

The Principles of Bio-Dynamics®

Wayne Brock

162 Chittering Street, Muchea 6501

Email: wayne.brock@hotmail.com

INTRODUCTION

The principles of bio-dynamics were first proposed by Rudolph Steiner in the early 1920s. Steiner is also well known for his philosophy on education — Steiner Schools.

He proposed that soil structure could be improved by placing green cow manure in a cow horn and burying it for a time. This burial takes place between April 21 and June 21 each year. In Western Australia approximately 150,000 cow horns are buried each year. The horns are filled manually with fresh green cow manure collected from the paddock where the cows have been bedded for the night. Each horn is filled to the brim with manure and carefully placed in a well drained pit. The horns do not touch each other and are positioned so that if any moisture were to seep through the ground it passes over the horn and doesn't flow into it. The shape of the horn is such that the opening naturally slopes down. The horns are lifted in September/October. What happens during this time is amazing. The green sloppy cow manure undergoes a complete metamorphosis.

This is stored in a wooden bin encased in moss to insulate it. It should keep for a couple of years providing the location is cool and occasionally may need a sprinkling of rain water over the top of the 500. We then utilise 1.5 oz of 500 mixed in 3.5 gal of water and this is sprayed over 1 acre. The way that it is mixed was also proposed by Steiner. The mixing vessel is cylindrical with a concave bottom and a paddle driven by electricity is rotated with a rounded shoulder. When this is achieved the paddle is reversed creating a chaos and the action is repeated again and again for 1 h. The 500 must be sprayed onto the pasture within 1 h of having been mixed. It is sprayed at a time when there is moisture in the soil and if a pasture like clover, rye grass, legumes, etc. have germinated but soil can still be seen between the plants. We utilise a diaphragm pump at 8 psi to pump the 500 onto the pasture as it is far gentler than a centrifugal pump. The 500 solution is alive contains up to 75% by volume of beneficial bacteria and is known as a concentrated bacterial interforce.

We also believe bio-dynamic compost complements the 500 spray. The compost heap is made on the ground with five bio-dynamic preparations inserted into the heap. The preparations are amazing in the way that they get the heap composting.

The compost is also sparingly spread over the pasture. I must say that before we put out the 500 we deep ripped the entire property in the summer to a depth of 0.6 metres to break up any hard pan caused through years of conventional farming practices. On our property, by putting out a 500 spray each summer/autumn together with compost application the soil structure has changed markedly.

Soil structure is important because we want the roots to go down to access the minerals and nutrients that are already down there. These roots also help the plant to drought proof itself. We also promote minimal tillage and encourage the worms to do our tilling. That gives you a small understanding of bio-dynamics and some of its principles.

NOW WHEN DID WE GET INTO BIO-DYNAMICS?

In a previous life I was a bank manager for some 37 years. I was stationed in a South West country town and loved working on farms on a weekend. It was when I discovered just how much fruit and vegetables were grown utilising Dieldrin as a pesticide. The cattle ate the grass grown on these properties after a vegetable crop and also ingested the Dieldrin. We eat the fruit, vegetables, and meat, and we take up the pesticides. This particular town, I was told, had the highest number of birth defects in Western Australia. Was it due to their farming practices? I believed so, and my wife and I decided to only eat what we could grow in future as we had three small children at the time.

We purchased 6.5 acres in Swan View and established a bio-dynamic commercial orchard growing some 46 types of fruit as well as our own vegetables and ran six cows and a couple of pigs and our own chooks. I had the head of the local Department of Agriculture Research Station visit me every year, and when he left he told me that they should be following the principles I was utilising as I was growing fruit that they themselves couldn't get to fruit in their Carnarvon Research Station. Bio-dynamics really works.

When I retired from the bank we concentrated on our Muchea property although all the hard work such as power, irrigation, etc. had been completed or so I thought. Muchea some 20,000 years ago was under water and where we live was an inlet with sand dunes to our east. The land is very flat and when we purchased it, it was pure beach sand. No body and no structure but we have plenty of ground water beneath. You cannot dig a hole 1 m in summer without it filling up with water. Great for the vegetables in summer but no good if you want to put in foundations for a shed or a composting toilet etc. One of our major problems is in winter when the ground water rises and this causes a separate set of issues for the vegetables. We have had to shift our main growing area twice. We now mainly grow brassicas during winter as they can withstand waterlogging for a few days. We have heaps of frogs which just prior to rain sound brilliant but with frogs we have snakes. Mainly tiger and dugites and it is not fun picking zucchini in summer and constantly coming across a tiger snake in the bush or wrapped around the lettuce.

We did grow bush beans at one stage but the tiger snakes loved settling in the plants and we had a number of scares and near misses, so we no longer grow bush beans. Another pest was the 28 parrots stripping our plums, apples, apricots, etc. so we trained our cattle dog to flush them out or tell us we had them in the orchard. We eventually netted the orchard with a 6-m high structure. We no longer have a bird problem and harvest all of our fruit. Crows and kangaroos eat melons as do foxes. Again, our dog now keeps the majority at bay.

Ideally we should spray our vegetables with 500 every time we construct a new planting but this is not always practical. It took us 4 years to get Muchea certified and you would not recognise the property. Our pasture is greener than our neighbours earlier and holds on for at least 1 month longer in summer. The soil colour has changed from beach white sand to grey and even rich black. The garden is the most noticeable. The soil has structure to a depth of 0.75 metres and is rich black. The reason being that it has had a lot more applications of 500 as well as our own compost. We utilise a lot of green manuring in the garden and even compost with lucerne which we grow on the property. Once a crop has been harvested it is also turned back into the ground. We also use a natural mineral mix from Western

Minerals that contains all the trace elements but no phosphate. During the past 14 years we have put out 1 ton application of rock phosphate over the entire property.

Over the summer months we collect our own cow manure for our compost heap. We also keep a few pigs to take care of any seconds fruits and vegetables and in turn utilise their manure in our compost. The pigs have their own septic system and everything is pumped back into the compost heap. Thankfully we do not have any problems with mildew, black spot, blossom end rot, etc. As I mentioned earlier our biggest problem is snakes.

We are very conscious and aware that we are exporting our minerals out through the front gate and this is why we rely so heavily on our stock to provide the base essentials for our compost. We have numerous requests and enquiries for our manure but all are turned down. Bio-dynamics works and you can physically see the difference in the soil structure and the plants. We do get a great number of enquiries and have two converts who are also both in conversion in Muchea growing commercial bio-dynamic vegetables.

Why do we do it? Sometimes I ask myself that very question. At first the ridicule was pretty heavy particularly when you are a bank manager talking and meeting with conventional farmers and market gardeners. But now people are starting to realize that conventional methods are not working and there has to be an alternative. Sure you don't grow as much as a conventional grower but you grow quality that you can see and taste. The shelf life of bio-dynamic produce is much longer. I say to all my customers who purchase our lettuce that I will put in writing that my lettuces will last at least 2 weeks in the fridge and look just as good as the day they put it in. We don't encourage it though as we should all eat fresh seasonal food.

Bio-dynamics is a way of life in which you are always striving for perfection. Because it is very labour intensive you cannot afford to waste time and when you do something you do it right the first time without having to repeat the process. We try to work smarter. The way we farm now is totally different to the way in which we started.

One example of this is that we now grow vegetables such as carrots, coriander, radish, parsnips, kohlrabi, horseradish, onions and Mediterranean varieties of garlic in raised beds. These beds are 50 m long, 1.8 m wide and 0.9 m high with a concrete path around each bed. These beds are made of concrete 10 cm thick. The bottom is open to the natural ground level. This method, although expensive to set up, saves a great deal of bending when planting, weeding, and harvesting. My knees are totally shot working in the garden 10–12 h per day, but with these types of vegetables it is very rewarding as my last job of the day is to stand there and weed without any discomfort. We have had to invent new ways of dispensing the 500, but now have this covered and it is working very well. It is our plan to increase the number of beds and in turn be in a position to still grow our own vegetables for the household when we finally retire from the garden.

The knowledge we have gained over the past 25 years cannot be dispensed in 20 min at a session such as this. For anyone starting out I would say to them that you need commitment. Water is vital to any farming venture so choose your location wisely. Don't be so concerned about the soil as you can make and improve any soil utilizing bio-dynamic principles. Do make sure, however, that the soil isn't contaminated with nasty pesticides or chemicals. The first thing to do is to deep rip the property to the greatest depth possible in summer with the rip marks being no greater than 2 metres apart.

Utilize minimum tillage on your property as much as possible. Do not use a rotary hoe in heavy or clay soils as you will polish the bottom and not allow water to flow down and encourage deep rooting by your plants. Do not be in a hurry to put in fence lines. Talk to the previous owners and neighbours about floods, droughts, prevailing winds, etc. Do fence water courses. Select what you intend growing very carefully. Perhaps plant a trial plot of a number of vegetables to ascertain what grows best. Contact the Bio-dynamic Research Institute in Powell Town, Victoria, to put you in touch with your closest mentor. Learn from experience and don't make additional work for yourself. Once you have a satisfactory product seek out your market.

Farmers markets are excellent as each customer has the ability to give you feedback. Actively seek this communication and adjust accordingly. Stay focused and you will reap your rewards.