



ON GOOD LAND:

## Farming to a Different Beat

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A community of biodynamic growers takes root on the East End.

By Geraldine Pluenneke • photographs by Randee Daddona

Several hours after Amy Pink, an East End backyard vegetable gardener, had given her friend Jennifer a basket piled with her tomatoes, squash, peppers and basil, she received a phone call. It was Jennifer, who now passed the phone to someone else who said, as Pink relates it, "This is Dr. Memhet Oz, do you have a moment?"

"He told me he hadn't tasted a tomato like mine, like any of my vegetables, since he was 10 years old visiting Turkey. We talked for 15 minutes!" says Pink of the celebrity heart surgeon, who nudges America toward better nutrition on his daily TV show. Pink told the doctor she believes the source of her crop's flavor is the composting, silica sprays and other principles of biodynamic farming she uses on her small plot.

Mention biodynamics to most people and expect blank looks. But a few, like my East Hampton friend Charlot, will drive to the North Fork for the legendary tomato seedlings, biodynamic grown, by K.K. Haspel in Southold. Or seek out Bees Needs honey from beekeeper Mary Woltz, whose small-scale, noninvasive practices are guided by biodynamics. The burgeoning East End biodynamic community includes vegetable farms that have been practicing biodynamics for nearly two decades, and at least one Long Island vineyard, Shinn Estate Vineyards, that is in the process of becoming the first certified biodynamic winery in the eastern United States.

Certified biodynamic growers eschew synthetic chemicals and fertilizers, and rely heavily on compost and manuring, like today's organic farmers. But they also follow a wide range of other practices, dictated by Rudolph Steiner, the Austrian philosopher, scientist and seer. Steiner's method was created in response to German farmers, who in 1924 came seeking help with the declining fertility of their animals and the deteriorating quality of seed stocks.

Steiner's advice on agriculture was voluminous, with thoughts on everything from seed saving to hay making. His lectures contain prescient observations (too much chemical

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fertilizer can ruin soils), but also cryptic descriptions of nutrient and soil processes that leave much open to interpretation. He suggested crops might benefit from planting in conjunction with particular moon and celestial cycles. He wrote elaborate recipes for nine preparations made from ingredients like yarrow and thistle, cow's horns and silica. These "preps," when applied in ounces rather than tons, he suggested, will not only improve the quality of food, but also heal the earth's soil.

"Biodynamics is a different way of thinking," says Woltz, the Sag Harbor beekeeper, who credits biodynamic techniques with keeping her more than 100 hives on both forks healthy, "Steiner gave eight lectures on bees that prophesized what is occurring now," she says, referring to bee die-offs around the country. "He said if we continue with our 'modern' methods of beekeeping, in 80 to 100 years, the bees are going to be in serious trouble—as in extinction."

## EARLY SEEDINGS

The East End's biodynamic farming history is said to go back a half century. One story has it that Alan Chadwick, the English inventor of the small-scale, high-yielding technique known as biodynamic/ French-intensive gardening, worked a plot of oceanfront land in Wainscott in the 1960s. Evidence left behind includes rich soil and the presence of several rare plants used for biodynamic preps.

But, by most accounts, Hugh Williams was the first serious biodynamic practitioner on the East End. Williams, who first used the process on his family's orchard and farm in Australia, moved to Sag Harbor with his wife, author Carol Williams, in 1974. He made biodynamic preparations and compost for his tree business, as well as commercial apple, pear and peach orchard with the late John Libby on Mitchell Lane in Bridgehampton, the preps continued. (Some trees still remain, although most of the orchard is now a neighborhood; Hugh moved Upstate and is considered one of the nation's leading biodynamic orchardists.)

The Williamses kept a biodynamic garden and a cow—critical for making preps and compost—on the Sagaponack farm of Lee and Cliff Foster. "The cow was docile and wonderful," says Lee Foster, who shared daily milking duties. "And the spectacle of seeing Hugh work with that manure. You knew it was mystical."

Foster adds that what Hugh and Carole provided was a new thoughtfulness. "These farmers brought a different point of view and a very lovely outlook on life and the land." Despite the dismissal and even resentment from some observers, Foster notes, "You couldn't reject it out of hand. There was too much that apparently worked."

In the early 1980s, the Williamses started a biodynamic study group; members included Larry Halsey, who later introduced his Water Mill family farm, the Green Thumb, to biodynamics, and Kate Plumb, a founder of the health food store Provisions in Sag Harbor, and manager of several South Fork farmers markets. In 1982, Charlie Marder helped sponsor a biodynamic conference at his eponymous nursery in Bridgehampton, where he still hosts biodynamic lectures and where he says widespread interest in organic gardening has spilled over to curiosity about biodynamics. "If the soil is healthy and the organisms in the soil are healthy and teeming with life," says Marder, "that allows your plants—whether large trees or annuals—to be healthy. It's the foundation of the whole system."

## THE PREPS

Among the formal teachers of biodynamic techniques on the East End is Steve Storch, who produces and distributes biodynamic preps for his company Natural Science Organics in Water Mill. Storch also teaches at the Nature Lyceum, a school for environmental horticulture in Westhampton that holds a two-day training program in biodynamics for "Green Guerillas." (K.K. Haspel and Amy Pink are graduates.) A Southampton College-educated marine biologist, Storch morphed into a biodynamic believer after he married Jo Halsey of the Green Thumb.

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Sitting in Storch's sprawling kitchen overlooking some of the Green Thumb's fields, you hear of compost teas, sea mineral concentrates and the holistic preparations Steiner advocated to right the wrongs of chemistry and restore the soil's life and fertility. "When you give plants nitrogen through biology you're stimulating biological processes in the soil, including bacteria, protozoa, fungi, microarthropods," he says, referring to compost, cover crops and manure. "With chemical fertilizers, you're stimulating a much narrower range of processes. Man is assuming very arrogantly that he knows something more than nature does. He's bypassing the physiological components of the plants."

Biodynamic practitioners, like Storch, are convinced that there is an energy in a handful of soil, in plants, in the earth that houses it all and in the cosmos. And input from this greater energy is the source of Steiner's otherwise puzzling preps. (See "Special Ingredients.")

In the autumn, Storch stuffs some 600 cow horns with manure and arranges them in one pit; another pit holds other preparations. "These are buried from the winter solstice to late spring," he says. "During this time the cosmic forces of Saturn, Mars and Jupiter and the solar wind pulse against the buried horns. Boom, boom, boom for the whole winter. What you're doing is initiating a cosmic connection."

Rex Farr, who farms 50 acres of vegetables, hay and wine grapes with his wife,

Connie, in Calverton, credits the preps with saving his crops during the incredibly wet 2009 growing season, when devastating funguses like downy and powdery mildew thrived across the East End. Farr, whose tomatoes can be found on the shelves of the King Kullen in Bridgehampton, sprayed his crops after each rain with silica equisetum (made with the horehound grass), which he believes helped absorb the excess moisture and "held funguses at bay." "My 10 acres of hay did extremely well, where organic farmers and even conventional farmers were having problems." (Among the machinery on Farr's farm is a mighty automated stirring machine that readies biodynamic preps for the tractor-driven, 90-gallon, multi-nozzled sprayer.)

"The preps are very, very powerful," says Haspel, who also credits them with protecting her tomatoes (and Amy Pink's) from 2009's late blight, which severely affected most of the East Coast's crop. Haspel's heirloom tomatoes and greens may throw chefs into superlatives, but Haspel is more impressed by what her growing techniques have done to the ground. "Ten years ago this was all sand, and now it has a foot of humus," she says, gesturing to a grassy area near her greenhouse. "It normally takes 100 years to build one-inch of top soil."

## PRACTICED PRODUCERS

Today, scattered around both forks, there are farmers and gardeners who not only swear by these preps, but employ a range of biodynamic practices that they argue have built up their soil quality, improved their output and protected their crops from disease, when conventional approaches have failed them.

For the vegetable, herb and flower seeds it starts in greenhouses each spring, the Green Thumb plants by the Stella Natura calendar—sowing flower crops on flower days, leaf crops on leaf days, doing no work on "blackout days." This astrological calendar, widely used by biodynamic farmers, was developed by German biodynamic farmer Maria Thun in the 1950s and 1960s, following meticulous planting and observation of vegetable seedlings. The Green Thumb has stuck with this routine because they have been so impressed by the vigor of their seedlings. Quail Hill Farm has also planted by this calendar for more than two decades.

To control pests, Storch of Natural Science Organics has used the biodynamic technique of ashing—which involves burning parts of a crop pest and then spreading the resulting ashes in an area affected by the pest. He reports some success with controlling phragmites and other pernicious East End weeds.

At Macari Vineyards in Mattituck—which produces a cabernet franc that Food & Wine



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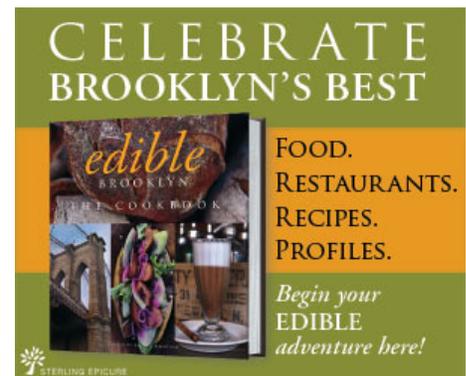
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calls excellent, “expressing pure, layered flavors of cranberry, bell pepper, pomegranate and dried fruit, punctuated by spice and pencil lead”—49 head of Texas Longhorn cattle supply manure that will inoculate biodynamic compost preps for the 200-acre operation. Fifteen hundred tons of manure was spread on Macari land last spring, an ongoing process that owner Joe Macari credits with building up the organic matter content in his otherwise sandy soils.

Or consider the practices of Woltz, the Sag Harbor beekeeper. Before moving to the East End in 2002 to tend the hives of the Hamptons Honey Company, Woltz worked at the Pfeiffer Center in Chestnut Ridge, New York, where she assisted biodynamic beekeeper Gunther Hawk, and picked up techniques and principles she considers less invasive and more effective than conventional beekeeping, such as treating varroa mites with oxalic acid (the common bee pest is usually treated, without much success, with antibiotics and insecticides), allowing hives to swarm and to breed their own queens, and allowing her bees to keep all of the honey they need rather than replacing it with sugar water.

“BD is a state of mind that guides my approach to beekeeping,” says Woltz. “All I can say is my bees are thriving and I’m extremely grateful.”

For Barbara Shinn of Shinn Estate Vineyards, on Oregon Road in Mattituck, the attraction to biodynamic farming is as much about specific techniques as the “intent” behind the approach, which encourages “being mindful in farming practices while farming with instinct, creativity, and current ever-evolving scientific guidance.” She and her husband, David Page, credit horsetail tea and silica (or ground quartz) for protecting their vineyard from mildew; the silica “works as an aid against powdery by reflecting light back into the shaded crevices of the grapevine canopy,” and functions as an insecticide when insects ingest it, Shinn explains. And they do soil work, harvest, and begin certain winemaking work in accordance with the Stella Natura calendar.

More broadly, Shinn and Page are directed by the holistic, biodynamic view of “the farm organism,” in which planted crops, wildlife, nearby wild areas and other elements of the farm landscape interact. For instance, Shinn explains, the floor of her vineyard, the area around the trunks of the vines and under the trellis, is “farmed as a meadow,” with over 30 species of broadleaves and 20 grasses identified to date, including plants like clover, dandelions, yarrow and nutsedge. “The intense cover-cropping provides beneficial insect habitat, erosion control, organic matter, indigenous wine yeast habitat, soil drying and water retention attributes, and wildlife habitat,” says Shinn. It’s a symbiosis that Shinn also sees in the cellar when they rely on wild yeast. “Our spontaneous fermentations reflect once again the union of the cultivated crop, that being the wine grape, and untamed nature, that being the wild yeast we allow to grow on the skins.”

## **STILL SKEPTICAL?**

Despite its history and widespread use, some consider any success with biodynamics largely anecdotal—practiced by farmers convinced by results they have seen in other fields or in their own. While many common biodynamic practices have been studied, like composting or companion planting, there has been much less formal study of Steiner’s more esoteric theories.

“There isn’t a lot of proof because there hasn’t been a lot of research done,” says Dr. Jennifer Reeve, assistant professor of organic and sustainable agriculture at Utah State University. Reeve was raised on a biodynamic farm in the UK, attended a small school run by her parents whose curriculum was designed by Steiner, worked for two and a half years at the Josephine Porter Institute, and then received her PhD at Washington State University.

In 2003 Reeve was the lead researcher in a comparison of organic and biodynamically treated grapes. The results showed that biodynamic wine grapes were significantly sweeter. And they were notably higher in phenols and anthocyanins, two of the flavor-conferring compounds in grape skins that are antioxidants. “The results are small, but they are relatively consistent,” she says. “When taken as a whole, the question could be asked, are these small physical changes indicative of something larger happening on a

deeper level?”

Still, skepticism abounds. In response to readers of the blog *The New York Cork Report*, who sniffed at the significance of Reeve’s findings, David Page, of Shinn Estate Vineyards, countered, “Ask any winemaker whether significantly higher brix [sugar levels], notably higher phenols and total anthocyanins will make any practical difference in the quality of their wine.”

Burying cow horns and stag bladders? Using ounces instead of tons of fertilizer? It’s easy to see how many would scoff at the biodynamic system. Eric Fry, winemaker at the Lenz Winery in Peconic, has called it voodoo. Linda Chalker-Scott, a horticultural educator at Washington State University, who runs “The Garden Professors” blog, has analyzed the literature on compost teas and biodynamic preparations, and argues that these substances are currently produced with little consistency and little evidence of impact on soil microbiology. California vintner Stuart Smith goes further. His blog is called *Biodynamics is a Hoax*.

“My interest in biodynamics is based solely on the evidence I obtain drinking biodynamic wines,” says Kareem Massoud, winemaker at Paumanok Vineyards in Aquebogue. “Some have been underwhelming, some have been good, some have been great and some have been among the best I’ve ever had.” At a biodynamic wine tasting in New York City a few years ago, Massoud heard Nicolas Joly of France’s Loire Valley make a passionate, but not evangelical, case that biodynamic methods result in superior wines.

When Massoud asked Joly for any scientific studies to share with skeptics—like his father—Joly said they didn’t exist. “So, basically, biodynamics is an act of faith?” Massoud asked.

“Yes!” Joly answered without hesitation.”

Massoud was still intrigued. “Whatever viticultural methodology allows me to achieve the healthiest, ripest grapes possible, is the course that I shall pursue,” he says, “regardless of whether that method is known as conventional, IPM, sustainable, practicing organic, organic, biodynamic or any other name.”

In other words, the results are important. And the biodynamic movement is gaining converts as open-minded farmers see biodynamic harvests being featured by top restaurants like Gerry Hayden’s North Fork Table and Inn in Southold, Keith Luce’s Jedediah Hawkins Inn, David Intonato’s Mill Pond House in Centerport (Intonato is starting a biodynamic garden at home), Rob Beaver of the Frisky Oyster and Noah Schwartz of Noah’s in Greenport. Luce says, “there is an intangible, deeper flavor that comes through from growers who are focused on creating a microbiology in the soil.” Certainly produce like the home-grown basket that made its way to Mehmet Oz is catching the attention of sophisticated palates.

“Nothing compares with what comes out of her garden because it’s that vibrant in flavor, that vibrant in color,” says Hayden, who features K.K. Haspel’s salad greens on his menu. “The spice level on her wild arugula is 10 times greater than any other grower.”

Believers keep popping up, partly because biodynamics may offer solutions where none currently exist. Shinn is the lone wine grower east of the Mississippi who is applying for biodynamic certification from Demeter USA and its organic arm, Stellar. It takes three years before anyone can market their wines as “Biodynamic,” with capitalization of the word conferring its status. “I think in this decade a lot of farmers are looking for answers to the problems that have manifested themselves from the use of chemistry,” she says.

Scott Chaskey, the farm director at Quail Hill in Amagansett, which has used assorted biodynamic practices over its history, recently led a panel at a biodynamic conference at the Pfeiffer Center attended by about 400 people. He says there’s a change in the air—that biodynamics, which “has actually been quite an insular movement” is beginning to draw others in. “I have great respect for the biodynamic farmers I know,” he says. “They are paying very close attention to the whole picture.”

Geraldine Pluenneke writes from Montauk where she is completing a book about flavor. Brian Halweil contributed reporting for this story.

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