



Biodynamic Agriculture Australia Ltd

*Living Soil Living Food*

## Biodynamics for Viticulture

Wherever we look in wine literature these days, it is hard not to notice the increasing prevalence of the words “organic” and “organically grown”. If we look a little harder we might also notice the words “biodynamic” and “biodynamically grown” appearing more frequently, especially overseas.

From the perspective of one of Australia’s only two biodynamic supply and training organizations, we can safely assert that in most cases the viticulturists who market their wine as organic are actually using biodynamic techniques in their vineyards.

Why the reluctance to call their wine what it is: *biodynamic*? Surely the publicity around biodynamic award-winning wines worldwide makes it a safe marketing ploy to call it what it is. To deflect to “organic”, however, implies that in a number of ways it does not reach the high standard of biodynamics. This is a pity, as biodynamic is definitely superior to merely organic, although basically organic it certainly is!

Obviously there must be a strong advantage in marketing such wine as organic. Biodynamic wine still only occupies a niche position despite all the ecstatic connoisseur wine palates and award-winning.

While accepting this market reality, we at Biodynamic Agriculture Australia are well set up to assist conventional wine growers who want to convert to biodynamics.

The benefits of biodynamic growing are compelling:

- rapid revitalising of the soil food web;
- better and more balanced growth of vines, under-vine vegetation and green manures;
- accelerated carbon accumulation in soil;
- strong environmental benefits to the vineyard and its surroundings;
- radically lowered input costs;
- increased resilience of vines to pests, diseases and weather extremes, and;
- an overwhelming sense of holism around the vineyard and homestead.

The tools of biodynamic practice are relatively simple, much like those of either conventional or straight-line organic wine growing. Biodynamic inputs can initially seem rather challenging but are easy enough to understand with an open mind. The stirring method for biodynamic growth catalysts and the observance of Moon rhythms are not difficult hurdles to master. Biodynamic practices empower viticulturists to combine their own individuality and intentions with the unique qualities of the soils they have selected as their winemaking base, to produce interesting, complex and outstanding wines. What is more, it is likely that terroir characteristics are enhanced by biodynamics practiced in the vineyard

Continual biodynamic farming practices also develop valuable reserves of humus in the soil, giving increased vitality and disease resistance to the vines, and greater water holding capacity to the soil.

## The vineyard in general

Site selection will be the most significant reflection of the individuality and intention of yourself, the viticulturist, closely followed by the grape varieties chosen to practice your personal alchemy. Once this process has been resolved the next task is the preparation for planting.

Experience shows that time spent preparing the soil before planting ensures strong healthy vines capable of good production and less susceptibility to disease. Curbing the urge to rush out and plant until the soil has been prepared and enlivened can be a challenge but will result in the satisfaction of seeing your vines soon catch up to those with less patient guardians.

Start right at the pre-planting stage by spraying out the full sequence of biodynamic sprays to establish strong biological activity and develop soil structure and humus, which importantly in most winegrowing regions improves water holding capacity. (See the Suggested Spray Program below.)

A green manure crop that suits your area and season will give lots of rich biomass to provide soil organic matter when slashed or turned in at early flowering. Forage sorghum, broad beans, millet or oats and lupins are ideal. When turning, spray with Biodynamic Manure Concentrate to assist breakdown of the green material. Repeat this green manuring before planting your vines if you can.

## Soil Tests

Use soil testing laboratories that offer Albrecht soil tests, such as EAL at Southern Cross University Lismore, Sweb or Agpath Laboratories in Victoria or Perry Laboratories in SA. Soil microbe counts are available from Soil Food Web Institute Australia and Agpath Laboratories.

Check that your calcium/magnesium ratio is in balance and other major nutrients are present. You may need to apply calcium or magnesium to establish the balance. We find with biodynamics, once you have the major nutrients present and in balance and your organic matter increases, the biodynamic compost enhancers stimulate the bacterial and fungal activity that bring in all the trace elements that are required for your specific area.

We also find that when using the biodynamic compost enhancers much smaller amounts of recommended mineral inputs, such as lime, are required as the biological activity that the compost enhancers stimulate, makes the substances more readily available to the plants.

Biodynamic practitioners also find the application of basalt dust to the area (at the rate of 1-2 tonnes per hectare) is also very beneficial, bringing in trace elements and paramagnetic qualities to your land. Try to get a typical analysis of various local rock dust sources available and find the one that matches deficiencies found in your soil test.

Regarding high paramagnetic basalt crusher dust, it is best to apply the quarry grade '4mm minus' as the larger particle sizes are important 'aerials' for radiating the paramagnetic energy.

Application of biodynamic compost to the whole area at the rate of 2-5 tonnes per hectare will also help strongly establish all these activities in your soil. See *Compost Making* later.

## Planting

When all is ready, deep ripping along the rows ensures easy rooting for your vines and better aeration of the soil.

Use a root dip of Biodynamic Soil Activator and/or apply a soil drench of this powerful preparation and/or apply biodynamic compost tea.

## Converting an existing vineyard

Where you are taking over an existing vineyard it is a matter of establishing sound biodynamic practices without delay in order to build healthy soil life, which in turn leads to good vine health. Converting an existing vineyard to biodynamics can be difficult as there are likely to be soil imbalances as well as damage to the soil structure and soil food web. Some of the vines will have health problems and have been kept alive through the use of chemicals. Some of these vines will die during the transition. Keep an eye out for poor or late growth and watch where any disease outbreaks such as powdery mildew start. Often this will be the sick vine and may require removal.

Soil compaction is often a problem and this can lead to restriction of root growth, blocking of water movement through the soil profile and the formation of anaerobic patches in the soil, harbouring pathogens. Penetrometer readings will assist in locating problem areas and monitoring progress. It takes some time for plants, soil and people to transition from chemical to organic/biodynamic regimes. During this time there is an increased risk of crop loss. Consider whether a staged conversion block-by-block or all-at-once conversion is your better option.

## Sward management

Now you need to establish your sward or grasses between the rows. A mixture of herbs, grasses and legumes provides variety for soil nutrition and life. Including herbs and perennials in the mix will incline the soil towards the fungal domination, optimal for grapevines. The plants in the sward perform many duties. The deep tap-rooted varieties can access deeper nutrients, mulch-mowing provides organic matter and food for the earthworms, and the mowings can be deposited over the undervine areas to form a cover or weed mat. The legumes in the mix bring extra nitrogen and support the calcium processes in the soil. You will notice your sward can also provide a habitat for beneficial insects such as predatory mites and wasps, ladybirds, lacewings hoverflies and tachnid flies. These all contribute to managing your vine parasites.

Use deep tap-rooted plants such as chicory, Queen Anne's lace, dandelions and lucerne. Mix these with some grasses such as rye, oats, prairie grass, native grasses and legumes such as lupins, red and white clovers. Other varieties of herbs can also be used such as alyssum, dill, caraway, coriander, buckwheat and basil. Just make sure you do not choose a climbing type that will soon use your vines to lift them higher in the world.

## Undervine management

Vines, according to Dr. Elaine Ingham, the Soil Food Web scientist and microbiologist, Oregon USA, require more fungi than bacteria in the soil (a ratio of 2-5 fungi : 1 bacteria), whereas grasses prefer more bacteria than fungi in their soil. By changing the compost or mulch on the surface of the undervine area, we can change the fungal/bacterial ratio and keep most grass type weeds out of the undervine area.

This can be achieved using a highly fungal compost with a higher woody content such as stems, cuttings, skins and seeds (mark), wood chip or mulching hay. Minimise compost turning and age for six months or more to allow the fungi to develop fully. Another way is to grow low growing herbs under the vines, such as thymes, lavenders, oregano, parsley etc.

Each area or state has its own vineyard mythology on undervine management. Victorian grape growers like to keep the earth bare allowing the reflected heat of the sun to ripen the fruit. They also feel that mulch will attract frost, which is seen as detrimental. In Western Australia's Margaret River area, mulching and composting under the vines and including under vine herbs once the vine is established is achieving award winning success. Margaret River has only winter rains and so weeds over summer are not an issue. Also, they don't get frosts. It may be the climatic conditions that really determine undervine management requirements. In the Barossa Valley, where they also receive only winter rains, biodynamic viticulturists are trialing undervine cover. Best practice in maximizing soil life is to keep all soil covered with live plants or mulch, and to not till the surface.

Whatever form of undervine management you finally choose there is agreement that in the early developmental stages of young vines, it is seen as important to keep the undervine areas cleared.

If you are taking over an existing vineyard and are not able to establish a good, clean environment to plant into, this is best achieved with undervine weeders that cut just under the soil and usually have a chain flail to clear the surface.

**PRODUCTS RECOMMENDED – remember if you join as a member there are significant benefits in respect of pricing and advice.**

**Astro Calendar**

[Astro Calendar](#)

**Atmospheric Sprays:**

[Horn Silica 501 - Atmospheric Spray](#)

[Summer Horn Clay](#)

[Equisetum Arvense \(508\) Fresh](#)



**Soil Options:**

[Horn Manure \(500\)](#)

[Soil Activator](#)

[Liquid Soil Activator - NO STIRRING OPTION](#)

[Combined Soil Preparation](#)

[Fish and Seaweed Concentrate](#)

[Fish Concentrate](#)

[Seaweed Concentrate](#)

[Basalt Rock Dust](#)



**Compost Making:**

[Compost Enhancers](#)

**Additional Remediation:**

[Vine and Tree Tonic](#)

[Vine, Tree and Shrub Paste](#)

Becoming a member gives you great benefits. Annually Farm Membership is \$130, Garden Membership is \$65. You receive our quarterly *News Leaf* Journal, better pricing on products, advice and support.

PRODUCTS	SIZE	FARM	GARDEN	NON-MEMBER
<b>Astro Calendar</b>	One Size	\$42.00	\$42.00	\$42.00
<b>Paste</b>	1.2kg	\$11.90	\$16.65	\$24.95
<b>500 – Horn Manure</b>	85g	\$11.55	\$16.20	\$24.25
<b>501 – Horn Silica</b>	1g	\$ 4.75	\$ 6.65	\$ 9.95
<b>Summer Horn Clay</b>	10g	\$2.85	\$4.00	\$6.00
<b>Fresh Equisetum</b>	5ml vial	\$5.95	\$8.35	\$12.50
<b>Compost Preparations</b>	1g	\$33.00	\$46.20	\$69.30
<b>Fish &amp; Seaweed</b>	1 litre	\$15.18	\$21.25	\$31.90
<b>Soil Activator</b>	75g	\$9.25	\$12.95	\$19.40
<b>Combined Soil Prep</b>	245g	\$21.15	\$29.60	\$44.35
<b>Vine and Tree Tonic</b>	One Size	26.40	\$37.02	\$55.45

Note prices as at March 2024 and purchasing in larger volumes is better value. These are the per hectare application rates

## Suggested biodynamic spray program for viticulture

<b>Activity</b>	<b>Type of Biodynamic Preparation</b>	<b>Rate Per Ha</b>	<b>Stirring</b>	<b>Application</b>	<b>Times of Application</b>
<b>Soil preparation prior to planting vines:</b>	Apply Biodynamic Soil Activator preparation to green manure crops in area planned for vineyard before discing in.	75g	20 mins flow forms or stirring machine	Soil spray droplets 35 litres per ha	Moon descending or Moon opposition Saturn  Afternoon
	Apply basalt rock dust and lime or soil amendments as required and deep rip rows to plant vines in.	1-2 tonnes		Spreader	Soil preparation and thereafter via compost

**Apply this sequence monthly to vines August to December each year.  
Do the first spray sequence of the season prior to bud burst.**

<b>Soil spray – apply to soil in rows between vines.</b>	*Biodynamic Soil Activator <b>*Biodynamic certification, Aust. standard require 2xHorn Manure 500 sprayouts per year, combined soil preparation suffices</b>	75g	20 min in flow forms or stirring machine	Soil spray droplets 35 litres per ha	Moon descending or Moon opposition Saturn  Afternoon
<b>Next a.m. – atmospheric spray</b>	horn silica, 501 summer horn clay Equisetum, 508 – fresh 8x potency	2g 10g 1 vial per tank	1 hour flow forms or stirring machine	Air spray mist	Sunrise Day after soil spray

**January to harvest each year – to keep sugar sap levels up to prevent and strengthen against fungal disease and mildews.**

<b>Atmospheric sprays</b>	horn silica, 501 summer horn clay Equisetum, 508 – fresh 8 x potency	2g 10g 1 vial per tank	1 hour flow forms or stirring machine	Air spray mist	Moon opposition Saturn each month. Sunrise or sunset
<b>Apply monthly during growth period – spring to harvest.</b>	fish or seaweed concentrate	2 –4 litres/ha	Stir for a few minutes to enliven the spray with your intent	Foliar spray morning or afternoon	Monthly 2-4 days up to Full Moon
<b>Prior to harvest; extra to lift Baume or Brix.</b>	horn silica, 501 Equisetum, 508 – fresh 8x (if damp)	2g 1 vial per stir	1 hour flow forms or stirring machine	Sunrise Only need to do boundaries of each block.	Ascending Moon
<b>Post harvest</b>	horn silica, 501	2g	1 hour flow forms	Sunrise	Ascending Moon

<b>Spray to assist leaves to take nutrients to soil for winter</b>			<i>or stirring machine</i>		
<b>Compost: apply 2 x per year – spring and autumn. See Handbook for instructions</b>	<i>Make up using the biodynamic compost enhancers 502-507.</i>			<i>1-2 shovelfuls per vine or 4-5 tonnes per ha.</i>	<i>Spread in inter-rows or under vines in autumn and then mulch in spring.</i>
<b>Tree pasting</b>	<i>Vine, Tree and Shrub Paste: cow manure, diatomaceous earth, bentonite, manure concentrate, horn manure, 500</i>	<i>20kg pail Enough for 1 ha</i>	<i>Mix in 200litres of water, strain &amp; spray over vines. Stir for a few minutes to enliven the spray with your intent</i>	<i>Cover the whole pruned vine.</i>	<i>At pruning (descending Moon) or over winter.</i>
<b>Vine and Tree Tonic</b>	<i>Contains horn manure, 500 and dried Equisetum mixed together</i>		<i>foliar spray Stir for a few minutes to enliven the spray with your intent</i>		<i>Can be used as a preparatory step to the the Vine, Tree &amp; Shrub Paste. Use to reduce fungus development, especially during wet season</i>



## Irrigation

Biodynamic soils retain water in the humus which is created using biodynamic practises. The biodynamically grown plants also develop extensive root systems which can access deeper water sources. Biodynamic viticulturists have found that they use 50-75% less water than neighbours, with the bonus of a better tasting crop! Dryland viticulture works very well for many biodynamic viticulturists.

## Fungal disease – prevention

Fungal disease breaks out when a number of climatic and plant health stresses coincide. Plant health is improved immeasurably by using the biodynamic compost enhancers and sprays. Through keeping the sugar saps up and the sap pH at 6.4 the plant does not attract insects. Bruce Tainio, microbiologist and agricultural consultant in Washington, USA, has found that if the sap pH is higher than 6.4 the plant is susceptible to insect attack. A low, more acidic sap pH will also see disease ensue. High sap Brix levels are also associated with plant health. Fungal diseases occur also when the moisture and warmth levels are up. Biodynamic viticulturists watch the weather and also use the Antipodean Astro Calendar to alert them to potential climatic problems ahead.

For instance, when there is a Full Moon and Moon Perigee,<sup>1</sup> (which is when the Moon is closest to Earth) they know and can prepare for increased risk of fungal activity. Under these circumstances the Earth is over-endowed with watery forces, and by regularly using the compost enhancers and the silica sprays [horn silica (501), fresh Equisetum (508) 8x or Casuarina], which balance watery forces, it is possible to strengthen the plant against this possibility of fungal disease. Horn silica and fresh Equisetum (508) 8x also keep the sap sugar levels (Brix) elevated in times of stress, so the plant is strong enough to withstand the adverse conditions.

Milk or whey is used to protect against powdery mildew with great success. Trials by Peter Crisp, et.al. found that in comparison with other organic type sprays, the lactoferrin in whey and milk causes the hyphae of the *Unicinula necator* to collapse within 24 hours. They are potential replacements for sulphur sprays in the vineyard.

Use of biodynamic manure concentrate, seaweed or fish hydrolysate sprays can also keep the beneficial fungi and bacteria up to high levels on the vine leaves, preventing infestation of non-beneficial, pathogenic fungi and bacteria.

Brewing aerated compost teas reinforced with seaweed, fish hydrosylate, organic molasses, humates and fulvates will further feed and build beneficial microbe numbers and enhance control of disease. Use fulvates for foliage and humate boosters via soil application. Both sulphur and copper sprays will cause a huge drop in microbial counts in your vineyard. These sprays kill both beneficial and pathogenic microbes. Always follow up with a microbe spray and microbe food sprays detailed above. In a deep organic/biodynamic system, plant health and beneficial microbes will keep disease at bay without the need for copper or Sulphur. You should be able to eliminate copper from your spray program easily; however elimination of Sulphur, though desirable, may be more difficult to achieve.

---

## Composting

Compost is best made on-farm and applied annually. Biodynamic viticulturists recycle grape mark and their chipped prunings through their composts. Having your own cow or cattle grazing for their influence and manure is the ideal situation. Some vigneronns have put off having cows and making compost for years.

Recycling farm waste back to the vines via compost, improves the strength and health of soil and plant. Just as we know certain plants need specific symbiotic mycorrhiza around their roots so they can grow optimally, so the biodynamic vineyard is able to develop the specific symbiotic microlife in the soil. The use of prunings and woody matter in the compost, boosts fungal development under the vines, aiding soil and plant health. Certified organic and biodynamic farms will need to use the Berkeley Hot Compost method with temperature monitoring and control. This is also the fastest method to make large quantities of high quality compost. See the *Biodynamic Handbook* for compost making instructions.

Compost would be made after post-harvest pruning and used the following year. It will not need turning during its maturation. The use of the biodynamic compost enhancers 502-507 in the compost process will help to regulate the cycling of elements within the soil as well as feeding the soil food web. Compost in a vineyard would be applied at the rate of 2 to 5 cubic metres/hectare, or more if you have it available.

Biodynamic compost is a means of incorporating additives, such as basalt dust, seaweed, diatomaceous earth, spent coffee grounds and borax or solubor (a trace, for boron). Only small quantities of additives are needed when they are included in the compost, where they are broken down and chelated by the bacterial and fungal organisms in the heap. This makes them readily available in the soil when applied, thus reducing costs and increasing efficacy. Regarding clay, include 5 to 10% of your own soil as a microbe source as you build your pile. Clay in compost later helps the formation of the critical clay humus complex in your vineyard soil.

## Trunk diseases

Trunk diseases are a reality in most established vineyards with a history of chemical usage. Start by cutting back the affected wood, which may extend well down the trunk. Options include cutting the trunk and training new shoots, or chainsaw carving to remove infected material. Some badly affected vines may die in the following years. Disinfect all tools when moving on to a new vine, using bleach or methylated spirit. Treat all pruning wounds with our Paste.

## Tree Pasting

The bark of the vines is coated with a mixture of clay, diatomaceous earth, biodynamic manure concentrate (aka cow pat pit, barrel compost), horn manure and cow manure. A thin mix of these is painted or sprayed onto the trunk of the vines and to cutting wounds after pruning. It radically improves the health and disease resistance of the vine and kills off over-wintering insects in the bark.

## Harvesting time

Regular use of horn silica throughout the whole year can lead to improved flavour and plant health. Brix/Baume levels will be raised by the use of horn silica (501) and fresh Equisetum (505) 8x. It lifts the sugar sap levels, often overnight, so that instead of having to wait weeks for a lift at such a precarious time, a quick move to harvest can ensue. Horn silica 501 increases the dry matter content of the fruit as well as strengthening the skins. It also enhances the all-important flavor.



## Biodynamic Wine

Biodynamic standards are additional requirements that need to be fulfilled on top of certified organic requirements. The aim, through time, is to limit external inputs into the farming system, most particularly fertilisers and manures, such that the farming system becomes a 'closed' or 'self-sustaining' ecological system, whilst ensuring sustainability and nutrient maintenance of the overall farming system. It is anticipated that use of brought-in composted materials to biodynamic farms shall cease by the time full certification is achieved.

In biodynamic viticulture, the use of compost made using the biodynamic compost preparations is essential for soil and plant health. Several preparations are used for different purposes and must be prepared correctly and applied at certain times.

## Biodynamic Preparations Allowed for use under Organic Certification

Atmospheric Spray: Horn silica (501) Soil Spray: Horn manure (500)

Compost Preparations:

Yarrow (502)

Chamomile (503)

Stinging nettle (504)

Oak bark (505)

Dandelion (506)

Valerian (507)

## In-Conversion Organic Wine

It can take between 1-3 years for a vineyard to achieve [organic certification](#), depending on its chemical usage history. Vignerons can sell organic wine as 'in-conversion' to indicate they are fulfilling all the requirements of certified organic, however have not yet completed the process.

## Why Choose Organic/Biodynamic?

Organic/biodynamic wine contains fewer synthetic chemicals, can have higher amounts of antioxidants than non-organic wine, and is a better choice for the environment. It's these reasons and more that organic is the better choice when it comes to wine.

## Health Benefits

Organic viticulture and production relies on keeping plants in optimum health to minimise plant disease. This translates to organic/biodynamic wine grapes having thicker skins and higher concentrations of beneficial anthocyanins and antioxidants, including polyphenols and cardio-friendly resveratrol. Organic wines are also free from residual traces of agricultural additives such as synthetic pesticides and herbicides.

Read Australian Organic's [Health Benefits of Organic](#) article for more detail on organic food in general and [What is sustainable winegrowing?](#)

# A Simple Guide to Keats' Antipodean Astro Calendar

For detailed information please refer to *How to read the Astro Calendar* by Brian Keats – [www.astro-calendar.com](http://www.astro-calendar.com)



## **MOON OPPOSITION SATURN – Apply soil and atmospheric sprays**

Locate Moon opposition Saturn – a little “dumbbell” symbol between moon crescent and Saturn symbol on the “Planet Nodes and Trines” alignment.

This occurs every 28 days and is widely regarded as a powerful time put out a soil spray the afternoon before, and an atmospheric spray the morning after. It is also a very beneficial time to plant seeds and seedlings.

The sequence could also be carried out a day earlier or later, as the influence is “in orb” for a day either side.

**SOIL SPRAYS - Apply during Descending Moon** BD500, Soil Activator, Combined Soil Preparation, Manure Concentrate, Winter Horn Clay, Fermented 508.

**ATMOSPHERIC SPRAYS– Apply during Ascending Moon** 501, Summer Horn Clay, Fresh 508.

‘Moon position’ at bottom of page: **Red dotted line – Ascending moon**, Black dotted line – Descending moon. **When the moon is ascending the influences above the ground are stronger. A descending moon promotes activity within the soil.**

**MOON IN ZODIAC –When to plant to promote Leaf, Fruit/Seed, Root or Flower growth** The Moon in Zodiac solid purple curve of symbols shows how the Moon tracks successively past each of the 12 Zodiac signs around the ecliptic – the plane of rotation of the planets around the Sun.

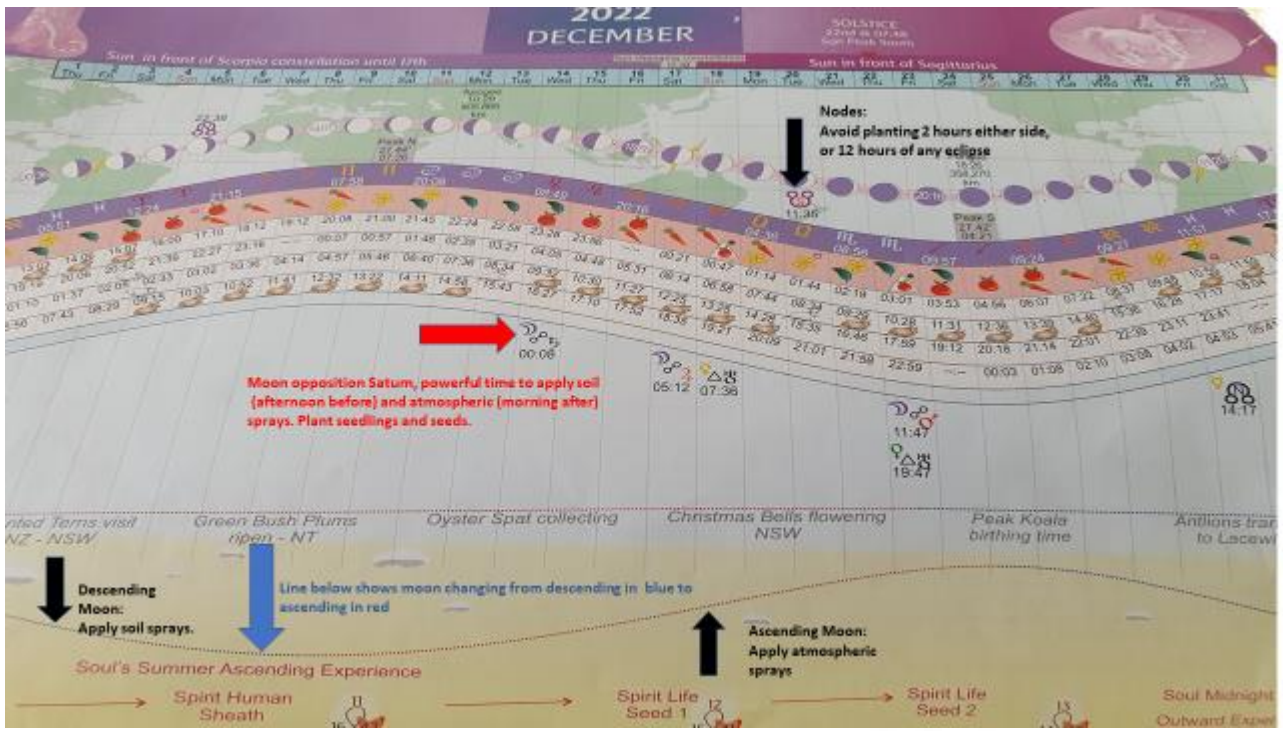
**When the Moon is in an EARTH sign constellation - Taurus, Virgo or Capricorn (orange) it is said to promote root growth (potatoes); in a WATER sign - Cancer, Scorpio and Pisces (blue) – leaves (lettuce); in an AIR sign - Gemini, Libra, Aquarius (yellow) - flower parts and in a FIRE sign - Aries, Leo and Sagittarius (red) - fruit and seeds (pumpkin, eggplant). (Adapted from ‘How to read the Astro Calendar’ by Brian Keats – [www.astro-calendar.com](http://www.astro-calendar.com))**

Experimentation has shown that adherence to these timings does result in significant increases in plant vitality and productivity, however these timings are guidelines only.

**Lunar and Planetary Nodes, Eclipses, Full Moon** Full Moon is regarded as “powerful” and an optimum time to plant seeds. However the “chaotic energy” at the exact time of the Full Moon is not ideal for putting out biodynamic preparations or planting.

Regarding lunar nodes and eclipses, avoid farm and garden activities if possible, especially planting, two hours either side of a lunar node or 12 hours either side of an eclipse.

**Moon Phases – Waxing and Waning** Gardeners can use the ‘waxing’ period from New Moon towards Full Moon for plants that have their main development above the soil surface such as lettuce or tomatoes. The ‘waning’ fortnight prior to New Moon is generally used to plant root crops, composting and for seed bed preparation.





# PRICE LIST AS AT OCT 2023 — Selling price includes GST

		PORTION SIZE	FARM	GARDEN	NON-MEMBER	
<b>Horn Clay – Summer</b>		4g	\$1.35	\$1.85	\$2.75	
		10g/ha	\$2.85	\$4.00	\$6.00	
		100g	\$26.40	\$36.95	\$55.45	
<b>Horn Silica 501</b>		1g	\$4.75	\$6.65	\$9.95	
		2g/ha	\$6.60	\$9.25	\$13.85	
		100g	\$277.20	\$388.10	\$582.15	
<b>Dried Equisetum arvense 508</b>	100g	makes 10 litres concentrate	\$19.80	\$27.75	\$41.60	
<b>Fresh Equisetum Fresh 508</b>		5ml vial – up to 25ha	\$5.95	\$8.35	\$12.50	
<b>Filter Bag</b>		450mm long	\$48.85	\$68.40	\$102.60	
		880mm long	\$73.95	\$103.50	\$155.25	
<b>Spray Nozzle for soil spray Horn Manure 500</b>		5kph	\$72.60	\$101.65	\$152.45	
		8kph	\$72.60	\$101.65	\$152.45	
		12kph	\$72.60	\$101.65	\$152.45	
		15kph	\$72.60	\$101.65	\$152.45	
<b>Spray Nozzle for atmospheric spray Horn Silica 501</b>		Small / Slow	\$63.40	\$88.70	\$133.05	
		Large / Fast	\$63.40	\$88.70	\$133.05	
<b>Yarrow 502</b>	10g	2g per ha	\$33.00	\$46.20	\$69.30	
<b>Chamomile 503</b>	10g	2g per ha	\$33.00	\$46.20	\$69.30	
<b>Nettle 504</b>	10g	2g per ha	\$33.00	\$46.20	\$69.30	
<b>Oakbark 505</b>	10g	2g per ha	\$33.00	\$46.20	\$69.30	
<b>Dandelion 506</b>	10g	2g per ha	\$33.00	\$46.20	\$69.30	
<b>Valerian 507</b>	5ml		\$7.25	\$10.15	\$15.25	
<b>Valerian 507</b>	100ml		\$59.40	\$83.15	\$124.75	
<b>Valerian 507 (when available)</b>	1 litre		\$330.00	\$462.00	\$693.00	
<b>HOME GARDEN KIT</b>	up to 1000 m <sup>2</sup> (¼ acre) – Instructions included. 1 portion each of Soil Activator, Horn Silica (501), Summer Horn Clay, Fresh Equisetum (508), and 1g set of Compost Enhancers		\$49.50	\$69.30	\$104.50	
<b>COMPOST ENHANCER KITS</b>						
<b>Compost Preparations</b>	1g/prep	for up to 3 tonnes or 12m <sup>3</sup> material	\$33.00	\$46.20	\$69.30	
<b>Compost Preparations</b>	2g/prep	for up to 6 tonnes or 24m <sup>3</sup> material	\$59.40	\$83.15	\$124.75	
<b>Compost Preparations</b>	4g/prep	for up to 12 tonnes or 48m <sup>3</sup> material	\$105.60	\$147.85	\$221.75	
<b>Cow Pat Pit Kit (CPP) for making Manure Concentrate</b>						
	plus Eggshell and Basalt Dust, for 1 wheelbarrow of manure		4g/prep	\$112.20	\$157.10	\$235.65
<b>Compost Preparations Bulk set</b>	up to 30 tons or 120m <sup>3</sup> material		10g/prep	\$145.20	\$203.30	\$304.95
<b>RAIN PLUS SEQUENTIAL SPRAY KIT</b> for 1 hectare – Instructions included. Combined Soil Preparation, Soil Activator, Horn Silica (501), Summer Horn Clay, Fresh and Fermented Equisetum (508), Valerian (507)			\$86.45	\$121.05	\$181.60	
<b>LIQUID PRODUCTS</b>						
<b>Liquid Soil Activator (LSA)</b> <i>Recommend using structured water – go to website for details</i>		100 ml	\$9.80	\$12.25	\$18.50	
		1 litre	\$38.50	\$53.90	\$80.85	
		2.5 litres	\$88.00	\$123.20	\$184.80	
		5 litres	\$165.00	\$231.00	\$346.50	
		10 litres	\$313.50	\$438.90	\$658.35	
		20 litres	\$605.00	\$847.00	\$1270.50	
<b>Fish Concentrate</b>		1 litre	\$13.20	\$18.50	\$27.75	
		2.5 litres	\$23.75	\$33.25	\$49.90	
		5 litres	\$46.20	\$64.70	\$97.05	
		20 litres	\$151.80	\$212.55	\$318.80	
		200 litres	\$1188.00	\$1663.20	\$2495.00	
		1000 litres	\$5280.00	\$7392.00	\$11088.00	
<b>Seaweed Concentrate</b>		1 litre	\$13.85	\$19.40	\$29.10	
		2.5 litres	\$30.35	\$42.50	\$63.75	
		5 litres	\$51.50	\$72.10	\$108.10	
		20 litres	\$171.60	\$240.25	\$360.40	
		200 litres	\$1320.00	\$1848.00	\$2772.00	
		1000 litres	\$5940.00	\$8316.00	\$12474.00	

ATMOSPHERIC SPRAYS

EQUIPMENT

INDIVIDUAL PREPARATIONS AND COMPOST ENHANCERS – KITS

SOIL PRODUCTS

## LIQUID PRODUCTS

	PORTION SIZE	FARM	GARDEN	NON-MEMBER
<b>Combined Fish Seaweed Concentrate</b>	1 litre	\$15.18	\$21.25	\$31.90
	2.5 litres	\$33.00	\$46.20	\$69.30
	5 litres	\$52.80	\$73.95	\$110.90
	20 litres	\$178.20	\$249.50	\$374.25
	200 litres	\$1452.00	\$2032.80	\$3049.20
	1000 litres	\$6600.00	\$9240.00	\$13860.00

## MINERALS

<b>Diatomaceous Earth</b>	1kg	\$9.25	\$12.95	\$19.40
	15kg	\$55.00	\$77.00	\$115.50
<b>Palagonite</b>	400g	\$6.60	\$9.25	\$13.85
	5kg	\$13.20	\$18.50	\$27.75
	20kg	\$35.65	\$49.90	\$74.85
<b>Dorrigo Basalt Crusher Dust</b>	5kg	\$13.20	\$18.50	\$27.75
	20kg	\$35.65	\$49.90	\$74.85
<b>Horn Basalt</b>	1g	\$1.75	\$2.45	\$3.70
	2g/ha	\$2.65	\$3.70	\$5.55
	100g	\$92.40	\$129.35	\$194.05

## SOIL PREPARATIONS

<b>Combined Soil Preparation (CSP)</b> Includes Horn Manure (500), Manure Concentrate, Winter Horn Clay, and Fermented Equisetum (508).	100g	\$13.20	\$18.50	\$27.75	
	245g/ha	\$21.15	\$29.60	\$44.35	
	1kg	\$79.20	\$110.90	\$166.35	
	10kg/kg	\$73.95	\$103.50	\$155.25	
<b>Equisetum Fermented 508</b>	5ml vial soil—up to 25ha	\$5.95	\$8.35	\$12.50	
<b>Horn Manure 500</b>	35g	\$5.50	\$7.70	\$11.55	
	85g/ha	\$11.55	\$16.20	\$24.25	
	1kg	\$114.85	\$160.80	\$241.20	
	10kg/kg	\$108.25	\$151.55	\$227.30	
<b>Manure Concentrate Cow Pat Pit (CPP)</b> Includes Composted Cow Manure, Compost Preparations 502-507, Ground Eggshells and Basalt Dust.	60g	\$4.75	\$6.65	\$9.95	
	150g/ha	\$9.90	\$13.85	\$20.80	
	1kg	\$59.40	\$83.15	\$124.75	
	10kg/kg	\$55.45	\$77.60	\$116.45	
<b>Soil Activator</b> Includes Composted Cow Manure, Horn Manure (500), Horn Silica (501), Compost Preparations 502-507, Equisetum (508), Winter Horn Clay, Horn Basalt and basalt dust.	30g	\$5.85	\$8.15	\$12.25	
	75g/ha	\$9.25	\$12.95	\$19.40	
	1kg	\$112.20	\$157.10	\$235.65	
	10kg/kg	\$105.60	\$147.85	\$221.75	
<b>Horn Clay – Winter</b>	4g	\$1.35	\$1.85	\$2.80	
	10g/ha	\$2.85	\$4.05	\$6.05	
	100g	\$26.40	\$36.95	\$55.45	
<b>Vine and Tree Tonic</b>	Contains Horn Manure and Equisetum. Comes with instructions	90g (one size)	\$26.40	\$37.02	\$55.45
<b>Vine, Tree and Shrub Paste</b>		1.2 kg	\$11.90	\$16.65	\$24.95
		5 kg	\$39.60	\$55.45	\$83.15
		10 kg	\$66.00	\$92.40	\$138.60
		20 kg	\$105.60	\$147.85	\$221.75

## AND MORE

<b>Astro Calendar</b>	Price varies each year — see website			
<b>Biodynamic Handbook</b> (comes with Membership Kit)	each	\$16.50	\$16.50	\$16.50
<b>News Leaf Journal</b>	year	\$48.40	\$48.40	\$48.40
<b>Garden Membership Subscription</b> <i>NEW \$15.00 sign-up free</i>	year		\$65.00	
<b>Farm Membership Subscription</b> <i>NEW \$15.00 sign-up free</i>	year	\$130.00		

All prices include GST. Please arrange credit card payment at time of ordering.

Order online: [www.biodynamics.net.au](http://www.biodynamics.net.au) OR phone (02) 6655 0566

Orders are despatched within three working days.

Shipped via: Australia Post or courier.

*Disclaimer: no preparations or products made and supplied by Biodynamic Agriculture Australia involve the use of radionics or field broadcasters.*