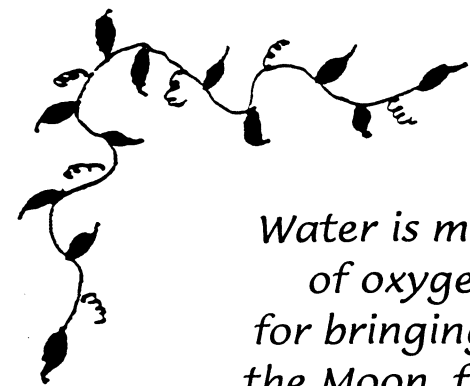




Water is much more than merely a chemical compound of oxygen and hydrogen. It is the ideal substance for bringing into the earth those forces that come from the Moon, for instance, for bringing about a distribution of the lunar forces within the earth. There is a definite connection between the Moon and the water on Earth. Suppose that it has just rained for a few days, and that these rainy days are followed by a full moon. Something stupendous takes place on Earth as a result of the full moon's forces. These forces shoot into all the vegetative growth; but only if the full moon was preceded by some rainy days.

—R. Steiner, *Spiritual Foundations for the Renewal of Agriculture*, lec. 1, p. 23f.

SO THAT THE EARTH MAY BE HEALED

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

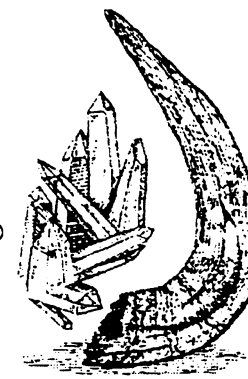
ADDRESS CORRECTION REQUESTED



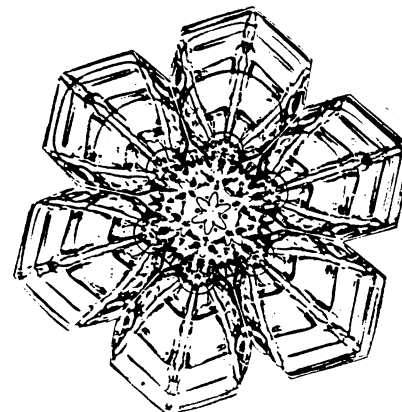
WINTER 1998-1999

Applied BIODYNAMICS®

Newsletter of the Josephine Porter Institute • Woolwine, Virginia



ISSUE No. 25



Search for the really practical life,
But in a way that does not blind you
To the spirit that is working there.
Search for the spirit,
But do not search
In spiritual ecstasy, out of spiritual egoism;
Search for it
Because you want to apply it selflessly in the material world.

Turn to the ancient maxim:
"Spirit is never without matter, matter is never without spirit,"
So that you can say:
We want to do all material deeds in the light of the spirit,
And we want to seek the light of the spirit,
That it give warmth to us for our practical deeds.



Spirit, led by us into matter,
Matter, which we work up to its revelation,
whereby it brings the spirit out of itself;
Matter which receives from us spirit revealed,
Spirit driven by us closer to matter—
These form the germ of life
that can bring real progress to mankind,
That progress longed for,
Deep in the silent core of souls today.

— Rudolf Steiner (Sept. 24, 1919)
(transl. by Christine Murphy)

FROM THE EDITOR

The main article in this issue (starts on page 4) is a review of 10 years of data on the technique of sequential spraying for the purpose of local weather modification. Unfortunately, many more people use this technique than keep records of their usage, and so once again we include a record sheet in this issue. (Please use this revised version in preference to the one enclosed with the last issue.)

Malcolm Ian Gardner

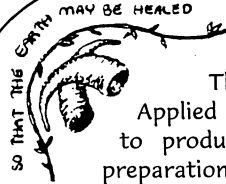
APPLIED BIODYNAMICS®

Applied Biodynamics is published three times a year by the Josephine Porter Institute for Applied Bio-Dynamics, Inc. (JPI). The subscription price of \$30 per year helps support JPI research and development. Back issues are \$5 each.

No part of this publication may be reproduced without the written consent of the publisher. Permission to reprint articles or artwork contained in this newsletter may be requested from:

The Editor, Applied Biodynamics
P.O. Box 133
Woolwine, Virginia 24185, U.S.A.
(phone/fax: 1-540-930-2463)

© 1999 The Josephine Porter Institute for Applied Bio-Dynamics, Inc.



MISSION

The Josephine Porter Institute for Applied Bio-Dynamics Inc. (JPI), 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 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.

Board of Directors

Lee McWhorter (Luray, VA), President
Jim Marquardt (Winchester, VA), Vice-President
Hugh Courtney (Woolwine, VA), Treasurer
Corry Watts (Horse Branch, KY), Secretary
Elizabeth Courtney (Woolwine, VA)
Sara Tufts (Mebane, NC)

Biodynamic Preparations Legend

- BD #500 — Horn Manure
 - BD #501 — Horn Silica
 - BD #502 — Yarrow
 - BD #503 — Chamomile
 - BD #504 — Stinging Nettle
 - BD #505 — Oak Bark
 - BD #506 — Dandelion
 - BD #507 — Valerian
 - BD #508 — Horsetail (*Equisetum*)
- } Compost Preparations

A TRIBUTE TO EHRENFRIED E. PFEIFFER
FOR HIS 100TH BIRTHDAY, FEB. 19, 1999

As we approach Ehrenfried Pfeiffer’s 100th birthday, it seems appropriate to focus our attention upon his seminal impact and formidable contributions to the biodynamic movement. Nearly twenty years have now passed since I first developed a budding interest in biodynamics. During a summer apprenticeship at a northern California French Intensive Style market garden I sometimes, in the heat of the day, retired to the old barn library, which housed a modest collection of Biodynamic publications. Upon my return to Madison, Wisconsin, I briefly corresponded with Dr. Koepf concerning my prospective enrollment at Emerson College. My life, however, for lack of a few pounds sterling, was bound to take another course. I accepted an apprenticeship opportunity with former Biodynamic Association president John Philbrick and his wife, Helen, the following spring and during my eastward journey was fortunate to visit Ruth and Richard Zinniker’s dairy farm, Heinz Grotzke’s Meadowbrook Herb Garden, and, perhaps most importantly, the Spring Valley Fellowship Community.

Three days in Spring Valley, New York, brought me in contact with Threefold Farm librarian Helen Bush, who was kind enough to introduce me to Adelheid Pfeiffer, Erica Sabarth, Alice Heckel, Evelyn Speiden Gregg, Margrit Selke, and Howland and Mathilde (Dickie) Vibber. These former colleagues of Dr. Pfeiffer were exceedingly kind and generous with their time. They entrusted me with portions of their personal collections of biodynamic literature and Ms. Selke, in her typically commanding style, impressed upon me the importance of securing my own land. This sustained me throughout the lean years of sacrifice necessary to achieve this goal.

There is a saying, “If I see further than other men, it is because I stand upon the shoulders of those who came before me.” This is fitting of the relationship Rudolf Steiner and Ehrenfried Pfeiffer had forged. Steiner, you will recall, served as Pfeiffer’s academic advisor in his early years, urging him to take many courses in the natural sciences, to carry, in fact, a load beyond what most students could reasonably handle. For if he wanted to overcome and go beyond materialistic science, Pfeiffer would first have to learn to know it very well. On the other hand, Steiner also gave Pfeiffer significant guidelines for conducting his own research into demonstrating and using the etheric formative forces, which Steiner had researched from a clairvoyant perspective. Steiner suggested among other things that he study crystallization processes and from this hint Pfeiffer developed the method of sensitive crystallization, which is now used for early diagnosis in anthroposophical medicine and elsewhere. Above all, it was in response to Pfeiffer’s question about how these forces could be put to practical use in agriculture, that Steiner began giving instructions for developing the biodynamic preparations. Pfeiffer worked tirelessly to test and develop these preparations and for many years almost single-handedly carried the biodynamic movement in the United States. He died in the midst of this work in Spring Valley, N.Y., on Nov. 30, 1961.

Michael J. Pawlicki (Berwyn, IL)

Durham, North Carolina, Sept. 3, 1998

Hello Hugh and all at JPI,

I was asked to document my experience with the rain sequence. Unfortunately, I did not document dates, so I must estimate. The details of my experience, however, I have shared on several occasions and feel my memory of them is pretty clear.

I believe it was August 1995 (could have been a year earlier or later). It was just before Labor Day because I remember we had a lovely soaking rain all through the holiday weekend. We had a drought situation and I called Hugh and asked if he had anything I could do for rain. He sent me products and instructions. I followed them despite the fact that I am allergic to before-dawn mornings. When I was spraying the last preparation, I felt something overhead, looked up and noticed a very small cloud swirling in a vortex formation over my head. I wondered if it could have anything to do with what I was doing. My logical brain said, “Naaaaaaaaaw.” My intuition said, “Definitely!”

I watched as this wisp of a cloud gathered strength and became larger and larger over the next hours. For several hours I could see that it continued to stretch out from the vortex pattern. That day became progressively more overcast and by nightfall it started to rain. It was the straightest rain I’ve ever seen for that long a period of time. No slant at all to this rain, it just came straight down for three days. It was a steady rain that was more than gentle but less than hard. It continuously rained this way for three days and three nights. An unusual aspect was that it never changed, the rate of rain was constant throughout. It was what my mountain friends would have called a serious rain. We needed it. It did not cause flooding or any negative effects, except perhaps to waylay some holiday plans for some folks. There was no rain forecast for that weekend, I heard that report the morning I finished the final spray and I remember thinking, “We’ll see.” We did. ...

Thank you Hugh. I appreciate your work. I appreciate especially your honest scientific exploration in realms into which many scientists would fear to embark. Thank you for being open minded enough to be truly scientific.

Lynette Marks

DELLA MAE, OUR ONE COW DAIRY
(Continued from page 3)

However, every now and then, she has a memory lapse and kicks the bucket, but by then I’m fast enough to get out of the way. I’m also quicker at milking, I can get about 2 gallons of milk in 15 minutes. We keep Della and her calf together and only separate them when I need to milk her or we need milk. We do this so that when the calf is old enough to drink all the milk, which takes 2 to 3 months, I will only have to milk when we need it. But when she first comes fresh, she gives so much milk, I have to milk every day.

If I’m lucky, I can con Della into sharing her milk with another cow’s calf; this way I’m not having to give so much milk to the chickens and pigs. When I put Della’s calf in the barn at night to separate them, I’ll put the other calf in too.

Then in the morning when I let Della in to get her feed and let her calf nurse, the second calf can steal the surplus milk. This takes a quick and persistent calf. At first, Della will try to kick the second calf away, if he nurses on a side by himself. When her bag is full her backward kick isn’t as affective as a full side kick; so, the calf usually nurses from the back, that way Della can’t see him. He is betting on the out of sight, out of mind theory, but Della knows he is back there, and she has her ways of retaliating. Ways that would probably have most people running for cover. It is not a pretty sight. When cows are grain fed, their “manuring process” is more frequent and it is usually very runny. Being behind an aggravated cow is not the safest place to be, especially at any short distance. This is her way of saying “don’t mess with me, I’m armed and dangerous.”

The calf I’m using now is pretty smart, after a few direct head shots from Della he figured out if he stood next to and on the outside of Della’s calf, that if Della tried to kick him away, she would be hitting her own calf instead of him. Some farm animals are pretty smart and the things that they can do would surprise you.

Most of the time, Della will only let her milk down when her calf is nursing. This is a truly amazing feat. Her bag can be so full that it will be dripping milk and when she runs, her swinging bag will almost knock her feet out from under her (this is a funny sight, but I wouldn’t dare laugh in front of her, at least, not when I’m in her line of fire). However, as soon as, I get her bag washed off, it all stops. The valve is shut. I get maybe 2 cups out of a bag that I know is holding 2 gallons. And she can also let milk down on one side, and hold it up on the other. The cow is in control!!

When her calf is nursing though, she has to let her milk down and can’t stop me from getting my half. The only problem is when the calf is older, we race each other for the milk. The calf is faster at nursing than I am at milking and it is hard to keep him or her from stealing the milk from my side of the bag. The calf will persistently try to dislodge my hand so it can take my portion of the milk. It takes strong and steady hands to milk this way. The muscles in my arms definitely get firmer, as does my handshake. We really do work hard for our food. It is a bit different than just picking up a gallon of milk out of the cooler in the grocery store, but I prefer it this way. Many people can’t understand why we spend the time and energy growing our own food, when it is so much more convenient to get it at the store.

We are so connected to Della; when she is “off her feed,” and not feeling well, we all feel her discomfort. Her milk flows through us and she is a part of us, the farm that we work so hard for is what makes up the cow that in turn feeds us. This is why we feel so adamant about spraying the BD preps, it enriches the soil that grows the grass that feeds the cow that gives us nourishment. It is a close and noble cycle that is just part of the relationship between man and the land. We do feel honored to have the privilege to be stewards of this land. It’s not for everyone and many times we wonder if it is for us, but when we go out in the fields and sit down and the cows or the sheep gently wander up and lay down besides us, we are reassured that this is what we should be doing. We like taking care of them, and in return, they take very good care of us. ❖

PERSONAL EXPERIENCES WITH SEQUENTIAL SPRAYING

Wabasha, Minnesota, Oct. 21, 1993

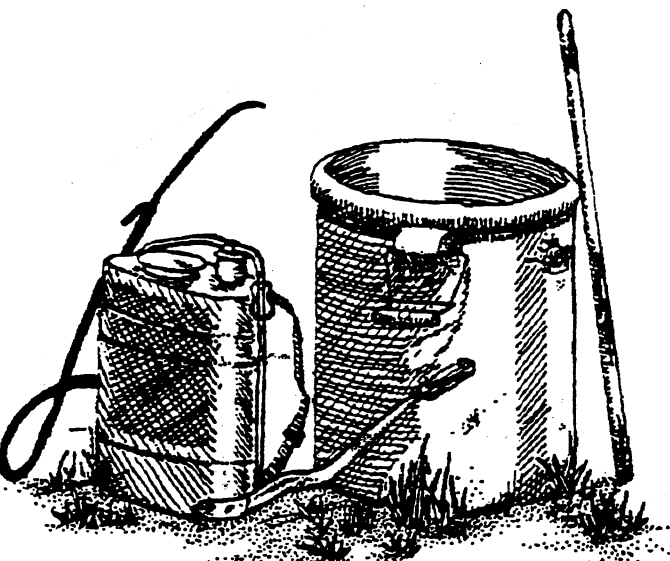
Dear Friends,

... I have been meaning to write you for a couple of weeks now. After my recent conversation with Hugh about the sequential spraying we started thinking about how we could use the sequence in a new way. We decided to spray the sequence for Michaelmas, as a gift to the farm and nature spirits. We started on the afternoon of September 28 and finished the morning of the 30th. We were a little concerned that the sequence would bring rain as 3 of the 4 sprays fell in leaf times. Our intention was not to bring rain or to stop it. We simply wanted to make a gift of the preparations as a whole to the farm as a whole. Instead of spraying certain gardens or orchards or the perimeters of fields, we sprayed a large circle of the farm encompassing the gardens, orchards, vineyard, hay ground, woodland and the homestead with homes and outbuildings. It made a lot of sense to spray the farm as a whole self and to do so on the seasonal holiday. We thought that we would carry out this act of thanksgiving at Easter and St. John's Tide as well.

In the 3 weeks since we sprayed the sequence, we have received approximately 0.6 inches of rain. We have had several nights of frost, some foggy days, but generally the weather has been wonderful for harvest of storage root crops, spreading compost and sowing cover crops.

It feels to us as though the attitude we bring to sequential spraying plays an important part in the effects of the sequence. This time we wanted nothing from the practice; we thought it a good way to celebrate the holiday and it allowed us a way to show our gratitude to earth, heaven and their spirits. We enjoyed it. ...

Claire Hall



Flovilla, Georgia, Feb. 7, 1997

Dear Hugh,

Here is an outline of our use of sequential spraying late last spring to bring along some rainfall to this section of middle Georgia, 50 miles south of Atlanta, 30 miles north of Macon.

Several leafy crops, some root things, and especially the sugar snap peas were doing well in our small garden. By May, however, I began watering as it got pretty hot (90's) and dry. On May 18th the evening air was humid, sticky and stagnant. Atlanta weather forecasts called for 20-30% chance of widely scattered showers, but none seemed to materialize here in the next few days.

I decided to begin an energy balancing spray sequence for May 22 when the moon, nearing 1st quarter, would come into Cancer. By then, humidity was diminished, but the heat was still strong. Atlanta's forecaster lessened the chance of rain; Macon's predicted none.

Accompanied by my son, Dennis, and a friend who lives 8 miles southwest of us, I stirred and applied the sprays, beginning with Barrel Compost. The moon remained in Cancer for doing 501 and 500 on Thursday, May 23, but moved to Leo for Friday morning's 508.

I believe the process balanced energy all right: soon after sundown on Friday night there began a long course of thunder, lightning and breeze rolling persistently until dawn. Around 5 a.m. the rain began, steadily and moderately, putting down about two inches. It was a wonderful satisfying event. To cap it off, there were a couple more good soaking rains the next three days, effectively giving all this area a good drink to sustain plants for the next few weeks.

I was impressed, but our friend was astonished. She noted over and over that neither she, her neighbors nor the Macon weather reports expected any rain at all.

During the spraying, I felt to be a mediator between Earth, needy of water, and Cosmos, provider of rain, and I made prayers accordingly.

I observed that the stirred 500 appeared more reddish-brown than the black-brown Barrel Compost. Of course the 501 is definitely white, but with lastly stirring the yellowy 508 it quickly came to me that these were the black, white, red and yellow—the sacred colors of the four directions in American Indian belief.

'Twas a happy rediscovery that there are no coincidences and an affirmation that our Creator responds to our prayers.

To make a fair report about the emotions during this endeavor, I must mention that with Thursday evening's one hour stirring, I was especially hot and tired, and my friend was not coming to help. And there I was, committed for sixty minutes of swishing water around in a barrel. I decided I must be a little nuts, and I felt entirely overwhelmed by the enormity of the task. But in the end, that near-hysteria was more than compensated by the awe, peace and thankfulness I felt with the arrival of the rainfall. ...

Jane McLeroy

DELLA MAE, OUR ONE COW DAIRY

By Alice Marie (Horse Branch, Kentucky)

When we first started looking for a milk cow my great-uncle Arthur told me to be sure and ask how old the cow was and when she would come fresh. Being new to farming I was reluctant to ask what coming fresh meant. Uncle Arthur didn't mind explaining things to us and he enjoyed talking about the old ways, he also got a kick out of the way we did things here, mostly our experiments. Some of our experiments brought tears to the old farmer's eyes; some were tears of laughter, some of joy. He said even though we knew nothing about farming, we still tried our best; we farm the way people should farm the land, with respect for the plants and the soil.

We like raw milk, so when Della Mae comes fresh it is a big event here. A milk cow is usually dried up for two months prior to giving birth to her calf. This gives her a chance to rest and build up the necessary strength she needs to calve and start the flow of milk again. When she does calve, around here they will say "the cow came fresh." It is left over from the days when most people had a milk cow and the milk was more important than the calf. Going without milk for a couple of months was hard on a family, especially when there weren't many stores around. It cost too much to keep two milk cows and two cows giving milk is a lot to keep up with.

Della is our Holstein, Hereford and Jersey cross milk-cow who's the great-grand daughter of Belinda Mae our very first milk cow; actually, our very first cow. We bought Belinda from my great-uncle Pirtle in 1983; our first year here. Belinda was a full stock Black Jersey. I first thought that the Black in Black Jersey was in reference to the darker color; compared to the lighter colored Jerseys. That was partially true, mostly it was in reference to her mood and sense of humor; especially, when it came to being milked.

Neither Belinda nor I knew anything about the milking process when we first met. She taught me a lot; mostly, how to dodge a flying bucket and how many directions a cow can kick with their back leg. These were hard lessons for me to learn, but eventually, I learned them, and became a better person for it.

Belinda had this pet peeve about humans touching her and thought they got just a little too familiar, especially when it came milking time. This is not a good character trait for a milk cow. She being our first cow was kind of like being the first born child. They have to experience all the greenhorn attempts at how a cow should be raised and all the mistakes that go along with it. Belinda and I never really bonded for this

reason. She actually thought, since we were humans, we should know what we were doing. She always held it against us when she realized we didn't.

I do admire her for sticking with us though, and not bailing out on us. I'm sure all those times she got out and ran to the neighbors was just a little wanderlust in her system. After we got a few more cows, we could let her out of the fenced pasture to graze the yard and the free side of the fence; she would do our mowing for us but when it came time to go back in with the others, she would be standing at the gate ready to go back into confinement. In the beginning she would have taken her leave, she just didn't like the pressures of being first cow.

Della Mae isn't as moody as Belinda was, but she can be just as contrary at times. Belinda had horns and I'm sure this had something to do with her attitude. I've observed that our cows with horns seem more alive and not nearly as docile as the polled (hornless) cows. The horned cows are always the leaders of the herd. The polled cows you would think would be quicker on their feet, from having to get out of the way of the horned ones, but they in fact, seem slower. Della is only quick with her back feet when she is upset with me or when it is dinnertime. Even though Della is polled, she is fairly aggressive when she wants her feed. We prefer to have horned cows because they can protect themselves and their young from dogs and coyotes. They also seem to be more attuned to what is going on. Neverthelsss, I have to admit I prefer having a polled milk cow because the horned ones have two very persuasive "points" of view.

Della, like Mercury, our bull, works on the barter system. I give her feed and she gives us milk and in that order only. She is not haltered or restrained when I milk her, and can walk away if she wishes. Therefore if the feed agreement is not met first, we get no milk. When Della first comes fresh and hasn't been

milked in a while, she forgets a few things about the milking process. There are a number of important terms in our barter contract that she tends to forget in the first initial session. The second agreement on the list, which I think is the most important one, she doesn't; you don't kick the lady with the bucket!!

For the first week I milk bending over with one hand on a "faucet" and the other on the bucket, ready to jump back when needed. She really only does this the first few times and then she is really good about letting me have her milk.



Continued on page 11

SEQUENTIAL SPRAYING—AN INTERIM ANALYSIS

by Malcolm Ian Gardner

“Sequential spraying” refers to the technique of spraying all nine of the biodynamic preparations in a short period of time (usually about 36 hours over three days) for the purpose of restoring balance when the forces of the environment have become too one-sided. In practice, the technique has most often been used to try to ameliorate drought conditions, but it has also been used with conditions of excessive wetness. Although the technique is relatively new—it was developed by Hugh Courtney in 1988 and 1989—it has spread quite rapidly and quite widely. (For details on the origin and early evolution of the technique, see *Applied Biodynamics*, no. 6, Winter 1993.) However, because many of the early users did not keep notes, it is only recently that enough detailed records have accumulated to begin to permit a meaningful analysis of this technique and the attendant weather patterns.

At present we have 62 relatively complete records of sequential sprayings by 26 individuals or teams, 57 of which were undertaken to address drought conditions. Of the remaining 5, 4 were undertaken to correct excessive wetness, and 1 was done simply as a celebration.

How well did the spray sequences succeed in balancing the environmental forces? And how might the technique be further improved? To answer these questions we will try to evaluate not only whether the environment became more moderate after the sprayings, but also the degree and the rapidity of the moderation. We will start by analyzing the records collectively (Section I) and then break them down into smaller groups, for there was some variation not only in the ingredients (Section II) and especially in the sequence of the sprays (see Section III), but also in their timing particularly in relation to the Moon (Section IV). Lastly, we will draw some tentative conclusions that may help guide the future evolution of this technique (Section V).

Persons interested in the five-page summary of the raw data on which the following analysis is based may request this document from the Josephine Porter Institute by sending a stamped, self-addressed envelope.

I. Collective Analysis

a) The Drought Relief Records

We will start by asking: In how many of the 57 cases undertaken for drought relief did a moderation occur within two, four, six, or eight days from the end of the sequence? (We include fog and heavy dew as symptoms of moderation. Because the sequence usually ended in the morning, the last day of the sequence is also counted as the first day after the sequence.) We will then ask: How many of these cases of precipitation cannot be attributed solely to the spraying because at least a 50% chance for such precipitation was predicted by meteorologists in advance of the spraying? (Unfortunately, the weather forecast was recorded in only 19 of the 57 cases; in 8 additional cases, however, the extent of the area of rain was estimated by the person who did the spraying. In the absence of

a forecast, we will consider these cases of localized rain as unpredicted rain.) Lastly we will ask: How much precipitation was recorded after completion of the sequence in those cases where it was a) predicted, b) not predicted, or c) prediction not recorded? (Because not everyone recorded rainfall in inches, we have tried to convert the narrative descriptions into conservative inch estimates. Thus, for example, we have rated a “thunderstorm” as 0.25 inches, a “soaker” as 0.5 inches, and a “sprinkle” as a negligible trace. Somewhat arbitrarily, any precipitation greater than 0.25 inches will be called “significant.”)

From Table 1 it may be seen that after *two* days no precipitation was recorded in 31 of the 57 cases (54%), but that in 7 cases the rainfall was greater than 0.25 inches and 5 cases it was greater than 1.0 inch (12% + 9% = 21%). In 4 cases the precipitation was predicted and/or widespread, in 7 cases it was unpredicted and/or localized, and in the 15 remaining cases the forecast or extent of the precipitation is unknown. If we discount the 4 cases where the precipitation was predicted, then in 22 (=7+15) cases we may say that the precipitation was possibly due to the sequential spraying, compared to 31 cases where no precipitation was recorded.

After *four* days, precipitation (rain, snow, fog or heavy dew) was recorded in more than half of the cases (40 of 57 = 70%), and in 22 (=12+10) cases the amount was significant (21%+17%=38%). In 9 cases the rain was predicted and/or widespread, in 11 cases unpredicted and/or localized, and in the remaining 20 the forecast or extent is not known. Thus in 31 (11+20) cases the precipitation was possibly due to the sequential spraying, compared to 17 cases with no precipitation.

After *six* days, precipitation occurred in 47 of 57 cases (82%), and in 28 (=16+12) cases the amount was significant (28%+21%=49%). In 11 cases the precipitation was predicted and/or widespread, in 12 cases unpredicted and/or localized, and in the remaining 24 the forecast of extent is not known. Thus in 36 (=12+24) cases the precipitation was possibly due to the sequential spraying, compared to 10 cases with no precipitation.

After *eight* days, precipitation was recorded in 52 of 57 cases (91.2%), and in 34 (=18+16) cases the amount was significant (32%+28%=60%). In 11 cases the precipitation was predicted and/or widespread, in 13 other cases unpredicted and/or localized, and in 28 cases the forecast or extent is not known. Thus in 41 (13+28) cases the precipitation was possibly due to the sequential spraying, compared to 5 cases with no precipitation.

b) The Rain Abatement Records

Although the 4 records available here are insufficient for a very meaningful analysis, we will nevertheless proceed much as with the drought relief analysis. Again, the questions to be asked here are: In how many cases did a moderation of the conditions occur, how rapidly did this happen, and was this

CRITICAL TIME	CASES OF SIGNIFICANT PRECIPITATION (> 0.25")			
	After two days	After four days	After six days	After eight days
Moon nodes (7 cases)	0 (0%)	2 (29%)	2 (29%)	2 (29%)
Mercury nodes (1 case)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Eclipses (3 cases)	1 (33%)	1 (33%)	1 (33%)	1 (33%)
Occultations (2 cases)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Table 8 Nodes, eclipses & occultations

All 4 rain abatement sequences took place when the Moon was receding. As described above, in 3 of these 4 cases a relative diminution of the rainfall occurred. The celebratory sequence took place when the Moon was at apogee.

e) Nodes, eclipses and occultations

The intersection points of the paths of the Moon and the planets with the sun’s path (the ecliptic) are called “nodes” and it is in the vicinity of these nodes that eclipses and occultations can occur. The number of cases in which one or more of these events occurred is rather small (11 drought relief, 1 rain abatement) because these times were usually deliberately avoided. (The total cases in Table 8 is greater than 11 because more than one of these events occurred during some of the sequences.)

CRITICAL TIME	CASES OF SIGNIFICANT PRECIPITATION (> 0.25")			
	After two days	After four days	After six days	After eight days
Mercury retrograde (12 cases)	4(33%)	5 (42%)	6 (50%)	7 (58%)

Table 9 Mercury retrograde

The Moon was at the descending node in 6 of the 7 drought relief cases (see Table 8) and in the 1 rain abatement case. In the 1 case during an ascending node, a thunderstorm followed within *two* days (as mentioned in the beginning, this still counts as an insignificant amount of precipitation). In the 1 rain abatement case absolutely no rain fell for weeks afterwards (which could be considered an overcompensation rather than a moderation of the environmental conditions!).

The 1 Mercury node case was a drought relief case and Mercury was at its descending node. No significant rain followed.

Of the 3 eclipse cases, 2 of them—one solar and one lunar—actually occurred about 40 hours after the end of the sequence. With the solar eclipse case a heavy fog was recorded between the end of the sequence and the eclipse, but otherwise no rain, and with the lunar eclipse no precipitation at all was recorded. The third case was a lunar eclipse that occurred about 15 hours after the end of the sequence. In this case about 2 inches of rain was recorded over the next *four* days.

Both of the occultation cases involved the Moon occulting Jupiter (and once also Venus). In neither of these cases was even a trace of rain recorded after *eight* days.

Despite the fact that there were 3 drought relief cases in which significant rainfall occurred, the general pattern suggests that these are indeed unfavorable times to try to undertake sequential sprayings.

f) Mercury retrograde

Because in 1 case a spray sequence was not successful during a period when Mercury’s motion was retrograde, and because the drought in that area broke a few weeks later just at the time when Mercury went direct again, the possibility has been suggested that when Mercury is retrograde this is an unfavorable time to undertake a sequential spraying. The data in Table 9, however, do not bear this out. Several sprayings were quite successful during such a time, and the merely 58% success rate after *eight* days suggests that the original observation was simply an unusual coincidence.

Lastly, Mercury’s motion was retrograde also during 2 of the 4 rain abatements cases. In both of these the sprayings were followed by a (desirable) diminution in rainfall.

V. Interim Conclusions

If we go strictly by the numbers—although we will see below why perhaps we should not—we can conclude that sequential spraying works best for drought relief if the fermented version of 508 is used as the last spray in either the full or the abbreviated sequence when done entirely during a “water” period while the Moon is waxing, descending and at apogee! On the other hand, the most promising conditions for the purpose of rain abatement seem to be to complete the sequence with 501 during a “fire” period while the Moon is waning, ascending and near perigee.

These conclusions, however, should be very lightly held, for they are based on a small or very small number of cases. Furthermore, the foregoing analysis could not take fully into account—partly because not all the right questions were asked of the practitioners—several subtle if not intangible factors that are likely to be quite important. One of these is the occurrence of fog and dew, another is the severity or duration of the imbalanced environmental conditions, and a third is the attitude and spirit with which the technique is undertaken. To address the first two factors, a revised data collection sheet is enclosed with this issue (**please use it if you undertake any sequential spraying!**). In order to convey a flavor of the “attitude and spirit” factor, three letters are reprinted on the next pages, which describe some of the inner as well as outer experiences of three persons who used this technique. ❖

PHASE	CASES OF SIGNIFICANT PRECIPITATION (> 0.25")			
	After two days	After four days	After six days	After eight days
First Quarter (12 cases)	4 (33%)	6 (50%)	8 (66%)	9 (75%)
Second Quarter (15 cases)	2 (13%)	8 (53%)	8 (53%)	9 (60%)
Full moon (3 cases)	1 (33%)	1 (33%)	2 (66%)	2 (66%)
subtotal (30 cases):	7 (23%)	15 (50%)	18 (60%)	20 (66%)
Third Quarter (6 cases)	1 (17%)	1 (17%)	2 (33%)	2 (33%)
Fourth Quarter (16 cases)	2 (13%)	5 (31%)	6 (38%)	7 (44%)
New moon (3 cases)	1 (33%)	1 (33%)	2 (66%)	3 (100%)
subtotal (25 cases):	4 (16%)	7 (28%)	10 (40%)	12 (48%)

Table 5 Lunar phases

In 1 case all the sprayings were conducted during an air period. This was followed by more than half an inch of rain within the next *six* days.

In 3 cases, some of the sprayings were conducted during so-called “unfavorable” or “blackout” periods. None of these were followed by significant precipitation within the next *eight* days.

b) Phase

We will separate the 55 drought relief cases according to which of the four lunar phases they took place in, and those that coincided with the day of the full or new Moon will also be segregated. (Those that coincided with the transition from the first to second quarters or from the third to fourth quarters will be included with the first or third quarters respectively.)

From Table 5 it can be seen that significant precipitation was somewhat more frequent during the waxing phases (first and second quarters) than during the waning phases (third and fourth quarters). The cases with insignificant precipitation reinforce this pattern—at least a trace of precipitation was recorded in every case during the first and second quarters, while no precipitation at all was recorded in 4 of 22 cases during the third and fourth quarters.

Of the 4 rain abatement sequences, 2 were undertaken during the fourth quarter. One of these was successful inasmuch as no precipitation at all occurred for weeks thereafter, and the other was unsuccessful inasmuch as there was significant precipitation within *two* days. The other 2 sequences coincided with the full moon; both were successful inasmuch as the rainy conditions considerably abated. The celebratory spray sequence was also undertaken at full moon..

DISTANCE	CASES OF SIGNIFICANT PRECIPITATION (> 0.25")			
	After two days	After four days	After six days	After eight days
Receding (17 cases)	2 (12%)	6 (35%)	7 (41%)	7 (41%)
Apogee (8 cases)	2 (25%)	3 (38%)	6 (75%)	8 (100%)
subtotal (25 cases):	4 (16%)	9 (36%)	13 (52%)	15 (60%)
Approaching (28 cases)	7 (25%)	13 (46%)	15 (54%)	17 (61%)
Perigee (2 cases)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
subtotal (30 cases):	7 (23%)	13 (43%)	15 (57%)	17 (57%)

Table 7 Lunar distance

c) *Arc ascension*

When the arc of the Moon’s path has fully ascended above the horizon, the Moon is said to be “running high”; when it has fully descended, the Moon is said to be “running low.” In 13 of the 55 drought relief cases the Moon was in its ascending period, and in 39 it was in its descending period. In the remaining 3 cases the spray sequence occurred when the Moon was running low (see Table 6). The 5 non-drought relief cases all occurred during an ascending period.

Here the percentage of cases with significant precipitation is somewhat greater with the descending moon than with the ascending moon. A similar trend is seen with the 5 non-drought relief sequences, all of which occurred during an ascending period: in 4 of the 5 cases a period of relative dryness followed.

ASCENSION	CASES OF SIGNIFICANT PRECIPITATION (> 0.25")			
	After two days	After four days	After six days	After eight days
Ascending (13 cases)	4 (31%)	6 (46%)	6 (46%)	6 (46%)
Running high (0 cases)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
subtotal (13 cases):	4 (31%)	6 (46%)	6 (46%)	6 (46%)
Descending (39 cases)	7 (18%)	16 (52%)	21 (54%)	25 (64%)
Running low (3 cases)	0 (0%)	0 (0%)	1 (33%)	1 (33%)
subtotal (42 cases):	7 (17%)	16 (38%)	22 (52%)	26 (62%)

Table 6 Lunar ascension

d) *Apsides (apogee and perigee)*

The Moon’s orbit around the Earth is slightly eccentric and therefore the Moon is sometimes approaching the Earth and sometimes receding from the Earth. The point of closest approach is called perigee; the point of greatest distance is called apogee. The figures for the 55 drought relief cases are presented in Table 7. The main striking feature here is the difference between the great success during apogee and the lack of success during perigee. However, because there is not much difference between the much more numerous receding and approaching cases, the difference between the apogee and perigee sprayings may simply be an artefact of their small case numbers.

PRECIPITATION	Cases	Predicted &/or widespread	Unpredicted &/or localized	Unknown
After Two Days				
none:	31 (54%)			
≤ 0.25":	14 (25%)	2	2	10
> 0.25 to 1.0":	7 (12%)	1	2	4
> 1.0":	5 (9%)	1	3	1
subtotal some:	26 (46%)	4	7	15
total cases:	57 (100%)			
After Four Days				
none:	17 (30%)			
≤ 0.25":	18 (32%)	2	4	12
> 0.25 to 1.0":	12 (21%)	5	2	5
> 1.0":	10 (17%)	2	5	3
subtotal some:	40 (70%)	9	11	20
total cases:	57 (100%)			
After Six Days				
none:	10 (18%)			
≤ 0.25":	19 (33%)	2	4	13
> 0.25 to 1.0":	16 (28%)	6	3	7
> 1.0":	12 (21%)	3	5	4
subtotal some:	47 (82%)	11	12	24
total cases:	57 (100%)			
After Eight Days				
none:	5 (8%)			
≤ 0.25":	18 (32%)	1	4	13
> 0.25 to 1.0":	18 (32%)	6	3	9
> 1.0":	16 (28%)	4	6	6
subtotal some:	52 (92%)	11	13	28
total cases:	57 (100%)			

Table 1 All drought relief cases

predicted? (Unfortunately, the weather forecast was recorded only in one case. In one additional case the area of the rain—or lack of it—was estimated.) The degree of rain abatement will be discussed as part of the first question.

In the *two* days following the sprayings, no rain at all was recorded in 1 of the 4 cases, and in 2 further cases the amount of rainfall was either considerably less than what the neighboring region received after the sprayings, or considerably less than what it had been in that locality before the sprayings (0.1 vs. 0.5 inches per day). This latter diminution was not forecast. Thus, in 3 of the 4 cases (75%), the excessively wet conditions abated during the *two* days following the spraying.

The figures for the period *four* and *six* days after the sprayings are the same as for the first period. Finally, in 1 of the 4 cases no rain occurred for weeks afterwards, and in another case the rainfall continued to be considerably diminished compared to what it had been. Thus, in 2 of the 4 cases (50%), the excessively wet conditions abated during the *eight* days following the sprayings.

c) *The Celebration*

One spray sequence was undertaken purely as a celebration at a time when the environmental conditions were not especially

out of balance. (See Claire Hall’s letter on page 10) It was followed by a relatively dry period—0.6 inches of rain in 3 weeks, an average of 0.2 inches per week.

II. The Spray Ingredients

All of the sequential spraying records analyzed in this article have in common that all nine of the biodynamic preparations were used in them. In different cases, however, different versions of the basic preparations were used, and in one case additional ingredients (milk and honey) were added to the sprays. In a number of cases the particular variant used was not definitely recorded. With all except the 508 variants there are too few cases for meaningful analysis; nonetheless, the others will be mentioned below for the sake of completeness. Here we will only distinguish between significant (greater than 0.25 inches) and insignificant (less than or equal to 0.25 inches) amounts of precipitation and also ignore whether or not the precipitation was predicted.

a) *Variants of BD #508*

The fermented version of 508 was used in the majority (33) of the 57 drought relief cases (for details on fermented 508, see *Appl. Biodyn.*, Issue 6, p. 5), the unfermented version was used

VARIANT	CASES OF PRECIPITATION			
	After two days	After four days	After six days	After eight days
Fermented 508				
insignificant ($\leq 0.25''$):	27 (82%)	21 (64%)	15 (45%)	13 (39%)
significant ($> 0.25''$):	6 (18%)	12 (36%)	18 (55%)	20 (61%)
total cases:	33 (100%)	33 (100%)	33 (100%)	33 (100%)
Unfermented 508				
insignificant ($\leq 0.25''$):	7 (87%)	6 (75%)	5 (63%)	4 (50%)
significant ($> 0.25''$):	1 (13%)	2 (25%)	3 (37%)	4 (50%)
total cases:	8 (100%)	8 (100%)	8 (100%)	8 (100%)
Unknown 508				
insignificant ($\leq 0.25''$):	12 (75%)	9 (56%)	9 (56%)	7 (44%)
significant ($> 0.25''$):	4 (25%)	7 (44%)	7 (44%)	9 (56%)
total cases:	16 (100%)	16 (100%)	16 (100%)	16 (100%)

Table 2 Variants of 508

in 8 cases, and in the remaining 16 cases it is not known which version was used. In every time period (*two* days, *four* days, etc.), the number of cases with significant rainfall was always greater with the fermented 508 than with the unfermented 508, and in all but the first case this was also true with respect to the cases where the 508 variant is not known (see Table 2). The 508 version used in the 4 rain abatement cases and in the celebration case is also not known (these 5 cases will henceforth be referred to collectively as non-drought relief cases.)

b) *Variants of BD #500*
In 5 cases—all drought relief cases—the “pre-potentized” X500 was used. In 4 of these cases there was some precipitation after four days, and in 1 case the amount was significant. After *eight* days some precipitation had been recorded in all cases, but again only in 1 case was the cumulative total significant.

c) *Variants of BD #501*
The 5 cases mentioned above in part *b* used either pre-potentized 501(5X) or 501 potentized with gold dust as well as the pre-potentized X500. In the 2 cases where 501(5X) was used, the rainfall was significant after *four* days in 1 case and insignificant even after *eight* days in the other case. In 3 cases the 501 included a trace of gold dust; each of these were followed by rainfall within *eight* days, although in no case was the amount significant.

In 2 further cases, 501F, the feldspar version of 501 was used. In 1 of these cases over 4 inches of rain followed within *four* days, but this was also part of the aftermath of a hurricane. In the other case, 0.71 inches were recorded over *eight* days.

d) *Milk and honey*
In 1 drought relief case milk and honey (see *Appl. Biodyn.*, no.6, p. 4) were added to each of two sprayings (X500 and BC in the evening, 501(5X) and unfermented 508 the next morning). This was followed by significant rain within *four* days.

III. The Spray Sequence
The actual sequence in which the nine preparations were applied varied considerably, and two or more of the preparations were often combined in a single spray (indeed the six compost preparations were always combined, in all but 1 case as BC [=Biodynamic Compound prep, formerly Barrel Compost]). The maximum number of sprayings was four, usually over three days (twice on the second day). In these cases the sprayings usually began either with BC or 500 (in the evening of the first day) and usually ended either with 501 or 508 (in the morning of the third day). Often, however, the BC and the 500 were combined, as were the 501 and the 508, into two sprays over two days (the evening of the first day and the morning of the second). In 1 case, only the BC and 500 were combined. We will summarize the four-spray sequences and then the abbreviated sequences. (In 1 case the sequence was not definitely recorded, so the total number of cases mentioned in the subsections below is 61 rather than 62.) Data on the most commonly used sequences is presented in Table 3.

a) *BC | 508 | 500 | 501*
This is the original sequence that Hugh Courtney used in the summer of 1988 during drought conditions. If we examine this and the 10 other cases in which this sequence was used during drought conditions, we find that at least a trace of rain was received within eight days in 8 of the 11 cases (73%), but that a significant amount (more than 0.25 inches) was received in only 3 of the 11 cases (27%) (see Table 3).

This sequence was also used in all 5 of the non-drought cases (see Sections *I.b* and *c* above).

b) *BC | 501 | 500 | 508*
This is the revised sequence that Hugh Courtney began to recommend when he came to regard the 508 as the principal ‘trigger’ for precipitation (see *Appl. Biodyn.*, no. 6, p. 4). This basic sequence was used in 7 cases and in all 7 (100%) at least 0.4 inches of rain was received within eight days (see also Table 3).

SEQUENCE	CASES OF SIGNIFICANT PRECIPITATION ($> 0.25''$)			
	After two days	After four days	After six days	After eight days
BC 508 500 501 (11 cases)	3 (27%)	3 (27%)	3 (27%)	3 (27%)
BC 501 500 508 (7 cases)	4 (57%)	5 (71%)	6 (86%)	7 (100%)
500 501 BC 508 (9 cases)	1 (11%)	2 (22%)	2 (22%)	3 (33%)
500&BC 501&508 (24 cases)	3 (13%)	9 (38%)	14 (58%)	17 (71%)

Table 3 Common sequences

c) *500 | 501 | BC | 508*
Due to a misunderstanding that found its way into print in Hugh Lovel’s book, *A Biodynamic Farm*, many people thought that this was the sequence that Hugh Courtney had pioneered. At least a trace of rain (or heavy dew) was recorded within *eight* days in 8 of the 9 cases (89%) in which this sequence was used, but only in 3 of the 9 cases (33%) was the precipitation significant (see Table 3).

d) *500 & BD Compost | 501 | 500 & BD Compost | 508*
In 1 case 500 was combined with the compost preps (in the form of BD Compost rather than BC) and sprayed on two evenings. This was followed by a significant rain within *two* days.

e) *500 | 508 | BC | 501*
This sequence was used in 1 case and was followed by some sprinkles and a thundershower within the first *four* days.

f) *501 | BC | 500 | 508*
This sequence is placed here because it involved four separate sprayings; however, all of them took place on the same day (the first two in the morning, the last two in the evening). This was followed by significant precipitation—0.57 inches over the next *six* days.

g) *508 | BC | 501 | 500*
This sequence was the result of a miscommunication; nevertheless, 0.13 inches of precipitation followed fifteen hours later.

h) *508 | BC+500 | 501*
This is the only three-spray sequence (over two days); it was followed by 1 inch of unexpected snow *three* days later.

i) *BC+500 | 501+508*
This abbreviated, two-day sequence was the one most commonly used (24 cases). It was followed by at least a trace of rain (or fog) within *eight* days in 100% of the cases. In 17 of the 24 cases (71%) the precipitation was significant (see Table 3).

TRIGON PERIOD	CASES OF SIGNIFICANT PRECIPITATION ($< 0.25''$)			
	After two days	After four days	After six days	After eight days
All water (34 cases)	6 (18%)	14 (41%)	19 (56%)	23 (68%)
Begin in water (10 cases)	1 (10%)	2 (20%)	2 (20%)	2 (20%)
End in water (4 cases)	1 (25%)	2 (50%)	3 (75%)	3 (75%)
End in earth (3 cases)	1 (33%)	1 (33%)	1 (33%)	1 (33%)

Table 4 Selected trigon periods

IV. The Timing of the Sequences
It is likely that the timing of the sequences within the rhythms of the environment is very important, but knowing which rhythms are the important ones is quite difficult. As rainfall

has often been associated with the rhythms of the Moon, we will consider here four lunar rhythms—the sidereal trigons, the phases, the arc ascension, and the apsides. In addition, we will examine the effect of the Moon’s nodal points, as well as Mercury’s nodal points and period of retrograde motion. (In 2 cases the exact timing of the spraying is uncertain and so most of the following analyses will be based on a total of 55 rather than 57 drought relief records.)

a) *Sidereal trigons*
The sidereal lunar trigon and hence “earth,” “water,” “air,” or “fire” period for each spraying was determined using the *Kimberton Hills Agricultural Calendar* or its successor *Stella Natura* (on the monthly calendar pages the four elements are called respectively “root,” “leaf,” “flower,” and “fruit,” but for our purposes here it is more appropriate to refer to the original elements). The majority (34) of the 60 sequential sprayings were conducted entirely within a water period (and all of these were undertaken during drought conditions). In 22 of the 34 cases (65%), at least a trace of rain, fog or dew was recorded within *four* days of the end of the sequence, and in 14 of the 34 cases (41%) the cumulative precipitation was significant (see Table 4). After *eight* days all but 2 of the 34 cases (94%) had recorded at least a trace of precipitation, and in 23 of the 34 cases (68%) the precipitation was significant.

In 10 further cases, only the first one, two or three sprayings were conducted during a water period; in these cases significant rainfall within *eight* days occurred only twice (20%). In 4 additional cases the sequence ended during a leaf period; here in 3 of these 4 cases (75%) the cumulative rainfall over *eight* days was significant (see Table 4).

In 2 cases all the sprayings were conducted during an earth period. This was followed within *two* days by significant rain in one case and by a thunderstorm in the other. In 2 cases the last three sprayings were conducted during an earth period. One of these was followed immediately by rain (and by more than 8 inches of rain within *eight* days), the other was followed by only a trace. Thus, in 2 of 3 cases (66%), rain followed within *two* days of a sequence completed during an earth period (see Table 4).