

Deep Ecology in the South African Wine Industry: The Biodynamic Approach and its Ethical and Practical Implications.

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1. Introduction

We shall have to shift from this dualistic belief that people and their environment are separate, toward a new consciousness of an all-encompassing reality... in which people feel their oneness with animate nature and all of creation.

Hoffman

Biodynamic Agriculture, hereafter referred to as Biodynamics (BD), is an approach to sustainable agriculture that is based on the philosophy of Rudolph Steiner as enumerated in a series of 8 lectures given to farmers in Europe at the start of the 20th century. Steiner built up his knowledge from keen observation of plant and animal forms, of traditional peasant practice, and from scientific study and deep spiritual research.

Biodynamic farmers use a range of specially formulated herbal, mineral and organic preparations to enhance the soil, boost plant and animal life and increase fertility. They develop farms into unique and distinct individualities that use the minimum of external inputs to produce high quality food, fibre and timber with no negative impact on the environment. The farmers work with natural and cosmic cycles, rhythms and forces that regulate all life on earth to create a harmonious whole.

On the wine farm this translates into organic status as a starting point. In addition the use of the BD preparations (500-508) are essential and vineyard practices must be in accordance with the ebb and flow of natural and cosmic rhythms and cycles. Monoculture is not allowed and as diverse system of plant and animal husbandry, as is suitable for the farm, should be in place.

In the wine cellar the basic organic principles are shared. In addition no artificial yeast cultures are allowed and all wines should be fermented with the natural wild yeasts growing on the grapes themselves. Wines should not be 'made' and the use of enzymes, protein- and cold stabilizations should be avoided. Specific cellar practices such as harvesting grapes or racking wine should be done in accordance with the natural and cosmic rhythms. The aim is to produce, with as little intervention as possible, wines that accurately portray the uniqueness of their vineyard and of the season.

2. Ethics

When the soil, the air, and the water have been extensively poisoned, human needs cannot be fulfilled. Strangely, this situation is the consequence of a human-centered norm of reality and value. Berry

For the purpose of this paper I have identified three broad paradigms that are used to understand man's relationship with the natural environment. Each of these views presents their own set of moral dilemmas and ethical issues. I have chosen to refer to these ecological paradigms or models as superficial, shallow and deep respectively. These adjectives (superficial, shallow and deep) are not used in a pejorative sense, but merely indicate the perception of how deep we see ourselves as emerged within the natural world.

Superficial ecology holds the anthropocentric view that man and nature are separate entities and that nature is there solely for the use of man. We can therefore use nature in whichever fashion we choose in order to satisfy our needs.

Shallow ecology shares the view that although man and nature are separate entities, man is not only entitled to, but is also reliant on the natural world for his wellbeing. Interaction between man and nature is still there for the benefit of man, but with the added realization that this is tied up with the issue of sustainability.

Deep ecology harbors the eco-centric view that man is a part of nature and that any interaction should be done in respect of this realization. Actions undertaken should therefore not merely benefit man (not even if it's in a sustainable way), but also benefit nature as a whole. In striving for this ideal, the narrow, materialistic view of our times should be replaced with a wider, more holistic view of reality.

Ethics is based on our perception of reality. Here nature must be the basic reference of what is real and what is worthwhile for man. In such a view nature cannot be reduced to fundamental entities, or fundamental building blocks of matter. The material universe is seen as a dynamic web of interrelated events and things exist by view of their mutually consistent relationships.

3. Practice.

Soils and farms are biological entities, not factories.
Podolinsky.

Modern agriculture is based on an approach where the scientific application of chemicals is seen as the solution to maintain high levels of crop production, to control the accompanying diseases, and attempt to stay one step ahead of the increasing resistance that pests, diseases and weeds are showing.

Organic farming is based on the assumption that a healthy soil is a better way through which the above ideals can be sustained. Pests and disease are seen as a sign of imbalance in nature, and an effort must be made to remedy the cause rather than treat the symptoms.

Biodynamic agriculture shares the organic view, and holds the assumption that farmers can further enhance the resistance and resilience of their crops and fields by reinforcing their built in defenses against pests and plagues.

Here a holistic approach is key, and the more diverse the plants, animals and soil-borne organisms that inhabit a farming system, the more diverse the community of pest fighting beneficial organisms the farm can support.

With the use of biodynamic preparations (on the soil, in the atmosphere and in compost), and in working within natural and cosmic cycles, BD farmers further contribute to the vitality of their farms and produce.

The differences between these approaches (built on their respective ethical and ecological viewpoints) can be illustrated by the way in which they deal with one of the most basic challenges farmers face: weeds.

In a conventional vineyard weeds are seen as competition for nutrients and moisture that the vines desperately need. They are controlled in the quickest and most cost effective way - generally through the use of herbicides.

The organic grower still sees weeds as competition for her vines, but prefer to remove them in a mechanical way or if it needs be with "soft" organically certifiable herbicides. Although this action may be more costly and less effective in the short term, the sustainability of this option outweighs it over the long term.

In the biodynamic vineyard weeds have a purpose and a sense of place. They are indicative of the farming practice that has taken place in that specific area. They act as messengers of nature that give us information with regards to the condition of our soils: As good vineyard practice improves our soil, so the weeds change. If the soil is too compacted, or too high in some nutrients or too low in others, or if the soil pH changes, they tell us.

Furthermore, they have the ability to add beneficial things like carbon, nitrogen and various other trace elements. They can inhibit nematode populations and they can diminish the spread of the much feared leaf roll virus. Finally weeds all harbor their own unique microorganisms, bacteria and fungi. In nature diversity equals stability. As a consequence the challenge for the BD farmer is not to eradicate weeds, but to manage them.

Mention has been made of the use of herbal preparations and of farming within natural and cosmic cycles and rhythms. These aspects are often confusing, and sometimes controversial, but make up an integral part of the BD system and cannot be ignored. However, given the brief that we received, there is just enough scope to discuss one example of each in this paper.

With regards to effect of the planetary influences, I think that anyone who stays close to the ocean will agree that the moon has a definite effect on the tides. If one takes into account that plants consist of more than 90% water, it makes sense that when the pull of the moon is strong, more moisture than average will be concentrated in the leaves. At other times though, when the gravitational force of the earth is unhindered, more moisture than average should be concentrated in the roots.

Through the centuries farmers developed a certain wisdom regarding sowing, pruning and harvesting in harmony with the moon and the position of the constellations. During the 20th century a German lady, Maria Thun, researched and experimented with this information.

After a number of years of research, she identified certain patterns and rhythms that proved that different positions of the moon and different positions of the constellations favored different farming activities. Planting at certain times would produce larger plants for example (full moon), and at other times stronger plants (moon – Saturn opposition). She formalized this knowledge into what is now known as the biodynamic calendar.

In the vineyard this information is vital and it is uncanny to see how something like downy mildew favors full moon, particularly at apogee. In the wine cellar racking should be done at new moon to ensure a clearer runoff, and if done properly a few times, there is no more need to filter the wine before bottling.

Why the biodynamic preparations work is a difficult question to answer. One way to explain this is by comparing it to Newton's and Einstein's views of modern science. On the one hand one can work with an analytical description of matter and on the other there are things that are better understood in terms of energy.

A material explanation of Preparation 500 for example, would be that it is prepared by putting cow manure into a cow horn – instead of a plastic bag, or Tupperware bucket – because the horn contains bacteria that act as an ideal catalyst for the composting process. Furthermore, the preparation is actively stirred for an hour in both directions to provide the microorganisms with as much oxygen as possible. This greatly improves their numbers and vitality.

Another explanation is that one is dealing with energy. The horn is seen (by Steiner) to have the ability to absorb the life energies that are in the soil in the winter months. The particular process of stirring energises the preparation. One has to stir in one direction until a vortex forms, where after the direction is changed abruptly, creating a brief chaotic moment after which the vortex is again formed in the opposite direction. The vortex mirrors how energy manifests itself in nature. (Think of a breaking wave, a hurricane, the shape of a pine cone or even the way petals grow on a flower). The idea is to channel the energy that we share with the universe to the benefit of the soil, plants, animals and humans.

Most people nowadays would opt for the former, softer explanation of why the preparations work so well. Personally, as a farmer relatively new to biodynamics, it also

makes more sense to me. In the discussions I have had with various students from the German University of Geissenheim (where one can obtain a PhD. in biodynamic viticulture and oenology) it just seems more scientific and logical than the more esoteric version.

However, before closing the door on the deeper understanding of biodynamics for the sake of legitimacy and credibility, there are a few points to ponder. In our haste to give a more scientific basis as to why biodynamics work, we must not forget the path down which this same scientific approach has taken us: toward modern agriculture. In the final instance Steiner himself did not discover the fruits of the biodynamic system through scientific research alone, but relied heavily on what he refers to as spiritual research.

Ultimately one of the greatest benefits of biodynamics is its ability to create a greater sensitivity and awareness of our inability to understand and explain everything. This leads to a respect and tolerance for that which does not seem important to us. Finally it serves as a counter measure for the overbearing materialism and spiritual poverty that is the hallmark of our modern culture.

4. Conclusion

I believe that biodynamic agriculture has an important role to play within the South African wine industry. Despite it's controversial nature I cherish the belief that nothing is inherently good or bad. The goodness or badness from any system depends on how it is applied. Herein lies a lesson not only for the biodynamic approach, but for the conventional and organic approaches as well.

Ultimately biodynamics derives its benefit not from standing alone but in it's interaction with the other paradigms. It should be critical of what it sees as the shortcomings of organic and conventional viticulture, but this should be done in a way in which dialogue and creative tension lead the way toward real progress.