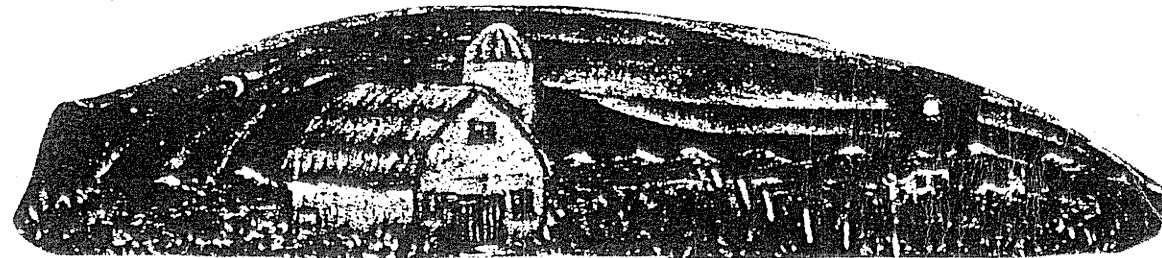


“ Now, a farm comes closest to its own essence when it can be conceived of as a kind of independent individuality, a self-contained entity. In reality, every farm ought to aspire to this state of being a self-contained individuality. This state cannot be achieved completely, but it needs to be approached.”

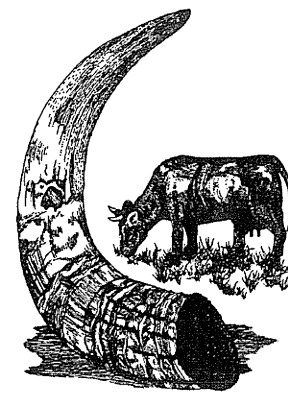


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SO THAT THE EARTH MAY BE HEALED

The Josephine Porter Institute
for
Applied Bio-Dynamics, Inc.
P.O. Box 133, Woolwine, VA 24185-0133



Applied BIODYNAMICS®



FALL 1994

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ISSUE Nº 9

FALL IN THE BIODYNAMIC GARDEN *by Hugh J. Courtney*

Editor's Note: Information for this article was obtained through taped telephone interviews that Hugh J. Courtney made during July and August, 1994. The Editor transcribed the tapes, and edited and compiled the material.

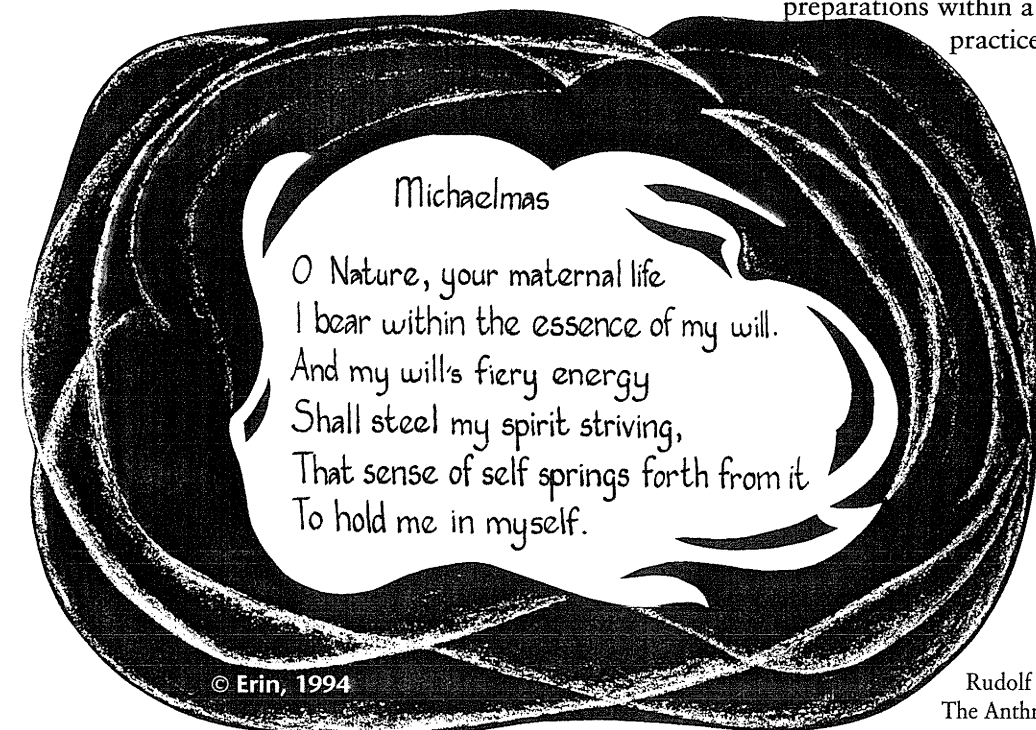
This past summer I contacted the eleven biodynamic practitioners, previously surveyed, to ascertain their Fall biodynamic practices. Each person was asked to respond to the same three questions.

It is hoped that the information provided here will be of help to you, the reader. As the quote on the back page of this issue highlights, each farm has its own individuality. This can be said for gardens and the farmer/gardener too! The real work of the biodynamic practitioner is to come to know this garden/farm individuality and to respond to its individual needs. It is through our observations that we can learn and know; and we can also learn from each other. As you will read, the gardeners interviewed are all observers. Their biodynamic practices have one major common factor and that is, they all

utilize the healing techniques of biodynamics. Also, they all aspire to developing a balance, a rhythm, that meets the needs of their garden/farm individuality. I hope that the information shared here will help and encourage each of you in responding to the uniqueness of your farm/garden.

One interviewer stated that “Whatever the farmer’s rhythm is, well, that’s the one that’s got to go. If the farm is out of sync, the farmer is out of sync.” Balance and rhythm contribute greatly to the flow of a garden/farm and thus the flow of the gardener/farmer. In the Spring interview article, “Spring in the Biodynamic Garden”, (see Issue #7, *Applied Biodynamics*), time and money were the major contributing factors to the level of frustration as cited by those interviewed. In these interviews, frustration seems to have been transformed. Qualitative results from the use of the biodynamic preparations, and sound farming practices are the contributing factors to the level of encouragement and enthusiasm cited here. These interviews confirm the high quality obtained using biodynamic preparations within a program of sound farming/gardening practices.

Although there isn’t enough space to share all the information received during the interviews, I will include each gardener’s answers to the three questions asked. Future newsletter issues will offer more in the areas of practical observations, uses of the biodynamic preparations, and various practices, as shared by these interviewers and others. We are just at the very early stages of understanding all that the preparations



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Rudolf Steiner. *The Calendar of the Soul*,
The Anthroposophic Press, 1992, p.53.

FALL (continued on page 3)

MISSION

The Josephine Porter Institute for Applied Bio-Dynamics, Inc., was founded to produce quality biodynamic agricultural preparations based on the spiritual scientific research of Rudolf Steiner.

It serves as a living memorial to Josephine Porter, a biodynamic pioneer for this work in America.

The mission of JPI also includes education and research in biodynamic agriculture.

JPI undertakes these tasks so that the Earth may be healed.

REALIZING THE MISSION — AN UPDATE

An on-site visit from Jorge Sanz Cardona, Architect, took place in July. We anticipate that the first draft of a building and site sketches will be in our hands by the time you receive this issue of the newsletter. It is an auspicious time to establish a building fund. Preliminary work has begun with the Rudolf Steiner Foundation to establish a Receiving Fund for the receipt of gifts for the building at JPI. Remember that we are building to support the work of the biodynamic preparations and to fulfill our Mission. In the meantime, you may make contributions directly to the Josephine Porter Institute.

Just arrived . . . good timing . . . the

1995

Kimberton Hills

Agricultural Calendar

Stella Natura

Along with important information for working with the cosmic rhythms, there is much practical advice for the beginner and professional gardener/farmer. We quote here an excerpt from an article entitled *Timing*, written by our JPI Farm Manager, Nick Franceschelli.

"Steiner points to the subtle, delicate relationship of cosmic events with natural processes. As biodynamic growers, or even as newcomers to this approach, it soon becomes clear that timing is critical."

Time it right! Purchase your 1995 calendar now and consider a few extras for gifts.

\$9.75 plus \$2.00 postage

Order from:

JPI, P.O. Box 133, Woolwine, VA 24185.

IMPORTANT REMINDER TO OUR READERS

It is time to think about renewing or establishing a 1995 Associative Contract. We are entering our third year with this type of economic base and partnership with our contractees.

An informal evaluation of the Associative Contract revealed that contractees are pleased with the method and enjoy the knowledge that "their biodynamic preparations" will arrive when they need them. This method has also served to enhance the will forces of the farmer/gardener to use the preparations. Many contractees also benefited from being able to contact JPI throughout the growing season to order additional preparations as needed. We wish we could continue this aspect of the contract, however, our evaluation indicated that JPI would have to modify this area. Since the financial cost of additional preparations has been subsidized entirely by JPI until now, *the 1995 Associative Contract will offer additional preparations as needed at 50% of the cost of the preparation.* For example, if a contractee needs an additional shipment of a set of Compost Preps (BD#502-507) which costs \$9.00 per set, the contractee would only be charged \$4.50 (plus shipping & handling). This way the cost of the additional needs of the contractee will be shared by JPI.

BIODYNAMIC PREPARATIONS LEGEND

BD #500 – Horn Manure	
BD #501 – Horn Silica	
BD #502 – Yarrow	C
BD #503 – Chamomile	O P
BD #504 – Stinging Nettle	M R
BD #505 – Oak Bark	P E
BD #506 – Dandelion	O P
BD #507 – Valerian	S S
	T
BD #508 – Horsetail (Equisetum arvense)	

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The subscription price of \$35/yr. helps subsidize JPI research and development.

Editor: Candace Coffin

Artwork by: Erin

FURTHER THOUGHTS *(continued from page 10)*

task of just stuffing another cow horn routinely without really concentrating on the need to pack it as tightly as possible, then it would be advisable to stop and refocus your concentration. While I trust no one will take my next comment amiss and assume it to be a chauvinistic statement, it is probable that any woman experiencing menstruation should avoid making any preparations during that time. Such an abstinence is observed in anthroposophical pharmacies in Europe when potentizing remedies. The making of a medicament for the healing of the Earth, such as BD# 500, could be affected by the very strong connection to the forces of the Moon usually associated with menstruation. Just to put a different perspective on this question, I should say that it has been my observation that women, generally, tend to produce better biodynamic preparations than men. A man probably needs to work very hard every day of the month to bring a balance into this preparation making process, while a woman brings a natural affinity or connection to the process except for those few days of the month when the Moon energies may interfere. In any case, this question at least needs to be placed on the table as a possible factor.

Of more direct concern is ridding ourselves of an attitude that regards the preparations as just a kind of organic fertilizer that is much better than any chemicals, and somehow a bit better than most organic soil amendments. At the end of this article, the reader will see a reference to several books, which may seem quite unconnected to either agriculture or the biodynamic preparations. However, if you read any of those titles while holding in mind an awareness of the biodynamic

preparations as the "only true sacrament in the Earth today," you may well gain a greater understanding of just how important they are. Such an understanding of their importance makes it imperative that we learn to make good preparations. The quality of the preparations may be primarily dependent on the quality of our attitude towards them. I have often said that one of the reasons that biodynamic agriculture has done so poorly, especially in this country, but elsewhere in the world as well, is that we do not really believe in it or the preparations. In comments to Ehrenfried Pfeiffer, Rudolf Steiner stated: "the benefits of the biodynamic preparations should be made available as quickly as possible to the largest possible areas of the entire Earth, for the Earth's healing."¹ Elsewhere, and on frequent occasions, Steiner expressed the hope and even the necessity that anthroposophy be widely established in the world by the end of the Twentieth century to prevent a tragic future for human evolution. As a somewhat neglected offspring of anthroposophy, biodynamics can hardly be regarded as widely established or as affecting the largest possible areas of the Earth in the year 1994, just 6 years short of the end of the Twentieth century. If we regard Steiner's words not as idle conversation, but as something of profound importance, you may come to the same conclusion which I have now reached. Our belief in the biodynamic preparations empowers them, and our use of the preparations in the Earth at the end of this century is an *absolute spiritual necessity*. So much to do and so far to go in such a short time.

¹ Steiner, Rudolf. *Agriculture, Bio-Dynamic Farming & Gardening*, 1993, p.261.

The reader of "Applied Biodynamics" may well wonder why the following four titles are carried by JPI since they have no apparent or immediate connection to biodynamic agriculture. It is our belief, however, that the healing nature of the biodynamic preparations penetrates to and affects realms other than the physical. At the level of the elemental kingdoms, the preparations nourish and liberate the elemental beings to a higher form of service. At the level of supersensible worlds, the preparations sustain the entry of the highest forms of energy into human and earthly evolution. The preparations possess redemptive qualities of resurrecting power. Their effectiveness can be utilized only through the willing action of human beings. These few books can give the reader some inkling of the levels and depths penetrated by the preparations beyond our farm and garden soils. Any and all of the following books are highly recommended reading to help encourage the willing action we all need at this time in the history of the Earth.

NEW BOOKS AVAILABLE FROM JPI

THE OCCULT SIGNIFICANCE OF FORGIVENESS

by Sergei O. Prokofieff

Temple Lodge, 1992. \$31.95

This book is a study in how one can freely and consciously develop the necessary forces which lead to forgiveness, and shows the esoteric significance of the acts of true forgiveness.

THE IMAGINATION OF PENTECOST

by Richard Leviton

Anthroposophic Press, 1994. \$24.95

A remarkable history of spirituality in America leading to a new vision of our future — the experience of a World Pentecost.

THE SPIRITUAL EVENT OF THE TWENTIETH CENTURY

by Jesaiah Ben Aharon

Temple Lodge, 1993. \$9.95

Through his own research, using the spiritual paths of Michael and supersensible perception, the author concentrates on the beginning of the second third of this century, encouraging a renewal of commitment to anthroposophy.

WORLD ETHER – ELEMENTAL BEINGS – KINGDOMS OF NATURE

by Ernst Hagemann, translated by Harold Jurgens

Mercury Press, 1993. \$15.00

A compilation of all of Rudolf Steiner's indications in books and lectures about the etheric realm and its effects on the physical world.

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these preparations accomplish above and beyond the ordinary compost making process? Here we need to look at Rudolf Steiner's *Agriculture* course, most especially Lecture Five where he described the six biodynamic compost preparations to be used. In the process of manuring (in 1924 this word was virtually synonymous with the word "fertilizing" in today's language), Steiner stated: "— the etheric vitality must be retained within the realm of the living, — it should never leave the realm of growth."¹ He further pointed out that in modern times, people have "lost all insight into how life that is common to plants and to the soil, also extends into the excretory products of life as we find them in manure."² The task of spiritual science includes acknowledging the validity of scientific achievements. On the other hand, it also includes active opposition to present day materialistic concepts when those concepts rest on totally false premises. As part of his acknowledgement of such achievements, Steiner referred to the "great deal (that) has already been accomplished"³ in so far as the manner in which "manure, liquid manure, or compost should be prepared for use as a fertilizer."⁴ It should be noted that manure (compost) and compost are viewed as distinctly different in meaning. In 1924, and for some time afterwards, the word compost included vegetable matter, but not animal manures. It could, however, include dead animals. In 1990, we no longer define compost and manure so exactly, and the word compost is used loosely to cover both pure animal manures and pure vegetable composts, as well as all mixtures in between.

One of the quite specific false premises Steiner himself focuses upon, is the idea that one can improve manure or compost by inoculating a pile with bacteria. The presence of this or that kind of bacteria is merely a symptom of conditions within the pile at a particular stage of its "biography". Adding a particular bacteria to a pile in the beginning can be wasted effort, unless you have somehow managed to create the ideal conditions within the pile for the bacteria concerned. This is highly unlikely, since the bacteria associated with the "break down" being sought generally don't show up until after the normal stage of heating up that a pile goes through when first built. Unfortunately, much of the consuming public can be approached more readily by referring to bacteria, than by mentioning biodynamic preparations and the forces they carry, thus, the advertising approach used to describe the Pfeiffer Biodynamic Compost Starter and Pfeiffer BD Field Spray. Interestingly enough, Steiner actually suggests that we would be better off taking measures to combat the bacteria in our compost rather than using them to inoculate a pile.

A second false premise mentioned by Steiner deals with the practice of "treating the manure with all kinds of inorganic compounds and chemical elements"⁵. This practice rests upon a false premise, since such a treatment has no "lasting positive effect" because it only affects the watery component of the soil. What biodynamics provides is a means to "properly vitalize" the soil or the Earth element itself. The effect, or result, of present day 'ordinary' composting is to reduce the

various components to a mineralized state and, with luck, a certain humus fraction. This is why 'ordinary' compost has so little carry over effect, and why one has to constantly resupply the soil with large doses of such a compost. If that compost contains a large percentage of animal manure, and if insufficient time is allowed for rotting, or break-down, the grower can expect an increase in pest problems. This is a major reason why it can no longer in good conscience be advised to spread raw manure on the land without first composting it thoroughly, (preferably by treating it with the biodynamic preparations in some form). An additional reason to avoid spreading raw manure is the often serious leaching of nitrates and other toxic compounds into the ground water. Well made biodynamic compost, using good quality biodynamic preparations, results in little or no leaching, and over a period of time, a substantial reduction in pest problems.

More importantly, the real purpose of the biodynamic preparations is summarized in the following words from Steiner:

"In order to grow sound and substantial plants, however, this [enlivening the watery part of the soil] is not enough, because no further vitalization proceeds from the water that seeps through the soil. We have to enliven the soil directly, and this cannot be done with mineral fertilizers, but only by means of organic material that has been conditioned to organize and enliven the solid earth itself. To indicate how this stimulus can be imparted to manure or liquid manure, or any other sort of organic matter, is the task of spiritual science with respect to agriculture."⁶

'Ordinary' compost works mostly through the watery element, and lacks the enlivening ability imparted to the soil by biodynamic compost. The remainder of Lecture Five contains the description of how to make these compost preparations which are the means to condition all organic material so that it (i.e. biodynamic compost) can "organize and enliven the solid earth itself." The preparations are the stimulants used to accomplish this enlivening process and 'ordinary' compost without the preparations lacks this enlivening ability. The biodynamic preparations give our compost the capability "of infusing the manure with living forces, which are much more important to the plants than the material forces, the mere substance."⁷ 'Ordinary' compost only possesses substance, not the enlivened forces. That is why one must use the biodynamic compost preparations in making compost.

¹ Steiner, Rudolf. *Agriculture*, Bio-Dynamic Farming & Gardening Assoc., 1993, p.89.

² Ibid. p.89

³ Ibid. p.90

⁴ Ibid. p.90

⁵ Ibid. p.91

⁶ Ibid. p.91

⁷ Ibid. p.91

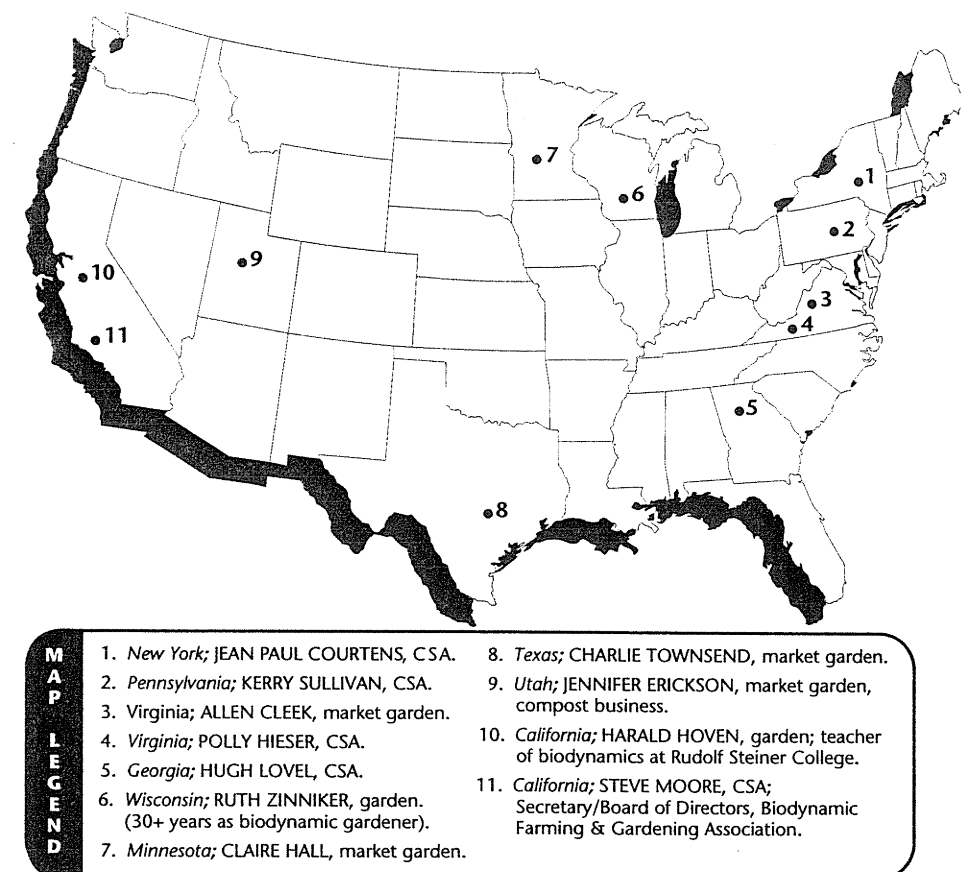
can do. Through them there is a remedy for every garden situation, we just haven't learned what it is yet.

The Three Questions Asked

"Describe your use of the biodynamic preparations during the Fall season."

"Describe your Fall composting practices."

"Is there anything that stood out for you this year regarding the biodynamic preparations?"



1. Jean Paul Courtens During the Fall season Jean Paul makes compost for the Spring, and the biodynamic compost preparations are used to prep the large manure piles. He puts up approximately 40 tons in the Fall, which is only half of what he uses on his 10 acres. (The other half comes out of the free stalls in the Spring. Although the manure in the stalls is not composted, Jean Paul does insert the compost preps right into the manure that has accumulated in the stalls. This is usually done in February when a good amount of manure has already built up in the free stalls.) This year he will add peat moss to the Fall manure pile because he says peat moss is good at taking up life forces, and because it will absorb the urine, which is full of potassium.

The horn silica preparation, BD #501, will be sprayed on all the Fall garden crops (broccoli, spinach, carrots, etc.). Ideally, Jean Paul would like to rotate his beds by allowing some to be planted with a cover crop in the Fall, applying compost in the Spring right on top of the cover crop, working in the cover crop around May, and then in the Fall planting a second cover crop. Then the following year, vegetables would be planted again. (A 25 acre piece of land has recently become available and may allow Jean Paul to implement his ideal.)

Regarding any observations of the preparations, Jean Paul stated that he had been more consistent this year with the BD#500 and the Barrel Compost and yet, had experienced more problems than ever this year. He found the flea beetles very bad and found the European corn borer in the eggplant. Following a discussion about this problem, we concluded that if Jean Paul can revise his handling and application of manure, that some of the insect problems may be solved. Jean Paul observed that the preparations alone, no matter how consis-

tent, will not take the place of good manuring practices . . . biodynamic farming must rely on good farming practice regardless.

2. Kerry Sullivan Beginning mid to late August, Kerry will apply BD#500 followed by a second application around October. He tries to make two applications of BD#500 in Spring, Summer, and Fall. As a regular addition, Kerry puts Barrel Compost into the BD#500, stirring it in during the last 20 minutes. He also sprays BD#501 in the Fall on all crops that are still growing. Starting in June or July, manure is gradually collected from the barn, and straw or old hay is added to it. By October the pile is large enough; a manure spreader is used initially to mix it and create the pile. It is then prepped and covered with an Austrian row cover, which serves as the outer layer (due to a lack of sufficient straw for covering the pile). The cover is gas permeable so it breathes, does not allow weeds to grow, and maintains the moisture level in the pile. At some point the pile will be turned and then repped. Garden beds that had early crops either get replanted with a fall crop, or they are prepared to go into a two year rest cycle with a grass/clover mix as a green manure crop.

"I can't say that I have had any specific observations regarding the preparations, but I can say that in general I have a better feeling for the correct time to apply them and just a better feeling about their use," replied Kerry to my third question. He attributed his feeling to getting to know the garden better. (Kerry has been gardening biodynamically for approximately 16 years.) During the Spring, Kerry had a dramatic experience with valerian (BD#507), during two late

frosts. Valerian was sprayed on his paste tomatoes for the first frost and on both the tomatoes and beans for the second frost. He said "The stuff worked fantastically. We had no damage on the paste tomatoes and it went down to 28 degrees; we had injury on the beans the first frost when we didn't spray them and the second time we didn't have damage when we did spray."

3. Allen Cleek Spraying BD#500 between October and November is Allen's normal Fall practice. He also tries to get in a few sprayings of Barrel Compost before the BD#500. Horn silica, BD#501 or 501(5x)†, will be sprayed on his fall crop of lettuce and other fall greens, during their growing cycle. Allen also likes to use the 501(5x) just prior to harvest. Generally he applies the 501(5x) the evening before harvesting. He observes that BD#501 seems to slow down the bolting process. Allen also applies BD#508 (*Equisetum arvense*) a couple of times during the Fall on everything. So, BD 500, 501 and 508 are all applied with BD#500 being the last application of the season.

Allen gathers material for his compost piles throughout the year. When cows are on his property in the Fall, he collects manure and makes his compost piles in October or November, inserting the BD Compost Preps #502-507 at that time. He makes about 40-50 tons. One slight variation Allen makes is that he saves all the filtered or screened residue from his preparation stirrings and sticks this 'big lump' of residue into the compost piles. He also stirs BD#508 and puts it into approximately 4 locations in the pile, in a cross formation, i.e., at the ends and in the middle on opposite sides of the pile. He observes that the pile seems more moisture balanced and spongier when he uses the BD#508. In the Fall, Allen also spreads on his beds whatever compost he has left from the previous year. He especially composts his potato beds in the Fall to eliminate scab problems.

With respect to using the Biodynamic preparations, Allen observes significant improvements in the soil structure. "My soil has improved tremendously; generally all over the garden the soil is taking on a better structural quality whereas before it was like the soil had no structure at all." One section of the garden has been treated biodynamically for 4 years, one section for 3 years and one section for 2 years. For many years the oldest part of the garden was chemically gardened. After 4 years of BD preps and cover crops, Allen says it's finally looking really good and comparable to the new (non-chemically treated) part of the garden. He remarked, "The oldest part has had more spraying, but the ground that I've really noticed improvements in, is the new ground; it has changed dramatically. It has a new color to it. Everyone notices it and they comment on how good it looks and what good soil I've got. I can really see the difference."

4. Polly Hieser Barrel Compost and BD#500 are sprayed on everything in the Fall, and BD#508 will be sprayed on all Fall crops. Like Kerry Sullivan, Polly adds Barrel Compost to BD#500 during the last 20 minutes of stirring and sprays them together. Compost building takes place whenever there is a lot

of crop residue. A backhoe or loader is used to make the pile and the plant materials are layered with manure and hay. The pile is then inoculated with the BD preps #502-507 and covered with a thick layer of hay. If needed, the pile will be turned half way through the winter and unless it has been 'sitting around' for a while, it is not reprepped. Approximately 5 or 6 piles of about 6-10 tons each are made each year. Another compost operation is that of manure compost piles. Loads of manure and straw are hauled and dumped in one area and then made into a windrow and prepped. An estimated 50 tons of manure compost is made. Polly said, "When we build our piles we also water each layer, especially if we're using dry stuff, like dry hay. We also put kelp, and rock phosphate and a little bit of lime in our piles; not a huge amount, but we do sprinkle a little in." The compost piles made in the Fall are used in the Spring. "Around here compost doesn't sit around for very long," reported Polly.

There was one significant observation regarding the use of the biodynamic preparations this year for Polly. After planting broccoli and cabbage in the Spring, she had many problems and the plants were just dying. There were cut worms and there was a disease that looked to her like a mineral imbalance. Polly decided it was a holistic kind of problem and decided to spray BD#501 with Valerian (BD#507) added the last 15 minutes of the stirring. She observed that it really made a huge difference, even by the very next day. She said, "I could see that they looked a bit perked up and they stopped dying so quickly. I also used Barrel Compost, not in the same spray, but as another tactic, which helped with the cut worms. But, I really noticed a difference right after the spray." One unit of BD#501 and one unit of Valerian, BD#507, treated the 1500 plants (broccoli and cabbage) that had been set out in the beds for about 2 weeks. Polly and I discussed the possible reasons for the problems. We felt that the compost that had been put on the beds was probably not as mature as it should have been. As suggested in the *Agriculture Course*, the best time for applying biodynamic compost is in the Fall of the year, specifically the middle of November to the middle of December. Polly reflected that "It might be a good idea to apply the compost in the Fall and get the beds all set up, especially for the early crops. It really can mellow during the winter and get a good balance. I had felt like there was an imbalance there, and that might have been part of it."

One other observation made was that Polly had done two sequential sprayings and said "It hasn't stopped raining, how do you turn it off?" I suggested that in order to dry things out the sequential spray might be done when the moon was in a Fire constellation, reversing BD#501 and BD#508. (For more indepth information on the sequential spray technique see *Applied Biodynamics*, Issue #6, Winter 1993.)

5. Hugh Lovel Attempting to dry up a very wet situation, Hugh is using a lot of BD#501 and BD#508. Since the beginning of June, he's had more than 40 straight days of rain.

COMPOST OR BIODYNAMIC COMPOST? by Hugh J. Courtney

Several months ago, when we did our editorial planning for this issue, an article on Fall composting seemed to be highly appropriate. The Fall season is a primary compost making period for many biodynamic practitioners. Initially, my intention was to devote the article to the *how* of biodynamic composting, emphasizing less widely known "tricks of the trade". While I certainly hope to cover that aspect in the future, it has become increasingly evident that the more important topic to be addressed is: the *why* of biodynamic composting.

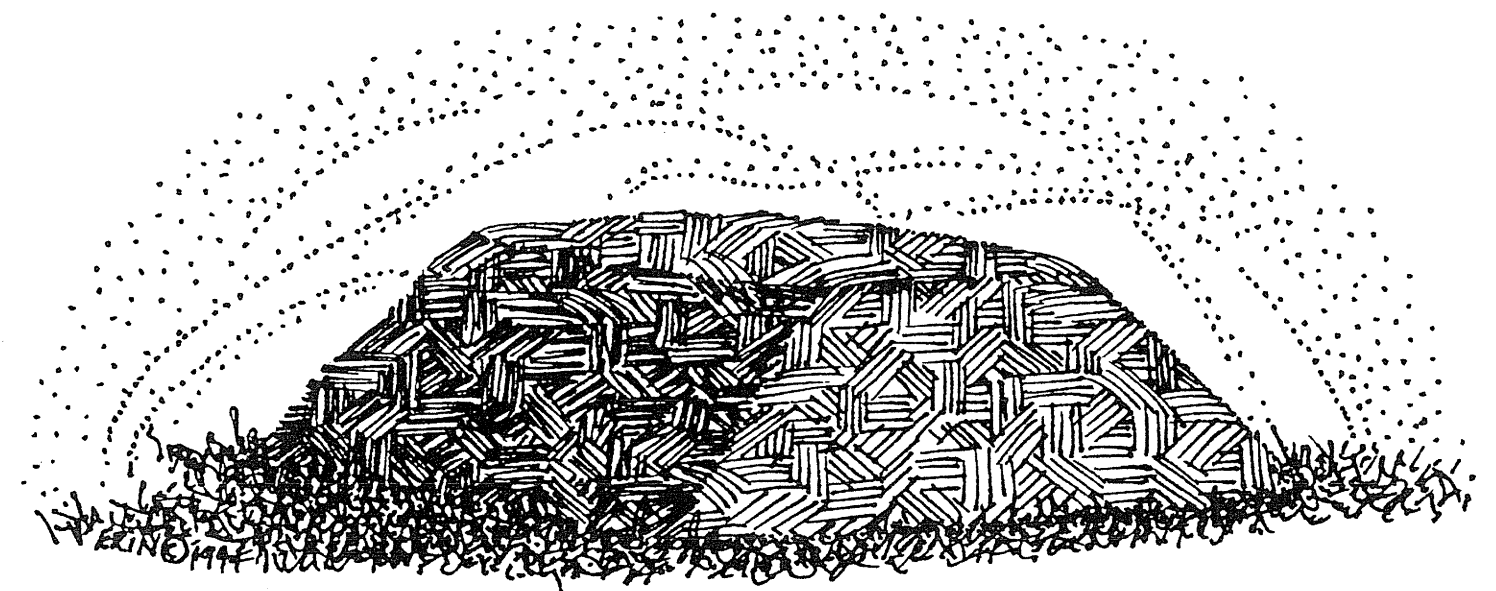
This reorientation is prompted by the fact that so many people, including many professed biodynamic gardeners and farmers, do not seem to realize that a significant difference exists between biodynamic compost and ordinary compost. In questioning people as to whether or not their pile had had the biodynamic compost preps in it, it was a bit dismaying to have, even from those practicing biodynamics, a response such as, "Well, no, but it turned out all right anyway". From the non-biodynamic composter, my question was often answered by another question, "No, but what would the BD preps do that I am not getting out of my compost now?"

To address these concerns and, more importantly, the attitudes which lie behind them, I would like to look first at composting as it is currently practiced. To begin with, the composter is encouraged to obtain a diversity of materials, with particular emphasis on ensuring a carbon to nitrogen ratio (C:N) of between 25:1 and 15:1. Often, small size particles of the material are encouraged, even to the point of recommending that if you are serious about composting, a shredder is needed. Frequent monitoring of the temperature of the pile is also regarded as necessary, with special thermometers suggested to do this job. Beyond this, one is told to turn the pile often to keep plenty of air in it so that it will "break down" rapidly. The advice is also received from many quarters that no "inoculants or compost additives" are really necessary, as you can accomplish this for yourself simply by adding a little soil to the pile, or better yet, some compost from a previous pile. Such soil or old compost is deemed to contain

"all the necessary bacteria" to break down the material in a compost pile. For large scale composting, the C:N concept is supplemented by a thorough chemical and/or bacterial analysis of various waste products (which are often waste disposal problems as well). This analysis permits the blending of the products in such a way that the best possible climate is created to encourage the proliferation of break-down bacteria and other organisms. With one or two exceptions, virtually nothing in the preceding summary of composting practices can really be objected to from a biodynamic point of view, other than to recognize that all of the procedures indicated are intended to encourage "break-down". On the other hand, biodynamic composting also includes a "building-up" process.

Let us now examine the attitude that a scrupulously honest look at the ordinary composting practices outlined above reveals. Many of the steps mentioned above are simply manipulating material substance to achieve a mechanistic "break down". The frequent turning recommended merely oxidizes the material, often into volatile gaseous compounds which waft off into the atmosphere. The composting process turns complicated, once-living organic compounds into simpler, chemical components that are no longer in a state or condition to emit offensive odors or appear visually objectionable. At the same time, we will obtain a material that can bring certain fertilizing components to the soil. In other words, our attitude with this approach is still very much that of a materialist, and our thinking is still somewhat oriented towards the chemical makeup of the compost by virtue of its nitrogen and other constituents. We are thinking in the same "NPK" terms that we find in mainstream chemical farming, even though we can feel a bit better about it by claiming an organic label for our efforts.

If we adopt a Biodynamic perspective in our thinking, the one major change in our composting practices would be the use of the Biodynamic preparations themselves. What is it that



blade of a pocket knife, any soil that may have lodged in the “throat” of the cow horn is carefully removed, until I am reasonably certain that only horn manure is still contained in the horn. When all the horns are taken from the pit in similar fashion, I then begin the process of actually emptying the horns themselves. Often, the first step is to smell the manure in the horn, hoping that my nostrils will detect an earthy smell, rather than any odor resembling the raw cow manure that was packed into the horns the previous Fall. Almost simultaneously, my eyes are carefully assessing the color of the material in the horn. Most desired is to see a deep rich black color, followed next in preference by an earthy brown color. Anything that resembles the greenish color of the raw manure that went into the horns to begin with, particularly when coupled with a raw manure smell, is cause to set that particular horn aside. However, if the color is wrong, but the smell is right, the problem most likely is a lack of air, and the manure from such a horn if emptied and exposed to air for as little as 24 hours will usually take on a more acceptable color. (Often, a major cause of this lack of air is the water which has somehow entered the horn, in spite of all efforts to position the horn in the pit to prevent this.) If it happens that you dig up your horns quite early in the Spring, and you experience either wrong color or odor or both, my best recommendation is to rebury the horns. Some people who contacted me this Spring with this problem and followed my recommendation reported better results when reexamining the pit as little as two weeks later. In some instances, with horns that do not pass muster, either by smell, sight, or both, storing them in our root cellar for a few weeks has led to a “curing” process that yields BD #500 with good smell and color. This root cellar location is well below the normal soil level, and serves, in essence, as a kind of horn pit in and of itself. The lack of soil actually surrounding the horns constitutes the major difference between leaving the horns buried, or allowing them to “cure” in the root cellar.

During this past winter, many areas of the country experienced long periods of heavy ice. This may have resulted in much less “breathing in” of air into the Earth. A snow cover does not seem to limit the air penetration in the same way that the ice cover appears to do. However, a number of people who reported problems with their #500 were in a location that did not experience any snow or ice this past winter. My speculative explanation for this is that we were experiencing a “light/air/flower” year. That is, the major area for the working of the formative forces for the year was in the realm of the air, with little or no penetration below the soil surface during the winter. Since that speculation continued the Fire/Earth/Air/Water rhythm that I have decided I have been observing over the last several years, I have a certain fondness for it. Such speculation requires far more than just a few years observation before it can be deemed to have substance. Also, I have not been too confident in determining the beginning of each year, or at least, the change-over time of one formative force or elemental impulse into its successor. Currently, my choice for such a change-over point would be St. John’s Day. If you

feel a certain resonance of thinking as regards my speculation, I would be very glad to hear your comments.

There is, however, perhaps an even more critical factor in assuring the production of acceptable BD# 500. That factor involves the attitude, or attentiveness, that one brings to the horn stuffing process. In my effort to identify and label this factor, I have referred to it in my own mind as the “green thumb/black thumb syndrome”. More than once over the years, I have seen different people achieve different results with the finished product of #500, in spite of using manure from the same source, horns of equivalent value, and with the horns buried side-by-side in the same pit. Initially, I preferred to assign the difference to some innate, but not easily observed difference in the quality of the horns. Recently, however, the evidence of a “green thumb/black thumb” factor has become too strong to ignore any longer. Accordingly, in the future, each individual participating in our horn stuffing activities will either bury his/her horns in a separate pit or else use a separate individually assigned marking on horns buried in a common pit. In the Spring of the year, when the pit is dug up, the resultant #500 will be indicative of success or failure. Any “grade” is actually assigned by the “elemental kingdom”, and not by myself or anyone else overseeing the operation.

Let us examine more closely this factor of attitude or attentiveness in the making of not only BD #500, but all the other preparations as well. During his visit to Kimberton, PA in June 1992, Alex Podolinsky was heard to say that the biodynamic preparations are the only true sacrament in the Earth today. Whether you agree with his statement or not, I would believe that it is at least indicative of the attitude one must bring to the preparations making task. It was certainly the attitude held by Josephine Porter who was my mentor in the preparations making art. Whatever success I have subsequently enjoyed in that art, I must attribute to my emulation of her attitude regarding the sacredness or holiness of this task of preparations making. If we approach the making of the preparations as just one more farm task that we “have to get done”, and without any consciousness of their importance in healing the Earth, we should not be too surprised if we achieve rather indifferent results. One of our directors here at JPI, Jim Marquardt, has suggested that an appropriate ritual should accompany the making of each preparation. While we shall certainly consider the feasibility of this, I hesitate to do so in order to avoid “fixing” or “dogmatizing” the process. What is really needed, is an “inner ritual” by each person participating in the preparations making activity. Perhaps in the future, one could consider a “sweat lodge” or some other “purification” process, but the whole biodynamic effort requires the individual to be constantly working on inner purification. Whatever might be stated here as regards the making of the preparations, should be seen as equally applicable to the using of the preparations. If one is in an argumentative or otherwise “bad” frame of mind, one should probably plan to make the preparations another day. If you find yourself performing the

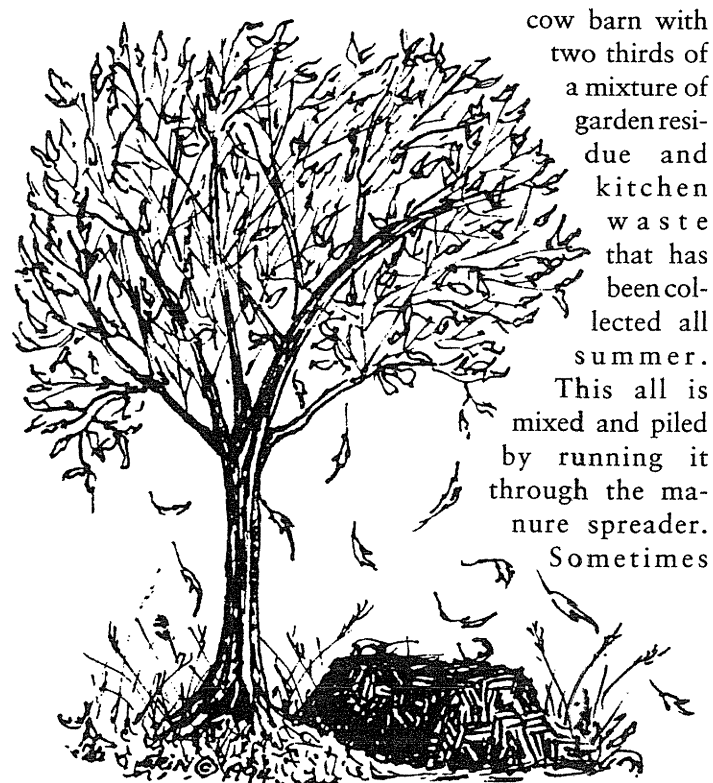
I suggested the same sequential spray remedy that I had offered Polly. (See above.) Ordinarily, Barrel Compost and BD#500 would be sprayed on the garden beds in the Fall, but with the ground so saturated Hugh needed to wait and see about this year.

During the Fall, Hugh Lovel makes all the compost he can out of sorghum, Sudan grass, soy, buckwheat and so forth. He uses this compost in the Spring. He uses the rest of this year’s compost on his Fall garlic, which is one of his most important crops in terms of yields and sales. He puts his compost on the land about the second week in September so that he can plant his spinach at the end of September and his garlic in October.

With all the rain, this has been a hard year for Hugh. In June the forecast was for a very dry season and so he did a sequential spray about 12 or 14 days before Mercury went retrograde. This was done during leaf and root periods. Since it didn’t stop raining once it started, it was difficult to spray the amount of BD#508 that Hugh usually does, and he said he lost a lot of his crops. His tomatoes and peppers were lost and his carrots suffered. He said his beans survived because he was able to catch them in time by spraying with BD#508 daily. Those were Hugh’s significant observations regarding the biodynamic preparations this year. There was still hope in his voice when he said, “Actually I prefer rain to a drought . . . though a creek bottom doesn’t really help in a wet year.”

6. Ruth Zinniker Horn manure, BD#500, is the only preparation that Ruth uses in the Fall. She first cultivates before she sprays, and then applies biodynamic compost with a manure spreader. After the garden is chisel plowed, then cover crops are planted.

After everything is off the garden Ruth begins her Fall compost making. She mixes one third fresh manure from the



cow barn with two thirds of a mixture of garden residue and kitchen waste that has been collected all summer. This all is mixed and piled by running it through the manure spreader. Sometimes

Ruth sprays Barrel Compost on all that has been collected during the summer. The compost that she applies on the beds in the Fall is mature compost that was made either the previous Fall season or early in Spring.

Ruth shared two significant observations regarding the preparations this year. There were extreme weather changes during the Spring. It could be 30 degrees at night and then 85 degrees during the day. Then in June there was a drought and a frost. Ruth then sprayed the garden with stinging nettle, using the following recipe. She cuts the stinging nettle and adds it to a crock or five gallon bucket filled with rain water. This she lets stand uncovered in a shaded spot for 24 to 48 hours. Then she covers the container with a lid and leaves it for at least 10 days, (fermentation takes about one week). The spray is made by adding one part filtered nettle ferment to two parts water. She observes that this strengthens the plants, gives them a boost when they are under stress, and brings the plants into balance. She sprays in the evening and feels that this helps a lot. After using some of the fermented nettle she adds more stinging nettle and water to the bucket and keeps this going throughout the growing season. (*Editor’s note: After the first 24 hours of soaking nettles in water, the liquid can be used as an insecticide.*)

Another observation Ruth made was that during one part of this year’s growing season they got a lot of rain, and she felt that she counteracted any possible damage by spraying BD #501, two to three times, to dry things up. She said, “My garden looks lush, and everything is growing into each other.” When asked if she had any problems this year, Ruth replied that the only problem was with potato beetles. However, she didn’t have to do anything, as the potato plants were healthy enough so as to remain unaffected. She also had no tomato blight and felt that this was due to the fact that she saves her own seed from year to year. During the Fall, on a fruit day, when the tomatoes are really ripe, she selects healthy looking ones for seed saving.

7. Claire Hall For Claire, the Fall preparations use includes undertaking a sequential spray around Michaelmas. She explained that they began this practice in 1993, and said, “It has been a real blessing for us and we really enjoy it. We don’t do it asking for anything; we just spray them (the biodynamic preparations, including Barrel Compost, BD#500, BD#501, BD#508) as a gift to the farm and it’s been a wonderful celebration. We also did it around Easter, Ascension, and St. John’s Tide.” She explained that this was the first year that they have sprayed the sequence all four times, and that it was something of a marathon to accomplish during April, May and June. However, they managed to do it and feel that “It has been a good benefit to the growth and life of the farm. It was a flower period during Ascension and the weather was dry after spraying; it was a leaf period during St. John’s Tide and about 4” of rain occurred during the next few days after that.” Claire noted that, “The quality of the year has been wonderful.”

Other Fall preparation practices include the spraying of Barrel Compost when the vetch is plowed down. There are four strips in production in her field garden and one fallow. The fallow is sown in rye over the winter and then in vetch in the beginning of August. The Barrel Compost is sprayed on the vetch before it is plowed down, and after a week or two, before the rye gets planted, BD#500 is sprayed. Claire observes that the Barrel Compost accelerates the breakdown practice. If time allows, Barrel Compost is also sprayed in the orchard and vineyard, after leaves fall, to help accelerate the decomposition of the leaves. Claire also feels that it helps to destroy any disease that the leaves may be harboring.

Garden compost is made throughout the season as material becomes available, while approximately 400 tons of manure compost is made in late spring or early summer when manure is available from a neighboring farm. All compost piles are inoculated with biodynamic compost preparations.

Claire reported the following regarding observations. “The thing that stood out that’s quite dramatic for us is the effects of the sequential spraying, and we were wondering if we should adjust our spraying of the sequence to the particular weather conditions we have in a year. For example, we had a very dry May and sprayed the sequence at Ascension in a flower time and it seemed to strengthen the dryness. We then had another month of no rain and so we did the sequence in a leaf period and got 4" of rain. So we were thinking that maybe next year, if we were having a dry Spring, we would do the Ascension time spraying during a leaf period. . . . Everything seems to be working the way Steiner said it would. This is our 8th year now and we’re becoming much more comfortable with using the preparations and this (the sequential spraying) just seems to really fit into the rhythm of the work.” Although the biodynamic preparations seem to ask the gardener/farmer to do a whole lot more than he or she is already doing, (since it takes a lot of time to stir† and spray, and to also prep the compost piles), Claire feels that it just seems to fit into the flow of their work. She said that the time comes off the other end, in that they are doing a lot less salvage work, a lot less clean up, a lot less trouble shooting. She also observed, “Things are healthier. During the course of the 8 or 9 day period when the moon has gone through all four elements (Fire, Earth, Air, Water), we have visited every crop on the farm and made sure that they have what they need, or, if they need help, we respond. It just seems to make the work flow much easier. It establishes a real rhythm and it really helps us focus.”

8. Charlie Townsend After breaking the land and before running the disk harrow on it, Charlie sprays Barrel Compost and BD#500 at the same time over the ‘whole place.’ That’s the extent of his Fall preparations practices until the Spring when he puts “another dose of the same thing on.” He ‘beds it up’ sometime during the winter. Since he’s not able to compost, Charlie depends on the Barrel Compost to take the place of composting. He also “turns under all the green stuff” he can. “So far it’s worked pretty well,” he says. Although this has been a rather null crop year for Charlie due to health

problems, he did say, “I get a pretty good crop when I get a crop.” (Charlie is President of the Texas Organic Growers organization.)

9. Jennifer Erickson Jenny’s Fall use of the preparations includes a general application of both BD#500 and BD#501 applied on everything. In addition, the compost piles are prepped.

Although compost is applied in the Spring, the making of compost is done in the Fall. Jennifer reported that they now have a compost turner. They collect all the materials including weeds and extra plant materials. She explained, “We mow it, and collect it, and combine it with the cow manure of the dairy farm that’s down the road, that isn’t organic. Then we mix all that together and, if carbon is needed, we add some straw.” The weeds and greens are fresh; some of the weeds are mature and have gone to seed, but Jenny explained that the compost pile heats up to between 140-145 degrees and so they experience no problems in their compost due to weed seeds. The ratio of straw to manure is 50:50, which, with the bedding already in the manure, gives an ideal C to N ratio. An estimated 10 tons of compost is made for use in her gardens. Materials are added to the manure at the dairy farm and then the compost pile is prepped. After about a month, the compost pile is brought back to “our site” and “we prep the pile again. In another month the pile is well decomposed and broken down. The pile then will sit and continue to work over winter.”

In retrospect, Jenny’s observations regarding the preparations this year are that she wished she had sprayed BD#501. Due to the very hot and dry weather, she was worried about spraying BD#501 under such conditions. However, her flea beetle problem was very bad and she feels that BD#501 might have helped to alleviate that problem. I told her about someone who had sprayed BD#501 on vineyards near Fresno when temperatures were over 100 degrees. They reported that they had not experienced any problems; they even felt that the BD#501, among other things, had built the sugar in the grapes and had also had some effect in controlling the mites.

Jenny was fermenting horsetail (BD#508) at the time of the interview. As soon as it was ready she was going to do the sequential spray, since they hadn’t had rain for two months.

10. Harald Hoven Harald says that it’s very dry in his part of California in the Fall and he is concerned about spraying BD#500 with so little soil surface moisture. However, when winter Brassicas are planted he does spray BD#500 and BD#501 about every other month while the plants are growing. Equisetum (BD#508) is sprayed in the Fall, with special concentration on the onions and leeks. In the future Harald would like to stir the BD#508, but presently he has simply been using the fermented version and agitating or shaking it briefly. Because he puts so much compost on everything he doesn’t spray Barrel Compost.

SIDEBAR #1

Editor’s Note: *To the proverbial question “What is biodynamics?” Jeff Poppen, a Tennessee biodynamic gardener, gives the following answer.* (This is a handout which Jeff provides to those asking the question.)

BIODYNAMIC FARMING by Jeff Poppen

Rudolf Steiner was once asked “How can it happen that the spiritual impulses, for which you are constantly providing stimulus and guidance, bear so little fruit? Why is the will for action, for the carrying out of these spiritual impulses, so weak?”

His surprising answer was: “This is a problem of nutrition. Nutrition, as it is today, does not supply the strength necessary for manifesting the spirit in physical life. A bridge can no longer be built from thinking to will and action. Food plants no longer contain the forces people need for this.”

In June of 1924, Dr. Steiner gave eight lectures on agriculture,† and provided insight into the nature of these forces, and how we can develop food plants that have them.

A plant is connected, through its roots and soil life, to all of the other plants around it, and also to the stars and farthest reaches of the cosmos. The growth and reproductive forces of calcium, working with the earth and water elements, are balanced by hardening and ripening forces of silica, working with air and warmth.

The elements of carbon (earth), oxygen (water), nitrogen (air), and hydrogen (fire) bind together to make our food with the help of sulphur and phosphorus, the light bearers. Also, potassium, magnesium, and the trace elements are all realized as forces, not just substances; and it is the processes of these forces that we are interested in.

Specifically, yarrow flowers are sewn up in a stag’s bladder, hung in the sun, then buried in the winter, and a teaspoonful of the resulting substance is put into a huge compost pile so that the forces of sulfur and potassium are enhanced. Likewise with chamomile flowers in an intestine for calcium; stinging nettle for iron and silica; white oak bark in a calf or sheep skull for a special calcium relation to plant diseases; dandelion flowers in a mesen-

tery for silica; and the juice of valerian flowers for phosphorus, all used in small amounts in a compost pile.

Cow manure is buried in a cow horn over winter and a small amount is stirred rhythmically for 1 hour and sprinkled on the land, as are ground quartz crystals that have been buried in a cow horn over summer.‡

These are homeopathic remedies for the earth, where small amounts, potentized, work with subtle processes.

Ashes of weed seeds, insects, pests, and rodent skins can be burned at certain times and spread back on the land; and a tea from the horsetail plant is recommended for plant diseases.

Finally, Steiner points out that food as a substance nourishes our head and nerve system, but that there are cosmic forces that are at work there; just as our body, bones, and muscles are made of cosmic substances absorbed through breathing and our senses, coupled with earthly forces. With the use of these preparations, we can make our plants sensitive and able to draw in these forces from the cosmos and earth; and thus supply our thinking, feeling, and willing with the proper nutrition.

These impulses are meant to be used in conjunction with proper farming techniques, which involve gentle tillage, crop rotation, cover crops, and many other good farming practices too complicated to go into in this short article. ~

†Available as a book *Agriculture*, by Rudolf Steiner. The new edition can be purchased from JPI, PO Box 133, Woolwine, VA 24185. (Paperback: \$17.50 plus \$2.00 postage; hard cover: \$22.50 plus \$2.00.)

‡All preparations may be purchased from the Josephine Porter Institute.

FURTHER THOUGHTS ON MAKING BD #500 by Hugh J. Courtney

In the Michaelmas issue of *Applied Biodynamics* last year, in the article entitled “Recipe for Making BD #500”, I outlined the bare essentials of placing the manure in the cow horns and burying them in the earth. As anyone knows who has ever gone through the process, there is much more to the making of BD #500 than this. Crucial to the successful making of BD #500 is its excavation and its subsequent evaluation. Perhaps even more crucial may be the attitude with which one approaches the entire task of making and digging up the highly precious horn manure.

Let us look first at the task of excavation and evaluation of this preparation. The most obvious, but often overlooked, requirement is to have marked the horn pit carefully and thoroughly enough so that you can find it again when you are ready to dig up the pit. I can well remember one of my first experiences at making horn manure at a friend’s place in Eastern Virginia. I took careful note of just how far it was from the fifth fence post from the corner, in full confidence that it would be an easy matter to recover the three or four horns that I was burying. Imagine my dismay when I made my return visit

the following spring to discover that over the winter months, my friend’s farmer neighbor, who was responsible for maintaining the fence, had removed it, bulldozed the entire fence line and was in the process of reconstructing it. Needless to say, the whereabouts of that particular horn pit remains hidden to this day.

Assuming that you have full assurance of the exact location of your buried horns, the excavation should proceed in a manner so as to remove all soil from atop the horns, while trying to disturb the horns themselves as little as possible. That is, when there is still considerable soil covering some of the horns, it is quite easy to be so rough in the digging up that you can actually spill dirt into the opening of the horns that happen to be facing in the direction of the soil being moved. I begin the actual step of lifting and removing a cow horn from the pit by scraping off the excess soil that might be clinging to the exterior of the horn. For this, I use a small trowel, or a kitchen or putty knife, or even a pocket knife. Next, using the