

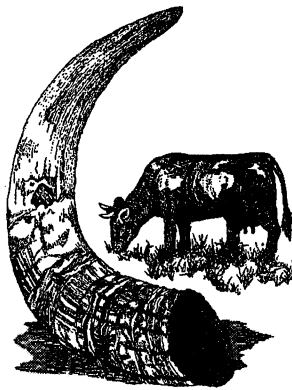
“Spiritual Science always tries to look into the effects of living things on a *large* scale. It does not pry into the minute and microscopic for that is not the most important. It does not primarily concern itself with the conclusions which are drawn from the minute — from microscopical investigations. To observe the *macroscopic* — the wide circumference of Nature’s workings — that is the task of Spiritual Science. But now we must first know how to penetrate into these wider workings of Nature.”

— Rudolf Steiner *Agriculture*, p. 89



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



WINTER 1993

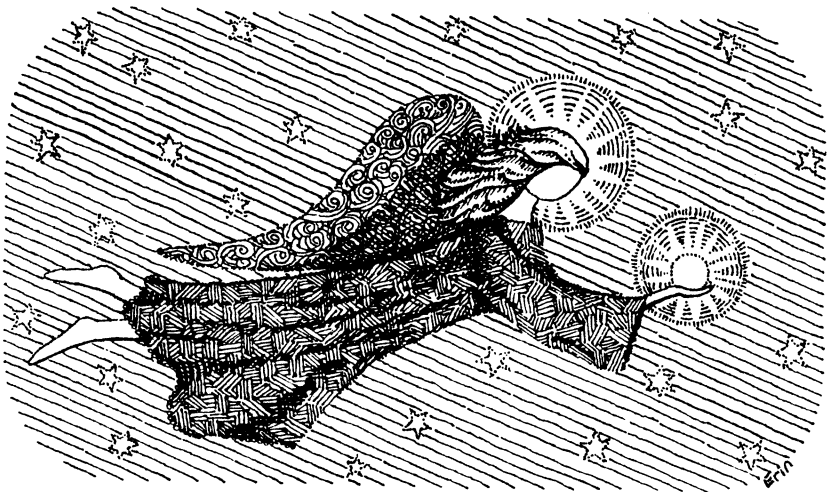
A Quarterly Newsletter of the Josephine Porter Institute • Woolwine, Virginia

ISSUE Nº 6

*At the turning of the time
The Spirit-Light of the world
Entered the stream of earthbly being.*

*Darkness of night
Had held its sway,*

*Day-radiant light
Streamed into souls of men.*



*Light that gives warmth
To simple shepherds' hearts,
Light that enlightens
The wise heads of kings.*

*Light Divine
Christ-Sun!
Warm thou our hearts,
Enlighten thou our heads,
That good may become
What we from our hearts would found
What we from our heads would direct
In conscious
Willing.*

Meditation given by R. Steiner at Christmas-Conference in Dornach, Switzerland, 1923.
The Christmas Conference, Anthroposophic Press, 1990, p. 74.

SEQUENTIAL SPRAYING ILLUSION, REMARKABLE COINCIDENCE, OR REALITY?

by Hugh J. Courtney

The Fall 1993 issue of *Applied Biodynamics* promised a more in depth article on the sequential spraying technique, and we would like to fulfill that promise in this issue.

First of all, the sequential spraying technique was developed by myself, almost accidentally, in the early summer of 1988 when it appeared that we were about to face a third year of blistering drought. Frustrated by that possibility, I reasoned that surely there had to be something in biodynamic agriculture that could relieve or at least ameliorate the damage to our pastures, hayfields and gardens. After all, had not Steiner himself in the *Agriculture* course, (see Lecture #5, especially p. 89), suggested that the preparations could help the plant attract to itself from its environment what was needed for its

best growth? I thought surely, if one knew precisely what preparations to use, then relief should be available somehow. That is, if one assumes that biodynamics really is valid and truly works. In my case, however, I did not have the wisdom to know the precise preparations to use.

At this point in my work with the preparations, I was convinced that it would be fairly difficult to cause harm with them, even if one used them in a situation that did not necessarily seem appropriate. The worst thing in such a case would be that their effects could be reduced, or negligible. So, I chose to use all nine of them. The six compost preparations

SPRAYING (continued on page 3)

AN IMPORTANT REMINDER AND A FLEXIBLE NEW OPTION FOR OUR READERS!

For most readers this is your last issue of *Applied Biodynamics*.

In 1993 there were 77 newsletter subscribers and 86 growers with Associative Contracts. We tried very hard to put together something that would be of use to anyone working "in the field."

The idea behind the Contract was to create a more effective means of mutual support between JPI and preparations users. A number of you who had 1993 Contracts have mentioned satisfaction with the arrangement and have expressed interest in a 1994 Contract.

NOW IS THE TIME to renew your contract. Enclosed in this issue is a JPI Order Form. The contracts need to be in by January 31, 1994! For growers with tight cash flow at this time of the year, the deadline can be negotiated. The Contract includes a newsletter subscription!

REMEMBER!: The contract is customizable! If the basic guidelines we provide, i.e. the amounts and kinds of preparations, are not right for you, please get in touch with us. We would like to meet your preparations needs as specifically and effectively as possible. For instance, some growers may want more compost preparations, and less BD#508. There is no reason why such a change in the Contract cannot be made. If your preparations requirements are extraordinarily high on a per acre basis, we might have to renegotiate the contract price, which we hope will be viewed as not unreasonable. On the other hand, for large acreages, we want to negotiate a contract that is economically within a grower's reach.

A NEW OPTION in '94 is an Associative Contract without preparations storage. In other words, you can sign on to a Contract with us, but we will not require that you have means of storing preps on hand. It will work, if all goes well, exactly the way the basic contract works, except that we ask you to specify (or call in to us) the time, as nearly as you can determine, at which you plan to use the preparations, especially the BD#500, BC, and the Compost Preparations. In this way, you will receive the preparations when you need to use them and thus there will be no need for storage. You may even split up the delivery schedule into more than two shipments, if required. (Please bear in mind that we charge an extra \$5.00 for each delivery above the basic Spring and Fall mailing). If this option is right for you, please check the "NS" box on the contract, filling out the rest of the contract as carefully as possible.

A SPECIAL THANKS to all who have subscribed to our 1993 *Applied Biodynamics* newsletter. A large portion of your subscription dollars helped fund our work directly. Please consider resubscribing in '94.



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.

LETTER FROM THE EDITOR

During this Thanksgiving, Advent, Christmas season, we are reminded that we are not solitary but rather interdependent beings. For example, the farmer/gardener is dependent upon the Cosmos and the Earth, and all who eat are dependent upon the farmer/gardener!

Thanksgiving raises our awareness that it is the nutritional gifts of the Earth and the Cosmos, the growing of our foods, that allow us continual replenishment of life forces. We are interconnected with the Earth and the Cosmos and it is in thanksgiving for this relationship that we live.

Advent is a time of waiting and of preparation for the Birth of the Light. We recognize our need to ready ourselves to receive this relationship.

It is the Christmas season that invites us to enter into a relationship with the spiritual forces of the Birth of Light. We are invited to participate in this relationship through our Earthly deeds. Peace on Earth can be realized through our participation as we recognize not only our interdependence but the significance of *how* we inter-relate/participate.

The Board and staff of the Josephine Porter Institute invites you to consider the active role you might take through the use of biodynamic preparations. A recent article in the "Raphael Association Newsletter" asks the question: "How can we make our work more effective so that like a highly potentized medication it can work powerfully on the sick society of our time? Any answers?" We at the Josephine Porter Institute would answer: "We can make our work more effective through the use of the biodynamic preparations."

May the joys of this warm season nourish you throughout the new year and may your daily efforts nourish health for the Earth.

— Candace Coffin, *Editor*

Applied
BIODYNAMICS

Applied Biodynamics is a quarterly newsletter of the Josephine Porter Institute for Applied Bio-Dynamics, Inc. The subscription price of \$35/yr. helps subsidize JPI research and development.

Editor: Candace Coffin Artwork by: Erin

A NUTRITION ARTICLE NATURE . . . A GREAT COMPOSER

by Betsy Cashen, R.D.

In the past two years or more there has been a noticeable shift in the nutritional message going out to the general public. The bottom line message is . . . look to whole foods to get the nourishment you need rather than isolated nutrients. This may hardly sound revolutionary to many people, and it probably has not made a dent in the ever-increasing sales of vitamins and mineral supplements. However, it does signify that nutrition scientists are recognizing that the whole really is much more than just the sum of its parts. While researchers have been able to analyze and extract many components from foods, and even synthesize these artificially, there is something even more elusive, and more significant, to be discovered in a vegetable or fruit in its original form and state.

An analogy given often by Dr. Gerhard Schmidt, (a nutritional researcher in the Anthroposophical tradition), is to consider the food as you would a musical composition. The notes must be played as written, and the rests or the pauses contribute as much to the character of a piece as any sounded note does. If I were to take the original notes of a piece and put them in a new arrangement, I will have an entirely different work; a new sound, a new feel, a new quality. Likewise, let us presume I could identify all of the substances known to exist in the juice of an orange (all of its notes). I obtain these one by one and assemble them in a solution. Although this new solution may resemble orange juice in a *substantive* way, what I have created is not the juice that originates from an orange. I now have a new configuration, a new arrangement. The inspiration that gave rise to the original musical piece will not be found in its rearranged form, anymore than my orange solution will have the integrity of orange juice. It is this particular organizing principle that cannot be found in the contrived "juice" made from combining the isolated parts.

In order to have a more complete understanding of the food, I want to be able to conceive of Nature as a great composer. She begins with an Idea for her living works and weaves substances from the world of matter to bring these entities into a physical existence. Coming from this broader perspective I can give the material-based nutrition research its relevance.

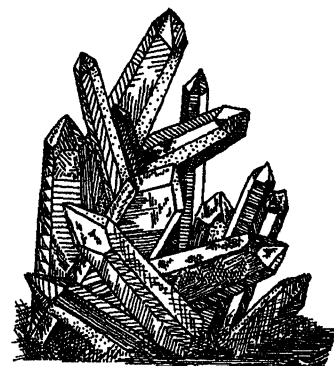
One continues to seek for other clues to the essence of a food:

- 1) qualities of taste, smell, color, physical shapes and patterns, and texture;
- 2) the growing conditions it thrives in;
- 3) its relationship to the elements — water, air, warmth, and earth;
- 4) when and where it was developed as a food for consumption;
- 5) does it play a special role in traditional celebrations or rituals?;
- 6) what quality does it have when eaten?;
- 7) does it tend to elicit a particular response or sensation?

These clues provide the text for the story of this food. They help us to come to an *artistic* conception of it.

A biodynamic farmer/gardener knows that the addition of inorganic mineral fertilizer (NPK) does not suffice to enhance the life of the soil and its ability to support healthy plant growth. Rather, effort is spent creating a biodynamic compost pile which is eventually spread in the fields. Analysis of this composted matter could show exactly what individual nutrients it contains, its specific acidity/alkalinity, etc. It's true, these are certainly very important aspects of the compost as fertilizer. However, just as with the nutrition scenario, the straight quantitative valuation of this farm product analyzes just the ashes, or the unorganized parts from this living whole. The real value of the compost can be fathomed more accurately when it is viewed as a living thing, an organic composition.

The ability of a living thing to organize what is essential for its identity is a tremendous feat. That a dandelion will form a rosette at its base, that cow's milk will be fluid and white, that garlic will have its garlicky smell, are all unique expressions of life and reveal at least as much vital information about a food's nourishing potential as any nutrient scoreboard does. Human ingenuity has not been able to duplicate these kinds of natural phenomena. Let's hope we don't get so entranced with our skills of dissection that we neglect to notice what stands before us in its completeness.



DR. PFEIFFER'S BD COMPOST STARTER AND BD FIELD SPRAY

by Hugh Courtney with Chris Stearn, Ph.D.

After thoughtful consideration and some discussions with The Pfeiffer Foundation, JPI has decided to offer Dr. Pfeiffer's BD Compost Starter and BD Field Spray. One of the questions we are asked most frequently is to explain the difference between the BD Compost Preparations and the Pfeiffer BD Compost Starter. There is no ready-made or quick and easy answer to this question, so to help frame an answer, I have enlisted the aid of Chris Stearn who is a consultant for and Board member of The Pfeiffer Foundation. This article will first cover his description of the products offered by The Pfeiffer Foundation, and then I will offer some additional input from the perspective of the biodynamic preparations with which we work here at the Josephine Porter Institute for Applied Biodynamics, Inc.

Chris Stearn's statement is as follows:

"The BD Compost Starter was originally developed by Dr. E. E. Pfeiffer in response to Dr. Rudolf Steiner's request to develop methods to get the biodynamic preparations into the soil. The BD Compost Starter seems to best serve the needs of people who have a small amount of organic matter to compost or who have a specific need to use Pfeiffer's 'hot fermentation' method to generate large quantities of stable compost in a short period of time. It is also very appropriate for the beginner in biodynamics who knows little about the method and wants to get started without worrying about 'am I doing it right?' The BD Compost Starter and BD Field Spray contain a myriad of organisms isolated by Dr. Pfeiffer. These organisms were specifically selected for their ability to degrade raw organic material as well as their ability to form humus. Both these products contain a vegetable enzyme base, the BD Compost Preparations #502-507 and stirred BD #500. Additionally, Pfeiffer prepared several barrel preparations similar to Maria Thun's Barrel Compost that are included in these products. Dr. Pfeiffer's BD Compost Starter and BD Field Spray have been available since the late 1940's. Over the years, they have proven to be very effective in a wide range of composting applications from backyard to intensive feed lot manure to municipal waste."

In essence, as I see it from the perspective of the biodynamic preparations, Dr. Pfeiffer has produced a highly sophisticated version of a biodynamic compound preparation. In the short history of biodynamic agriculture, a number of such compound preparations have been concocted. The most well known, of course, are the Maria Thun Barrel Compost already mentioned by Chris, and the "Prepared #500" of Alex Podolinsky in Australia. The major purpose of such compound preparations is to provide a way to distribute the compost preparations to the soil. An additional purpose is to make the preparations "go further." All such compound preparations seem to be effective and all seem to have a significant body of users who swear by



Horn Manure
BD #500

them. All are properly justified in labeling themselves biodynamic since they contain at least some of the original biodynamic preparations, and their use results in the biodynamic effect to at least some degree. Thus, it seems most appropriate for JPI to offer the the BD Compost Starter and the BD Field Spray.

Much of the advertising for the Pfeiffer products emphasizes the "biology" involved. My perception is that their effectiveness results from two major reasons, both involving the "dynamics" of their production. First, they contain the biodynamic compost preparations #502-507, and the stirred BD #500. Second, their manufacture includes a "rhythmatizing" or "potentizing" process similar to but more intensive and sophisticated than the technique used by Maria Thun to make the Barrel Compost. Since the entire process is proprietary, there may well be other reasons for the effectiveness of the Pfeiffer BD Compost Starter and BD Field Spray. My view is that the two reasons mentioned are quite sufficient to render the Pfeiffer products far superior to any other compost "inoculants" or "activators" presently on the market. (The BD compost preparations should not be viewed as "inoculants" or "activators.") Indeed, a great deal of energy has been expended in trying to duplicate the composting effect of these products. Those efforts focus on the "biology" but ignore the "dynamics" and thus far, have failed to surpass Pfeiffer's work.

From the point of view of maintaining the "purity" of biodynamic agriculture as presented by Rudolf Steiner in the Agriculture course, one can object to these materials. Indeed, objections have been raised to all such compound preparations. In Pfeiffer's case, such objection has been particularly vehement because the ease of use of the products permits one to avoid thinking "biodynamically." My concern is that after achieving very impressive results, the user may not be inclined to apply the BD #501 or #508 preparations as well. Such an incomplete approach to biodynamics when using these products should be avoided. However, I would believe that had Dr. Pfeiffer been granted a few more years for his work, he would have found a solution to this problem as well. As Dr. Pfeiffer mentions in his preface to the Agriculture course, Dr. Steiner expressed his concern for the future of the biodynamic preparations in the following statement: "The most important thing is to make the benefits of our agricultural preparations available to the largest possible areas over the entire earth, so that the earth may be healed and the nutritive quality of its produce improved in every respect." Pfeiffer took this as a mandate for his life's work¹ and the BD Compost Starter and the BD Field Spray represent his valiant and brilliant effort to fulfill the charge of his mentor.

From our point of view, we shall continue to focus our work on the actual biodynamic preparations. We do wish to provide the biodynamic practitioner with a full "tool shed" of the very best biodynamic products available. As part of that "tool shed" we are now offering single units of the BD Compost Starter and BD Field Spray.

¹ See related biography: *Ehrenfried Pfeiffer: A Profile* by Gisela Franceschelli, beginning on page 7 of this issue.

SPRAYING (continued from page 1)

were applied in the form of the Barrel Compost (Thun recipe) along with BD #500, BD #501, and BD #508. I reasoned that I should commence in the evening with Barrel Compost, since the generally accepted biodynamic practice is to begin with the compost preparations. I followed the next morning with BD #508, and since I had been very much impressed with the work of Lilly Kolisko, and since I already had some on hand, I chose to use the fermented version of #508 as detailed in her work, *Agriculture of Tomorrow*. In the evening of the second day I applied the BD #500. On the morning of the third day, I sprayed the BD #501(c), which is a crystal silica material found in a matrix of rectorite, a clay-like substance. I had been experimenting with this form of #501 and had been very pleased with the results to this point, so it was an obvious choice for me.

Since I was treating hayfields, and was very interested in the water element anyway, I chose to apply the sequence in a Leaf¹ period, which turned out to be just before the full moon on the 26th, 27th and 28th of June 1988. Sometime within the following night, we received a nice, lengthy, soaking rain which totaled around .9 of an inch.

My first reaction was one of total awe at the results. I next had a sense of thankfulness that my trust, belief, or faith in the preparations was confirmed. Then the logical mind took over and began to label the results simply as coincidence that would not necessarily be duplicated were one to try the sequence again.

Later on that summer, the drought tendency gave signs of returning. I repeated the sequence on hayfields during a Leaf period in July, and experienced a similar result. The sense of awe, that a person could change a weather pattern, was followed this time by an awareness that this technique required a very responsible attitude and was not an activity to be engaged in thoughtlessly.

Later that fall, after a rainless month of October, (and the threat of forest fires looming), the sequence was applied once again. This time I enlisted the services of John Carlson, who had come to help me with the preparations work for a time. The spraying was done on hayfields. Again it was applied principally during a Leaf period, and again it was followed by rain of the most beneficial kind. Because of my poor record keeping, I can not give exact dates or actual precipitation results, but I at least had a witness this time.

In March 1989, John Carlson and I were in Kimberton, PA in connection with the visit of Maria Thun to this country. John and I decided that the newly acquired BD Headquarters property could benefit from a treatment of the preparations. With the consent of Rod Shouldice (the BDA's Executive Director at that time), we proceeded to treat the property with the sequential spraying technique. Since we were there for

only a very short time, it seemed a good idea to apply *all* the preparations. We did not record exact times and dates of application, but we have calculated that it took place on March 10, 11, 12 (during Fruit, Flower and Root periods successively). It was completed less than a week after an eclipse of the Sun, two weeks prior to Easter and 10 days prior to Full Moon, or 8 days prior to the Spring Equinox.

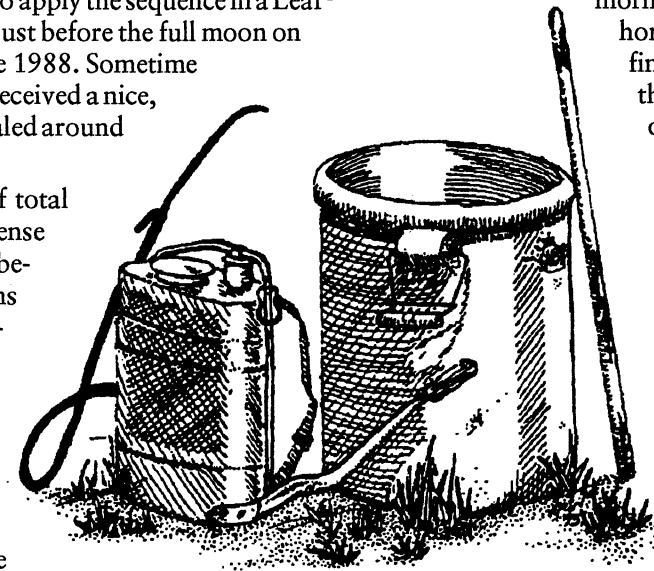
We were aware that the previous growing season in Kimberton had been a pretty dry one from all the complaints expressed by the CSA vegetable gardeners. However, the 1989 growing season in Kimberton was among the wettest in recent memory, and Kerry Sullivan is now quite adamant that I do not use the sequence in the Kimberton area when I am visiting. That same year in Woolwine, it was a different story, with less than 1.25 inches from May 7th until May 31st. So, from June 1st to June 3rd we repeated the sequence, and on the morning of June 4th, we added the milk and

honey spray (see Sidebar #1) as a kind of finishing touch to the sequence, even though we had received a nice .2 inches of rain during the night of June 3/4. The rainfall amounts subsequently were as follows: June 4 - trace; June 5 - .5"; June 6 - 1.25"; June 7 - .9"; June 8 - 1.3"; June 9 - 1.55"; June 10 - trace. This period was followed by a couple of dry days and for the remainder of the month, we alternated with modest precipitation amounts for 2-3 days interspersed with one or two dry days. The most remarkable result was that almost all of the rain occurred during the night, was of the gentle steady type, rather than

a cloudburst, leaving the day sunny and bright with gardens and fields still able to be worked.

This sequence at the beginning of June was applied during Fruit and Root periods, with the bulk of it, including the milk and honey part, taking place during the Root (Earth element) period. It may also be noted that it took place just prior and during the time of new moon. For the rest of the growing year, we experienced considerable precipitation, and we were more concerned about reversing the rain impulse. (An interesting aspect in the following years during lengthy dry spells has been that the plants in our gardens showed only minimal stress from lack of moisture even though gardens elsewhere in the area were totally burned out. This has been without consistent sequential spraying.)

During the course of the next couple of years, when speaking to a farmer or gardener driven to despair by a drought situation, I felt that my experience with the sequential spraying technique was something to be shared, albeit with both discretion and caution as to claims of 100% assured success. At a certain point, to be clear about the directions for completing the sequence, I wrote down the specific instruc-



SIDEBAR #1

THE MILK SPRAY / THE MILK & HONEY SPRAY

When certain plants in the garden experience a sudden attack by detrimental insects or when plants seem to be experiencing great stress which is not overcome by the Barrel Compost (Thun recipe) or other BD preparation spray treatment, a spray of milk, or sometimes, a spray of milk and honey, can often bring benefits. While attempts to explain what is actually happening are difficult, the most evident result is a tremendous increase in the population of so-called beneficial insects, often in such numbers as to quickly eliminate as a problem the previous onslaught by the detrimental insects.

The basic formula used is one (1) part milk to nine (9) parts water, (i.e. 1:10 ratio). The honey is sometimes added in a ratio of 1:100

tions (see Sidebar #2). After some further personal experience in using the technique, I began to recommend that BD #501 and #508 be interchanged in the sequence, because my perception was that the #508 was the principal “trigger” for precipitation. I felt that it was important to use all the preparations, and if someone experienced rain before finishing the sequence, they might be inclined to skip the remaining steps. Although I have a personal preference for the #501(c), the sought for results have been readily obtained with “regular” versions of BD #501.

As time went on and more and more people reported positive results, I became less hesitant to recommend the technique. In the beginning, I would focus on the particular crop which the grower was working on, but in general, if pasture or hayfields were in the picture, I would suggest that a Leaf (Water) period* be used when applying the sequence. In the first 100 times that the technique was used, the success rate in “stimulating” rain was greater than 90%. Even in the few cases of failure, one could readily identify the factors that may have been involved. In at least one instance, old, improperly stored preparations were used during a Fruit (Fire/Warmth) period resulting in a “technical” rain. By “technical”, I mean that shortly after completion of the sequence a few scattered drops of rain fell, but not enough to call the technique a success.

When Dan Thomas, in South Dakota, used the sequence on grain fields during a Fruit (Fire/Warmth) period, the resultant .1" of rain did little to relieve the dry conditions. One can label this a “technical” success, and a substantive failure. At a later time, when Dan tried the sequence during a Leaf (Water) period, whatever success achieved was completely overshadowed by another phenomenon observed. On the particular field where the sequence was applied, a totally different weed population subsequently sprang up. To the precise edge of the field where the Leaf (Water) period sequence was applied, the entire field was infested with broad leaf weeds, mostly in the mustard family.

In an effort to analyze what may have happened, I offered Dan the following speculations: “ One of my contentions with the sequential spraying has been that when the land receives the benefit of all the preparations in such a short period of time, it can attract to itself what is needed. What your land may have needed is the benefits of a green manure crop with a high sulfur content and the soil structure benefits (i.e. maybe

to the entire volume. Particularly when using the honey, the water should be warmed to aid in dissolving the honey. Each mixture is stirred in the customary Biodynamic fashion for 20 minutes and then sprayed in a medium to fine mist, somewhere between the large drops recommended for BD #500 and the fine mist recommended for BD #501. We generally stir and spray either 5 or 10 gallon batches with the following ratios:

	FIVE GALLONS	TEN GALLONS
MILK	½ gallon	1 gallon
WATER	4½ gallons	9 gallons
when used with HONEY	6.4 oz. by volume	12.8 oz. by volume

porosity and crumb structure improvements). It may be that you would not have had the same experience if you had continued to spray the sequence during a Fruit (Fire/Warmth) period in accordance with the organ of the plant (wheat) you were growing. It would also be extremely interesting to know what would have manifested if you had used the sequence during a Root (Earth) or a Flower (Air/Light) period. For now, I would have to recommend that you spray in a Fruit (Fire/Warmth) period for a wheat crop. A further suggestion is that you look closely at your rotational pattern and consider a broad leaf crop (perhaps winter kale?) as part of the rotation. It may be also, that you should reserve the rain stimulating sequence only for pasture or hayfield areas and apply that during the Leaf (Water) period. *The sequence has to be viewed as a technique to balance forces.* The fact that the weeds appeared in the way they did suggests that Nature was attempting to use them to bring the balance that the wheat crop could not manage to do, especially when it was the Leaf impulse that was so strongly stimulated. I would say that you can take some consolation in the fact that your soils respond so readily to the biodynamic preparations stimuli.”

Other “failures” of the sequential spraying technique were equally instructive. In Whitney, Texas, in the summer of 1990, Charlie Townsend experienced two failures in a row with his efforts to use the sequence. However, a closer examination of the celestial events taking place during the time he chose to spray revealed that in the first instance an eclipse was transpiring. In the second instance, the two middle sprays in the sequence were applied when the moon was at a nodal point and when it was occulting (“hiding”) both Jupiter and Venus. Although Charlie has subsequently managed a “successful” sequential spraying, his concern that he might be “robbing” a neighbor of a share of the rain led him to abandon the technique for the time being. Interestingly enough, his experience after making this decision is that the rain supply to his land has been entirely adequate. Out in Carpinteria, California, the first time Steve Moore applied the sequence resulted in absolutely no rain in the following 72 hours. Examination of the celestial events taking place revealed that the two middle sprays in the sequence were applied during an eclipse of the Sun. This past summer, in Blairsville, Georgia, Hugh

came from a brief hint that Steiner once gave for making visible the formative forces in living organisms. The chemical reaction of copper chloride with a plant sap or blood would show a certain formation, a pattern. The pattern makes visible, according to Pfeiffer, the formative forces of the organism, be it plant, animal, or human.

Merely investigating the chemical components of compost according to the NPK-method of thinking (NPK — inorganic mineral fertilizer made up of Nitrogen, Phosphorous, and Kalium, i.e. potassium) was not enough for Pfeiffer. In the preface to the Agriculture Course, Pfeiffer writes that he asked Steiner questions about why the spiritual impulse was bearing so little fruit. He further questioned, “Why, worst of all, is the will for action, for the carrying out of these spiritual impulses, so weak?” Steiner’s 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.” (*Agriculture Course*, Preface, p.7).

As a way to indicate the presence and quality of forces, Pfeiffer developed the chromatography test method. It is a qualitative test which can be used, for example, to separate different fractions of humus extract by means of the capillarity of suitable filter papers. The filter paper is prepared with a photo-reactive substance, for instance, silver nitrate; an extraction of humus is added, and the two agents react in forming patterns on the filter paper and coloring it. The interpretation of these visible manifestations are significant for determining the quality of the substances contained in the extracts.

Besides teaching, laboratory work, consulting and research, Pfeiffer gave many lectures in New York City and in Spring Valley, NY. He also played an important role as an active member of the Anthroposophical Society in America.

In closing this brief summary of Pfeiffer’s life and work, the following quote from a lecture he gave in Spring Valley, NY, shortly before his death on November 30th, 1961, will elucidate his inner strivings. “As a fourteen year old I had the idea, the ideal, to try to comprehend the forces that are effective in all the appearances and manifestations in nature. I wanted to understand the forces that make the plants grow, that give movement to the animals, that bring forth thunder and lightning, and even those forces that work for the functioning of man’s body. This dream forced me to learn about my environment, to study plants, animals and nature forces. These impulses from my youth determined my complete life as a researcher.”

Through Pfeiffer’s efforts, biodynamics in America gained a much stronger foundation. Many pioneering biodynamic farmers throughout America profited from his advice. A wealth of useful knowledge about soils and husbandry can still be found in his writings.

Thanks to a warmly worded biography by Alla Selawry, it is possible to picture the personality of Ehrenfried Pfeiffer. A number of the books written by Pfeiffer might inspire those who want to learn more about the diverse initiatives with which he was involved.

One cannot help but be left with a deep respect for the man who did so much to pioneer biodynamics in this country. ~

— BOOK LIST —

Biographies on Ehrenfried Pfeiffer

- Ehrenfried Pfeiffer, *Pioneer in Agriculture and Natural Science* by Dr. Herbert Koepf
- Ehrenfried Pfeiffer, *Pionier der Geistesforschung und Praxis* (German) by Alla Selawry

Books by Ehrenfried Pfeiffer

AGRICULTURAL BOOKS

- Biodynamics, Three Introductory Articles*
- Biodynamic Farming and Gardening, Vol. I, II, III*
- Grow a Garden and be Self Sufficient*
- Weeds and What They Tell*
- Biodynamic Compost on the Farm and How Much Compost Should We Use ?*
- Soil Fertility, Renewal, and Preservation*
- The Biodynamic Treatment of Fruit Trees, Berries, and Shrubs*
- Using the Biodynamic Compost Preparations and Sprays in Garden, Orchard, and Farm*
- The Earth’s Face, Landscape and it’s Relationship to the Health of the Soil*
- Thoughts on Nutrition*
Sub-Nature and Super-Nature, The True Foundations of Nutrition
- Chromatography Applied to Quality Testing*
A handbook on how to apply the method of Chromatography as a quality test.
- Sensitive Crystallization Processes*
A Demonstration of Formative Forces in the Blood

Pfeiffer helped organize and manage Steiner's travel plans for lecture tours. He accompanied Steiner on his travels and had the opportunity to pose scientific and esoteric questions to Rudolf Steiner.

In 1924, when Rudolf Steiner gave the Agriculture Course in Koberwitz, Silesia, (today a part of Poland), Pfeiffer was unable to participate. He was, however, the person who actually made the biodynamic preparations for this particular event under Steiner's guidance.

Pfeiffer was 26 years old at the time of Rudolf Steiner's death. He felt deeply responsible for completing the tasks received from his mentor, Rudolf Steiner.

Pfeiffer had been making the biodynamic preparations since 1921. In 1924, he began working on a means to represent etheric formative forces via what is now known as the sensitive crystallization method. At the Goetheanum Youth Section, Pfeiffer taught classes on the nature of substances, and he presented alchemical knowledge from a scientific-spiritual point of view.

In an effort to further biodynamic agriculture, Pfeiffer traveled during the years 1927 to 1934 throughout Europe, Asia Minor, Egypt, and England. In 1934 he visited the United States for the first time. Up until 1941 he was a major consultant for the development of biodynamic agriculture in Switzerland, Germany, and the Netherlands.

During this time, his studies and experiments with a blood crystallization technique attracted attention from the professional medical world in Berlin, Germany, and in Philadelphia, Pennsylvania. In 1938 Pfeiffer was offered a position at the Hahnemann Medical College in Philadelphia where he worked with blood crystallizations of cancer patients. This outstanding work earned him an honorable medical doctorate from Hahnemann.

In 1940 he moved with his wife and two children to Kimberton, Pennsylvania in order to establish a biodynamic model farm and farm school, as well as a research laboratory. He was initially granted freedom to carry out scientific work and was backed by generous financial support. Subsequently, however, the situation changed and support was withdrawn.

Soon a new opportunity arose. In 1944, with the help of Peter Escher, Dr. Ehrenfried Pfeiffer purchased a farm in Chester, New York, where he and his wife managed the farm biodynamically. During this period he experienced a great deal of physical, emotional and financial stress and contracted a severe case of tuberculosis. Dr. Pfeiffer spent more than two years in a hospital undergoing several surgeries and medical treatment. Pfeiffer's searching mind could not rest. While a patient in the hospital, he studied world and cosmic history. He also spent time learning experimental and theoretical

microbiology in the hospital's laboratory. These laboratory experiences served as the basis for his later achievements in biodynamic composting methods.

Due to his illness, Dr. Pfeiffer could not go back to work on his dairy farm which his wife and a coworker had managed during his hospital stay. Therefore, in 1948, the Pfeiffers moved to Threefold Farm in Spring Valley, New York, with its new laboratory. Here Pfeiffer continued his work with the biodynamic preparations, the sensitive crystallization method, and the chromatography process.

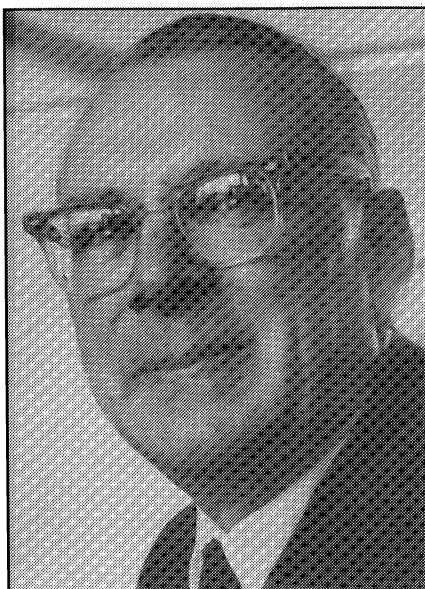
Pfeiffer helped to found the Bio-Dynamic Farming and Gardening Association of North America. He managed the advisory tasks and organized conferences. His main emphasis was to find ways to improve soil fertility, plant growth and food quality. One way of accomplishing this task was the development of the Pfeiffer Compost Starter. Farmers used it by spraying it on the daily accumulations of animal manure. The Starter accelerated the composting process, helped eliminate odor, and led to an improvement in soil structure and to a healthier soil life.

The Compost Starter was also used for composting urban and industrial waste. The combination of the biodynamic preparations and certain microorganisms helped the decomposition of paper, wood, fish, meat, and other organic matter. The goal was to produce a stable humus structure by the end of the composting process. (In the 1950's, urban household waste consisted mainly of plant material. Today, composting household waste would require removal of much inorganic material.)

Although Pfeiffer was involved with agriculture, he regarded the question of food quality of utmost importance as well. The study of the effects of trace elements, enzymes, amino acids, bacteria, and fungi helped him to better comprehend the process of nutrition. A friendly cooperation between the Bio-Dynamic Association and the Natural Food Association (NFA) was achieved due to Pfeiffer's efforts.

In 1957, Pfeiffer received an invitation to teach at Farleigh-Dickinson University in New Jersey. The class that he taught carried the following subtitle: "This course gives a survey of nutrition in the light of modern research developments. An analysis of food values and their importance in the maintenance of good health are the major concerns of the course."

The sensitive crystallization method, which makes visible etheric formative forces, was developed by Pfeiffer in cooperation with Erika Sabarth. Later on, Alla Selawry joined this project as well. The impetus and initial idea for this process



Ehrenfried E. Pfeiffer, M.D.
February 19, 1899 – November 30, 1961

Lovel had his first ever "failure" to achieve rain results after a long string of successes. He feels that a retrograde Mercury may have been a factor. All these "failures" strongly suggest that one must pay very careful attention to the forces involved, be they celestial or earthly in nature.

In an effort to better collect the data involved in the phenomenon of this sequential spraying technique, I enlisted

DESCRIPTION OF A SEQUENTIAL SPRAYING TECHNIQUE USING THE BIODYNAMIC PREPARATIONS TO BALANCE FORCES OF PLANT GROWTH SIDEBAR #2

The sequential spraying technique involves the application of all *nine* of the biodynamic preparations in a relatively brief period of time so as to maximize the possibility for plants (and soils) to attract to themselves from their environment what is needed for the best growth. It is accomplished in a period covering three days, or as little as 36 hours. Preparations BD#500, BD#501, and BD#508 are applied separately, whereas the BD compost preparations, #s 502 through 507, are applied as a group in the form of the Barrel Compost (Thun recipe).

DAY ONE: Evening hours. Stir Barrel Compost (Thun recipe) for 20 minutes and spray. Have usually sprayed only one to three units over an area of one to three acres more or less.

DAY TWO: Morning hours (as near to sunrise as is possible). Stir BD#508 in the fermented version (as described by Kolisko in *Agriculture of Tomorrow*, p. 83)¹ for 20 minutes and spray over the same area covered the previous evening by the Barrel Compost (Thun recipe) spray.

DAY TWO: Evening hours. Stir BD#500 for one hour and spray over the same area covered by previous sprays.

DAY THREE: Morning hours (as near to sunrise as is possible). Stir BD#501(c)² for one hour and spray over the same area covered by prior sprays in the sequence.

The principal consequence from use of this sequential spraying technique that has been observed, but which may be only coincidental, is an overall improvement in conditions of soil moisture. This consequence was observed even when sequence was varied by applying the BD#501(c) on day two and the BD#508 on day three. Application of the entire sequence during a LEAF (water constellation) period dramatically enhances the soil moisture situation, we believe. The M. Thun planting calendar has been used to determine constellational forces.

¹ The Kolisko recommendation as modified in our practice is basically as follows: Take one unit of the shredded horsetail herb (*Equisetum arvense*) which is approximately 10 ounces by volume, add to one gallon of water, bring to a boil and simmer for one hour. Remove from heat, transfer to crock (or other storage container) with loose fitting, store in a cool place, i.e. basement, and allow to ferment for 10 days to 2 weeks until the "characteristic smell", described by Kolisko, develops. Thereafter, strain the remaining particles of herb, place the tea in a glass jug and store in a cool dark place until ready to use. Store as long as 6 months or more without loss of effectiveness. Take ½ gallon of fermented tea, add 4½ gallons water, stir 20 minutes and spray on up to 1½ acres. This method allows one to use one unit to treat up to 3 acres with as powerful effect as can be achieved by the fresh tea applied to one acre.

² BD#501(c) is an experimental form of horn silica derived from a mined microscopic crystal quartz found in a rectorite matrix. Rectorite is a clay-like mineral found in veins in Arkansas.

the services of Chris Stearn, from Weleda, Inc., to design a form (see *Sidebar #3*) for reporting the results of using the sequential spraying technique. In the Spring '93 issue of *Applied Biodynamics*, the article entitled "Practical Biodynamic Research" listed several research questions to be tackled, among them one on the sequential spraying technique (see *Sidebar #4*, question #5 from "Practical Biodynamic Research").

The reader will observe that the form (*Sidebar #3*) is subtitled: *Sequential Spraying for Drought Relief*. In 1993 however, the most significant development with regard to the sequential spraying technique involved using it as a possible way to ameliorate the excessive rain experienced in the Midwest. Working in close cooperation, Kimberly Rector in Caledonia, Illinois, and Claire Hall in Wabasha, Minnesota applied the sequence beginning with Barrel Compost the evening of July 2nd and ending with BD #501 the morning of July 4th. The entire sequence was accomplished during a Fruit (Fire/Warmth) period with no apparent celestial events occurring that might interfere other than a retrograde Mercury. Their rather thorough completion of the report form suggests that the sequential spraying technique is not necessarily confined to drought relief only. I will allow the narrative reports submitted by each of them to support that contention.

Kimberly's report states: "For several weeks before the sequential spray, we were averaging .5" rain per day — about 7" rain every two weeks. After the sequence we averaged only about .1" of rain a day. During the 12 day period after the sequence, weather forecasters were calling for big rains (from 2-4" on several occasions). We received more moderate amounts. Two or three times we observed big rains just a mile or two away — when the big clouds rolled over our farm, we'd get just a light drizzle — it seemed like a mist. On one occasion, when we received only .2" of rain, a big storm was raging within sight, just 600' feet to the north of us, dropping an inch or two of rain, knocking down many trees. Overall, I feel that the sequence was a success in bringing some localized relief to the floods."

From Claire Hall's report the following is excerpted: "After completing the sequence with #501 on the morning of 7/4, we had only .15" of rain for the next 6½ days. During this period there were heavy rains, high winds and large hail in all directions. We watched storms pass by but no real substantial rainfall occurred here until last night and this morning (7/11) when we received .85" with thunder and lightning but no high winds or hail. The days we had without rain were humid, some sun, mostly cloudy, with morning fog and mostly cool. We got a lot of work done and were immensely grateful. We have watched with interest the last few years for accounts of the use of the method of sequential spraying to balance both drought and flooding conditions. This is the first time the method has been used on our farm. Had Kimberly not asked us to do it, it would not have been done here. One of the things that first attracted me to biodynamics was being told by Dewane Morgan that we could have a beneficial effect on our whole area by use of the preparations on our farm. The use of

all the preparations in concert with the expressed purpose of influencing the weather patterns is so much larger in scope that we have had reservations about our ability to responsibly use these powerful spiritual forces in this way. Being asked by Kimberly for our help in strengthening a regional impulse made the decision easy. I now feel good about having done the sequence spraying, (and) trying to cooperate with and offer assistance to ease the rains and ongoing devastation from flooding that is devastating the Mississippi River Valley is an effort I am glad to join. We wondered if an effort to ease drought and heat on the East Coast with use of the sequence sprayings would harmonize with or prove dissonant with an effort to ease the rain in the Midwest. There is so much we don't know."

There is so much that we don't know and I can only reiterate Claire Hall's last comment above. During the same approximate time, but in a Leaf (Water) period, several of us in the Western parts of Virginia and North Carolina did do the sequential spraying. While we all achieved the results we have now become accustomed to experiencing, it was not until application of the sequence a second time during the month of July that there was any significant dissolution of the high pressure off the East Coast that seemed to be contributing to the heavy rain situation in the Midwest.

What is the reality behind this phenomenon of sequential spraying? How can one possibly lay claim to influencing the weather in the way that some of the preceding experiences might seem to suggest? If we truly have the power to influence a future event from such a deliberate present action, what is our responsibility? Perhaps from the beginning of humanity's experience with weather on the Earth, the dream has been to influence a future weather event. When one actually completes a sequential spraying and experiences the hoped for result, one is overwhelmed with a feeling that I call 'Sorcerer's

Apprentice' syndrome. My own experience of the history and evolution of this technique has taught me that it should never be entered into lightly or with totally materialistic motivation. In fact, anyone who does so may be in for serious changes in his or her life. My perception is that not only does one change the agricultural atmosphere of the farm/garden individuality, but the spiritual atmosphere changes as well. Since this claim is even less subject to proof, I can only suggest a thoughtful caution before using the sequential spraying technique.

I conclude by summarizing my present understanding of how one should use this technique, and what its use may accomplish. First of all, it should be used with an attitude of thoughtful responsibility. In the beginning of my experience with it, I saw it as strengthening the plants and the soil to permit the attraction of what is needed for best plant growth. I then became aware that celestial and cosmic forces were also a probable factor of significance. In the case of drought, the sequence can be seen as supporting watery forces that have somehow become weakened. In the case of excessive rainfall, the sequence may likely be undergirding the drying (fiery/warmth) forces that are too weak.

A further responsibility to be recognized and included for future consideration is that the earth and air forces may also need support. It would be important in the future to give "equal time" to the four elements of Fire, Earth, Air, and Water when considering application of a sequential spray. It might be highly appropriate to do a sequential spraying as an integral part of celebrating the Festivals of the year, emphasizing a different element during each Festival. The effects of the technique also appear to be significantly reinforced when done just prior to either New Moon or Full Moon. One also needs to avoid so called "difficult" or blank periods on the calendar when celestial events of one sort or another can not support the whole process. In at least a few instances when faced with these celestial situations, an abbreviated sequence

has been used by combining Barrel Compost and BD #500 (or #(x)500) in one spray in the evening and BD #501 (or #501(5x)) and BD #508 in one spray in the morning. In every case, the hoped for results have been forthcoming. However, whenever the sequence has been used without regard to what is actually happening in the heavens, the opposite effect to what is desired can result. (The major use of this technique should be to balance and harmonize the forces and energies of the agricultural individuality. No biodynamic farm or garden need ever suffer from the extremes of unbalanced weather.)

At the very least, an experi-

ence with this technique can give the user a much stronger sense that the biodynamic preparations work as forces and not as substances. If one uses the sequential spraying technique, this can be experienced as a reality. To one who has never used it, it remains an illusion. As substantial results continue to be evidenced by its use, the sequential spraying technique may prove to be more than a remarkable coincidence.

P.S. Should you choose to try this technique, please request a report form from us and forward it to us so that we can study this phenomenon further.

¹ See the introductory remarks and explanations regarding LEAF, ROOT, FLOWER, FRUIT elements in the *Stella Natura*, Kimberton Calendar.

² WELEDA, Inc. was founded in Switzerland in 1921 as a pioneering company making anthroposophical and homeopathic medicines, and natural body care products. Within a year of Weleda's founding, branches were opened throughout Europe. The American Weleda was incorporated in 1931. Chris Stearn works at Weleda, Inc., PO Box 769, Spring Valley, NY 10977.

EHRENFRIED PFEIFFER: A PROFILE

by Gisela Franceschelli

This article is only a profile of the biodynamic pioneer, Ehrenfried Pfeiffer, since his work is so vast and rich. However, it is hoped that the information offered here will give you an overview and whet your appetite to pursue further knowledge of this important figure on your own.

Ehrenfried Pfeiffer was born in Munich, Germany, on February 19, 1899. A man of the last century? Not so! As a child, he learned to love nature, especially while hiking with his grandfather. On those hikes, under his grandfather's guidance, the world of medicinal plants and their healing substances was opened to the young Ehrenfried. Pfeiffer was gifted with the ability to experience the realm of the elemental beings and retained that ability throughout his entire life. His grandfather, an apothecary, also introduced young Ehrenfried (pronounce: Air-in-freed) to the wonders of chemical reactions in his laboratory.

Ehrenfried was studying at a musical conservatory in his teenage years when he began reading books on alchemical processes in nature. These self taught studies enriched his own experiences with the beings of the elemental world.

When the First World War broke out, Ehrenfried Pfeiffer was eighteen years old. He volunteered for an engineering unit, in the German army, where he learned to build bridges and fortifications and worked with explosives. Appalled by the cruelty of war, he concentrated on helping the wounded and dying.

After the war, back home in Stuttgart, Germany, Ehrenfried Pfeiffer became a student of Anthroposophy. He was formally introduced to Dr. Rudolf Steiner in the summer of 1919.

SIDEBAR #4

QUESTION #5: Does the use of the sequential spraying technique actually provide drought relief or encourage precipitation?

Background: In over 100 different applications of a sequential spraying technique . . . significant rainfall occurred in more than 90% of the instances. Cosmic and especially moon rhythms seemed to be a significant factor in determining the nature and quantity of precipitation. Statistics for this phenomenon have not been accurately recorded for all applications. Procedures and quality of preparations involved may have varied significantly. As a result, nothing but remarkable "coincidences" may be claimed for this phenomenon up to this point.

Research Parameters: Anyone experiencing a drought situation who wishes to apply the sequential spraying technique is asked to record exact times and dates of each application in the sequence plus appropriate weather data before and after. Such data and results, if any, should be provided to JPI so we may tabulate it and thereby learn more about the viability of this technique. A form for reporting use of this technique is available from JPI. (See Sidebar #3, p. 6).

SIDEBAR #3

JPI Research Project 5 (Sequential Spraying for Drought Relief)

Record Sheet

Name _____
 Address _____
 City _____, State _____, Zip _____
 Telephone: (Day) _____, (Eve.) _____
 Time Zone _____ (example: EST, EDT, CST, etc.)

Component Sprayed	Date	Plant Organ Day	Time	Relative Humidity (%)	Daily Temp. High	Description of Weather and Local Conditions
Barrel Compost						
BD Prep #0						
BD Prep #00						
BD Prep #01						

*From Kimberton Calendar, **If available.

Example

Barrel Compost	6/15/93			90/61°F.	30.12"	Clear skies, few clouds on horizon, very dry.
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NOTE: If this spray sequence

Additional Information

Last rain, _____ (da. _____). Is rain predicted? ____ (Y/N). When _____? (Days or Date).
 If possible, please include paper weather maps and meteorological data covering your local area from a few days prior to the start of the spraying sequence through _____ after the spray sequence is completed.

After Spray Sequence:

Did it rain? ____ (Y/N). How long after finish of sequence? _____ (hours, or days). How much? _____ (inches). Over what area? _____ (Local, Wide).

Other observations, comments, feelings (please use other side of form if needed: