

Vineyard Views
by Cliff Ohmart
A Snapshot of Biodynamic Farming

Many of us have a basic understanding of what organic farming is and quite a few winegrape growers in California adhere to its standards. The term sustainable farming is also familiar to many of us. On the other hand, most of us have little or no knowledge of biodynamic farming. Some growers have never heard the term before, while others, when hearing the word, envision voodoo dolls, chanting, applying strange potions to the soil, and occult practices. I have a feeling that we are going to hear more about this type of farming and some practitioners claim that farming biodynamically “can cure any insect, disease, yield or quality problem on any crop, anywhere.” (*Wine Business Monthly* August 2000 pp. 45-54). With rhetoric such as this it is important to become familiar with biodynamic farming so it can be discussed in a coherent fashion. It is not possible in a few pages to thoroughly cover biodynamics. However, I can give a brief history of the origins and founding principles of biodynamic farming so as to put it into perspective with other farming strategies.

Biodynamics can be traced directly back to a series of 8 lectures developed and presented in June of 1924 by Dr. Rudolf Steiner to a group of European farmers who came to him for advice on soil fertility problems, degenerate seed strains and the spread of animal disease. Steiner died in early 1925 and others have carried on his work. To fully appreciate what is behind biodynamics, it is important to understand Steiner the scientist.

Dr. Rudolf Steiner ‘Spiritual’ Scientist and Researcher

Rudolf Steiner was born in 1861 in a small town in what is now Croatia. He went to technical school as a youth and was well grounded in the natural sciences. Out of his own interests he began reading a great number of philosophy books. He became convinced that it was only through the philosophical method that the material and spiritual worlds would be bridged. Throughout his advanced studies in math, natural history and chemistry he continued his keen interest in the work of contemporary philosophers. He saw a constant interplay between the material and spiritual worlds. He obtained a Ph.D. in 1891 and taught history, German literature, and the history of science in Berlin for several years. In 1902 he declared in a lecture that his life’s aim was to found new methods of spiritual research based on science.

In a biography of Steiner¹ Gilbert Childs writes “Steiner was an explorer of worlds closed to the ordinary powers of sense-perception, and few were capable of following him”. Childs develops Steiner’s idea that for spiritual perception we need to develop supersensory organs and claimed that Steiner had achieved such a perceptive ability. Nevertheless, since Steiner was trained as a scientist and dedicated to the investigative standards of scientific research, he strove constantly to apply corresponding rigor to his own investigations. Steiner referred to himself as a ‘spiritual researcher’ and felt that the

¹ Childs, G. 1995. *Rudolf Steiner: His life and work*. Anthroposophy Press, N.Y.

body of the knowledge he accumulated was genuine 'spiritual science'. He coined the term "anthroposophy" as the name of this science. Steiner defined anthroposophy as "a path of knowledge that strives to lead the spiritual in man to the spiritual in the universe".²

Steiner's views were considered by many of his contemporaries to be controversial and there was strong opposition to them, to the point of threats being made on his life. Some felt he was associated with the occult. He began lecturing on diverse topics such as religion, education, social issues, history and human nature. Many sympathizers began to desert him. However, by January 1905, his depth of knowledge of the material and immaterial worlds was such that invitations to give lectures poured in and his life work had begun.

Around 1917, Steiner began another phase of his career, devoting his time to putting his spiritual-scientific principles and knowledge to practical use. For example, he was approached by the managing director of the Waldorf-Astoria cigarette factory in Stuttgart, Germany, to direct a school for children of factory employees. To accomplish this he started the Waldorf/Steiner school in 1919 and developed an educational system based on anthroposophy. There are now Waldorf schools all over the world. In 1920 he was asked by a doctor to develop a series of lectures for doctors and medical students on various aspects of human anatomy, physiology, and pathology as well as diagnoses and appropriate remedies, including developing some pharmaceuticals. Then in 1924, one year before his death, Steiner gave his series of 8 lectures that became the basis for biodynamic farming.

The Foundations of Biodynamic Farming

Steiner took a holistic approach to farming. He felt that since plants germinate, grow and produce fruit and are dependent on the sun, earth, air and water to do so, then literally the whole universe is involved in these processes. Another way to put it is that the yield and quality of crops come about under the influence to two groups of environmental factors: earthly and cosmic. He saw each farm as an individual organism which should be as self-sufficient as possible. For example, a biodynamic farm should have a diversity of crops and a certain amount of livestock. Because a farm is a living organism he reasoned that only life-endowed substances should be applied to it. 'Dead' materials such as chemical fertilizers should not be used. By this same argument, synthetic pesticides should not be used either. Therefore only organically derived materials should be used in farming and it is in this aspect that biodynamic farming has a commonality with organic farming. It is interesting to note that Steiner developed these ideas before synthetic, carbon-based pesticides were invented and widely used.

When someone asked for his views about plant diseases Steiner responded by saying that plants could never be diseased in a primary sense, "since they are the products of a healthy etheric world." He believed they are diseased as a result of diseased conditions in their environment, especially the soil.²

² Koepf, H. H. 1976. *Bio-dynamic agriculture: An introduction*. Anthroposophic Press. NY. 429pp.

One important practice that sets biodynamics apart from other farming practices, particularly from organic farming, is the use of 8 specific preparations of materials developed by Steiner to add to composts, to the soil or sprayed on plants, depending on the preparation. The amount of the preparation applied is small because he felt that they worked “dynamically,” regulating and stimulating processes of growth. Putting it in present day terms, their primary purpose is to stimulate the processes of nutrient and energy cycling. Steiner gave each preparation a number from 500 to 508 and they are divided into two groups. The first group consists of Nos. 500 and 501 and each is applied in spray form. No. 500 consists of dairy cow manure collected in early autumn, packed into a cow’s horn, buried in a pit in biologically active soil for the winter and dug up in the spring. No. 501 consists of ground quartz mixed with rain water to make a paste which is then packed into a cow’s horn, ideally from a cow that has calved a number of times but not more than 8 years old. The horn is then buried in the late spring in a sunny spot and dug up in late autumn. Both 500 and 501 are made into a spray by mixing the end materials with rainwater. No. 500 is sprayed onto the soil while 501 is sprayed onto plants.³

Preparations 502 to 508 are made from the following plant substances, respectively: yarrow blossoms, camomile blossoms, stinging nettle, oak bark, dandelion flowers, valerian flowers, and horsetail. Each preparation is made in a very specific way. For example, No. 502 is made from yarrow flowers that are put in the bladder of a red deer stag, suspended in the sun throughout the summer and buried in the ground during the winter. It is then added to a compost pile, along with some of the other preparations, to aid the composting process, resulting in biodynamic compost. Certain animal parts are used in the other preparations, such as bovine mesentery, bovine intestines, and domestic animal skulls. For more detailed descriptions of Steiner’s preparations and their uses see Sattler 1992.³ Sattler emphasized in his book that little or no result can be expected if a preparation is used on its own. It needs to be used in concert with all of the other biodynamic principles, processes and preparations.

Rhythms are also an integral part of biodynamic farming. It is felt that biological rhythms are connected in some way to cosmic rhythms. For example, Steiner felt that sun spot activity, moon rhythms, and the zodiac all have significant affects on the growth and health of plants. Space does not allow a detailed explanation here but see Sattler’s book for more details.³

There has been little scientific research into the efficacy of biodynamic farming practices. The few studies that have been done have focused on the effectiveness of Steiner’s preparations. The results have been mixed but in some studies it was shown that biodynamic farming systems have better soil quality and lower crop yield when compared to conventional farming systems.⁴

³ Sattler, F. 1992. *Biodynamic farming practice*. Bio-Dynamic Agricultural Assoc. 333pp.

⁴ Reganold, J. P. 1995. Soil quality and profitability of biodynamic and conventional farming systems: A review. *Amer. J. Alternative Agr.* 10(1):36-45.

Because I was trained in the scientific method and my understanding of how biological systems work is based on sound ecological principles I have a hard time coming to grips with many of Steiner's ideas and recommendations. Not only did he develop his very unorthodox methods with little scientific justification they cannot be tested in the normal sense because there is an inherent contradiction in his philosophy. Steiner developed his 'spiritual' science as an alternative to the traditional scientific method so traditional science cannot be used to test the efficacy of biodynamic farming.