

An Overview of Bio-dynamics®

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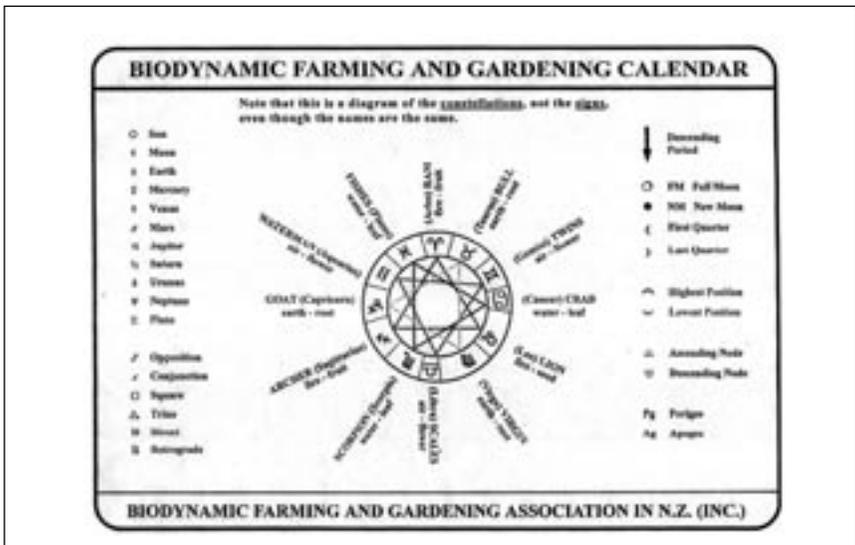
Karuna Gardens, Morven, RD 10, Waimate, South Canterbury

INTRODUCTION

The Bio-dynamic (BD) system of agriculture and movement was founded on a series of eight lectures given by Dr. Rudolf Steiner at Koberwitz (in Silesia, now part of Poland), in 1924. These lectures were given over a period of several days to a group of farmers and scientists, and were prompted by requests. This course of eight lectures, published under the name of "Agriculture", is part of Steiner's wider work known as Anthroposophy.

Bio-dynamic methods have their basis in a sound farming (or gardening) regime, and are an added practice. They work towards the development of the farm or garden as a balanced and sustainable unit. Each farm or garden is seen as a unique living organism. Within this organism, cattle have an important role for soil fertility. Even in a horticultural unit, the ideal is to fit some animals into the system. On a farm, or small-holding, trees and plant diversity play an essential role as well. For example, legumes are used extensively in green manures. Earthworms and all other soil microorganisms, beneficial predators, etc., are encouraged by sound biological husbandries.

The effects of the influences of the sun, moon, planets, and stars are recognised, and tasks are organised with the help of a planetary calendar (Fig. 1). One begins to recognise cycles and rhythms, for example: the rhythm of expansion and contraction, and especially of levity as a formative force. Use is also made of special plant, animal, and mineral preparations, which play a crucial role in stimulating and balancing vital processes in the soil and the plants. Six preparations are used in composting and the making of liquid manures. Two are used as ground and foliar spray.



These methods lead to a natural reduction of pests and diseases in plant and animal, and to an increase in the nutritive value of the food produced. Here we can mention the increase in etheric forces, though this is difficult to measure still, except by Kirlian photography or by sensitive crystallisation (chromatogram).

The question is often asked: Why bother with the seemingly complex BD methods? Why not let nature look after itself in the more simple organic approach? Already in 1924 Steiner could see that the earth's vitality was declining. This is a general phenomenon which even a few farmers of the time could sense, and which prompted them to ask for guidelines. The people who listened to Rudolf Steiner in 1924 heard about a new science of living nature. From the sources of spiritual science new views were opened to them into the processes and dynamic forces which fashion the life of plants and animals, and of course man. It was quite obvious to them that these new ideas and principles had to be applied in the field, to be translated into workable methods. Although they knew Rudolf Steiner and had confidence in him, they realised this would need a lot of trials, and indeed Steiner repeatedly encouraged them to test his suggestions, observe and record everything. Only through practical application, joining of forces and hard work, leading to experience and problem solving, can an established method eventually evolve. Methods of composting, sustainable cropping systems, making and applying preparations, conservation and landscaping, supplying farm based food, evaluating the quality of food and feed, all these and many other aspects had to be worked out by practising farmers and gardeners in co-operation with a number of scientists working out of a spiritual science.

Thus Bio-dynamics has become, both practically and scientifically, a sound comprehensive system of sustainable agriculture. Bio-dynamics is not a uniform technology following set rules that can be applied mechanically. Use for farm programmes, and day-to-day working, in particular the systems of crop rotations, have to be adapted to the site, to local requirements, plant-pest interactions, yields and market conditions, climatic changes, labour availability, and state of the mechanical equipment. Bio-dynamic farms each have their own individual character.

BASIC PRINCIPLES

- Diversified farms, a site-adapted programme and maximum self-sufficiency.
- Farms fashioned in the image of the threefold plant, as it is related to its earthly and universal environment.
- Integrating appropriate numbers and kinds of livestock into the system.
- Application of dynamic measures.
- Building healthy sustainable landscapes.
- Applying rational principles to feeding and to the nutritional quality of produce, transcending the common approach, based on nutrients contents and daily requirements
- Vocation of the farmer and gardener as a path of personal development and a path towards integration and deeper understanding of living nature which encourages both the individual and society to foster a responsible attitude towards life and the earth.

To the bio-dynamic farmer understanding the forces which manifest themselves in living nature is very important. There is an urgency to be sensitive to the requirements of the farm as a whole, whilst at the same time, evaluating the needs of individual fields, plants, animals, etc., yet always keeping in mind and heart the plight of our ailing earth. Bio-dynamics is about the environment and healing of the planet. It also stimulates positive interaction amongst farmers and gardeners by way of sharing work-loads, discussing issues, evaluating problems, helping to understand the specific methods, and giving mutual encouragement. In this respect it is very community and socially orientated.

Marketing of bio-dynamic produce under the Demeter™ trade mark was initiated in 1928. The Bio-dynamic Associations in various countries set strict guidelines to farmers and gardeners, as well as the food processing and retailing industries who wish to market their produce under the Demeter standard. In an age where people are becoming more conscious of the food they eat, of health hazards, and of preventive health, the high quality that the Demeter™ standard represents has become very important. Bio-dynamic associations also stimulate interaction between producer, processor, and consumer.

BIO-DYNAMIC METHODS

Understanding and following the planetary calendar (exp. for transplanting, sowing, cultivating, etc.) is an essential part of bio-dynamic methods. As well as this various preparations are used. These act somewhat like homeopathic remedies. They are not a substitute for sound biological husbandry but an added practice. It is not in the scope of this paper to enter deeply into the reasons of how and why these preparations work. It is an area of research where much still remains to be discovered and understood. Practice, experience, observation, learning to be attuned to nature's processes, and even inner contemplation are all very important in bio-dynamic practices. There are many ways to approach this field.

PREPARATIONS

Field Preparation 500 (Cow Horn Preparation). Preparation 500 is the first step in BD work, though we shall see later that another preparation is used in some countries. Preparation 500 is made in a cow horn. The horns, filled with cow manure, are placed in the earth in the autumn, left over the winter period before being dug up in the spring. The manure's consistency changes to dark pliable humus while buried. It is during these winter months when everything above the soil is dormant that the earth is most alive. And Preparation 500 works within the soil, encouraging greater work and microorganism activity. Preparation 500 can be seen as a quickener of life, and has a special relationship to germination and root development.

The Preparation 500 is applied in early spring and again in autumn. Ideally it should not be applied when the ground is too dry, or in frosty conditions, as this prevents the penetration of the mixture. It is applied when the moon is in a descending period for this is when its influence is streaming into the earth. Likewise the later part of the day is chosen when the earth is breathing in. Very small quantities are used: approximately 50 g for 30 litres of water per 1 ha. This proportion can even be reduced in large farms. The water used to dissolve the portion of Preparation

500 is lukewarm and is stirred for 1 h. Stirring is done in one direction until a vortex is formed, then the direction is reversed, thus creating a chaos. After 1 h the water is saturated with oxygen and other particles and of course permeated with the life force, calcium, and other elements, from the Preparation 500 itself. Oxygen is regarded as the physical carrier of etheric forces. This ether can then be carried into the material framework of nature. This is the dynamisation process, which can be done manually or with a machine or even a flow form. The stirred Preparation 500 is immediately sprayed on the land in large droplets either with a bucket and a brush for small gardens, either with a knapsack sprayer, like used for liquid manures, on small-holdings, or with mechanical spraying equipment on farms.

Preparation 501 (Horn Silica Preparation). Preparation 501 is made from finely ground quartz crystals, also placed inside a cow horn, but dug into the earth during spring and summer. Preparation 501 is somewhat the opposite to Preparation 500. It acts above ground, works with light, etc. Preparation 501 is stirred in the same manner as Preparation 500 but applied in the finest mist possible, directly on the plants. An ascending period of the moon is chosen for this is when the earth breathes out. Likewise a morning is chosen, as sunny as possible, but fairly early before the rays of the sun are too strong. We use the rising sap to carry the influence of the Silica Preparation through the whole plant. Judgement, care, and experience are required in applying Preparation 501 as plants have been known to burn if done at the wrong time. The timing in relation to each plant stage of growth is also very specific, and plants have been known to bolt to seed. The correct use of Preparation 501 unfolds with our understanding of BD methods and with the development of our intuitive faculties. If properly used Preparation 501 strengthens plants against fungal attacks, enhances the photosynthesis process, increases the production of sugars, starches, and cellulose and improves the keeping qualities. The etheric field is strengthened. When used correctly Preparation 500 and Preparation 501 bring a balance between calcium and silica and between the earth and the sun processes.

THE BIO-DYNAMIC COMPOST PREPARATIONS

There are six compost (or humus) preparations (Table 1), numbered 502 to 507. These preparations are applied to compost, as well as manure heaps and liquid manure. They can also be introduced towards the end of the stirring process of Preparation 500. The formation of nitrogen is supported: calcium-phosphorous-potassium etc., processes are intensified. There is a fundamental polarity between sulphur and phosphorus, just as the Preparations 500 and 501 give polarity between calcium and silica. The preparations themselves consist of herbs which have been brought into relationship with certain animal organs during part or the whole of the yearly cycle, partly above and partly below ground. Thus the three Kingdoms of Nature are working together (Mineral, Plant and Animal Kingdoms) to which could be added the Human Kingdom, in so far as man is orientating these processes.

502 Yarrow, Venus. High calcium and potash content. Creates an atmosphere for potassium and sulphur to be assimilated in the compost heap. Opens up the ground for assimilation of trace elements from the cosmos. Dried flowers in a stag bladder. Buried in autumn to experience winter earth processes.

503 Chamomile, Mercury. Enables sulphur to balance the potassium and calcium activities and to transmute them. Stabilises the nitrogen by controlling the

putrefaction of proteins and by stimulating the life forces in the decomposing manure heap. Flowers in cow's intestines. Over-wintered.

504 Stinging Nettle, Mars. Brings the right balance of iron in the soil. Contains formic acid: simplest way in which carbon, hydrogen, and oxygen can combine together. Cut at flowering stage and buried for 12 months.

505 Oak Bark, Mars. Helps calcium forces into the soil and brings strength to help combat fungal disease. Ashes contain 70% calcium. Finely grated bark placed in a cow or sheep's skull and left in a watery environment.

506 Dandelion, Jupiter. Brings silica acid and creates an interaction with potassium. Helps the growing plant to attract what it requires to grow. Flowers put in mesentery of a cow, buried during autumn and winter.

507 Valerian, Saturn. Helps regulate the phosphorus activity. Keeps the warmth. Is applied to the finished compost heap, before thatching. Prepared as a tincture, contrary to the others which are in the form of humus.

Table 1. Preparation, sphere of effect, kind of effect, and related substances.

	Preparation	Sphere of effect	Kind of effect	Related substance
Plant	(507) Valerian	Archetype or Ego	Reception of cosmic influences.	Phosphorus
Plant	(506) dandelion	sentient sphere	Plant becomes able to attract what it needs.	Silica
Plant	(505) oak bark	living sphere	Regulates growth forces.	Calcium
Soil	(504) nettle	sentient sphere	Soil adapts itself to plant.	Iron + sulphur
Soil	(503) chamomile	living sphere	Soil is enlivened.	Calcium + sulphur
Soil	(502) yarrow	physical sphere	Soil attracts more distant cosmos, binds substances.	Potassium + sulphur

Compost Preparations. These regulate and stimulate other processes in nature.

Cow Pat Pit Preparation (Maria Thun's Preparation). This is a manure concentrate developed by Maria Thun, a German bio-dynamic researcher and a scientist. This process is to help and quicken the conversion of the land to BD methods by applying more frequently the compost preparations than would otherwise be possible just through the spreading of compost. In Europe several applications of the Cow Pat Pit Preparation are recommended on land in conversion, even before the first application of Preparation 500. In brief the Cow Pat Pit Preparation is a mixture of cow manure combined with basalt and eggshells and containing the six compost preparations. The mixture is placed in the ground, in a wooden frame, for up to 3 months. It encourages an active soil life, prevents fungal attacks, and generally is a plant tonic.

BRIEF BIOGRAPHY OF RUDOLF STEINER

This is only a brief biography, to give a background to the origin of Bio-dynamics.

- February 27 1861, Rudolf Steiner was born in Kraljevec, then in Hungary, now Yugoslavia. He studied in maths and natural sciences (as well as literature, philosophy, and history) at the Technical University of Vienna and collaboration in the edition of the scientific work of Goethe, (1749-1832, German scientist, author, and poet who inspired Steiner). In 1891, he received a Doctorate in Philosophy and began to write and give conferences. Foundation of his anthroposophical concept of man and the universe.
- 1913, Edification of the first building "Goetheanum", at Dornach, near Zurich for the Anthroposophical Society. Conferences and courses throughout Europe, giving the basis for many areas; art, medicine, education, research, sociology.
- 1924, Increase in number of conferences. Specialised courses, amongst which the "Agriculture Course", at the request of some farmers. Given to a hundred people as guidelines for further experiment and investigation: this is the basis for BD.
- 30 March 1925, Rudolf Steiner died in Dornach.
- Other scientists have taken up Steiner's indications and developed them: E. and L. Kolisko (a husband and wife team); Erhenfried Pfeiffer (1899-1961) close collaborator of Steiner, Maria Thun, and John Soper.

NOTES ON THE DEMETER TRADEMARK™

New Zealand Certification Trademark. The Demeter trademark appeared in Germany around 1928 and is a certification trademark. It is now registered in 62 countries. In some countries, Demeter is owned and administered by its respective Bio-dynamic association, wherever it is present. Otherwise it is the association Demeter International which holds the rights and does the inspections in countries where bio-dynamic activities are present but no association exists. Demeter International grew out of the Demeter Bund in Darmstadt, Germany. It has memberships from 19 countries and its board members are from various nationalities. The Demeter trademark was registered with the New Zealand Trademark Register in 1982. The logo and the name Demeter is owned in New Zealand by the Bio Dynamic Farming and Gardening Association (NZ) Inc., for the purposes of certification of produce grown and processed in New Zealand. The association licenses farmers, growers, and processors to use it. It is not granted to a property itself. The guidelines and rules for certification under this organic/bio-dynamic regime are strict. An in-depth documentation (journal, maps, and questionnaire) is requested from the licensee(s) and an inspector is sent once a year to verify that production methods are consistent with Bio-dynamic principles and techniques.

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