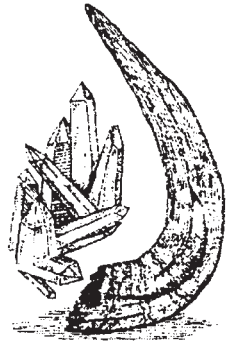


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Issue No. 92

Jack McAndrew, Master Compost Maker

Abigail Porter

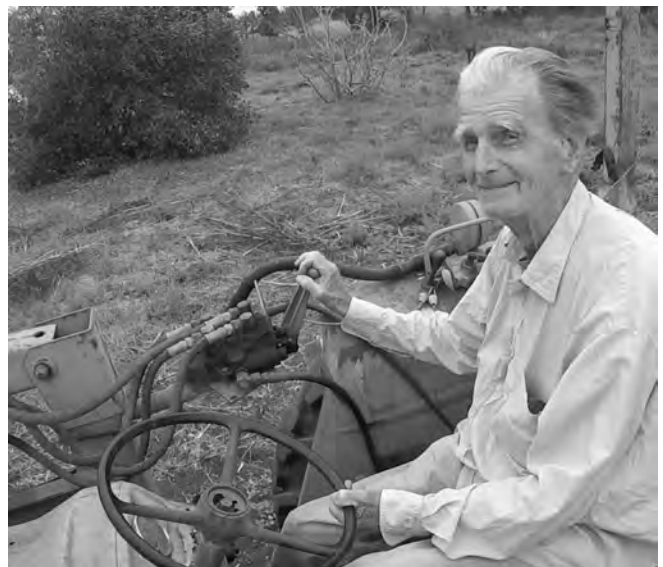
Jack McAndrew has been making biodynamic compost for more than forty years and is well known for producing compost of exceptional quality. Jack continues to be sought out for both his compost and consulting. Through the years he has given lectures and workshops, set up educational booths at conferences and whole food expos, and mentored many students, all to help move an understanding of biodynamic principles forward. In southern California (CA), he is known as Farmer Jack, the local biodynamic compost guru.

I had heard about Jack and his compost from Dr. Maria Linder about five years ago and spent almost two years, on and off, trying to contact Jack to no avail. Then, while I was working the JPI booth at the Biodynamic Association's conference in Kentucky in 2014, I was surprised when Jack showed up at the booth looking for me! It turns out Jack had known my father (Harris Porter), whom I had lost contact with in the 1970s after his several moves in California. Not only did Jack know my father, who had taught him how to make compost, but he had mentored with him for the last 26 years of Harris' life. I was intrigued by this turn of events, and by this humble, elfin, yet wizened man with kind eyes and a sense of humor.

An article titled "Biodynamic Gardening and Agricultural Resources" in the September 16, 2008, *Optimal Gardens* blog reports that Dr. Maria C. Linder, Professor of Biochemistry at Cal State Fullerton, once wrote about Jack McAndrew: "Composting is not something one can pick up overnight and really do well. It takes years to get real expertise... Bio-dynamic composting is more scientifically based than most and is by far the most impressive method I have encountered. Jack has studied the process for many years, and with the best Masters in the business." In the same article Jack is quoted, "I had the best mentors in the

field, such as Peter Dukich, Harris Porter, Erica Sabarth and Margrit Selke, who had themselves apprenticed in the art with Dr Ehrenfried Pfeiffer... As unfortunately, [they] are no more with us today, there is no one left for me to learn from anymore, except experience working with Earth, the Living Planet itself. But, on the other hand, I feel I am starting to really understand compost and the forces at play during composting."¹

Jack McAndrew has led a diverse and colorful life. He was born in Minnesota; then a few years later his father found work as a "milkman" delivering milk for a dairy in Pasadena, CA. So his family packed up and moved to Southern California where Jack has been ever since, with the exception of a four-year stint in the Navy and three years as a photographer on cruise ships, giving him the



Jack on his tractor. Courtesy of Mike Reisbord

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From the Editor

Dear Reader,

As the calendar turns toward fall and the even longer nights of winter, our longing to enjoy the heat of these last sweet, not-quite-summer days seems to intensify. Yes, this summer has been unbearably hot in some parts of the globe, and, yes, the once familiar cadences of the wheel of the year seem to be changing almost daily, becoming more strident and less predictable. But still the reflection of the light lives in us and we feel it deepen at this time, even as our thoughts turn to harvest and to preparations for winter.

In keeping with the season, *Applied Biodynamics* interviewed one of the United States' master biodynamic compost makers, Jack McAndrew, of elfin smile and commitment to "working with Earth, the Living Planet itself," as mentioned by Abigail Porter in the article that leads off this issue. You might also enjoy Mike Biltonen's interview with Eric Shatt, an orchardist and hard cider maker in the Finger Lakes region of New York. Says Eric: "I have a quest to properly represent the apple as a quality fruit for fermented beverages."

In addition, we report on a new way of pruning stone

fruit trees, taught by Enzo Nastati to the biodynamic community in Colorado's Western Slope. Although not enough time has passed to ensure definitive results, anecdotal evidence suggests greater fruit yield and improved tree health.

Consider also Abigail Porter's suggestions for fall and winter biodynamic practices, as well as a few reflections from the work of Maria Thun. If making sauerkraut is in your plans, for example, harvesting and fermenting on flower or fruit days improves the product you put away for winter use.

Mike Biltonen also reviews *Cosmos, Earth, and Nutrition* by Richard Thorton Smith. "I've never run across a book that made a better connection between biodynamics and accepted scientific principles," he writes. Then he continues: "And that's where this book is so important. It makes biodynamics make sense. This is critical because life on this planet is at a crossroads. While we certainly can't go backwards in time, we can make changes to how we farm and steward the land."

Perhaps some of these changes ultimately are internal ones, in keeping with the approaching season—internal time during the cold months to go within to process the thoughts and intuitions that the speed of summer made impossible grasp. In her article on biodynamic practices, Abby also mentions extending gratitude to "the earthly and cosmic forces that make all life possible." As the wheel turns toward the darker season, may the internal light of such gratitude shine brightly in all of us, strengthening our relationships with Earth, Cosmos, and each other.

—Mary Maruca

Applied Biodynamics

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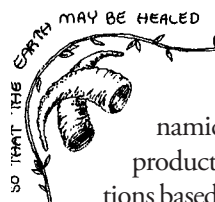
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Mission



The mission of the Josephine Porter Institute for Applied Biodynamics, Inc. is to heal the earth through production of quality biodynamic preparations based on the spiritual scientific discoveries of Rudolf Steiner and to advance education and research in biodynamic agriculture.

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Jack McAndrew, Master Compost Maker

opportunity to travel around the world to exotic places. Jack had studied studio photography for two years at The ArtCenter College of Design in Los Angeles (LA) and that led to his job on the cruise ships. Back on land, he worked in a stockbroker's office for a couple years before working at racetracks in the LA area for the next twenty years.

When Jack was in his early 30s, he began searching for a spiritual path and meaning in his life. He frequented the Bodhi Tree, an esoteric bookstore in Hollywood, CA, where he read and studied various religions and spiritual approaches. Jack had always been interested in agriculture and so, one day in 1970, he was drawn to Rudolf Steiner's *Agriculture Course*. It was here that he found a spiritual path in agriculture with the hands-on practical instruction he was looking for.

He spent the next five years studying the *Agriculture Course* and trying to find someone who could teach him more. Then in 1975, he heard a radio announcement of a lecture on biodynamics to be given by Peter Dukich (longtime anthroposophist, and biodynamic practitioner and teacher). Jack went to the event and, when he entered the lecture hall, Peter, who had been conversing with a group of people at the front of the room, immediately walked over to Jack and greeted him as an old friend. After the lecture, Peter invited Jack to come over to his house for coffee. Jack ended up staying for an "incredible" three days, touring the gardens and learning about biodynamics and anthroposophy.

Ten acres of land in Topanga had recently been "given" [loaned] to Peter to farm and hold classes. He scheduled his classes on Sundays and Mondays to coincide with Jack's days off from his job at the racetrack. Jack and a dozen other students, interns, and volunteers double-dug most of the ten acres in preparation for planting. Jack insisted



Jack as a photographer in his late twenties

that I mention fellow student, Larry Hirshman who made the best potting mix that Jack has ever used. The mix consisted of equal parts of biodynamic compost, composted oak leaves, and river bottom sand. Larry had previously mentored with Alan Chadwick and was sharing what he had learned with the class.

Shortly after Jack joined the class, Harris Porter drove up from near San Diego with a trailer load of manure from his cow to teach biodynamic compost making. The students mixed leaves, straw, garden waste and whatever they had available with the manure. When Jack asked what the best material would be to mix with the manure for carbon, "alfalfa hay" was the response Harris gave.² Jack was impressed with Harris' reverence for the compost making process: "He was like a priest when he made compost." Jack related that he "was imbued with Peter's and Harris' love for biodynamic agriculture and anthroposophy." That love became the motivating force for Jack's path with biodynamics and composting. He continued studying Steiner and biodynamics with Peter and Harris at various farm locations

Biodynamic Preparations Legend

BD 500 – Horn Manure

BD 501 – Horn Silica

COMPOST PREPARATIONS

BD 502 – Yarrow (*Achillea millefolium*)

BD 503 – German Chamomile (*Matricaria chamomilla*)

BD 504 – Stinging Nettle (*Urtica dioica*)

BD 505 – Oak Bark (*Quercus alba*)

BD 506 – Dandelion (*Taraxacum officinale*)

BD 507 – Valerian (*Valeriana officinalis*)

BD 508 – Horsetail (*Equisetum arvense*)

through the years. Jack summed it up recently with, “If I didn’t have Steiner and this work, I would have been dead twenty years ago.”

In 1982, Jack traveled to Spring Valley, New York, to attend the Biodynamic Farming and Gardening Association’s annual conference to learn more about biodynamics. While there, he went to the Pfeiffer Foundation to meet Margrit Selke, who had started making the Pfeiffer compost starter under Dr. Pfeiffer’s direction in the 1940s. (She continued making the Pfeiffer products for Pfeiffer Foundation until she was well into her nineties when the responsibility, rights and formula were transferred and assigned to JPI, another non-profit.) When Miss Selke asked Jack how he made his compost, he responded that he sprayed the compost starter on as he was mixing alfalfa hay with the cow manure. “Don’t you use the preps?” she queried. “Oh, yes, but I put the compost starter on first, on everything I make,” was his reply. Miss Selke responded with an enthusiastic “That’s wonderful!” in her German way and accent as Jack recalls.

In 1992, Jack went to Skyline Organic Farm in Topanga Canyon to mentor Stefan Hagopian, who was impressed with results of trials he had done with Jack’s compost. While there, Jack helped plant 1000 cabernet vines, dipping the roots in BD 500 (horn manure) as they were planted along with application of the compost. Jack ran his composting business from this location for the next twenty years until required to cease due to California Coastal Commission regulations. At about the same time, Alice Bamford, owner of One Gun Ranch, heard about Jack and reached out to him through the Malibu Agricultural Society that Jack helped form.

Jack began to oversee compost making and biodynamic practices at One Gun Ranch in 2010 where he annually has made up to 500 tons of Demeter-certified compost. Compost is made 100 tons at a time, over a three-day period, throughout the year, using organic cow manure (which they have to haul in from a dairy 250 miles away), organic alfalfa hay, 10 percent soil, and ten units of the Pfeiffer Biodynamic Compost Starter, in addition to ten sets of the biodynamic compost preparations (BD 502–507). Produce is grown in the straight compost, with two tons of compost filling each of the 250 raised-bed, 3 foot by 20 foot boxes. After each harvest, the beds are topped off with fresh compost in preparation for the next crop. The produce is sold to restaurants, and sells out at Erewhon Grocers and other markets at premium Malibu prices. Compost is sold to backyard gardeners and, more recently, to farmers growing medical cannabis.

Education is a major focus at One Gun Ranch³ and thousands of school children have come to the farm annually to learn how food is grown and to visit with the rescue animals. They experience planting, harvesting and tasting



Abby meets Jack McAndrew at the Biodynamic Association’s Kentucky conference in 2014.

the vibrant, colorful food grown on the farm. Jack takes the children to an enclosed “secret garden” where they fill flowerpots with compost and plant lettuce seeds to take home with them.

When I spoke with Jack earlier this year, he hadn’t slowed down much despite overcoming a recent health crisis and just reaching his eighty-second birthday. In addition to his work at One Gun Ranch, he was helping Stefan harvest fruit at his farm in Topanga, and was mentoring a new farm in Malibu. Jack continues to observe and learn from Nature and is currently studying the three *Isis Sophia* books by astrophysicist, Willi Sucher.⁴ He is still active in the field (literally), helping The Farm in Malibu plant, harvest and deliver produce, in addition to advising on biodynamic practices and composting. As an elder, Jack generously continues to share his wisdom and reverence for biodynamics, which he practices as a meditation.

Jack has offered to travel “anywhere” to consult and demonstrate his method of compost making (with expenses covered, of course). He may be contacted at 310-729-7205.

Notes

- 1) <http://optimalgardens.blogspot.com/2008/09/biodynamic-gardening-agricultural.html>
- 2) “Mature alfalfa hay has nearly the perfect balance that soil microorganisms love with a 25:1 C:N ratio. Microbes consume it quickly and leave little excess C or N.” http://www.agriculture.com/crops/cover-crops/heres-why-carbonnitrogen-ratio-matters_568-ar48014
- 3) For more on One Gun go to <http://1gunranch.com>.
- 4) For more about astrophysics, Willi Sucher, and his books go to <https://astrophysicscenter.com/>.

Farmer Jack's Protocol for Making Compost

Abigail Porter

The following directions are given for the 100 tons that Jack usually makes at a time but they can easily be adapted to smaller piles using the same ratios. However, if you are making a small pile of only one to two tons, it would be beneficial to use a full unit of the Pfeiffer BD Compost Starter instead of the one to 10-ton ratio, and likewise a full set of the compost preps would be used to generate a comparable energetic and biological environment as a pile with much greater mass and less surface area.

Materials

Organic cow manure, organic alfalfa hay (two 125 lb. square bales for each ton of manure), 10 percent soil, 10 units of Pfeiffer Biodynamic Compost Starter plus 10 sets of BD Compost Preps (502–507).

Procedure

A 10-ton pile is built in alternating layers of hay and manure with a sprinkling of soil added every third or fourth layer. The goal is achieving approximately 20:1 carbon to nitrogen ratio by volume. First the bales of hay are opened up and fluffed out. Compost Starter is sprayed onto the soil where the compost will be made, and three scoops of hay comprises the first layer. Each layer is generously watered with well water (not chemically treated city water) until it

is like a moist, wrung-out sponge. Although fresh manure is used, it dries out quickly in that climate and needs to be moistened as well. Pfeiffer Compost Starter is sprayed on each layer before the next layer is added. Alternating layers are added until the pile is five feet high.

At this point the whole pile is mixed with the front-end loader by scooping up and feathering. More water is added if needed and more compost starter is sprayed on as the pile is being mixed. Once the pile is thoroughly mixed, it is piled up to five feet high again. Additional ten-ton piles are built the same way, butting up to each other, eventually becoming one 75-foot windrow (pile), 9 feet wide by 5 feet high. Once the pile is set, the 10 sets of compost preps are inserted (one set for each ten tons), the pile is sprayed with valerian (BD 507) and covered with one foot of straw.

The pile reaches an initial heat of 120–140 degrees and then remains close to body temperature for most of the nine months allowed for the transformation process of breakdown and build up into rich colloidal humus.

Through years of experience and intuition, Jack has developed a way of making compost with the crucial moisture content that does not require turning in the Mediterranean climate where he lives with an average rainfall of only thirteen inches a year.



Compost pile at One Gun Ranch

“Inch By Inch, Row By Row” Jack McAndrew Speaks About Biodynamics

Karen Moneymaker

How do you pin down a legend, particularly one who doesn't really want to talk about how much of a legend he is?

I ventured out to the coastal town of Malibu, a town that is an interesting blend of glitz and grit, beaches and bohemians, and home to some of Southern California's most influential biodynamic farmers and gardeners. At the heart of this tight knit community is Jack McAndrew, the octogenarian livewire who, over the course of four decades, has passed on his knowledge of biodynamic composting to the next generation (or two) of farmers and backyard gardeners.

When I arrived at the farm, a year-old project that McAndrew is working on with longtime friend and colleague, Kerry Clasby, it became clear that this would not be a run-of-the-mill, sit down Q & A. The farm was teeming with life, both in the soil and above ground. A handful of volunteers were weeding a bed of strawberries, while another group was packing produce for the market. Jack and I did sit for a few minutes to chat, and I was struck by the composition of this man sitting in front of me.

Tall and wiry, with an impish smile and kind eyes, McAndrew is a fascinating blend of frailty and strength, as if his eighty some years on this planet have taken bits of him as sacrifice, while giving back elements that have rooted him to the earth. When he stands still, which isn't for very long, he seems to connect to the ground beneath him, planting himself like an ancient tree, brimming with vitality and life.

I begin by asking Jack how his feet ended up on the path of biodynamic agriculture, and he recounts to me the same history outlined by Abigail Porter in her lead article in this issue. “I was looking for a way to live my life and the *Agriculture* book literally fell into my hands,” chuckles McAndrew. “There really wasn't a lot going on in terms of biodynamic agriculture in Southern California in the 70's. I travelled with Peter [Dukich] and Harris [Porter], studying with them as a protégé—we would give lectures and heal small farms and get people, backyard gardeners, interested in biodynamic agriculture. That was our mission over the years. I remember the first lecture in 1975—there

were three or four people there. Now, I heard in Santa Fe there were over 800 people there. Phenomenal.”

With mentors Harris Porter and Peter Dukich, McAndrew dove deeper into his study of what he calls “spiritual agriculture,” moving from farm to farm, learning everything he could and, eventually, teaching anyone who was open to listening. We realize through our conversation that our paths had crossed through history (albeit with many years between), as he had a farm in Valley Center in the 80s (I grew up there) and also in Ojai (where I lived for several years). I ask Jack how he ended up carving out a niche for himself, becoming the “biodynamic compost guru” of the West Coast.

“Yeah, I guess that's what they say about me,” he chuckles at the thought, “But I am just a peasant farmer, like Steiner himself said in many of his lectures. I am a servant. Peter told me once that I am a steward of the land and I agree with him now, a steward of the land, trying to heal the earth through biodynamic composting, teaching others the same. I've been fortunate to be able to do all these things without getting paid, for the last 30 years.”

I tell him that is one heck of a retirement plan, to which he laughs, exasperatedly, “Yeah, right!”

I then ask Jack how the biodynamic community has changed and grown in the four decades since he began his work here, and he muses that the community has not really grown as much or as vigorously as it should.

“Land here in So Cal is expensive, so not a lot of new farms and farmers. With all the land and all the money and all the people, you would think it would have taken off,” notes McAndrew. “It is phenomenal the interest, but I don't know how to put it, I don't think there is an integrity and commitment to the quality of the food that biodynamic agriculture gives you. The people who get it, get it, but there's too much food around and too many stores and the price is not compatible with biodynamically grown produce. It's an educational process.”

In a separate interview I had the chance to speak with Stefan Hagopian, a pioneer in his own right of the Southern

“I think it has to do with the sanctity of healing the earth, this passion I have, and having studied with the great spiritual advisors in the biodynamic composting arena, growing food biodynamically...” he pauses, then continues, “growing food biodynamically gives the will forces to continue everyday existence.”

California biodynamic movement, whose farm was the first to achieve Demeter Certification in the region in the early 1990s [see *Applied Biodynamics* Issue 91 for an article about Stefan Hagopian].

I asked Stefan about his time working with Jack (who introduced him to biodynamic compost in the early days of Skyline Organic Farms), and he recounted the following anecdote:

For 20 years Jack spent a lot of time at our farm, initially teaching us how to make compost, later helping make wine and offering advice whenever he could. With Jack's guidance, we only farmed that land organically and biodynamically, so years later, when we started making wine, all the produce was really showing the effects of biodynamics, you know, achieving an intact self-fertile and self-regulating ecosystem.

At the time we were one of only three Demeter-certified farms in Southern California, and every person who tasted our produce wondered why it was so much better than other things available at any price elsewhere. Jack would point out that the taste was only part of the story. He was constantly doing experiments—whenever I would visit him at his home, there were always various stages of shriveled fruits from my farm on the windowsill, on a dark countertop, or in the fridge, and he would gleefully tell me how many weeks since harvest they were sitting there to show that storage capacity was so much longer than other organic or chemically raised fruits or vegetables. Then he would slice them open, and sure enough, the produce was still edible and delicious and full of vitality.

He would always emphasize that vitality and digestibility were other qualities that biodynamic farming could enhance greatly. And even fresh from the farmers market most other produce seems to lack the vitality and good feeling that comes when you eat something in a healthy state from the wild or from a biodynamic farm.

One time he really surprised me when we were discussing the challenges in getting attendance to our courses in traditional osteopathy, which like biodynamic farming, is based in part on a study of nature with a somewhat spiritual perspective. These are paradigms and ways of multi-dimensional thinking that people don't consider as important, or think about as often as they did in the past.

When you read old literature, you realize that early farmers and physicians understood the issues of natural health and vitality more easily than we do now, almost as if by instinct. Today, this way of thinking and feeling seems elusive, or at least not appreciated by most people.

Maybe, Jack and I surmised most people are just too distracted by all the entertaining and stimulating



Jack with his “magic wand” spreading Pfeiffer Field Spray on a section of garden that has been turned in. Jack said that as he sprays he focuses/meditates on the plants that were growing there that were turned in. Another shallow pass will be made after spraying. Currently Jack is mentoring a new farm called The Farm in Malibu. Photo courtesy of Mike Reisbord.

electronic sources, or by the constant pursuit of material gains or success in business. Most people just don't seem to have any serious interest or energy left over for significant contemplation of the type that produces any other kind of growth in their being

At this point in our conversation Jack recalled a quote from Steiner who was asked, “Why do people seem so unmotivated in this regard, or disinterested in spirituality compared to the elders, or people of the past?”

Steiner's answer to that question was “It is the food! And the lack of vitality in the food that should be providing a natural energy of consciousness that motivates real spiritual growth... which could come from just breathing and eating and moving about on earth.”

Back at the farm in Malibu, McAndrew again echoes Steiner's sentiments, “You don't need a lot of money to eat biodynamic food because the quality of the food is there, the vitality is there. You don't need a whole bunch of carrots, a whole head of lettuce, just a single carrot and a few leaves of lettuce.”

McAndrew worked alongside Hagopian for the better part of twenty-five years at Skyline Organic Farms in Topanga Canyon.

“I had my entire biodynamic compost operation there,” recalls McAndrew “And then the Coastal Commission shut us down. But we go on, don't we? We just continue to go on.”

His faithful clients of backyard gardeners and farmers continued to purchase compost from him when he passed on to One Gun Ranch in Malibu, a property he has worked



Jack with Kerry Clasby on the Farm at Malibu

with for seven years. "Alice [Bamford, owner of One Gun Ranch] took to Steiner's agriculture with a passion I've never seen before," explains McAndrew. "What I've gathered from working on Stefan's farm and at One Gun and here at Kerry's farm is that we have the ability to grow the most incredible produce you could ever want or need."

Having earlier sampled some strawberries from the field, I completely understand what Jack is saying. I can tell that my time with Jack-the-sitting/talker is about to give way to Jack-the moving/doer, so I ask him one last question. "What excites you the most and draws you to teach composting to a new generation of gardeners and farmers?"

Jack pauses to think, a long time. A very long time. His eyes start to shine, and he sniffs a few times, taking a long deep breath.

I am caught in this moment with Jack, and while I can't know what is going through his head, I feel like I am witnessing in real time the conflicted gratitude of a person so influential to the biodynamic movement, caught between the certainty of his own mortality and the impossible desire to see what the future holds, what the next wave of stewards will achieve with the lessons passed down through Jack himself. Several minutes pass and I almost regret asking the question, when he starts to speak.

"I think it has to do with the sanctity of healing the earth, this passion I have, and having studied with the great spiritual advisors in the biodynamic composting arena, growing food biodynamically..." he pauses, then continues, "growing food

biodynamically gives the will forces to continue everyday existence."

We sit for a second and I let what he said sink in. He shakes his head and adds with optimism, "you know, go out and preach the gospel, if you need to use words." With a laugh, I remind him that his retirement sounds exhausting.

At this point Kerry walks in from the field of strawberries and tomatoes to join us, exclaiming, "Man, that soil is teeming with life!" Jack smiles and responds, "It is amazing what we've been able to accomplish in one year here..."

McAndrew and Kerry Clasby met sixteen years ago at a farmer's market in the Palisades, where Kerry purchased some compost from Jack to plant tomatoes. A decade and a half later, the duo are working together on Clasby's farm, three acres of virgin property on which she has a twenty-five-year lease. The mutual admiration and respect between the two is evident. McAndrew calls Clasby "a dynamo with a force of her own," and Clasby explains to me that "Jack has been an incredible support and benefactor for this farm. Faithful and long suffering, and humble servant and steward of the land." Her words mirror how Peter Dukich once described his protégé.

The energy of the farm starts to swirl in the other direction. Kerry leaves us to oversee the packing of the produce, and a few volunteers come in from the strawberries to grab water and shed layers as the sun peeks out of the June gloom. Jack strikes up conversation with one of the crew, Mike Reisbord who, though he has a small farm of his own [Rancho Reiso], comes out nearly every Tuesday to help and to learn from Jack. They talk about Mike's study of Steiner's *Agriculture*. He is in the chapter on pest control and their conversation moves to the subject of application.

"Having seen you prepare the squirrel pepper and the snail prep... it is easier to understand when you've seen it prepared and applied," explains Mike to Jack of the difficulties that I think we all sometimes feel in diving into Steiner's lectures.

"I really honor your openness in wanting to learn more about biodynamic agriculture," says McAndrew.

Mike smiles and quotes one of Jack's favorite mantras, "Inch by inch, row by row, right!?" Mike turns to go and Jack waves over his shoulder, "See you next week. Love you!"

"Back at you Jack, love you too."

I am caught in this moment with Jack, and while I can't know what is going through his head, I feel like I am witnessing in real time the conflicted gratitude of a person so influential to the biodynamic movement, caught between the certainty of his own mortality and the impossible desire to see what the ... the next wave of stewards will achieve with the lessons passed down through Jack himself.

McAndrew turns back to me, smiles, then scans the farm, looking from his growing compost pile to the newly planted tomatoes, vital and happy. I take the moment in, not wanting to rush. I try to imagine myself rooted to this land, the way Jack might feel when he walks on a property that he has nurtured and healed. A few minutes pass, and I ask if I can take a picture of Jack on his tractor. I watch his face evolve from that of peaceful contemplation, to open enthusiasm, with just a touch of mischief and curiosity. He grins, says “of course!” And we are off.

One Gun Ranch Malibu: Biodynamic Recipes For Vibrant Living is a new book by Alice Bamford and Ann Eysenring. The first half of the book is educational, introducing readers to biodynamics and sustainable living, from nutrition and exercise to growing, eating, and shopping for the best quality food. The second half of the book includes menus and healthy, light recipes to help readers eat according to the season, using as much of the whole plant as possible—for instance, roasted carrots with carrot top pesto.



Jack collecting green waste for compost

Wild Apples, Hard Cider, and Biodynamic Preparations

Mike Biltonen Interviews Eric Shatt

This past summer, I had the opportunity to interview Eric Shatt of Redbyrd Orchard and Cider (http://redbyrdorchardcider.com) at his orchard in Trumansburg, New York. Eric is an orchardist and cider maker with a unique approach to growing fruit and making hard cider. He is also the orchard manager for the Cornell University research orchards in Ithaca. He and his wife, Deva, own two orchard sites, a total of fourteen acres managed in a natural style with an emphasis on biodynamics and, in particular, the use of biodynamic preparation 508 [Equisetum arvense/horsetail herb] for disease control. What makes Redbyrd's orchards so unique is that they have been using biodynamic principles to encourage fruit production for a number of years. This commitment to natural fruit growing is reflected in the style and quality of the orchard's apples and ciders. Shatt is currently pursuing biodynamic certification for his two orchard sites. What follows is a brief conversation with Eric about his orchards, growing style, and commitment to biodynamic farming.

What brought you to farming? It started in part from nostalgia. My dad grew up on a farm in Pennsylvania. I remember my brother and me running around the fields as kids. When I graduated from high school I knew I wanted to go into something environmentally oriented. Environ-

mental science wasn't it, but I quickly learned that agriculture was what I wanted to do. I worked on a small farm for a time as a teenager before getting a bachelor's degree from New Mexico State. After college, I also knew I didn't want to do research and, instead, wanted to be involved on the practical end of things, in the growing of crops.

What was your first real farming job? I worked on a farm called Blue Moon Acres in Buckingham, Pennsylvania, a small organic farm with primarily greenhouse grown leafy greens and tomatoes that we shipped to New York City. I worked there for a year before heading off to New Mexico State University. The year after I graduated from college, I hiked the Appalachian Trail. In Virginia on that trip I camped with two guys from California who raved about the California wine industry and vineyard managers having fun doing what they wanted to do. I moved back to Pennsylvania and went to work at Chaddsford Winery before moving up to the Finger Lakes. So, Chaddsford was my first full time farming job after college, but Blue Moon taught me that farming was what I wanted to do.

After moving to the Finger Lakes in 2002, I worked at Hermann J. Wiemer Vineyards for two years as the



Eric with young apple trees

vineyard manager, and was involved in the wine making and nursery operations. Then I helped a startup vineyard [Ventosa Vineyards] in Geneva, New York. I was there for six years, managed the twenty-one acres, made the wine, and worked under the direction of Rob Thomas [Shalestone Vineyards], a well-respected wine maker in the Finger Lakes. My key experience was understanding how the influence of growing fruit can impact the quality of the wine or cider and thus influence the final product.

When did you decide to switch from grapes to apples and from wine to cider? I had just bought the farm in Burdett—four acres—that was up the road from an old, rundown orchard with lots of wild trees in the hedgerows. Being young and ambitious, I remember going through those fields and brushfields, harvesting wild apples to make cider. I first did that in 2003, and the quality of the cider from that fruit was astonishing. Already steeped in the Finger Lakes wine industry and having come to know Riesling and Chardonnay, I was really blown away by the quality of the cider from this wild, feral fruit. The cider quality showed

off the potential of the fruit, but also the complexity of the fruit and how it was grown. Deva and I planted an orchard in Burdett not too long after that, and, in 2010, converted an out building to a cidery and got our cidery license. So it's really been a fifteen-year process of experimenting with cider. I feel I have a quest to properly represent the apple as a quality fruit for fermented beverages.

Did you start with a certain philosophical direction to farming such as biodynamics, or how has your approach to farming evolved? Since I started with Blue Moon, I always had a sustainable focus even when I went to college. When I worked for Hermann Weiner, he had an interest in moving in a more sustainable direction. I also heard Nicolas Joly speak at a biodynamic viticulture conference and became very interested in biodynamic winemaking, as well as how we engage that type of sustainability. I then heard Hugh Courtney speak at another conference, so between Joly and Courtney, I found my path.

How are you applying the fundamentals of biodynamics here at your orchards? Well, we've always farmed organically. And we've always incorporated and engaged in biodynamics. But we're only at the tip of the iceberg. I understand how to work with the preps and the animals, plants, and soil. I look up to Hugh Williams [see *Applied Biodynamics* issue 91 where Hugh is featured] who I feel has his whole farm system intact. We do buy in hay to feed our sheep. So, for us, progressing closer to that whole farm system is the key. We're definitely engaged in that, though there is a ton more to do and learn, but we're in no rush.

What does this mean practically? Are you following the biodynamic calendar or looking more toward traditional horticultural events? Every year, at the beginning of the season, we apply BD 500 [horn manure] to get the soil biology moving as the trees are coming out of dormancy. Then, taking an organic approach, we spray copper to combat fireblight and, to a lesser degree, apple scab. We also spray Entrust and DiPel to combat insect pests. But this approach is very relaxed compared to a conventional or intensively managed farm system. We spray a lot of BD 508, especially with all the rain we have received, so we're getting beneficial fungal dominance on the leaf tissue. From the sheep bedding, we generate this wonderful pile of compost. We don't have a good way to spread it through the orchard yet, so we alternate rows and rotate it with the wood chips to feed the soil. We'd do graze our sheep in the orchard, but need to be careful, since copper is toxic to sheep. I am still not clear about BD 501 [horn silica]. I know it is a thinner, so I am apprehensive because I don't want to lose the fruit. I feel I am destined to use it this year, so that we can enhance the flavor of the fruit. The one thing about biodynamics that is especially interesting to

me is how I use intuition to make decisions on the farm. A big part of that is just listening, being one with the farm. Envisioning the farm as a whole organism is just really cool, and I feel that's the key.

Do you treat the compost with the preps, and how do you use the other preps? All of the compost is treated with the preps and we sometimes use valerian [BD 507] for frost control on the trees during bloom. Pretty much all we use for foliar spraying is BD 508 and BD 500 a few other times through the season. The only way the other preps get into the orchard is through the compost. We haven't used biodynamic tree paste before, but I'm interested in learning more.

What are the biggest hurdles you've faced once you decided to certify your orchards as biodynamic? My full-time job at Cornell University managing the research farm for seven years has given me a great perspective on conventional apple growing. The thing that has really struck home is how much you can increase the productive potential, precocity, in a conventional system. And it's not the synthetic pesticides, it's the herbicides and the ability to create a non-competitive, weed-free strip underneath the trees. When you have an easy, inexpensive way to manage competition with the tree, the tree flourishes from the perspective that it is moving quickly towards profit. In an organic and especially a biodynamic system where you are spending a lot of time building biodiversity—this rich, resilient ecosystem—you don't move as quickly toward precocity or profit. As a small farmer, especially one who didn't inherit land, fruit tree growing requires five or six years before you harvest anything. That's a big hurdle if you are growing biodynamically. But I am confident we are building a stronger system. It's a longer road, but I am already confident that the fruit we have harvested is superior to fruit grown in a system geared toward production and profitability. The quality from a cider making perspective is better—that's exciting. So biodynamic orchardists and farmers need to have a long-term vision and, from a financial standpoint, that is a nightmare. For me, that's the biggest hurdle.

Granted you are not growing fruit for cosmetic purposes, so from an insect and disease perspective are there any special issues that you face? Do you have the same issues as other growers? In my role as manager at Cornell University where we grow beautiful conventional crops, the approach is to prevent and control disease infections. As soon as you let down your guard, you're open to attack by whatever it is — apple scab, fireblight, plum curculio. In a holistic, biodynamic approach, however, my thought process is to let it go as much as I can—build an ecosystem, build resilience, keep a close eye on things, and, as best you can, let nature manage itself. We have made no targeted sprays for scab

applications [except for general BD 508 applications] on this farm this year, which is a big deal because of how wet it has been. Also, some copper for fireblight, which potentially knocked back some scab, but no intentional scab application. And I have scab, but big deal. I trust that the other fungal organisms are keeping it in check. It's the biodiversity that's balancing this farm. Once you're annihilating fungal organisms [as in a conventional system], you're wide open for inoculation from pathogens. So those are two very different perspectives. I feel if you approach biodynamics from a conventional perspective, it's not going to work as well as stepping back and seeing yourself as an observer and a bringer of balance rather than as a dominator of the system.

What is your take on regionality—developing a Finger Lakes style of cider and using your apples as a basis for that? I like to think the Finger Lakes cider industry is piggy-backing on the wine industry. The wine industry brings people to this region, and I think we take it for granted. We have palates that appreciate a fine wine, and a really tart Riesling. When we make really tight, bright, fruity ciders, there are people who appreciate that also. That is the culture of the Finger Lakes community. And it's defining the kind of cider that's coming out of the region. It gives us more artistic freedom. We



Eric's farm with hedgerow and apple trees

don't need to stick to mainstream preferences. We can go a little off the wall. Enough of us have grown these traditional cider apples long enough that we are learning about varieties that work for cider. Growing apples without [much] human intervention should become mainstream in the next twenty years. What we have here is not just the food culture, but a horticultural desire that stems from Cornell and the vast diversity of agriculture in the region.

Where are you in the process of certifying the orchards as biodynamic? What are you going to do differently?

From what I understand from other people that have gone through the process, they're going to be happy with how we manage pest pressure, use the preps, and grow our apples, as well as that we have sheep that provide compost for the farm. The biggest hurdle—and remember we're only fourteen acres on two different parcels—is knowing how long we can bring in hay from off the farm to feed

the sheep in order to generate compost to feed the trees. If that's totally unacceptable, then I don't know. Or maybe they'll give us three or ten years to close that loop. To me, that is the most important part of biodynamics—that you are continuously moving towards that closed-loop farm. I just don't know if we can do it on fourteen acres. Do I want to change the livestock to meet the requirements? Is there an innovative way to bale up the hay between the rows of apple trees? The biggest question for certification is the importance of closing the loop. I'd also like to certify the cidery as well, but we do use sulfites in production, and I don't think that's acceptable. I am o.k. moving toward using natural fermentation, but don't know how to address the sulfite issue to prevent oxidation and spoilage, and satisfy Demeter. If we only certify the orchards, then we can't call the cider biodynamic. If we do, it puts us in a unique marketing category, and that's really exciting.

Fall and Winter Biodynamic Practices

Abigail Porter

During the autumn the Earth continues her in-breathing process begun at the summer solstice. Leaves fall from the trees, the elementals retreat, and the Earth becomes more inwardly alive as the coldest part of winter approaches. So too, we start to withdraw from the outer world in preparation for the quiet of winter when we also become more inwardly active and contemplative. But before we can settle in for the winter, there are an abundance of tasks to complete: the last rush of harvest before frost, clearing garden debris and making compost, planting fall crops and winter cover crops, applying compost made through the summer, the fall application of preparations, and, last but not least, a celebration of gratitude for the bountiful harvest, and for the elementals and the earthly and cosmic forces that make all life possible.

The following is a brief guide to fall and winter activities and preparations. More information on the preps and their use may be found on the JPI website, www.jpibiodynamics.org under "Preparation Info."

Harmonizing Preparation, Hugo Erbe #9—The Harmonizing Preparation developed by Hugo Erbe is used as an expression of gratitude to the elemental beings during the celebration of Michaelmas (September 29) or can be used at Thanksgiving in November. It is a companion to The Three Kings Preparation sprayed on Epiphany (January 6) and is diluted with water and stirred for an hour in the same way. You may make your own which takes 6–7 weeks to ferment. The recipe is in the book, *Hugo Erbe's New Bio-dynamic*

Preparations. Ingredients include egg whites, sunflower oil, salt, honey, cow's milk, organic grape juice and biodynamic wheat grits or whole wheat flour. The ready-to-use prep may be purchased from JPI.

Valerian (BD 508)—Fermented valerian blossom juice offers protection from early frosts.

Horn Manure (BD 500) and/or **Pfeiffer BD Field and Garden Spray** are used when planting fall cover crops, turning in cover crops or garden debris, applying compost, and as an overall fall spray enhancing humus formation and root growth.

Barrel Compost developed by Maria Thun and Ehrenfried Pfeiffer to counter the uptake by plants of radioactive substances can be applied with the horn manure or separately to stimulate biological activity in the soil. We recommend that you spray the barrel compost out monthly to counter the ongoing chemical contamination in the air and rain that compromises the life of the soil microorganisms and plant health.

Pfeiffer Compost Starter and/or **Compost Preparations (BD 502–507)** are used when making fall compost for spring application.

BD Tree Paste is used in the fall after leaf drop to protect trees and bushes from hibernating insects and in late winter when pruning to heal wounds and to strengthen.

Burial of Seeds is done during the Holy Nights (December 24–January 6) or during the coldest part of the winter though February, which simulates what happens naturally when

the seed drops to the earth and is exposed to the winter crystalline forces. Anecdotes of improved growth and vitality have been reported, and directions are in *Applied Biodynamics* Fall/Winter 2015–16, Issue No. 88.

The Three Kings Preparation of gold, frankincense, and myrrh is ground together for an hour over midnight on New Year Eve (11:30 PM–12:30 AM) and stirred and sprayed in the late afternoon of Three Kings' Day or Epiphany (January 6). It is an offering to the Elemental World as a

protection against the activities of opposing forces, and is sprayed around the boundary of the property.

Biodynamic calendar—The effects of the use of the calendar at appropriate times for your farming and gardening practices become stronger and more noticeable with longer and consistent use of all of the biodynamic preparations. The soil and plants become increasingly more sensitive and receptive to earthly and cosmic influences and are nourished by them.

Recommendations from *The North American Maria Thun Biodynamic Calendar* and *Maria Thun's The Biodynamic Year*

Christmas trees and holiday greenery remain fresh and fragrant longer when they are cut on flower/air days during the fourteen-day ascending moon period when upward flow of sap and energy is stronger. The moon travels in an arc across the night sky, making a higher arc on each day during this period before it descends over the next fourteen days.

Cabbage for sauerkraut and other vegetables for fermenting are best harvested and preserved on flower or fruit days. **Fruit for storage** is also best harvested during ascending moon on fruit or flower days. Avoid harvesting fruit or vegetables during full moon or during perigee when the watery influence is strongest.

Pruning and transplanting is best done during the fourteen-day period when the arc of moon is descending closer

to the horizon and there is a more earthward flow of energy or in-breathing (indicated as "transplanting time" on the Thun calendar). Fruit trees should be pruned on fruit or flower days. Flower bulbs do better when planted during this time as well, showing more vigorous growth and increased flowering.

Pest Control – "Burn feathers or skins of warm blooded pests from December 2 at 7 A.M. to December 3 at 3 P.M. Ensure the fire is glowing hot (don't use grilling charcoal). Lay the dry feathers or skin on the glowing embers. After they have cooled, collect the light grey ash and grind for an hour with a mortar and pestle. This increases the efficiency, and the ash can be potentized in water later. **The burning and grinding should be completed by December 3 at 3 P.M.**"

Available from JPI

Hugo Erbe's New Biodynamic Preparations

Hugo Erbe, Helmut Finsterlin, Ernst Hagermann and Paul Carline

This book contains essays on elemental beings and the ways to work with them to heal nature, together with detailed recipes for Hugo Erbe's original biodynamic preparations. These essays include "Preparations Supplementing Those Given by Rudolf Steiner," and "Offerings for the Elemental World."

104 pages—\$25.00



Harmonizing Preparation, Hugo Erbe's #9—\$10.00
1 Unit = 12 Grams. Treats 1 Acre.

An expression of gratitude to the Elemental Beings in fall at Michaelmas and as companion to the Three Kings Prep.

Three Kings Preparation, Hugo Erbe's #8—\$35.00
An offering to the Elemental World as a protection against negative forces. Gold, frankincense and myrrh treat the boundary of 19 contiguous acres. Ground together and in a paste it will store indefinitely and is enough to use multiple years on smaller parcels of land.

Michaelmas

*There works in me the dragon's power
Which wants to drag me down.
I do not see it, I feel it as that
Which wants to make of me
What is beneath my being.
But I see in the Spirit the radiant Angel
Whose Cosmic task it has always been
To conquer the dragon.
I concentrate my warm-hearted feeling-will'
upon this radiant figure.
I let its light ray into
My warm-hearted feeling-will.*

—Rudolf Steiner

For more on Michaelmas and other Festivals www.rsarchive.org/Festivals/Michaelmas/

New Pruning Practices on the Western Slope

Mary Maruca

Seminar trainings led by Enzo Nastati continue to have a profound influence on biodynamic farmers in Paonia, Colorado.¹ One of the more recent skills now being tested by in that community was first presented to Caren von Gontard as a way to prune stone fruit trees successfully. Enzo had provided similar training in Europe, particularly in Spain, Greece, and Russia, with good results, but not until several years ago in the United States when he demonstrated the technique on Caren's trees.

Enzo instructed that the intention of the pruning is to draw the incarnating forces into the tree from above, find the balance point of exchange in the middle, and then distribute those forces out from the tree in the lower part of the foliage. This exchange is modeled on the process that occurs when the sap moves within the tree, Caren explains. Orchardists pruning trees this way help to harmonize the action coming from above the tree with that coming up from the earth. In this way, the trees become like the bio-

dynamic preparations, sending etheric vitality out into the surrounding environment.

"Of course, every tree is an entity in and of itself, and so the actual pruning has to be adapted to the tree and the conditions," Caren advises. "A very old tree might need to be pruned over several years to establish a desired shape. A small tree can be pruned quickly, but too severe a pruning might remove too many branches at once and leave the tree a bit naked. The orchardist must always decide in the moment."

Pat Frazier, JPI President, who immediately started using the techniques on her trees, provides a simple way to remember the pruning steps. "Right down low, left up high," she says. By this, she means first to start pruning the low, right-leaning branches (essentially what grows from the right side of the branch) while also circling to the right (counterclockwise) as you prune. This pruning on the lower part of the tree, where the branches on the right sides are removed, takes you from the bottom of the tree to about half-way up the tree.

You have now arrived at the middle section of the tree where you remove any broken or criss-crossing branches and prune only as you normally would. This middle section comprises approximately one-third to one-half of what remains of the tree above the section you have just pruned. The pruning begins again above this middle section (the remaining portion of the tree above the middle section) where you begin to prune toward the left on any branch that is left-leaning (growing on the left side of the branch), while likewise moving toward the left (clockwise). Ultimately, you create a spiral for the tree. Pruning to the left brings down the forces coming in from the cosmos. Pruning to the right encourages the incarnating forces.

One benefit of this technique is that the person doing the pruning doesn't have to carefully consider where to start the work. After observing the entire tree, the person just starts with the lowest branch of the tree, pruning to the right as described above.

The biodynamic farming community members who have used this technique use it as Enzo taught it. Scientific trials of the technique are still underway in this area, however, and scientific results have not yet been determined. Nevertheless, intrigued by the technique, Pat tried it immediately, both on her seeded and stone fruit trees, even though Enzo had not specifically indicated the use of this technique for more than stone fruit. Pat has a mixed orchard with all types of fruit growing together, however. For her orchard, the spirals created by the pruning produced a cohesive architecture for her orchard, an awareness that came as she followed her intuition and also used dowsing rods to test the trees.

Since 2016 was a fruit year, meaning that fruit production would have been high with or without this form of pruning, she has not yet determined if the pruning significantly impacted yield. This year, at the 6,800-foot altitude where she farms, the late freezes impacted fruit development, despite repeated valerian sprays. However, she has noted that trees pruned according to Enzo's instruction have responded with vigorous, healthy growth and a lush appearance. Including the spiral in the trees has seemed to improve tree health, she says.

Another local orchardist, Lloyd Nelson, also used Enzo's method to prune 300 apricot trees this spring. Although definitive information on yield is not available at the time of this printing, Caren indicates that he used a set of dowsing rods to test for the trees' vital forces before and after pruning. The ditches in the orchard offered a test of the extent of the trees' vital force. Before the pruning, Caren said, the etheric vitality of the tree couldn't get across the ditches. After pruning, the vitality jumped the ditch and kept going.

Like the human energy system, which is far more than the sum of its parts, so too is the farm organism, which, as

Enzo and others suggest, can be strengthened by the care we take with all the individual aspects of the farm, pruning being one of these aspects. Together, these individual elements connect to, refine, and amplify the whole. For those who want to know a bit more and can understand Italian, listen to Enzo's pruning instructions on YouTube at <https://youtube/jn58w4UmL8k>.

Note

1. See "My Introduction to Homeodynamics" by Stone Hunter on the Biodynamic Association's June online blog (<https://biodynamicsbda.wordpress.com/2017/06/14/my-introduction-to-homeodynamics-with-enzo-nastati/>). In the blog, Hunter cited the influence Enzo Nastati and the Trinium method had on him and how he now thinks about the farm as an organism. Also, see "Spiritual Economy: Helping Farmers Make A Living" by Caren von Gontard, Spring and Summer 2017 issue of *Biodynamics Journal*.



Pat Frazier's spiraling peach tree in summer 2017, after she used Enzo's pruning tips in fall 2016

Viva La Vida Foundation: Biodynamic Education at the Foot of Lamborn Mountain

Mary Maruca

In 2013, when Caren von Gontard and others in Colorado's Western Slope biodynamic community first hosted Italian biodynamicist Enzo Nastati, they became committed to researching his form of agriculture, referred to as the Trinium Method, an evolution of methods, techniques, and preparations grounded in Rudolf Steiner's teachings. While not a strictly biodynamic practice as Steiner originally defined it, the Trinium Method represents a committed attempt to follow Steiner's instructions to evolve farm practices to meet the challenges of the future.

Among other aspects of the method is included consideration of ratios and relationships among components of the farm organism, regarding these to be as important as the use of the preparations. For example, ratios between

plants within rows in the garden and the distances between rows contribute a quality aspect to the plants. In addition, this method has evolved the preparations beyond those well known to biodynamic practitioners to help meet the increased challenges we face (e.g., drought, pollution, and GMOs).¹

Enzo Nastati's first seminar in 2013 and his subsequent teachings employing this method challenged biodynamic practitioners in Paonia to experiment with the processes he had developed at Eureka Institute, a research center in Italy. The astonishing amount of vegetables they received from plants usually unable to produce such large amounts inspired them to invite Nastati to deliver further seminars. Ultimately, these and other results also paved the way for



New school site with Lamborn Mountain in the background

JPI Hosts World Farming Day

Pat Frazier

The spring issue [No. 91] of *Applied Biodynamics* described initiation of a new worldwide event to celebrate biodynamic agriculture. This first World Biodynamic Farming Day brought awareness and community building to the practice of spraying biodynamic preparations around the world at a coordinated time on a specific day. Whitsun, celebrated as a national holiday in parts of Europe, marks Pentecost, the eighth Sunday following Easter. Pentecost commemorates the descent of the Holy Spirit on Christ's disciples. According to Rudolf Steiner, that event gives us the opportunity to access our spiritual origins as beings of the Sun and to increase our awareness of our earthly connection to the Christ as our human destiny. Whitsun also celebrates the emergence of the summer season, the greening of the pastures, and hope for the bounty of the agricultural season. It is a natural time to celebrate biodynamic agriculture by spraying out all of the preparations.

Whitsun is also marked by community gatherings. When JPI decided to hold a celebration in honor of this weekend, we approached our neighbors, Spikenard Farm Honeybee Sanctuary and Riverstone Organic Farm, asking them to join together in a community gathering signifying our growing unity as a biodynamic triad in the Floyd, Virginia, community.

Since JPI moved to the farm in Floyd in 2013, we have held annual spring and fall workshops, providing education on biodynamic preparation making and compost building. During those workshops, participants generally spray preparations on a portion of the farm. For the Whitsun day event, we focused on spraying all preparations in a short window of time over the entire farm, both evening and morning, in coordination with other communities around the world who were simultaneously doing the same. In this way, we all demonstrated our unity with each other in the larger world



JPI farm in Floyd, Virginia



A luscious lunch provided for World Biodynamic Day participants

community. The Whitsun Day celebration also offered the making of Barrel Compost, lectures on the spray preparations and their actions, and tours of all three farms.

We opened the weekend with a circle, setting our intention that the JPI farm would continue to serve as a center for biodynamic preparation making, distribution, and education. During the morning, all participants and apprentices from the Riverstone Farm attended a lecture by JPI president Pat Frazier on biodynamic rhythms and using the preparations within those rhythms. Owner Woody Crenshaw gave a late morning tour of Riverstone Farm, followed by a delicious lunch of local foods, also prepared by Riverstone Farm.

We spent the afternoon making Barrel Compost, then stirring and spraying out BD 500 and Barrel Compost on the JPI Farm, as well as parts of Riverstone and Spikenard farms. Dinner and time to socialize followed these activities as the sun set. The following morning, we completed a dawn stir and spray of BD 501 (horn silica) and BD 508 (horsetail) on the farm, which greeted a beautiful sunrise interspersed with thick clouds. Following the completion of this spray, we definitely experienced a feeling of completion, settling, and gratitude on the farm. After a short breakfast, we traveled up the hill to Spikenard Farm Honeybee Sanctuary for

a tour and talk by Gunther Hauk on his work there with biodynamic beekeeping, and the spiritual significance of the BD preparations. The workshop ended around lunchtime.

Although the tours showed that each of our three participating farms demonstrate a unique nature and intention, we witnessed an emerging unity among all of us, as well as many levels of support. As a national treasure for the preservation and sanctity of the honeybee, Spikenard Farm is unmatched in its provision of biodynamic beekeeping education. But the farm also is so much more. The grounds are a “bee heaven,” having thousands of pollinator plants, multiple examples of beehives, and a beautiful, thoughtful design that provides for interactive experience between bees, their caretakers, and students of all ages. Gunther Hauk, the creator of Spikenard, is also a treasure of the anthroposophical world. He is passionate, inspirational, and warm. His support of the local community of Floyd and the biodynamic movement in the United States demonstrates dedication and commitment. Also, his support of the mission and operations at JPI is unwavering. We deeply appreciate his wisdom and experience as we build our farm.

Riverstone Organic Farm is a retail and wholesale produc-

tion model of sustainable organic agriculture. Fertility for the farm is provided through multiple cover crop rotations, thoughtful composting, and companion planting. In addition to vegetable production and distribution, the farm supports laying hens, perennial small fruit production, and a commercial kitchen for development of value-added products.

This year, owner Woody Crenshaw has opened the farm to biodynamic preparations to assist with breakdown of cover crop residue, as well as initiated consistent biodynamic management on our shared acreage, which includes minimal tillage, as well as cover crop rotations, and multiple BD preparations applications.

Our shared acreage is the site of initial research documenting the effects of BD preparations on soil health, with baseline soil samples having been collected for two seasons thus far. Samples have been tested for standard constituents, soil food web microbiology, and chromatograms. In addition, BD preparations of horn manure and Barrel Compost have been tested. As the JPI Farm develops into a fully operational farm organism, similar research projects demonstrating the efficacy of the BD preparations in the field, thoughtful farm design, and demonstration gardens showcasing the plants used for the preparations are in our future.



Making barrel compost



Barrel compost pit

We especially thank Jon McNamara, the farm manager this spring season at Riverstone, for helping plan the Whitsun Day event. Jon and wife Emily have since relocated from Riverstone. We wish them prosperity in their new endeavors. In addition to Jon and Emily, Dee Davidson, a long time friend and intermittent resident of Floyd, provided excellent, healthy food for the weekend. All farm staff, as well as Woody and Jackie Crenshaw, were gracious hosts, opening their farm to all workshop activities. Larry, Kendell, and Carolyn, our very dedicated and knowledgeable JPI staff, supported our educational efforts, opened our bookstore for participants, and coordinated registration efforts. Thanks for a job well done! And as mentioned previously, our friends and neighbors at Spikenard Farm provided the beautiful ending talk and tour, concluding what is envisioned as an annual event celebrating biodynamic agriculture and community.



Dawn spray of BD 501 and 508 on JPI, Riverstone, and Spikenard Farms



Gunther Hauk, Spikenard Farm Honeybee Sanctuary, discusses his work with biodynamic beekeeping.

Another Call for Board Members

The JPI Board of Directors is seeking additional members interested in serving JPI's mission of distribution, education, and research of the biodynamic preparations. Board terms are three years in length, with a term limit of two consecutive terms. Members commit to approximately five to ten hours per month while serving on the board. Board meetings occur monthly and are conducted by conference call. An annual in-person meeting in Floyd, Virginia, at the JPI headquarters is also required. Expertise in preparation making is not a critical qualification for membership but is certainly valued. Experience in non-profit board membership in similar organizations or in biodynamic or regenerative agriculture is preferred. Please contact JPI at agatha@jpibiodynamics.org, using "Board Membership" as the subject line, if you are interested in serving.

In Memory of Dr. Basil Williams (1939–2017)

Basil Byron Williams, Jr., passed away on July 16, after a lifetime pursuing the true nature of health, not only for himself, his family, and his clients, but also for the Earth. He and his wife, Christiana, lived in Ghent, New York, where he kept the festivals of the year with his New York community (e.g., festivals of St. John, Michaelmas, Christmas, Epiphany, Easter, and Whitsun), always with an eye toward nourishing the elementals for the healing of the Earth and, in this way, walking in the footsteps of Rudolf Steiner, Hugo Erbe and others. Dr. Williams was a prodigious lecturer at anthroposophic gatherings. His wife, three children, four grandsons, one great grandson, and two older brothers survive him.

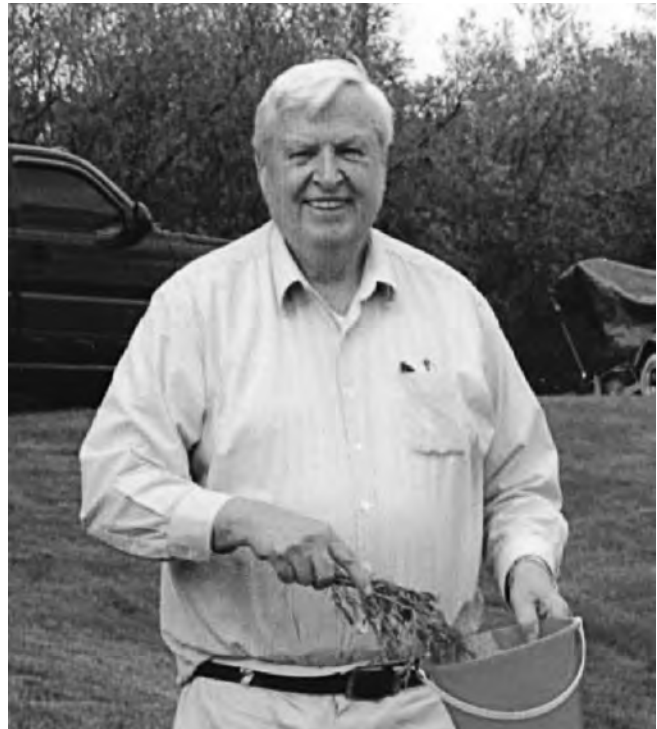
Dr. Williams grew up on a small farm in Freeland, Michigan. From his earliest years, he demonstrated a deep interest in and connection to nature, caring for plants and farm animals alike. He watched and studied birds, wildlife, sky phenomena, and even rocks and archeological sites. While still in college, he met and married his wife, Christiana, then went on to receive his bachelor's and master's degrees in biology and microbiology before the couple moved to Chicago where Dr. Williams attended Midwest University.

Dr. Williams specialized in internal medicine, with a secondary emphasis on infectious disease at Wayne State University School of Medicine. He worked as a consultant in five hospitals in the Detroit area, as well as at the Veterans Administration hospital there. But he also was a man of varied interests that further expanded in 1976 when he and his wife first became aware of Rudolf Steiner's lectures.

Dr. Williams specifically focused his interests on education, medicine, and biodynamic agriculture. After moving to Ghent in 1987, he studied anthroposophic medicine in Europe, extending his knowledge of traditional medicine to include supersensible realities underlying physical sense phenomena. He continued working at the Veterans Administration in Massachusetts, but also traveled throughout the United States and abroad to teach, lecture, and give workshops. During this time, he wrote and spoke about ways to help heal and nurture Nature, Earth, and humanity.

In Abigail Porter's 2015 interview of Dr. Williams for *Applied Biodynamics*, he told her, "I began to find the physical scientific medicine lacking in the explanations of many phenomena in the life of the human being. So, I began seeking a new philosophy concerning the origin and health of the human being. Over the years, I began a quest into spiritual scientific medicine."

While Dr. Williams and his wife lived in the Boston area, he talked with Marjorie Spock, who also had inspired noted naturalist and scientist Rachel Carson. Marjorie supported



Dr. Williams' work of helping people awaken to the healing forces in all of life. In part, through her, he became interested in acknowledging the elementals. He noted to Abigail that even when he lived in Detroit, he had left a portion of his property wild to sustain the elementals: "I had read and been influenced by Marjorie Spock's book, *Fairy World and Workers*, and Rudolf Steiner's *Nature Spirits*."

His medical training helped Dr. Williams recognize that Nature also needs healing. He observed, "When we do not recognize and appreciate nature and the Spiritual Beings that are part of creation, then that is an illness as well. [In the festival sprays] I . . . work with homeopathic and anthroposophic medicines that I use in my [medical] practice like gold, silver, silica, calcium carbonicum and so on, as healing substances for the earth and as spiritual symbols that relate to the elemental beings."

Ultimately, Dr. Williams came to recognize that "All living things are maintained by spiritual beings in their physiology and growth."

We are honored and grateful for the opportunity to have featured Dr. Williams and to have shared his festival sprays with our readers in the 2015–2016 Fall/Winter Issue No. 88 of *Applied Biodynamics*. For more information about this amazing man and his work, request a copy of *Applied Biodynamics* issue number 88 from JPI or Dr. Williams' book, *Awakening to the Festivals, Elemental Beings and Healing Substances*.

JPI News

Pat Frazier

Board Members Attend Fellowship of Preparation Makers Conference in Canada

In February, the Hack family farm in Kincardine, Ontario, Canada, again hosted the annual Fellowship of Preparation Makers Conference whose theme was “Cultivating and Sharing Our Perspectives of Horn Manure.” Board members Bill McCranie and Patricia Frazier attended as Fellowship members and JPI representatives. Approximately ninety persons attended from five Canadian provinces and five states in America.

A preconference day of introductory, hands-on instruction in biodynamics began the event. The conference explored farmers’ perspectives on the nuances of making and using the horn manure preparation across two countries in multiple bioregions. Reverend Jonah Evans also provided a unique perspective on the Christ impulse in biodynamic agriculture. Also, experiential exercises helped attendees perceive etheric forces by stirring various preparations. Speakers included Uli Hack, Jeff Poppen (Red Boiling Springs, Tennessee), Lloyd Nelson

(Paonia, Colorado), Hugh Courtney (Woolwine, Virginia), Chris Boettcher (Ontario, Canada), Reverend Jonah Evans (Christian Community in Toronto, Ontario, Canada), Wali Via (Noti, Oregon), and Patricia Frazier (Hotchkiss, Colorado).

The conference first came to Kincardine in 2011 at the same venue in the tiny town of Armow, home to the Hack farm. The farm has 2,000 acres, which grow grain and maintain beef cattle. Uli Hack makes a large proportion of the biodynamic preparations distributed in Canada and also has been instrumental in managing the Demeter organization in that nation. His farm, managed in partnership with brother Martin, exemplifies family unity and community building. Its management of large-scale biodynamic acreage is a treasure for all of Canada. (See **Save The Date** in this issue for information regarding the 2018 conference.)

Farm Improvements

JPI’s idyllic 25 acres on the Little River in Floyd, Virginia, currently is home to our production facility. The facility houses the Pfeiffer Compost Starter and Field Spray production equipment, provides storage for preparation materials and farm equipment, and also contains a classroom, lab, and small kitchen. Although it is an aging agricultural barn, we gradually are making improvements as resources permit. We recently added a septic system and bathroom facilities, and upgraded the kitchen plumbing to be able to provide more educational events and better support our farm staff in their preparation making activities, as well as improve the work environment.

After moving to the farm in 2013, the JPI Board engaged an architectural design firm to provide a conceptual plan for eventual development of the entire farm barn area. Our intention is to provide upgraded educational space, larger kitchen facilities, and short-term residential space for educational events, in addition to improved efficiency for our Pfeiffer products production. Upgrading an aging agricultural structure rather than replacing it represents the Board’s decision to maintain a small footprint, recycling and repurposing existing infrastructure, while making intelligent, multiple-use decisions pertaining to the space.

The big news from the farm, however, is that we have

cows. Yes, cows have made their entrance into the farm organism. Early this summer, a herd of approximately 30 cow/calf pairs began grazing our pastures and providing us with fresh manure for our preparations and fertility for farm pastures. The cows are part of a lease arrangement our neighbors have with a neighboring farmer to make good use of vacant pastures. We are grateful for the presence of cows on the farm.

Improving our cultivated pasture is a primary focus for our farm efforts, as well as at neighboring Riverstone Farm. We have initiated rigorous spraying of biodynamic preparations and cover crop rotation on our cultivated seventeen acres, leased by Riverstone Organic Farm, as well as on a portion of the other hundred acres that comprise Riverstone Farm. The spraying will continue throughout the season, as will continued soil testing to determine any change in soil health on the acres we share with Riverside.

Thanks for your continued support of JPI’s mission of healing the earth through the use of biodynamic preparations. We have experienced an increase in first-time customers buying biodynamic preparations during the first part of this year. I regard it as strong indication of the growth of biodynamic agriculture, and we are most appreciative of that trend!

Congratulations and Farewell to Cynthia Bowman

It is with bittersweet feelings that we congratulate Cynthia Bowman on her career change from JPI to a new position as a human resource manager for Landmark Healthcare in Stuart, Virginia. For thirteen years, Cynthia—or Cyd, as many of us called her—was the face of JPI for our customers. Whether she spoke with them on the phone, at events, or in the office, every one of them felt her deep commitment to the mission of JPI, and appreciated the kindness and joy that she brought to everything she did.

Cyd began her position with JPI while we were located in Woolwine, at Hugh Courtney's family farm. She supervised our move to Floyd, implemented our entire systems management process in the new Floyd storefront office, fulfilled the role of a supervisor for our on-site employees, and, most importantly, provided an extremely knowledgeable, personable customer relations focus for JPI.

Cyd was an invaluable organizer, managing our educational workshops and all inventory needs, as well as shipping, website interface, and all personnel and financial business for JPI. Hardly a day passed that Cyd didn't go beyond the call of duty, making everyone's life easier at JPI because of the



efficiency and generosity with which she completed each day's work. It is hard to imagine JPI without Cyd. As Cyd has said, "I love my customers and my fellow employees. We are like family." Fortunately, Cyd continues to assist JPI with its employee training needs and financial management. Thank you, Cyd, for your generous commitment to the work of JPI. We are fortunate to have worked with and learned from you, and wish you all the best in your new position.

Welcome to Our Newest Board Member

JPI is pleased to welcome Clay Wesson to the board of directors. Clay is a member of the Oregon Biodynamic Group and an active member of the Fellowship of Preparation Makers (FOPM). He sits on the Conference Planning Committee and administers the FOPM email list serve, a valuable communication tool for Fellowship members.

Clay lives in McMinnville, Oregon, moving there from Alabama in 2007. He received a degree in horticulture from Auburn University and has developed wide-ranging experience with ornamental and native plant nursery management. Most recently, he has been applying biodynamic practices to Willamette Valley vineyards.

Originally discovering biodynamics through the study of herbal medicine, Clay furthered his education as a librarian and member of the Oregon Biodynamic Group, as well as by attending Fellowship of the Preparation Maker conferences. Clay became a master gardener through the Oregon State University extension service and has been focusing on providing education through workshops and consultations. He focuses on bridging the gap between the spiritual and practical aspects associated with growing quality plants using clean farming practices.

Clay states that, "As someone who ordered my first preparations from JPI many years ago, it is an honor to be on the board

for the Josephine Porter Institute as the interest in biodynamics continues to grow across the country. I feel the time is right and that it is important to lend my energy and support to further the noble mission of JPI in the coming years."



Cosmos, Earth and Nutrition: The Biodynamic Approach to Agriculture by Richard Thornton Smith

Reviewed by Mike Biltonen

Biodynamics is voodoo, hokey, hogwash!

At least that's what many people believe, and why biodynamic farmers and teachers often fail to engage a largely skeptical audience. The fact is that biodynamics is not for the faint of heart—it was not borne of conventional scientific investigation, but the conceptualizations of Rudolf Steiner. And there is no doubt it requires a level of devotion that takes you off the well-trodden land-grant university approach to farming. Indeed, many of biodynamics' underlying principles and practices will never be proven to the satisfaction of the scientific community. But that is what makes biodynamic practices all the more alluring.

I, too, have been a healthy skeptic about many things, including biodynamics. And for all the books and articles I have read on the subject, I've never run across a book that made a better connection between biodynamics and accepted scientific principles than *Cosmos, Earth and Nutrition: The Biodynamic Approach to Agriculture* by Richard Thornton Smith. The author doesn't approach this subject by laying out an argument for biodynamics, supported by statistics and excruciating scientific methodology. Instead, he reaches deep into ancient wisdom, as well as current scientific axioms to explain why biodynamics is a rational, scientific way of thinking, farming, and living. Covering his material in twelve chapters, the author looks at the past, present, and future of biodynamics from a perspective that gives it a legitimacy I have yet to encounter elsewhere—a legitimacy that many are seeking.

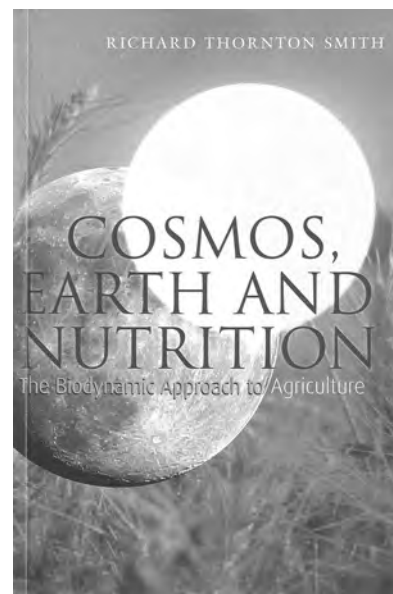
The book begins by describing holistic agriculture and how the benefits of organic agriculture form the basis of a healthy plant/farm ecosystem. These benefits include produce quality and health, soils and organic matter, plant nutrition, drought tolerance, water energy, and wildlife biodiversity, all of which are attributes of sound agriculture. Biodynamics, as many are aware, starts where organic agriculture leaves off—and so the author continues by describing the energy systems that are the real core of biodynamics. Finally, no discussion of biodynamics would be complete without reference to its cosmic connections and spiritual aspects. Using basic chemistry and quantum physics theories, the author helps us recognize that biodynamics is really about the capture and transfer of energy from the cosmos to the earth and ultimately to our food.

As much as biodynamics is a way of farming and growing food, one must go beyond its core pragmatic aspects—the application of the nine preparations—and wrap our collective heads around the fact that basic principles of physics

are at work here. While discussions of the cosmos may be daunting for some, looking deeper into how energy is made, as well as transferred into and through our farming systems opens up a window to how biodynamic practice really “works.” More importantly, the author describes this without getting bogged down in the mud, thus providing a robust comprehensive discussion of what is probably the hardest part of biodynamics to grasp—it was for me anyway, and is what made this book so compelling. Steiner described biodynamics as he saw it in 1924. The author takes it a step further so that even skeptics can begin to take notice.

What really intrigued me about this book was how the author tied together the pieces of the puzzle and used scientific language that was familiar to me. He didn't begin and end with asking the reader to simply believe in the power of the cosmos or spiritual beings, but explained the energy of biodynamics through a straight-forward explanation of energy transfer as it relates to physiology, chemistry and physics. Belief is a powerful motivator. But a stronger understanding of biodynamics through basic scientific explanation makes it acceptable to a broader audience yearning for both a better way to steward the land and farm food. Wishful thinking won't get a farmer anywhere when biological realities come home to roost, so this stuff has got to work!

And that's where this book is so important. It makes biodynamics make sense. This is critical because life on this planet is at a crossroads. While we certainly can't go backwards in



time, we can make changes to how we farm and steward the land. But we need to act faster, given the rapid changes humans are facing. By bringing biodynamics more into the open, we provide a valid basis for what the future of the planet can and should be. This is where this book succeeds—it provides a context for what biodynamics can do for food and nutrition, as well as community and spirituality. If we can learn to work and live with nature, and grow food in a benign manner, then our species has a future on this planet. If we step back, we realize that biodynamics offers a mutually beneficial proposition for all life on Earth.

In the end, *Cosmos, Earth and Nutrition* is a biodynamic science primer for practical farmers looking for a valid approach to growing better food more safely and in concert with nature. The book is a long way from a recipe. Rather, it is a roadmap, pointing to where the next steps in organic farming can be taken. It gives understanding and context to what has been a murky and relatively unapproachable farming philosophy for many people.

For all its benefits, organic farming has been corporatized until it means little anymore. Biodynamics provides a new path—one that goes beyond current organic thinking and extends into the inviting void where the true salvation of our planet lies. This book holds the keys.

JPI Recommends

Consider any of the following for your holiday list, available at <https://jpibiodynamics.org/product-category/books/>:

Gardening for Life: The Biodynamic Way

Maria Thun, \$30.00.

How to Know Higher Worlds

Rudolf Steiner, \$16.95.

Steiner provides guidance and practical exercises of inner and outer observation to develop “the capacities by which we can gain insights into the higher worlds [that] lie dormant within each one of us.”

Biodynamic Gardening

Monty Waldin, \$22.95

Practical reference for beginners and more experienced biodynamic practitioners alike. Covers preparations, lunar cycles, planting guide, making barrel compost, tree paste, plant teas for the garden and more. Color photos on every page.

Architecture as Peacework: The First Goetheanum, Dornach, 1914 (from *The Collected Works of Rudolf Steiner*)

This recently published book is timely as nationalism has grown both here and abroad. Volunteers from many countries had been working together on the construction of the first Goetheanum under Steiner’s guidance for almost a year. When the first world war started to heat up in 1914, conflicts arose

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between workers from countries involved in the war, jeopardizing further construction. Seeing that the situation was untenable, Steiner gave this series of lectures, after which volunteers were again able to work together amicably. Steiner showed how every culture has an essential role to play in individual evolution, as well as the evolution of the whole of humanity. How can we apply this knowledge to ourselves, our communities, and the larger world? How can biodynamics serve as peacework?



Also you might consider any of the biodynamic calendars for 2018, available from JPI at www.jpibiodynamics.org.

Save the Date

September 28–30: Biodynamic Principles and Practice
Spikenard Farm Honeybee Sanctuary, Floyd, Virginia. For more information visit www.spikenardfarm.org.

September 29 – October 1, 2017: Southern Biodynamic Conference, Red Boiling Springs, Tennessee
www.eventbrite.com/e/southeast-regional-biodynamic-conference-tickets-36015713970

October 20, 2017: “Horn Manure” Workshop: Practical Fertility for the Farm with Stewart Lundy
To be held at Perennial Roots Farm, Accomac, Virginia
www.perennialroots.com

November Seminars with Enzo Nastati

NOVEMBER 3–5 : SPACE AND TIME

NOVEMBER 6–8: WATER

Both of the above in Paonia, CO

NOVEMBER 10–12: DROUGHT

To be held in Santa Fe, NM. vivalavida.paonia@gmail.com

December 5–8, 2017: ACRES USA Conference and Trade Show, Columbus, Ohio

Listen to JPI President Pat Frazier speak on “Principles of Biodynamics in the Field” and “Transitioning to Biodynamics on Conventional or Organic Farms.” Visit JPI at booth 123 at the trade show for books and preps. www.acresusa.com/events

January 22–24, 2018: Virginia Biological Farming Conference

Homestead Resort, Hot Springs, Virginia. <http://vabf.org/conference/>

January 13, 2018: Northeast Organic Farming Association Conference, Worcester, Massachusetts

www.nofamass.org/events/wc.

January 17–20, 2018: Southern SAWG Conference, Chattanooga, Tennessee

www.ssawg.org/january-2018-conference/

January 24–27, 2018: Ecofarm Conference, Pacific Grove, California

<https://eco-farm.org/conference>

February 8–10, 2018: Fellowship of Preparation Makers Conference, Jeff Poppen’s Long Hungry Creek Farm, Red Boiling Springs, Tennessee

<http://barefootfarmer.com/>

February 22–24, 2018: MOSES Organic Farming Conference, La Crosse, Wisconsin

<https://mosesorganic.org/conference/>

For additional listings of events, classes and workshops see the **Biodynamic Association calendar** at www.biodynamics.com/calendar.

ONGOING

Biodynamic Association Webinar Series

For a small fee, the Biodynamic Association offers ongoing webinars on pertinent topics. On October 12, join in to learn about “Practical Carbon Solutions: How Biodynamics Can Engage Climate in the Farm and Garden.” <https://www.biodynamics.com/webinars>

Chesapeake Biodynamic Network (CBDN), College Park, MD

Meetings held monthly on Saturdays at the Christian Community Garden Grounds in College Park, MD. Contact Michael Judge for info, mjudge2000@gmail.com.

The Pfeiffer Center, Chestnut Ridge, New York

Workshops and trainings. <http://www.pfeiffercenter.org>

Spikenard Farm Honeybee Sanctuary, Floyd, VA

Classes in sustainable beekeeping and biodynamics. Apprenticeship/internship opportunities. Please visit www.spikenardfarm.org

The Triangle Biodynamic Network, Hillsborough, North Carolina

Second Saturday of the month. Contact Jon Lyerly at Jelyerly2@gmail.com.

White Rose Farm, Taneytown, Maryland

Educational food and farm events, festivals, celebrations and biodynamic farm days. www.whiterosefarm.com.

JPI Annual Fall Workshop

October 27–29: “Developing the Farm Organism” with Wali Via

A workshop on growing and understanding the biodynamic preparation plants.

Three days of lectures, experiential learning, hands-on biodynamic prep-making, and a chance to view the farm through a Perma-Dynamic lens. Please join us for this incredible educational opportunity!

Folks of all experience levels are welcome, and everyone will have a chance to socialize, ask questions, and hear stories throughout the weekend. Several meals will be provided. More details and registration information will soon be on our website at www.jpibiodynamics.org!

In Gratitude

JPI would like to extend a special thanks to those who collected and sent dandelions this year to support JPI's preparation work:

- Helen Belcher—Woolwine, VA
- Moses and Katie Borntrager—Augusta, WI
- Anne Wilder Chamberlain - Priest River, ID
- Genesis Farm (Grace) – Blairstown, NJ
- V. Hames – Jacksonville, OR
- Patricia Smith – Newport, VA
- Jorge De Varona – Dowagiac, MI
- David Yoder - Fairchild, WI

We also extend our thanks for yarrow given by:

- Ira Haspel – Southold, NY

Also, deepest thanks to Bruce Bumbarger for his donation of back issues of the *Journal of Biodynamic Agriculture* to the JPI permanent library.

Online Resources

Rudolf Steiner Archive

Lectures and books online. Donation requested.

www.rsarchive.org/

Rudolf Steiner Audio

Audio version of lectures and books. Donation requested.

www.rudolfsteineraudio.com

Bio-Dynamics Journal (1941–2007): Soil and Health Library.

With articles by scientist E.E. Pfeiffer, Sir Albert Howard, William Albrecht, and others. One time donation of 10 euros.

www.soilandhealth.org

Seed Regeneration

English translation of Georg W. Schmidt's work.

www.planting-calendar.com/seed-regeneration-2.php

Reminders

- For timely delivery, order Three Kings preps by December 10.
- Associative Contracts are due by or before March 31, 2018, to qualify for a discount. For more information and to access the contract, go to: www.jpibiodynamics.org/associative-contracts/.
- Time to renew *Applied Biodynamics*. Annual subscription is \$30.00 (print) or \$20.00 (pdf): www.jpibiodynamics.org/applied-biodynamics-jpi-periodical/

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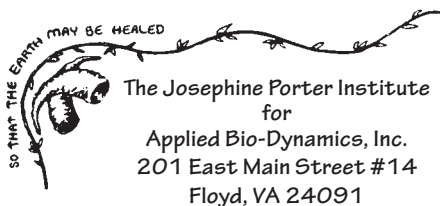
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“We must vitalize the earth directly, and this we cannot do by merely mineral procedures. This we can only do by working with organic matter, bringing it into such a condition that it is able to organize and vitalize the solid earthly element itself. To endow the mass of manure, or the liquid manure, with this kind of quickening or stimulus, is precisely the object of those inspirations which we are able to give to agriculture out of spiritual science.”

Rudolf Steiner, *Agriculture*, (Adams translation), p. 89



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