



# BIODYNAMICS GUIDE

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# What is Biodynamics?

Biodynamics is rooted in the work of philosopher and scientist Dr. Rudolf Steiner, whose 1924 lectures to farmers opened a new way to integrate scientific understanding with a recognition of spirit in nature. Biodynamics has continued to develop and evolve since the 1920s around the world. Biodynamic practices are alive in thousands of thriving gardens, farms, vineyards, ranches, and orchards. The principles and practices of biodynamics can be applied anywhere food is grown, with thoughtful adaptation to scale, landscape, climate, and culture.



## Biodynamic Compost Pile

Biodynamic (BD) Compost builds and sustains humus content, microbiological life and earthworm activity. You can still build a great compost pile following these guidelines without the adding the BD preparations.



There are two main stages in the six month process:

- 1.** Heating and breakdown (should heat to 60 to 65C)
- 2.** Biological breakdown (via microbial activity, fungi and worms etc)

# The main components

- Carbon ~ 80% and Nitrogen ~20% plus moisture plus air
- Carbon (brown) ingredients which can include: Hay, Cane Mulch, bark, wood chips, dry leaves, cardboard.
- Nitrogen (green) which can include: Manure, green plant materials (lawn clippings, weeds, green leaves, banana trees, kitchen scraps), seaweed, blood and bone, fish frames etc.
- BD piles are built in layers of carbon and nitrogen ingredients

## MAIN INGREDIENTS TO ASSEMBLE:

**Water** - You'll want the pile to be quite wet and be able to squeeze a few drops of water out of a fistful of materials when finished. So wet things down or build on a rainy day.

**The base** - sticks or poles to provide an aerated base to build upon. (You will need to pull these out after 6 to 8 weeks to turn the pile, so think about this when you start building)

**Carbon materials** - add a layer to the base

**Nitrogen** - manure, greens etc - add a layer to the carbon

**Calcium** - Egg Shells and or Lime - sprinkle over the nitrogen layer.

**Crusher Dust / Rock Minerals** - sprinkle over the calcium.

Repeat the layering process working materials around the outside to form a long "M" shape to your pile. If you do a  $\Delta$  shape, your materials will just roll off the side. Build the pile at least 1.5 metres high if possible.

**Biodynamic Preparations** (not essential) - Once Complete, add the preparations into the pile and stir the valerian for at least 20 mins and sprinkle over the top. Like you're blessing your pile!





**OTHER NON-ESSENTIAL  
INGREDIENTS YOU COULD  
ADD:**

**Keratin** - One of the main components of cow horns but can also be found in hair, wool etc

**Charcoal / Bio Char** - Provides "apartment blocks" for your microbes to thrive.

**Stinging Nettle** - One of the BD Preps, makes a wonderful tea and is a huge nitrogen and balancing source for your pile.

**Comfrey** - Puts down big tap roots to pull up minerals

**Compost activator** - Free and easy to make biological stimulant - see SPICE fact sheet

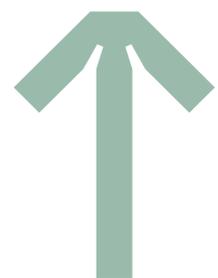
**Air Plants** - such as old man's beard - are wonderful mineral accumulators from the atmosphere.

**Older Compost or Soil** - There are more microbes in a teaspoon of healthy soil than people on earth. Grab a couple of shovels of previous compost piles or fertile soil to sprinkle over your layers in your new pile.

**Clay** - If you're on sandy soils, clay helps hold the minerals closer to the surface for your plants. We use bentonite clay for our kitty litter (for the cat not us!) and this clay goes into our composting systems.

**Weeds** - They perform a service for your garden bringing different minerals and influences to your garden.

# COMPOSTING GUIDE - THE BASICS



# What if I'm building a big farm pile more than 20 cubic metres in size?

Biodynamic Soil Activator has influences of all the BD preps in it and I use this to spray over the manure layers as we build big piles on farms. The more diversity in your pile, the better – get creative!

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## Maintaining your pile

After building your pile - Cover the pile with an old tarp or a good covering of hay or straw to keep the moisture in and or the rain out.

In the first 6 to 8 weeks - Check that it's hot (~60C) and moist. Get a gauge or just use your hand. Remember it needs some air and moisture. It needs to burn those weed seeds off.

Turn the pile after 6 to 8 weeks - It will aerate the pile and should help with the thermal breakdown. You may start to see some critters and worms starting to work into the pile after the first two months. It will typically breakdown faster through summer.

Watch out for hungry tree roots - My fertility centre is surrounded by massive trees. You'll tend to see the pile shrink in size dramatically when it's close to complete as the roots get in.

After 4 to 5 months, I transfer my worm packed compost to bathtubs to turn them into a compost storage / worm farm for the last period of curing.

I collect the worm juice as a bonus.



# THE MAIN BIODYNAMIC PREPARATIONS

"Life draws organisation to itself and builds more life. Biodynamic preparations are specially made so to be so rich in life that they draw life into wherever they are applied. We can stir up such tiny doses of preparation in water and sprinkle them over large areas and thereby bring these areas to life is because life energy flows from the lowest concentration to higher concentrations. When we spray an area and enrich its vitality, more life energy, more organisation, flows to the area sprayed. The more we spray preparations and boost the life energy in an area, the more strongly it draws organisation from the surrounding universe."

- Hugh Lovel (2014)

## Two main spray preparations:

**Cow Horn Manure BD500** - Used to bring energy and balance to our soils  
Cow manure placed in cow horns and buried over winter for six months.

**Cow Horn Silica BD501** - Used as an atmospheric spray to harness light forces and balance to our plants. Crushed silica powder buried in cow horns over summer.

## Herbal Preparations:

**Yarrow BD502** - Yarrow flowers placed in a stag's bladder. Stimulates the potassium, silica and selenium activating bacteria and helps combine sulphur with other substances. Remedies weaknesses in flowering and fruiting and strengthens the plant against insect attack.



**Chamomile BD503** - Placed in the small intestines of the cow. Helps retain nitrogen, calcium and sulphur. Also stimulates manganese and boron, as well as azotobacter activity - the best bacteria for making nitrogen in the soil.

**Stinging Nettle BD504** - Buried without an animal sheath. Conveys intelligence to the soil, helps proper decomposition, aids chlorophyll formation and stimulates iron, potassium, calcium, magnesium and sulphur bacteria activity in the soil. In flowering and fruiting and strengthens the plant against insect attack.

**Oak Bark BD505** - Placed in a cow skull and in water over winter. Helps restore balance when water activity is working too strongly, after lots of rain or at full moon. It also helps protect against fungal diseases. Helps calcium and phosphorus work into the earth in a living form.

**Dandelion BD506** - Placed in a cow's mesentery. Stimulates the potassium /silica activating bacteria and fungi in the soil to enable them to work more effectively. Silica makes the plants more inwardly sensitive. Can help increase flowering and filling of fruit out to tips. Stimulates the magnesium, boron and selenium soil activity.

**Valerian BD507** - A tincture made of valerian flowers. Stimulates the phosphorus process and mobilises the phosphorus activating bacteria in the soil, as well as selenium and magnesium. Prevents the flowering process becoming excessive. Forms a warmth blanket around a compost heap.

**Also.....**

**Equisetum / Casuarina BD508** - Fresh casuarina works with the water balance in the atmosphere as a fresh tea and is used to prevent and stop fungal growth, sooty mould and tightens plants against becoming soft and open to mildew infection.

# MAKING WEED TEAS

This one is for bindi's but use any weed you want to reduce in your garden or farm.

Walking around your yard in bare feet is one of life's great pleasures...often destroyed by bindis!

Microbes from the soil make you happy, scientists have discovered. I've heard it from an aboriginal elder that stamping your bare feet on the ground first thing in the morning makes you happy too. So like a lot of things, first nations people knew this stuff already. So what to do with bindis?

Weeds are there to deliver a service to the soil. Dumping poisons on them degrades your soil.

If you spray weeds with roundup, the weeds just pop back up and you just have to keep spraying!





1. Spend a lazy arvo digging up half a bucket of weeds. (Works well with a cold beer in hand)
2. Fill the bucket up with clean water and add.....
  - a) a good handful of bd soil activator or...
  - b) a set of biodynamic preps or...
  - c) nothing (the BD elements will just help balance and energise your tea)
3. Stir once or twice a week for six weeks.
4. Keep it covered with cloth to keep the mossies from breeding.
5. After 6 weeks strain off the weedy bits and then pour the clear liquid into a container.
6. Apply the tea at around 40 to 1 with water to the areas where the weeds are rampaging. - You can also add a litre or two of the weed tea for the last 15 minutes of your BD Soil Activator stir.

You can make a general weed tea with multiple weeds included. It just won't have the potency that a targeted brew will. It will still be beneficial for your soil.

### **Why do it?**

Well it's better for all living things than poisons.

So look after your soils while you look after your feet.

# BIODYNAMIC SOIL ACTIVATOR

First created by Maria Thun due to the shortage of cow horns.

This mix takes the power of BD500 Cow Horn Manure Prep and Combines it with the CPP (Cow Pat PIT) composted manure which has the forces of the BD herbal preparations within. This makes a fantastic BD "tonic" which contains a large majority of the BD elements and links to the cosmic forces around us.

It's Soil and plant tonic which aids fertility, stimulates bacteria and fungi that brings trace elements into the soil. Repairs badly contaminated or degraded soils.

Recommended as initial Biodynamic soil spray when starting biodynamics.

## To make Soil Activator:

- Make a Cow Pat Pit - add a large set of BD preps
- Bury Cow Horns over winter
- Bury Cow Horn Clay over winter
- Make sure the site stays moist and dig it up 4 to 6 months later (sub-tropics will compost faster)
- Combine CPP 1kg with composted 125g of cow horn manure and 125g of cow horn clay
- It's about an 8 to 1 ratio CPP to horn manure and cow horn clay



## Application:

- Later afternoon (3pm onwards) as the Earth is cooling down and breathing in.
- Preferably 2 days before Moon opposition Saturn or when Moon is descending.
- Stir for one hour at 220g in 30litres of clean water per hectare.
- Spray out in large rain droplets, just a couple of drops per square metre will do.

**Note:** I'd recommend just using a 20 litre bucket with 10 litres of water and 70 grams of soil activator to start with. Put it out 3 times over 3 months around your garden / house trees etc. That amount will easily do ¼ to ½ an acre. Remember it's not fertiliser, it's an energiser and a few drops goes a long way!

## Storage:

- In a clay pot in a cool dark place.
- Check every couple of months and add water to keep it moist.

# Biodynamic Tree Paste



Tree paste works to heal pruning and grafting wounds on trees and rejuvenate old or neglected trees. It works to nourish trees by protecting bark and the cambium layer under the bark.

Rudolf Steiner talked about trees saying, "the trunk of a tree can be likened to an elongated mound of Earth, upon which plants (leaves) grow."

So, you can look at tree paste on the branches as a slow-release biodynamic (soil / compost) treatment for the tree.

## There's three ways you can apply the paste:

1. A thick paste - for applying to tree trunks to promote healthy growth
2. A thick paste - to apply to pruning cuts and scars
3. A thin sprayable slurry - used in larger orchards and vineyards etc.

## There are three main ingredients and approximate ratios:

1. 4 parts Cow Manure - Preferably clean lactating cow poo (a couple of days old to let some nitrogen burn off)
2. 3 parts Clay - preferably potter's (kaolin) clay (or bentonite clay will do).
3. 2 parts Diatomaceous Earth or Silica Sand - Silica influence - fossilised plankton / algae with a hard silica shell.

## You could also add some:

Biochar or fine basalt / crusher dust to the mix.

## To make the paste:

Mix the components together in a bucket or barrel. If you've got a drill and paint mixer attachment, that will make it much easier.

## Liquids (one or more) to use in the mix:

- Casuarina tea (silica anti fungal influence)
- Stirred soil activator / cow horn manure liquid
- Nettle or other fermented tea such as comfrey or weeds
- Whey or whole milk
- If you don't have any of the above, just use clean water.

## Application:

The paste can be applied preferably through winter but can be used at any time of year. Applying it when you are pruning your trees is a logical time to do it.

- If your trees have any lichen or moss, give the bark a good scrub with a stiff brush.
- Use an old paint brush or better still, use your hands to apply the paste.
- If you're doing orchards or vineyards, you'll need to dilute the mix so it can be sprayed on to the main trunks and branches.



# BIOCHAR

Biochar's porous structure stores nutrients, water, beneficial microbes developing in your soil from biodynamic practices. It's like providing apartment blocks for microbes to live in. It can also absorb heavy metals and other contaminants thereby reducing uptake by plants.

Mycorrhizal fungi also loves the porous structure of biochar which helps the population of microbes and fungi to multiply.

## Benefits of Biochar:

- **Improves soil structure:** Biochar helps to increase soil aeration and water retention.
- **Boosts nutrient retention:** It holds onto nutrients and prevents them from leaching out of the soil.
- **Enhances microbial activity:** Biochar creates a habitat for beneficial soil organisms.
- **Reduces greenhouse gases:** Biochar sequesters carbon, keeping it out of the atmosphere for long periods.

By making biochar in an open fire, you are using an ancient and sustainable method to improve soil health and fertility in a cost-effective way.

## The Process:

It is simply the process of burning fuel in a low oxygen environment, a process called pyrolysis. In general terms, you want a consistent, fast burn which is extinguished before the charcoal turns to ash.

## Materials Needed:

- Dry biomass: Wood, agricultural waste, coconut shells, or any other dry organic material.
- A pit: You can dig a pit in the ground, or use a metal barrel with holes.
- Shovel: To manage the fire and move the materials around.
- Water: For extinguishing the biochar once the process is complete.
- Protective gear: Gloves, a mask, and goggles for safety.

# Steps to Make Biochar in an Open Fire

## 1. Prepare the Pit or Barrel

- Pit Method: Dig a pit about 2-3 feet deep and 3-4 feet wide. The depth helps control oxygen flow.
- Barrel Method: Use a metal barrel with holes near the bottom to allow for some airflow. You can also cut off the top of the barrel.

## 2. Gather Biomass

- Collect dry, carbon-rich materials like wood scraps, branches, or agricultural waste (e.g., corn stalks, leaves, rice husks).

## 3. Start the Fire

- Light a small fire at the bottom of your pit or barrel with dry twigs or kindling. Allow it to burn well and establish a hot base.

## 4. Add Biomass in Layers

- Once the fire is burning steadily, add your biomass gradually in layers. Start by placing the larger, thicker pieces of wood or material at the bottom, then smaller pieces as you go.
- You want the material to char rather than burn completely. This is the pyrolysis process, where the biomass turns into charcoal in the absence of oxygen.
- Do not allow full flames to burn the material to ash. Control the fire by limiting the oxygen flow—this is crucial for producing good biochar. If you see too much flaming, reduce oxygen by covering part of the fire with soil or reducing airflow.

## 5. Monitor the Pyrolysis Process

- Keep an eye on the fire, ensuring that the biomass is charring rather than fully burning. You'll notice the color change as the biomass turns black and the smoke becomes less dense (grayish rather than white or yellow).
- The key is to maintain a balance where the fire stays hot but doesn't consume the biomass completely.

## 6. Quench the Fire

- Once the biomass has mostly charred and turned black, it's time to stop the process.
- Extinguish the fire by quenching it with water. Use enough water to fully douse the fire, ensuring no embers are left. Alternatively, you can cover the pit with soil to cut off the oxygen supply.
- Stir the biochar gently with a shovel to ensure all parts are completely extinguished.

## 7. Crush the Biochar (Optional)

- Once cooled, break up the large pieces of biochar into smaller fragments. You can use a hammer or other tools to crush it into smaller particles. This makes it easier to mix into soil.

## 8. Charge the Biochar - This is extremely important!

- Biochar can absorb nutrients from the soil very effectively. If you add it directly to the soil near your plants, your plants may lose access to nutrients, so you want to “fill the fridges in the apartment blocks for the microbes to eat before spreading it out.
- Pre-soak it in compost tea, stirred BD soil activator, worm juice, urine, or another nutrient-rich liquid before applying it to your soil. This prevents the biochar from pulling nutrients away from plants when first applied.

## Tips for Success:

- Control oxygen levels: A key to making good biochar is minimizing oxygen flow, which can be achieved by covering the fire with soil or restricting airflow while still allowing it to smolder.
- Use wood of a consistent size: To get an even burn rate, try and use materials that will burn at the same rate.



# HORN SILICA

## - BD501 - Atmospheric Spray - Harnessing Light Forces

BD501 enhances plant growth and vitality, improves resilience to environmental stresses, and synchronises the plant's development with natural rhythms.

### **Application:**

1 gram / 13 litres of water / 1 acre is stirred for an hour at first light.

It should be applied as a fine atmospheric mist (rather than big droplets used for BD500).

It should be applied before the sunlight becomes too strong (usually before 9am)

## Benefits include

### **1. Enhanced Photosynthesis**

Helps plants absorb light more efficiently, stimulating and enhancing the photosynthesis process. This leads to improved plant vitality and stronger growth.

### **2. Stronger Plant Structure**

The silica in BD501 strengthens cell walls, making plants more robust and resilient to stresses such as wind, drought, and extreme temperatures.

### **3. Improved Light and Heat Utilization**

Applied as a fine mist on plant leaves and helps plants utilize light and heat better, particularly during the peak growing seasons. This leads to better development and productivity, especially in crops like fruits and vegetables.



### **4. Enhanced Flowering and Fruiting**

BD501 is often applied during the fruiting and flowering stages. It enhances the formation of flowers and fruits, leading to improved quality, yield, and flavour.

### **5. Improved Plant Immunity**

By strengthening the plant's structure and vital processes, BD501 increases the plant's natural defenses against pests and diseases.

# Production:

Very finely ground crystalline quartz ( $\text{SiO}_2$ ) is required for the production of the horn silica preparation. For this purpose, rock crystal or pure quartz rocks can be used.

The crystals should not contain other minerals. For the production of the horn silica preparation undamaged and well-formed cow horns are also required.

Horns used for the silica preparation should either be new or be used for this purpose only.

To obtain very finely ground quartz powder several steps are necessary. Large pieces of quartz must be crushed with a heavy hammer until they are small enough to be crushed in a solid iron mortar; some use a fence post rammer.

Fragments of quartz can be extremely sharp: wear protective goggles. Because of the fine dust produced during grinding, it is recommended to wear a protective mask.

The mortar can be covered with a piece of cotton cloth. When crushing in an iron mortar, fine metal abrasion can occur. To obtain a pure product, iron particles can be removed with a strong magnet. After grinding, the crushed quartz pieces are sieved. The coarse material is further crushed, and the finer material is crushed into a flour-like consistency. Traditional millstones, granite slabs or glass plates (8 mm or more) can be used for this process. The quartz must be ground into a flour so fine that it can be sifted through a tightly woven cotton cloth. To check the degree of fineness, the powder can be tested between the teeth; if it crunches, it is not yet fine enough.



## FILLING THE HORNS

The quartz flour is mixed with clean water to form a thick paste and filled into the cow horns. The horns should be placed vertically. Cavities should be avoided.

Some farmers pour a rather runny silica into the horns, while others prefer to fill a solid paste with the help of spoons into the horns. After filling, any excess water will rise to the top.

Depending on the consistency of the paste, this can take a few hours or one or two days. Excess water must be poured off and the horns topped up with quartz paste. Before burying, the paste should be of a solid consistency.

## BURYING THE HORNS

In the southern hemisphere, the horns remain in the soil from September-October to March-April. The freshly filled horns are placed in the pit with the opening facing down. Some farmers seal the horns with clay. Each horn must be surrounded by soil.

## EXCAVATING THE HORNS

After about six months the horns can be dug out. The horns need to be cleaned from the outside. Any fungi or soil should be scraped away from the mouth of the horn to avoid contaminating the prep when the horns are emptied. By gently tapping the horns on a stone the contents can usually be easily removed from the horns. Depending on the size of the horns, an average of 150 - 250 g of horn silica can be expected; from a single large horn even up to 600 - 700 grams.

## STORAGE

The silica preparation can be filled into a clean, transparent glass jar and stored in a bright place that catches the morning sun. Alternatively, it is possible to leave the preparation in the horns until the silica preparation is used. The horns should be placed in a light and sunny position. The silica preparation should never be stored in the dark. As long as the preparation remains dry it can be used for many years.

# WANT TO KNOW MORE?

## Watch:

- One Man, One Cow, One Planet - Peter Proctor (NZ) and his journey helping farmers in India. - <https://krishnatube.com/video/859/one-man-one-cow-one-planet-save-the-world-with-peter-proctor/>
- Kiss the Ground - Not about BD as such but a great film about caring for our soils, ourselves and our planet. <https://www.netflix.com/title/81321999>
- Campfire Stories - Into the Soil: Some beautiful short films on this site including BD, Soil, Gardening and Farming <https://campfire-stories.org/into-the-soil/>
- The Biggest Little Farm - A great documentary about a young couple new to the game of farming, trying to do their best - <https://www.imdb.com/title/tt8969332/>
- Gerry Gillespie's ZWIT / SPICE Lactobcillus serum compost accelerator: just google "gerry gillespie zwit inoculant" <https://youtu.be/Sh-GZTKlrH8>

## Read:

- Berkeley Compost Method - Fast compost and some good composting guidelines <https://deepgreenpermaculture.com/2010/05/08/hot-compost-composting-in-18-days/>
- The Call of the Reed Warbler - Charles Massey OAM: The book that changed my life! Charlie's book is a beautiful read and a book of hope about how we can regenerate our land.
- Dark Emu: Bruce Pascoe's book shine's a light on the "farming" practices of our first nation's people. They farmed differently to us but in a way that was in tune with our landscape.
- The Song of Increase: Jacqueline Freeman talks and listens to her bees tell the story of their life. Disengage your frontal lobe and scepticism to enjoy this book about the life of bees.
- Biodynamics Australia: Sign up to their Newsletter and become a member for discounts on BD supplies. Quarterly members magazine and a free BD members handbook that is a great guide to BD practices <https://biodynamics.net.au/>
- Research on BD methods: 21 year old field trial on Conventional / Organic / BD farming - <https://www.biodynamics.com/category/research-127>
- Others worth chasing up, Gabe Brown, Joel Salatin, Nicole Masters, Alan Savory.

## Learn:

- Hamish Mackay and Charlie Arnott 2 day introduction to Biodynamics: Where Bridget and I started 5 years ago. Great hands on learning and an ongoing community of practice with monthly meetings. Charlie has some great podcasts too. Checkout next dates and locations via <https://charliearnott.com.au/events/> You can order supplies from Hamish via <https://biodynamics2024.com.au/contact-us/>
- Steiner Archives and Books etc: Steiner gave 5 to 6 thousand lectures in his lifetime including health, to education, community, spirituality, the arts and agriculture. <https://rsarchive.org/> and <http://rudolfsteineraudio.com/>
- Brownie's Biodynamics: Just drop me a message or give me a call, I'm more than happy to help.





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