Farming and Ranching](#)

