

ECOLOGY ACTION'S GARDEN COMPANION

GROW BIOINTENSIVE News from around the World



Photo: Cynthia Raiser-Jeavons

Victory Gardens for Peace Update

A Collaboration

By Mary Zellachild, Communications Director

At the beginning of the year, Ecology Action and Victory Gardens for Peace signed a collaboration agreement with Jeff Stanford, owner of the Stanford Inn on the Mendocino Coast, who has been hosting an EA Mini-Farm there since 2010. For almost 30 years the Inn has fed customers gourmet vegan food from its garden. Now, with the EA project well established there, all the Inn's gardens will become part of the GROW BIOINTENSIVE system. The agreement defines the administrative and financial responsibilities of each of the three participants through 2020. This project could be a model for how commercial/non-profit partnerships can work together to benefit a whole community.

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The Growing Edge: Biointensive is Thriving in Nicaragua

By Mary Zellachild, Communications Director, and Shannon Joyner, EA's e-newsletter Editor



Huerto Eli garden in Corozo, Nicaragua.

Photo: EA staff

Of all the places in the world where the GROW BIOINTENSIVE method (GB) is being used, it is spreading rapidly in Mexico and Latin America and—most of all—in Nicaragua. By the end of 2018 there will be over 100 certified trainers at all levels in Mexico, South America, Central America and the Caribbean, with 85 of them in Nicaragua!

From January 22 to 26, 2018, ECOPOL, Ecology Action's International Partner in Latin America, co-sponsored a five-day GB conference in Nicaragua, with 20 participants from Bolivia, Chile, Peru, El Salvador, Honduras, Mexico, France, Italy

and Spain. On the first day, which was for presentations at the National Agrarian University (UNA)—a co-sponsor of the event where the conference took place—there were over 100 attendees. Juan Manuel Martinez, head of ECO-POL, who organized the conference, estimates there were about 400 Nicaraguans who participated in activities during the week.

Lilia Splender, the CEO of Friends of the Earth-Spain, was one of the participants, and her organization is going to publish 5,000 copies of HTGMV 8th edition in Spanish for Central America. Others interested in the conference streamed the event live on Facebook, allowing it to be viewed elsewhere in Nicaragua and worldwide. The energy level was very high! As a result of the conference and the GB work being accomplished in Nicaragua, HBO is planning a program on the GB method in that country in 2019.

Ecology Action's John Jeavons, Director, and Matt Drewno, GB Advanced-Level Certified Teacher and VGfP Mini-Farm Manager, each made presentations at the conference.

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The Growing Edge

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Matt spoke on Achieving More with Less: Experiments in Growing a Complete Diet in 1,000 Square Feet and John's topic was Food for the Future: Now. John and Juan Manuel were both awarded beautiful certificates at the final celebration dinner—each for his life of humanitarian work.

After he and Matt returned home, John had many things to report from the conference and his time in Nicaragua. He believes that the GB program there can be viewed as a microcosm of what can, and possibly should, be done—a living example of a proactive, nurturing and healthful farming and gardening system. Examples of the work there include:

- Universidad Nacional Agraria, the National Agrarian University (UNA), is in the process of setting up a three-year GB university course for the purpose of training Biointensive Technical Specialists. There is also a GB training/demonstration center at the university. Javier Silva, the Program Director, is a UNA professor. For a video on this work www.youtube.com/watch?v=AYlaPyG31fA.



Co-op member holds saplings ready for planting.
Photo: Higher Ground

The Centro Biointensivo involved in this program is the result of a 2013 cooperation agreement between

CCID BioNica, <http://bionica.org/>, the UNA, Ecology Action and ECOPOL.

- A Nicaraguan, who was a presenter at the conference, had taught the Biointensive method to 38,000 people in 26 years.
- Franck Tondeur runs another demonstration/training center and has taught 4,800 people in four years. Trials and research are being carried out at both the university and Franck's center.
- John observed that people there take responsibility for themselves and what they are doing. They understand GB from a cultural standpoint and are doing it from their souls.
- At the conference men's and women's GB mini-farming projects were represented, with both groups doing well. In addition, one of the highlights of the conference was the introduction of two strong women's groups who have incorporated the GB method into their organizations.
- La Central Cooperativa Las Diosas ("The Goddesses") is a dynamic network of community-based cooperatives run by women and supports true development and respect for women's rights. The cooperative is located east of Managua, where much of the land is devoted to tobacco production and largely controlled by male producers. Las Diosas consists of four smaller cooperatives, each managed by its own Directiva (female Board of Directors). Fiercely independent and determined to succeed in the coffee industry, the 260-member cooperative has made much progress since its founding in 1996, both in terms of sustainable commercial relations for their coffee sales and in the promotion of issues such as women's education, housing and health. The women grow organic coffee as well as vegetables, grains and fruit using the GROW BIOINTENSIVE method. Las Diosas works closely with another women's group, La Fundacion Entre Mujeres (FEM), or Foundation between Women, which focuses its development project work on issues concerning women's health, universal access to education and economic and moral support for single mothers. For more on these organizations, visit

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The Growing Edge

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www.highergroundstrading.com/pages/nicaragua.

- **Artistas Para La Sopa (Artists for Soup)** www.artistsforsoup.org/ is a nonprofit organization “...dedicated to reducing hunger, malnutrition and poverty by empowering women and secondary school students through community Bio-intensive garden development, solar oven and nutrition classes, science and technology program support to secondary schools, human rights training for women, arts cooperative development and more.” It was started several years ago by a group of women artists who created and sold paintings to enable the project to begin. It began with “growing veggies for soup” and continues to expand. They have taught the GB method to 2,000 people in and around La Paz Centro, Leon, Nicaragua. See page six for more on this organization.
- One of the best GB gardens visited is maintained by children—who also expose their parents to the method in this way. You can view a fantastic video of this beautiful garden and the next generation of sustainable farmers at https://www.youtube.com/watch?v=IiQAGE_6cvU. Local Nicaraguans have fabricated a strong garden spade, which is successfully used with the method.
- Seeing the energy and drive exhibited at the conference, John realized that if the GROW BIOINTENSIVE method could be seen globally—and activated!—through the lens of what is being done in Nicaragua, it might save 10 years in the ongoing process to change the world from a depleting agriculture to a living, environmentally sound and productive biologically intensive agriculture. We are hoping that some key practitioners from Nicaragua will be able to secure funding to join the

8-month Internship Program at Victory Gardens for Peace, Ecology Action's training site near Mendocino, California. This could produce farm leaders to strengthen Nicaragua's Biointensive advance and their understanding and skills more rapidly—including the intuitive feeling and GB philosophy gained from working with Ecology Action directly.

At the Celebration Dinner, on the final night of the conference, Ecology Action’s Director was asked what he thought might be good initiatives to address



John with the next generation of Nicaragua’s farmers. Photo: EA staff

some of Nicaragua's environmental and food sovereignty challenges. He suggested the following:

- Work on reforestation throughout the country and re-population of the agricultural areas. (45% of the people currently live in cities.)
- Research the percentage of calories that are now imported and, because of the world situation, may not be available to import in three years’ time—to take initiatives to produce all their nutrition within the county.
- Encourage expansion of the GB program through localization, embedding it in many areas through demonstration and teaching centers run by certified GB practitioners.

There are skilled people at the “top”, including at the university level, and there are also skilled people at

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The Growing Edge

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the project and program levels, all accomplished at teaching and coordinating programs and actions. At the same time, many of the mini-farmers in the field have not been able to spend sufficient time in the garden and/or spend time working with an expert GB practitioner to gain enough experience to get a complete “feel” for the whole process of closed-loop, sustainable farming as a way of life. More time growing the soil and food, plus some more via watering the gardens, taking note of the subtle changes in the growing beds that indicate imbalances needing correction, would smooth out the rough spots and yield the best results. To address this need, a group of thoroughly experienced specialists should be developed to “circuit ride”—regularly travel through the regions of the country checking in

with newly emerging farmers, working with them to spread the in-depth and in-breadth “feel” and understanding of the biologically intensive process.

“... there are skilled people at the “top” including at the university level and there are skilled people at the project and program level...”

The Nicaraguan conference and workshops were an incredible experience and a humbling inspiration for us. We are so grateful for the work ECOPOL, CCID BioNica, the UNA, and many others put into our collaboration, and we are excited to continue working with the GB practitioners of Nicaragua, and the whole of Mexico, Latin America, the Caribbean, Spain, and beyond!

We hope you are inspired to join us. If you are interested in helping Nicaraguan interns travel to Ecology Action in 2019, you can make a donation here <https://donatenow.networkforgood.org/ecologyaction>.

Viva GROW BIOINTENSIVE!!



Photo: James Fougere

VGfP Update

Continued from page 1

Four staff members from the Stanford Inn are each growing three beds in the VGfP Mini-Farm. They are hoping the experience of working the three beds will go towards helping them

took VGfP's fall 2017 2-day workshop, one has taken an EA 3-Day Workshop, and the fourth will be enrolled in the Nine-Saturdays Course this summer.

So far this year, Matt has been busy at the VGfP Mini-Farm and travel-

seeds from Bountiful Gardens (which had just closed), gave a garden planning workshop for 18 local gardeners—about 75% of them women—and took part in a seed-cleaning jamboree at the local Mendocino Botanic Gardens. He traveled to Nicaragua for the five-day Conference and visited 10–15 farms throughout the country, where individuals are training thousands of people per year. Matt also presented the new Booklet #38 on the Ten-Bed Unit, with a projected release date of February 2019.

On April first, Kimberley Fisher from Bermuda arrived at the VGfP Mini-Farm to be an 8-month intern. Bermuda is a small island with a rising ocean and a large population, and people are working hard to spread Biointensive there. Matt describes Kimberley as a hard worker with a warm heart. She has a background in non-profit management and skills in communications, fund raising and organizing.



become Basic-Level certified in growing to GB presentations. In January GROW BIOINTENSIVE. Two of them he acquired a large donation of

VGfP Update

Continued from page 4

In April, Matt traveled to Loyola Marymount University in Los Angeles to consult with them about their vegetable garden. He also made a presentation on the GB method to about 60 people at the university: students, faculty and local gardeners. Participants also included professors in Food Policy, Environmental Studies and Environmental Sciences from UCLA, who explored creative ways to strengthen their campus garden. VGfP can be found on FB www.facebook.com/victorygardensforpeace/

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The Alan Chadwick Living Library and Archive

Alan Chadwick (1909-1980), the English master horticulturalist, was tutored as a youth by Dr. Rudolf Steiner and brought what he termed "The Biodynamic-French Intensive" approach to artistic horticulture and gardening in America. From 1967 until his death in 1980, he taught publicly and left a



Alan Chadwick, circa 1970.
Photo: <http://chadwickarchive.org>

huge legacy, creating five gardens in the United States and inspiring hundreds of apprentices.

An extensive collection of Chadwick materials is now freely available to the public. There are videos, many hours of audio files of Alan's lectures to apprentices and public addresses, photos, written materials and much more.

This archive project was begun in 1980, primarily by the Chadwick Society in California. The society then, via Ms. Virginia Baker, entrusted all of their archival materials to Craig Alan Siska—a former Chadwick garden apprentice—now of Verdant Vale Gardens, LLC, in North Carolina, which launched this new website. This honors Alan's final request that his work, vision and legacy be shared freely with the public.

Over time, more materials will be uploaded to the website. If you have archival materials to share, please contact them via the "Contact Page" on their website, <http://chadwickarchive.org>.

The Kilili Self Help Project

Sandra Mardigian, a colleague of Ecology Action who had spent many years in Kenya, started Kilili Self Help Project (KSHP) in 1985 as a community assistance fund with Kilili Village in Machakos, Kenya. The Kilili community met together and prioritized their needs, then sent proposals. When word reached Sandra that Manor House Agricultural Centre (MHAC), a Biointensive agriculture school, had just been started in western Kenya, she chose to use Kilili funding to support the Centre's graduates who were training farmers in their communities. The community contributed the labor and built a community water project, a school, a maize-grinding mill, and a medical dispensary. In December 1989, Kilili Self Help Project sent a group of Kilili primary school teachers to MHAC for a week of training in the Biointensive method.

With experience over the years, Sandra's vision evolved, and an idea took shape for a grassroots GROW BIOINTENSIVE education center where farmers could come for training and the center's staff could also do outreach to train farmers in their communities. In 2008 the vision was manifested with the opening of the Grow Biointensive Center of Kenya (G-BIACK). Since



Samuel Nderitu (right) teaches the GB method. Photo: G-BIACK

then, all of Kilili's focus and funding has been directed to G-BIACK. Seeking to honor forty years of research, innovation and education in Biointensive agriculture by John Jeavons and Ecology Action, the Foundation for Global Community sponsored a film to show the successful application of this work in the impoverished areas of the world where it is flourishing. When asked to recommend a good subject for the film, KSHP suggested G-BIACK, outside Nairobi. The result is the 12-minute film GROW, www.g-biack.org/videoviewgrow.html.

Sandra Mardigian, Director of the Kilili Self Help Project, is the sole staff-person. She carries out the administration of KSHP on a volunteer basis, and donates all costs and overhead (except bank transfer fees). Therefore, nearly 100% of contributions by donors can go directly to programs in Kenya.

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the strategy of “pollination.” They try to take their knowledge and spread it to receptive groups. Since 2014, the group has succeeded at initiating large Biointensive projects in schools, churches and family patio gardens. One of their recent successes is with a group called “Choir of Angels,” a care/school program where young children of single parents receive a meal, snacks and care while their parent works. They hope their gardens will supplement the beans, rice and cereal provided by the

vised wooden, plastic, and sheet metal homes. El Quilombo has been developing since 2012 when the land was granted by the government. With technical assistance and training, a new group of women has begun to form in El Quilombo. Artists for Soup invites you to learn more about their methods and the big impact this new work will have in the future on some of the poorest residents of La Paz Central. To read more or to support the work in La Paz Centro, visit www.artistsforsoup.org/.

**Artists for Soup—
Nicaragua**

www.facebook.com/groups/830078337045658/about

Artists for Soup is a non-profit organization that works to support sustainable development work in La Paz Centro, Nicaragua. Over time, they hope to improve the possibilities for school retention, food security and creative enterprise for women in the city. They will be working with Nicaraguan organizations to achieve these goals.

Huerto Eli is the Biointensive garden developed by Elioena Arauz, the Program Director of Artists for Soup. So far Elioena has 44 garden beds producing organic vegetables.

Environmental degradation and hunger are inextricably linked. What can be done about this? Artists for Soup supports groups teaching the Biointensive method. In 2014, they started cultivating a collaboration with “La Fortaleza,” or “Strength,” a women’s Biointensive gardening group in La Paz Centro. This group works with

government and make meals more nutritious.

In August of 2016, Artists for Soup and the La Fortaleza gardeners started making a new community garden in a settlement called El Quilombo. This settlement currently houses 353 Nicaraguan families, most of them living in impro-



Left to right: Elioena Arauz, Program Director, John Jeavons, Don Sergio Arauz and Alyeriz Arauz Zeledo. Photo: Artists for Soup staff

Kilili Self Help Project

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To read more about KSHP, visit <http://kililiselfhelp.net/home.html>, or to contact Sandra, smardigan.kilili.self.help@gmail.com.

GB Videos Now with Spanish Subtitles

Spanish subtitled GROW BIOINTENSIVE How-To videos are now on YouTube! You can see them at www.youtube.com/playlist?list=PLGnAjqjLW25a5VrNYKtDBmSDSw79PwNp.



Healthy Soil is the Real Key to Feeding the World

By David R. Montgomery

Edited for space. To read the entire article, visit <https://theconversation.com/healthy-soil-is-the-real-key-to-feeding-the-world-75364>

April 13, 2017

One of the biggest modern myths about agriculture is that organic farming is inherently sustainable. It can be, but it isn't necessarily. After all, soil erosion from chemical-free tilled fields undermined the Roman Empire and other ancient societies around the world. Other agricultural myths hinder recognizing the potential to restore degraded soils to feed the world using fewer agrochemicals.

When I embarked on a six-month trip to visit farms around the world to research my forthcoming book, *Growing a Revolution: Bringing Our Soil Back to Life*, the innovative farmers I met showed me that regenerative farming practices can restore the world's agricultural soils. In both the developed and developing worlds, these farmers rapidly rebuilt the fertility of their degraded soil, which then allowed them to maintain high yields using far less fertilizer and fewer pesticides.

Their experiences, and the results that I saw on their farms in North and South Dakota, Ohio, Pennsylvania, Ghana and Costa Rica, offer compelling evidence that the key to sustaining highly productive agriculture lies in rebuilding healthy, fertile soil. This journey also led me to question three pillars of conventional wisdom about today's industrialized agrochemical agriculture.

Myth 1: Large-scale agriculture feeds the world today

According to a recent UN Food and Agriculture Organization (FAO) report, family farms produce over three-quarters of the world's food. The FAO also estimates that almost three-quarters of all farms worldwide are smaller than one hectare—about 2.5 acres, or the size of a typical city block.

Only about 1 percent of Americans are farmers today. Yet most of the world's farmers work the land to feed themselves and their families. So while conventional industrialized agriculture feeds the developed world, most of the world's farmers

work small family farms. A 2016 Environmental Working Group report found that almost 90 percent of US agricultural exports went to developed countries with few hungry people.

Of course the world needs commercial agriculture, unless we all want to live on and work our own farms. But are large industrial farms really the best, let alone the only way forward? This question leads us to a second myth.

Myth 2: Large farms are more efficient

Many high-volume industrial processes exhibit efficiencies at large scale that decrease inputs per unit of production. The more widgets you make, the more efficiently you can make each one. But agriculture is different. A 1989 National Research Council study concluded that "well-managed alternative farming systems nearly always use less synthetic chemical pesticides, fertilizers, and antibiotics per unit of production than conventional farms."

And while mechanization can provide cost and labor efficiencies on large farms, bigger farms do not necessarily produce more food. According to a 1992 agricultural census report, small, diversified farms produce more than twice as much food per acre than large farms do.

Myth 3: Conventional farming is necessary to feed the world

We've all heard proponents of conventional agriculture claim that organic farming is a recipe for global starvation because it produces lower yields. The most extensive yield comparison to date, a 2015 meta-



Cover crops planted on wheat fields in The Dalles, Oregon.

Photo : Garrett Duyck, NRCS/Flickr, CC BY-ND

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Healthy Soil is the Real Key...

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Conventionally grown crops, a finding similar to those of prior studies.

But the study went a step further, comparing crop yields on conventional farms to those on organic farms where cover crops were planted and crops were rotated to build soil health. These techniques shrank the yield gap to below 10 percent.

The authors concluded that the actual gap may be much smaller, as they found “evidence of bias in the meta-dataset toward studies reporting higher conventional yields...” In other words, claims that organic agriculture can’t feed the world depend as much on specific farming methods as on the type of farm.

Building healthy soil

Conventional farming practices that degrade soil health undermine humanity’s ability to continue feeding everyone over the long term. Regenerative practices like those used on the farms and ranches I visited show that we can readily improve soil fertility on both large farms in the US and on small subsistence farms in the tropics.

I no longer see debates about the future of agriculture as simply conventional versus organic. In my view, we’ve oversimplified the complexity of the land and underutilized the ingenuity of farmers. I now see adopting farming practices that build soil health as the key to a stable and resilient agriculture. And the farmers I visited had cracked this code, adapting no-till methods, cover cropping and complex rotations to their particular soil, environmental and socioeconomic conditions.

Whether they were organic or still used some fertilizers and pesticides, the farms I visited that adopted this transformational suite of practices all reported harvests that consistently matched or exceeded those from neighboring conventional farms after a short transition period. Another message was as simple as it was clear: Farmers who restored their soil used fewer inputs to produce higher yields, which translated into higher profits.

No matter how one looks at it, we can be certain that agriculture will soon face another revolution. For agriculture today runs on abundant, cheap oil for fuel and to make fertilizer—and our supply of cheap oil will not last forever. There are already enough people on the planet that we have less than a year’s supply of food for the global population on hand at any one time. This simple fact has critical implications for society.

analysis of 115 studies, found that organic production averaged almost 20 percent less than con-

ventionally grown crops, a finding similar to those of prior studies. So how do we speed the adoption of a more resilient agriculture? Creating demonstration farms would help, as would carrying out system-scale research to evaluate what works best to adapt specific practices to general principles in different settings.

We also need to reframe our agricultural policies and subsidies. It makes no sense to continue incentivizing conventional practices that degrade soil fertility. We must begin supporting and rewarding farmers who adopt regenerative practices.

Once we see through myths of modern agriculture, practices that build soil health become the lens through which to assess strategies for feeding us all over the long haul. Why am I so confident that regen-



No-till and composting can build soil organic matter and improve soil fertility.

Photo: David R. Montgomery

erative farming practices can prove both productive and economical? The farmers I met showed me they already are.

David R. Montgomery is Professor of Earth and Space Sciences at the University of Washington, author of the award-winning popular-science books: King of Fish, Dirt, The Rocks Don't Lie, and co-author of The Hidden Half of Nature: The Microbial Roots of Life and Health.

GB Continues to Inspire Hope

In 2015, EA's International Partner, G-BIACK in Kenya, held an African Symposium. John Jeavons asked a number of the participants, "What would you do if you could have anything in the world, even if you think it is impossible?" One of the participants, a woman working in the Nairobi two-million-person slum, had a very heartwarming response to

the question asked via Skype. "I would want for everyone in the world to be able to use the life-giving GROW BIOINTENSIVE method." John was surprised that despite all the things she could've asked for, this was her wish for a community that has so many needs.



Some of the attendees at the 2015 African Symposium.

Photo: G-BIACK

GB's Place in the World Food System

By John Jeavons, Director of Ecology Action

Ecology Action is excited with the collaboration and initiatives for 2018 and beyond, including increased online educational opportunities for everyone, everywhere, plus 2-, 4-, 6-, 8- and 12-month internships and 1- and 3-year apprenticeships.

GROW BIOINTENSIVE's closed-loop sustainable farming currently provides soil- and food-growing localization successfully in 152 countries by approximately 7 million individuals, so far, in virtually all soils and climates where food is grown. Its higher yields are accomplished using a fraction of the water, nutrient in organic-fertilizer form, and energy per pound of food produced, compared with standard farming practices. The manual system involved is very low-cost and works with locally available resources.

The United Nations Food and Agriculture Organization (UNFAO) has recently noted that smallholder farms produce 75% of the world's food, making the GB approach especially helpful and important. This is done while building farmable soil 60 times faster than in nature. In contrast, other farming approach-

es deplete the soil 18 to 80 times faster than nature builds soil. Put another way, the six inches of farmable soil needed to grow food takes an average of 3,000 years to develop, in the world and the US, and much longer in California. GROW BIOINTENSIVE has the capacity to grow six inches of farmable soil in 51 years—according to a Master's Thesis in the Soil Science Department at the University of California-Berkeley. In a world with as little as 26 years of farmable soil remaining, this is especially important.

A growing number of organizations are using Biointensive techniques, including the non-profit Mercy Corps and the governmental aid group Peace Corps. This trend is important to changing the world's food producing picture. Let's GROW more with less now!

Grow the Earth is the motto of John Jeavons' Facebook page, featuring weekly food-, soil- and other related topics, www.facebook.com/JohnJeavonsGrowBio/. The information can also be found at www.johnjeavons.org

Heartfelt Thanks to Our Major Donors

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Dr. Kent T Hoffman



Kim Krull



Sandra Mardigian
and Doug Burck



William L Shuman

And many thanks to all
our partners who have
supported us in many
ways over the years.

Ecology Action's Annual Report for 2017

Message from the Director

Dear Friends,

Each of us is being impacted by global events that have begun to shatter our understanding of what's normal. It can feel like everything we've counted upon for stability is being overturned, leaving us on less firm ground. Like the rest of our nation and the world, Ecology Action experienced some daunting challenges during 2017. Because of these, we initiated a major restructuring and reassessed ways to most effectively assist those needing best-practice soil- and food-growing approaches. The good news is we're not only still here, but are discovering new avenues to increase the localization and outreach of the GROW BIOINTENSIVE (GB) system. After all, the plants are rooting for our success!

One of the most exciting avenues is the collaboration agreement recently negotiated between Ecology Action (EA), Victory Gardens for Peace (VGfP), and The Stanford Inn by the Sea. This strengthens the relationship Ecology Action and the Inn have developed since 2010. Stanford Inn is located on the Coast, just south of the town of Mendocino, an area which attracts many visitors each year. The Inn has been using Biointensive practices for over three decades. The demonstration, training and research garden VGfP maintains and is expanding at the Inn will not only introduce Ecology Action to a larger audience, but will potentially bring a greater number of people to the Inn.

EA and VGfP are providing direction for the cutting-edge 10-Bed-Unit (1,000 square feet of planted surface) Soil Sustainability research project—started during 2017 at VGfP, Ecology Action's Mini-Farm at the Golden Rule site, ten Latin American sites, and one in Italy. The projects in Latin America and Italy will be carried out for at least the next two years—and the one at VGfP will continue indefinitely. This is the latest phase of EA's ongoing garden research which provides the foundation for the GROW BIOINTENSIVE system—and one of our most effective methods of global outreach since Ecology Action began. The purpose of this current research project is to discover the smallest possible garden size that will provide a sustainable, complete annual diet for one person—including growing compost materials and using the least amount of the Earth's resources possible. At intermediate GB yields, this may be done in as little as 2,000 square feet of planted surface—when the right crops are chosen and the gardener's skill and the soil have been reasonably built up. At high GB yields, research indicates this may be accomplished in as little as 1,000 square feet. Matt Drewno, manager of the VGfP Mini-Farm, is writing a Self-Teaching Mini-Series booklet on this process.

It was extremely rewarding for Matt Drewno and me to attend the Five-Day GB events in Nicaragua in January 2018. In 2004 Juan Manuel Martinez, director of ECO-POL, gave trainings in that country for the first time and set himself the goal of helping the country be a reference point for the GB method in all of Central America. As a result, thousands of people have been and are being trained.

I also know that at the local level each biologically intensive garden that is grown and viewed has the power to ignite a longing for community in which local food security is one of the major elements. Each of us has the ability to strengthen our community and our own inner longing to be part of something greater than ourselves by growing food in a healthy way, whether in a pot on the balcony or with our hands nurturing fertile soil in a backyard, community garden, or nearby small-scale farm. And while we nurture the soil, we also nurture ourselves and our community.

Sri Kaleeshwar shares a holistic insightful perspective for us all,

“The earth is so beautiful, creation is so beautiful. When we look at the mountains or anything in nature, seeing all the many beautiful things, our heart is completely softened by the divine energy. When this happens, it is easy to attract the earth’s energy.”

Whoever connects to the earth energy will automatically receive great happiness and peace. They can live on the earth with great joy. Even though they have to face the biggest of problems, they receive the type of strength and courage needed to deal with them. Even though they have the problems, without even noticing it they no longer care about their problems and the problems will decrease; this type of happiness will take good care of that.

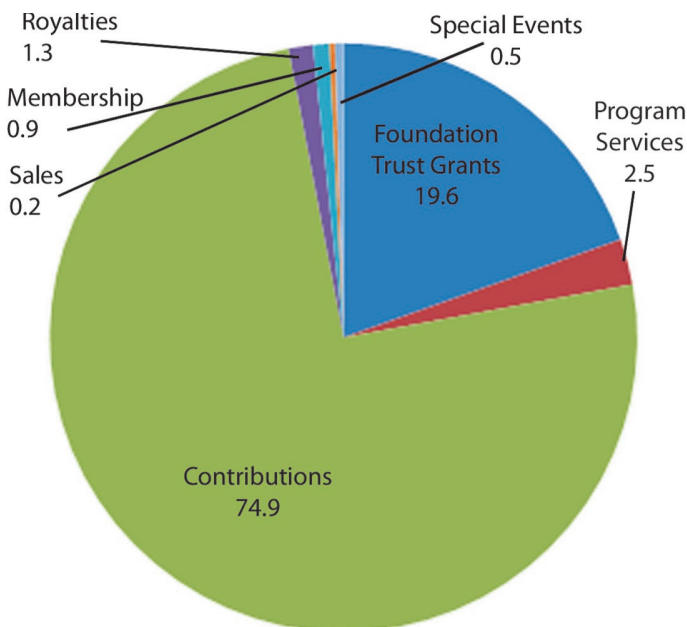
This is the happiness that comes through the earth vibrations. The earth energy and the soul energy connect to each other. Then the earth energy automatically protects them, making the big happiness.”

Best Wishes,
John Jeavons, Executive Director, Ecology Action

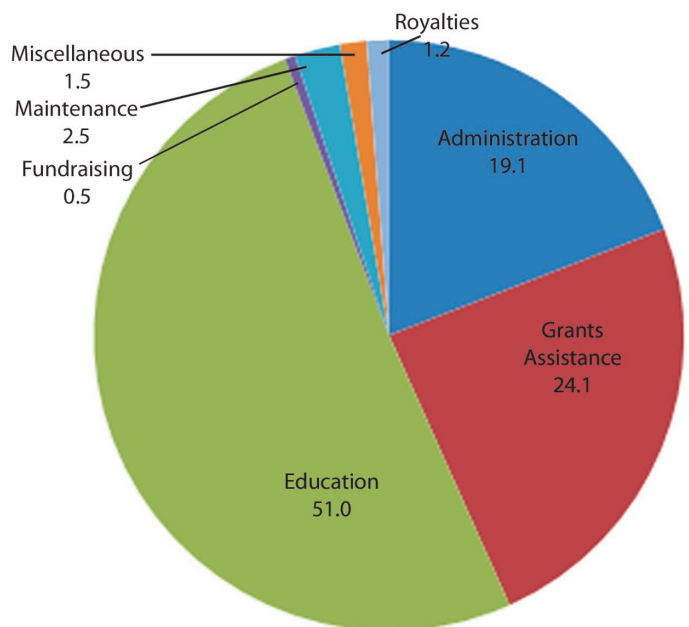
Income and Expenses for 2017

Total Income: \$820,438

Shown as percentages on charts below.



Total Expenses: \$522,510



Herbal Spotlight: Arnica

By Rachel Laase, Farmer and Herbalist, Ridgewood Ranch



Arnica blooms from May to early fall.

Photo: www.autobienetre.com/arnica/

With the days warming up and a mosaic of colors covering the hillsides as the wildflowers bloom, morning walks are one of my favorite ways to start the day, allowing me to observe which plants are blooming and to keep track of peak foraging harvest times. On a recent walk, I stumbled upon a cluster of wild *Arnica Montana*, also known as 'Wolf's Bane', which is part of the Asteraceae family. It was a delightful discovery since my muscles have been a bit sore from the tasks of maintaining the garden beds and double-digging.

This herbal ally is best known for its bright yellow flower, which starts to bloom in May and continues into fall. It is used in herbal oils and creams to help heal bruises, sprains or muscle and joint pain because of its anti-inflammatory, analgesic, and anti-septic properties. Arnica is an herbaceous perennial that can get up to 2 ft tall and 1 ft wide and is fairly

easy to grow since it can thrive in poor soil conditions. Once flowering, the blossoms can be harvested when fully open and then dried and stored in a cool dark place for use later.

Arnica is typically used as an external remedy and is considered to be toxic if taken internally. Gels and ointments containing arnica are available as over-the-counter applications in most pharmacies; however they contain petroleum, preservatives, and other ingredients that can easily be avoided by making your own arnica salve with homegrown or store-bought flowers. My favorite way to utilize its medicine is to make a simple infused oil or salve. Here is a straightforward recipe for both:

How to Make Infused Oil

Fill a pint jar 1/3 of the way with dried arnica flowers. Fill the jar with a carrier oil of your choice, such as olive, almond, sesame, etc.

Cover the top of the jar, and let it sit in a warm, sunny location for four to six weeks. Strain the plant material from the infused oil. Compost the spent flowers, and your oil is ready to use.

How to Make a Salve

Measure infused arnica oil and beeswax in a 4:1 ratio. For example, if you use one cup of oil, add 1/4 cup beeswax. Place the oil and beeswax in a double boiler and heat until the beeswax is thoroughly melted. Pour the mixture into tin cans or small jars, and let cool completely before using. Label, date and store in a cool place.

This herbal ally ... is used in oils and creams to help heal bruises, sprains or muscle and joint pain because of its anti-inflammatory, analgesic, and antiseptic properties.

For bruises or sore muscles, gently rub a small amount into the affected area. Repeat as needed, three times a day.

NOTE: The content in this article is meant to inform, not to diagnose or treat any ailment. Always use common sense, and consult with your healthcare provider before attempting to treat yourself or others.

Parsley Puree

By Leslie Roberts

This season I have two parsley plants that produce copious amounts of greenery every week. I was harvesting a little at a time to toss into salads or use in soups, but the productivity of the plants got ahead of me. I thought about drying it, but I like the taste of fresh parsley. Solution? Create a puree.

When I make a large pot of soup or filling for a casserole, I toss one or two puree cubes in the mix. It tastes closer to fresh than dried parsley, and it's so easy!



Photos: Leslie Roberts

What you will need:

- Quantities can be approximated.
- Freshly harvested and washed parsley
- Organic chicken or vegetable broth
- A blender or food processor

Remove leaves from stems and wash thoroughly. I like to use my salad spinner for this. Roughly measure 6-8 cups of leaves.



Working in batches, loosely

fill the blender canister with leaves, add 1/3 to 1/2 cup broth per blender batch, and puree. Stop and scrape the sides of the blender as needed. Pour into ice cube trays, and freeze solid. Remove from the tray, and store in a Ziploc bag or glass container.

Parsley, chopped, fresh, 1/2 c, 30.40 g
Calories: 11

Nutrient	RDA %
Vitamin K	554
Vitamin C	54
Vitamin A	14
Folate	12
Iron	10
Copper	6
Calcium	4
Magnesium	4
Potassium	4
Fiber	4
Zinc	3
Phosphorus	3
Vitamin B3	3
Vitamin B1	3

Chart:
www.whfoods.com/genpage.php?dbid=100&tname=foodspice

Biointensive Team Corner Book Reviews

Katherine Cantwell

Executive Assistant and Office Manager at The Jeavons Center



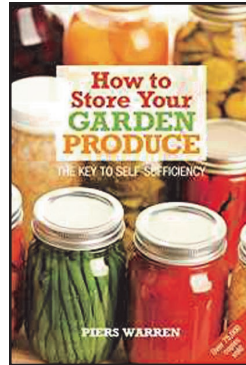
Photo: EA staff

Kathy is the happy mother of four now-grown children. They grew up with no television, but lots of good organic food which they continue to buy for themselves. While living in the desert in southern Nevada in the early 90s, Katharine bought seeds from Bountiful Gardens because they were the best supplier of organic, non-GMO seed at the time. She also practiced double-digging in her garden. She and her family moved to Willits in 2002, knowing it was the right choice and feeling like she had found her tribe. Her early interest was in Geology, which she studied at the University of Nevada, Las Vegas; more recently she studied Marine Science Technology, at the College of the Redwoods, in Mendocino. She also attended Doula (birth assistant) training in Santa Rosa and is currently offering her services in Mendocino County. She is thrilled to be a part of the Ecology Action team to help promote all that it stands for.

How to Store Your Garden Produce: The Key to Self-Sufficiency

by Piers Warren (Green Books Ltd, 2009). Amazon review adapted by Leslie Roberts

Learning to store your garden produce is the key to self-sufficiency. This current-day handbook to storing and preserving your harvest assists you in eating home-grown goodness all year round. The easy-to-use reference section provides storage and preservation techniques for the majority of produce commonly grown in gardens. Growing food on less than an acre, you can harvest enough produce to feed a family of four for a year. Much of the produce will ripen simultaneously in the summer, requiring proper storage so nothing will go to waste.



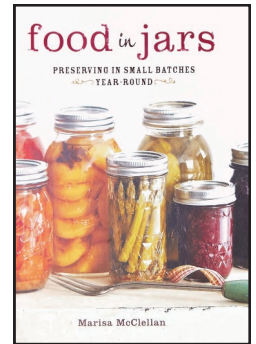
Photos: Amazon.com

Simple and enjoyable techniques for storing your food are provided so you can experience the satisfaction of self-sufficiency. In the A-to-Z list of produce, each item includes recommended varieties, suggested methods of storage, and a number of recipes. Many of the recipes may prove to be unfamiliar to some but provide enticing eating experiences for gardeners in the US. This will allow you to know where your food comes from, save money, eliminate packaging, and eat tasty local food while feeling good about it. This book could be an ideal gift for yourself or a gardening friend.

Food in Jars: Preserving in Small Batches Year-Round

by Marisa McClellan (Running Press Adult, 2012). Amazon review adapted by Leslie Roberts

Popular food blogger and leader in the area of home canning, Marisa McClellan, is using small batches and innovative flavors to make preserving easy enough for the novice. Whether you're familiar with home-preserved jams and pickles, or you're new to putting up, you'll find recipes to enjoy.



Preserving food is not just for late summer or fall harvest. There are recipes for every season. Try some of these favorites:

- Spring: Apricot Jam and Rhubarb Syrup
- Summer: Blueberry Butter and Peach Salsa
- Fall: Dilly Beans and Spicy Pickled Cauliflower
- Winter: Three-Citrus Marmalade and Cranberry Ketchup

Marisa's knowledgeable, down-to-earth approach guides you through the process as it calms possible fears of making mistakes along the way, and the book is written for cooks of all levels of experience. Stories of wild blackberry jam and California Meyer lemon marmalade from the author's childhood render this a pleasurable and delicious read. Her way of preserving at home, learned from generations of canners and cooks, nourishes the heart as well as the body.

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ECOLOGY ACTION'S GARDEN COMPANION

~ Published three times a year ~

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Book Reviews

Continued from page 14

Hand Made: The Modern Woman's Guide to Made-from-Scratch Living

by Melissa K. Norris

Review by Melissa K. Norris



Homemade shouldn't be hectic. Do you wish you could slow down and create a home you and your family love and enjoy spending time in?

Author Melissa K. Norris (melissak-norris.com/blog/) offers down-to-earth guidance and tips to help you learn to:

- bake old-fashioned recipes (everything from biscuits to shepherd's pie) with quick, easy-to-follow steps
- grow, harvest, and preserve culinary and medicinal herbs, with DIY tutorials for soaps, salves, and balms

Continued on page 16

EA Events

❖ August 3-5
3-Day GROW BIOINTENSIVESM Basic-Level Teacher Certification Workshop, Willits, CA.

❖ August 10
Registration deadline for Nine-Saturdays Course: Part 2 (Each part is complete in itself.)

❖ August 18
Nine-Saturdays Course: Part 2 Planning and Design begins.

❖ September 12
**National Heirloom Expo, Santa Rosa, CA
Food for the Future: Now! with John Jeavons**

❖ November 2-4
3-Day Ecology Action GROW BIOINTENSIVESM Sustainable Mini-Farming Workshop, Willits, CA

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Mendocino, CA 95460

Start Date:
Immediate

For more information visit,
[www.growbiointensive.org/
Opportunities.html](http://www.growbiointensive.org/Opportunities.html).

Book Reviews
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- simplify your routine and de-clutter your home with room-by-room guides and Depression-era wisdom.
- make your own cultured and fermented foods following simple instructions for buttermilk, sour cream, sourdough, and more

Open your heart to God-given rest and discover practical and tangible ways you can craft your home into a refuge for yourself and the ones you love.

Ecology Action Newsletters are available online at growbiointensive.org/Enewsletter/archive.html.

To view a complete list of GROW BIOINTENSIVE classes and upcoming activities visit growbiointensive.org/events_main.html.

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