

out of every twelve months (Fig. 4). For six short videos from MPP about building a tire garden, see https://www.youtube.com/watch?v=yL4dgMzl_HU.

6) **Red worms.** At least three tires that are producing vermicompost on a continuous basis (Fig. 5).

7) **Compost.** A space for collecting kitchen waste, straw, animal manures and other organic residues. A hole works best, so that as the family sweeps the yard, the sweepings (and any other waste that can rot) can be added along with what comes out of the kitchen.

8) **A permanent source of animal manure.** An area where the family keeps pigs, or a chicken roost, or where animals are tied up for the night (horses, burros, mules, goats), or any system that provides a daily source of manure. The manure is included in the compost or provided as food for the red worms.



Figure 3. Perennial vegetables in a yard garden. Fenaheme Joachim, in Bassin Zim-Hinche, with his patch of moringa (LEFT). Malabar spinach maintained more or less as a perennial (as it readily reseeds), growing from tires up the side of the kitchen/storage room at Good Samaritan clinic, Batey 7, Dominican Republic (RIGHT).

9) **Vegetable bed.** At least one vegetable bed (Fig. 6) which produces vegetables continuously for at least six out of twelve months. This could be a bed that is at least 1.2 meters (4 feet) wide and 4 meters (12 feet) long, or it could be four ridges that are each 4 meters long [for example, this might be done on an area of sloped land].

10) **Roots or other types of staple food plants.** At least ten plants in the yard that can produce significant amounts of energy-giving food. Examples include bananas, papaya, or taro.

11) **Fruit trees.** At least five well-cared-for, fruit-producing trees or vines. Preferably these will be plants that will not shade out



Figure 2. Luxène Sommervil and his wife with their vegetable space. Orange, Léogâne.

the rest of the yard; for this reason, soursop, passion fruit, and guava are preferred over mangoes and avocados.

12) **Medicinal plants.** At least five varieties of plants that can be used to make natural remedies. Examples include aloe, lemon grass and false basil ("Fòbazen"). See Figure 7.



13) **Trash collection and elimination.** Plastics are harmful to the land. The family needs some system for eliminating non-organic trash in the yard. Cleanliness of the yard is a measure of success.

14) A **latrine.** The family is producing healthy food, and their environment needs to be healthy as well. The yard should have a latrine that is in good condition: it should have a roof, a hole that is not too large for young children to use, and a cover for the hole to prevent flies from readily entering or leaving.

15) **Treated water.** In order for the family to take maximum advantage of the food that they are producing, they should eliminate as many sources of parasites as possible.

There should be a bucket with a spigot and some system for ensuring that the water in the bucket is potable. In Haiti, several simple systems are available. The Klorfasil system is one example; see <http://www.klorfasil.org/>

16) **The beauty of the yard.** As we come into a yard, how does it make us feel? Is it a pleasure to be there? Do we see flowers? Is it well-organized? Is all of the space well-used? See Figure 4.

How the Program Works

I asked Mark a number of questions about the program, to better understand how it is structured and how it works.

DRB: How did this program come about?

Mark: FONDAMA is an association of grassroots organizations that are working together to address the root causes of hunger. They are part of the Joining Hands Program, which is part of the Presbyterian Hunger Program. Their main focus is advocacy, but the Yard Garden Program is being extended to FONDAMA partners through MPP.

As we prepared the Yard Garden program, I thought of what seemed to have worked in MPP and what didn't; what I have read over the years; and what I have heard at ECHO. I tried to distill all of that into a viable process for introducing the program, providing training, following up with the work, and providing for evaluation (our evaluation of the yards, but also evaluation by the participants of their experience with the program).

In terms of how the program was developed, it came out of the work of an earlier project that I helped initiate in 2004. The specific elements and quantities came through A LOT of home visits, and consultations with Haitian yard garden technicians who worked with me on developing them. The list has gone through many edits. Many ideas were the inspiration of Alexander Placide, one of MPP's agronomists. Other ideas were the inspiration of program participants.

DRB: How do people become participants in the Yard Garden Program?

Mark: The process starts when participants are chosen by the local Farmer Movement group in a given area. Our vision is that the initial group of participants will acquire and apply all of the essential skills and then

be the nuclei for extending the skills to the people around them.



Figure 4 Wilner Exil and his wife, Tesil in their yard garden. Tesil is harvesting morninga shoots for food and Wilner is weeding his cabbages in the tires. Wilner and Tesil also have tires with red worms and fruit trees planted throughout their 1/3 of an acre (0.13 ha) yard. They have papayas and bananas as well. It is always a pleasure to walk into their home. Leodiague, Hinche, Haiti.

At an initial meeting, we start by discussing the knowledge and resources that farmers have already in each of their zones, and the fact that what we have to offer them is very small compared to all the knowledge and resources they already have. We follow this up by sharing a Biblical basis for the work of building a yard garden. As part of this, we describe God's abundance by sharing texts taken from Genesis 2:15 ("The Lord GOD took the man and put him in the garden...to till it and to care for it.") and Revelation 22:1-3 ("Then the angel showed me the river of the water of life, bright as crystal, flowing from the throne of God and of the Lamb.... On either side of the river is the tree of life with its twelve kinds of fruit, producing its fruit each month; and the leaves of the tree are for the healing of the nations. Nothing accursed will be found there anymore....").

Next, participants watch a PowerPoint that shows photos of the program working, and one person shares how working with the Yard Garden program has been important to his/her family.

Then there is a visit to an area where the participants see good examples of yard gardens and talk with the families. During this visit, we provide a three-day workshop to teach the basic techniques: mixing soil for the vegetable tires; building vegetable beds; producing vermicompost; building benches for the tires; making compost; and producing organic insecticides.

Once we all return from the trip, the MPP team visits the homes, one by one. We

start with a yard design (a diagram with a proposed layout; see Figure 1), an evaluation and a registration form. The registration form provides some baseline information (for example: what a family produces in their yard already; what seems to produce the most right now; what animals they have; what animal provides the most benefit; what problems they have in terms of production; how far away the water is). The registration form also asks the participating family to list at least ten things they are going to change in their yard during the next twelve months. We use the evaluation form to guide them.

DRB: Do participants tackle all of the aspects at once, or do they work on their yard garden bit by bit? Is there a recommended order of incorporation?

Mark: Once a family has a design and a plan of action, they can choose to start with whatever element they would like.

We evaluate yards of new trainees in the middle of the year and in November. Each element of the Yard Garden Plan is worth 3 points. At the end of the year, those who have achieved a score of at least 45 out of 50 possible points receive a certificate of excellence.



Figure 5 African red worms (*Eudrilus eugeniae*) and the compost, produced from animal manures.

DRB: How do participants go about the initial planning process and come up with a yard design diagram (like the one shown in Figure 1)?

Mark: We provide the initial expertise to draw the yard designs. This year, one of our main goals is to have someone acquire the skills to do the designs in each area where there are participants.

DRB: Do people need to demonstrate a certain level of commitment to participate in the program?

Mark: The team of instructors has criteria for eliminating participants. In such cases, we offer the organization the opportunity to replace the lost participants.

In general, we are moving towards having a team of three participants in four or five key communities within the respective organization.

Yard Garden Testimonies

Gultho Orné

Excerpts from an interview with Gultho Orné illustrate some of the benefits that a yard garden can provide. The interview from April 2014, with members of MPP, was later translated and transcribed by Mark Hare.

Mark Hare commented, "The interview took place at Gultho's current home (in which he also grew up), sitting in one of the two yard garden spaces he has created within the yard, underneath the shade of a huge *rakét* [*Euphorbia lactea*], a common fencing material for live fences. Gultho is a young man, single, who for several years was one of the primary caretakers for his mentally ill mother until her passing in 2012. Gultho has been introducing new yard garden techniques in his own yard since about 2007. Because of the excellence of his work, he was offered a paying job around 2009 or 2010 working for one of MPP's Yard Garden projects called The Road to Life Yard." Gultho has several siblings who have their own homes but live nearby.

Concerning the changes that Gultho has made over the years (including a goat house, cedar tree [*Cedrela odorata*], compost hole, cistern and *rakét* fence), Gultho shared, "Having this production here helps me because when you buy things in the market place, you don't know what kinds of chemicals people used. Before you eat anything, you should ask where the food came from. If you want to eat good food you should produce it at your own home.

"I produce papaya, peppers, moringa, Haitian basket vine leaves. Yard gardens are so important. If you don't have beans to cook, instead of going to market to buy them, you harvest some leaves to cook with your rice. And leaves are important for your body.

"Also there are family members and other people who ask me for leaves. I don't sell them. I give them away. But tomorrow, maybe I won't give them away because I produce the leaves in dirt. They can produce them in dirt, too, so that they have them for tomorrow."

Gultho mentioned that the yard garden provides a source of income to purchase needed items such as salt, oil and kerosene. Mark Hare noted, "A bunch of amaranth leaves grown in one tire can sell for 20 to 50 gourdes, which is enough to purchase oil and seasonings to cook a meal, with maybe enough left (depending on the season and the going price for the leaves) to buy kerosene for the night and one or two other small items."

Gultho grows peppers to sell in the market, and commented, "I have purchased two chickens with the money from my garden." He also built a goat house, on his own initiative, after seeing one in Papaye. He said, "I give away a lot of manure to other people starting their yard gardens."

On how Gultho came to start his yard garden:

"I was in a farmer's group that sent me to participate in a workshop. During the workshop I saw some nice looking yard gardens: vegetables in tires, vegetable beds and "biyon" [a system for planting on a slope, where the soil is worked up into ridges that approximately follow the contours]. I said to myself, I can't just see this here and learn this and have it stay here. I need to produce this in my own yard for my own family.

"So I started producing in my own yard for my family. I like the vegetable tires, because one gallon of water can water two tires. The water isn't wasted. If you have five gallons of water you can water a lot of vegetables so that you can find food and you will get money from those tires too.

On motivations for making a yard garden:

"Initially I had the idea that they were paying the leader of the community group. And

when he asked us to do yard gardens, I wondered if he was going to make money off of me when I started doing a yard garden in my yard. After that, I realized that that wasn't so. Because everything I was producing in my garden was mine. No one came and took anything away.

"And I realized, too, that if someone had given me money to do this garden, or they had given me those tires for me to grow vegetables I would not have taken the thing seriously. But I bought those tires with my own money and nobody was going to give that money back to me. So I had to buckle down so the money wasn't wasted. And now I make money on this garden."

On interactions with neighbors:

"I have a lot of neighbors who ask me how they can have a garden like this. And I tell them if they buy the tires I can help them get started. But I tell them, if I am the one to give you the tires, you won't take it seriously. I have five people that I am working with. Their yards are looking good. From time to time the people ask me when I am going to come by to see what they are producing. Yesterday, I went down to the crossroads and I found someone growing vegetables in two old plastic wash basins. One basin had leeks that they use for cooking. The other had green peppers that the family is eating and selling and giving away. I have people who are interested in the gardens and I am helping them, in vegetable beds, in old plastic wash basins or in tires.

Gultho has family members who have yard gardens of their own, and members of his community group also work with the yard garden technique. About the latter, Gultho explained, "What got them interested is that when they were asking those of us with gardens to give them things from our gardens, we would tell them, "I can't give my vegetables away to you every day. I produce this in my tires, you can produce it, too." So they got jealous of us and they started producing so that they could eat their own production and sell it too."

Rhoda Beutler

Rhoda Beutler, who also works in Haiti, is familiar with the Yard Garden program. She commented, "I love the yard garden program and have learned a lot through the program and Mark's willingness to share. I've been in a handful of homes of the participants, and I have been quite impressed to see the life and abundance there."



Figure 6. Herve Delisma helping form vegetable beds at the home of Luxène Som-mervil's in Orange, Léogâne.



Figure 7. Medicinal plant bed at the Good Samaritan Clinic in Batey 7. Lemon grass forms the outer part of the circle.

Conclusion

In Haiti, the Yard Garden program promoted by MPP and FONDAMA is resulting in real change for the families who participate and whose yards—and lives—are being transformed as a result. If the yard garden idea interests you, we hope this article will encourage you and help you understand how the program works.

.....

FROM ECHO'S SEED BANK

2013/2014 Tomato Observation Trial

by Holly Sobetski, ECHO Florida
Seed Bank Manager

The ECHO Florida Seed Bank conducted a tomato observation trial during the 2013/2014 winter season, to compare our currently-offered varieties with new varieties acquired in 2013. In this article we aim to: 1) summarize findings from our trial that may be helpful to you in selecting varieties to grow and evaluate; 2) inform you of tomato varieties available from ECHO; and 3) provide practical tips on observation trials in general. If you would like to try the varieties featured in this article, visit ECHOcommunity.org for a list of offerings and information on how to request trial packets of seed.

Methods

At ECHO's Global Demonstration Farm in southwest Florida, 24 varieties of tomato were planted in a trial containing a mix of indeterminate and determinate, open-pollinated and hybrid types. On 17 October 2013, tomato seedlings were transplanted into raised beds covered with plastic mulch. Three plants of each variety were spaced 2 ft (61 cm) apart, with 4 ft (122 cm) between varieties.

The tomatoes were fertilized with soluble fertilizer three times a week through drip irrigation. Coragen® was sprayed on the tomatoes on 25 November 2013 to kill caterpillars, and ECHO® 720 was sprayed on 27 December 2013 to treat Septoria leaf spot. Interns collected data from November 2013 to February 2014. The tomato plants were covered with cloth as needed to protect them from freezing temperatures.

Ripe tomatoes were harvested twice a week (edible fruit was counted and weighed) from 17 December 2013 to 18 February 2014 (Fig. 8). One taste test was conducted on 16 January 2014 with fruit from 20 of the 24 varieties. Plants of some of the varieties continued to produce fruit beyond the trial end date (18 February 2014). In this article, findings are shown for 13 top-performing varieties (see Fig. 9 for information on varieties offered in our seed catalog as of 2014; offerings can change over time).

Results

Plant growth traits

Significant variation was observed between cultivars with respect to plant size, fruit size, fruit color and leaf shape. Plant growth habit was mostly consistent with whether the variety was a determinate type (Floradade, Homestead, Hayslip, Komohana, Roma VFN and Walter) or indeterminate type (Beefsteak, Brazilian Beauty, Delicious, Marianna's Peace, Matt's Wild Cherry, Tropic, and Yellow Pear). Determinate types are often more compact and bear fruit for a shorter period of time than indeterminate types. In this trial, Roma VFN and Komohana were compact, while most of the other varieties (even some of the determinate types) were large and sprawling, especially Matt's Wild Cherry. Marianna's Peace had large potato-like leaves. Knowing the growth habit of a particular variety is helpful when deciding how far apart to space plants in the garden and whether or not the vines need to be supported with stakes or trellises.

Disease resistance

The tomato plants were attacked by fungus which caused foliar yellowing and die back of the lower leaves. These varieties showed some resistance: Delicious, Roma VFN, Komohana and Matt's Wild Cherry. A variety trial can be a helpful way to evaluate crop varieties for a given area, allowing you to note plant diseases and pests that affect the plants, and to select varieties that perform best under local conditions.

Fruit color, shape, taste

Fruit size varied with variety, from small grape and cherry tomatoes (Matt's Wild Cherry, Yellow Pear, Komohana), to medium-sized fruit (Roma VFN, Tropic, Homestead, Brazilian Beauty), to large fruit (Hayslip, Delicious, Floradade, Marianna's Peace, Beefsteak, Walter). Fruit color and shape also varied, with Yellow Pear looking just like its name implies and Brazilian Beauty ripening with a dark greenish-red hue. Varieties with consistently cracked fruit were Marianna's Peace and Matt's Wild Cherry. In our opinion, fruits with the best overall appearance were those of Yellow Pear, Tropic and Komohana. Matt's Wild Cherry also ranked high as far as color/appearance, but the fruits tended to split

when harvested. Be aware of local cultural preferences for fruit color, size/shape, and taste when evaluating new varieties.

The tomatoes that received the best overall taste ratings by ECHO staff members were Yellow Pear, Matt's Wild Cherry, Marianna's Peace, Komohana and Brazilian Beauty. Marianna's Peace produced large, reddish-pink fruit that were soft and difficult to transport, but very meaty and tasty.



Figure 8. The diversity of tomatoes harvested during our 2013/2014 variety trial. Photo by James Lee.

Fruit yield

Fruit yield data are shown in Figure 9. The grape and cherry types produced many more tomatoes than the mid- and large-sized types (Fig. 9 Top). Matt's Wild Cherry and Komohana produced over 2000 fruits during the season.

Fruit weights, however, were highest with the large-sized tomato types (Fig. 9 Bottom). Top-performing large-sized types were Hayslip, Floradade and Marianna's Peace.

Keep in mind that grape and cherry tomato types are typically more heat tolerant than larger-sized varieties. They make excellent additions to salads and other dishes. If you want to experiment with mid- or larger-sized tomatoes in the warm tropics, try varieties known for their heat tolerance, such as Floradade, and plant during the coolest time of year (likely during the dry season, when watering/irrigation is especially important and plant disease pressure is less).

Suggestions for Conducting an Observation Trial

Comments from ECHO intern, Brian Lawrence: If many varieties of a particular crop are available, collect seeds or plants prior to the study and plant them all at the same time. Record observations of plant health (along with other measurements that are deemed important), in successive intervals from planting time until the completion of the study. If you are taking notes in the field, consider carrying a notebook or paper listing all the varieties and their locations. Record any observations you see; notes on crop size, harvest duration, and pest resistance can be important, but so can the color of leaves and fruit, taste, and even scent. The scope of data collected can be quite broad! If the study aims to identify marketability in addition to growth habits, a taste test can be helpful.

An observation trial lacks the scientific rigor of a randomized, replicated experiment, but it can still be a very helpful tool. A large-scale replicated plot trial can be difficult to set up, especially if there are many varieties to compare. Starting with an observation trial allows opportunity for mistakes to be made without harming important data; unforeseen biases to be identified; and the process of collecting and plotting information to be refined. A later randomized, replicated trial could then be done with a smaller investment of time and money, focusing on only a few best-performing varieties.

.....

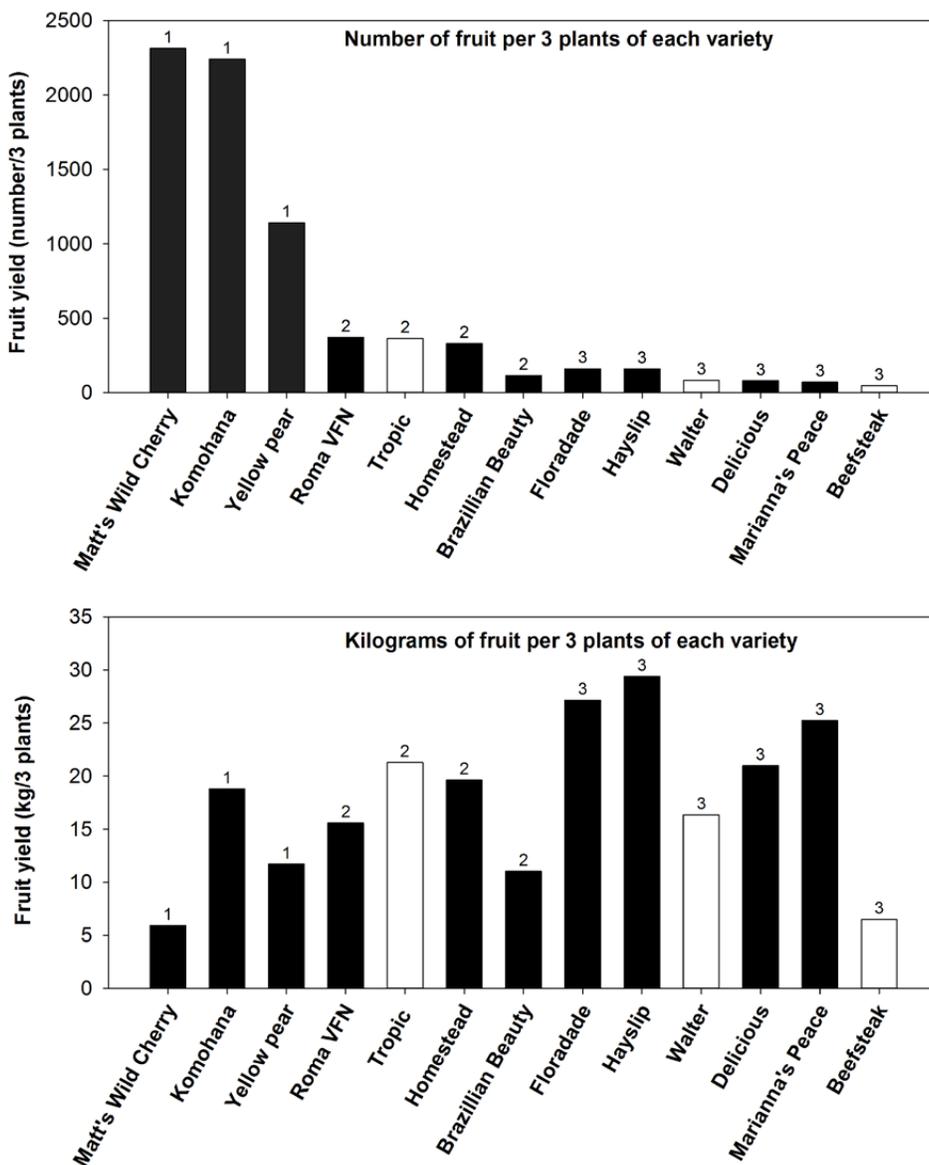


Figure 9. Number (Top) and kilograms (Bottom) of fruit produced from top-performing tomato varieties trialed during the winter of 2013/14. Solid bars represent varieties for which seeds are currently, as of 2014, offered in our network seed catalog. Numbers above varieties represent grape and cherry tomatoes (1), medium-sized tomatoes (2), and large-sized tomatoes (3).

FROM OUR REGIONAL IMPACT CENTERS

ECHO East Africa

Erwin Kinsey, Director of ECHO East Africa, is a contributing author in an FAO publication on family poultry development. You can find the publication at: <http://www.fao.org/docrep/019/i3542e/i3542e.pdf>.

ECHO Asia

ECHO Asia Notes # 21 (June 2014) contains three articles about SRI:

- A re-print of a Farming Matters article about adoption of SRI principles
- A translated work from the Thai journal "Natural Farming," which highlights the creation of useful SRI tools in use currently in the central plains of Thailand
- A reflection piece by Boonsong about his training in the central plains seeing SRI

South Africa

Bucket Rat Trap---Revisited
by Tim Motis

Some of the animal pests we have had to cope with in ECHO research plots in South Africa include rats, guinea fowl, small antelope, porcupines, and warthogs. Many of these can be dealt with, at least in part, by fencing or planting large crop buffers (e.g., around the borders of experiments) so that

.....

foraging animals have other plants to feed on besides those in the research plots. This doesn't necessarily work, however, for rats. They are small enough to get through almost any barrier, and they multiply quickly enough to spread throughout the field. Rats have dug tunnels throughout the field where our trials are located in South Africa. We have noticed damage to young crop seedlings, presumably a result of the rats eating the seeds.

Prior to coming on staff with ECHO, while working as an agriculturalist in Ethiopia, I found that rats were damaging plants in our tree nursery and vegetable beds. In that setting, rats made their homes in crevices of rock walls and terraces. To reduce the rat population, I set up a bucket trap that I had read about in ECHO literature (*EDN* 55) at the time. We have tried a similar trap in South Africa. It has potential for being a low-cost, effective trap that can be made with locally available materials.

To make the trap, bury a container in the ground so that the top of the container is flush with the surface of the ground. In Ethiopia, I used large, powdered milk cans. In South Africa, we made the trap with a plastic bucket. Fill the container, to within 8 cm of the top, with water. Then add something that floats, such as millet sweepings, rice hulls or bits of dried grass. The floating layer needs to hide the water and be thin enough to allow a rat to easily fall through it into the water. Dangle bait, such as bread covered with peanut butter, over the top of the bucket, or use a floating bait; *EDN* 55 suggests fresh sweepings from a millet floor to both camouflage the water and serve as a floating bait.

Ideally, the material on the water should close back over itself after one rat falls through. That way, the next rat would not see any disturbance, and would be more likely to approach the bait and fall into the water, resulting in multiple rats being caught

in a single night. In a conversation among ECHO agricultural staff, it was mentioned that corn cobs would float well and would leave no evidence of being disturbed after a rat falls into the water and drowns.

A bucket trap we set up in South Africa caught three rats over a two-day period. The traps I had used in Ethiopia netted as many as three or four rats each night. We plan to try different materials/baits to improve the trap. Let us know if you have suggestions for how to maximize the effectiveness of a bucket rat trap.

CAUTION: Mark the traps so that they are clearly visible to field workers. Place them where people will not stumble over the traps.

.....

UPCOMING EVENTS

West Africa Networking Forum 2014

September 23 to September 25, 2014

Pacific Hotel/Hôtel Pacific Ouagadougou
Avenue de L'UEMOA
01 BP 5818 Ouagadougou 01

Morning plenary sessions, afternoon workshops and discussion groups will be led by regional agricultural development workers and experts. See www.ECHOcommunity.org for topics covered and registration information.

21st Annual ECHO International Agriculture Conference

November 18-20, 2014 (Note change in date from previous years); Fort Myers, Florida

Speakers at this event will share practical solutions to agricultural challenges, personal experiences and strategies for improving the lives of millions who daily face the threat of starvation. The event offers an open exchange of information, connecting the people and ideas that can make a real and sustainable difference.

Topics for this year's plenary sessions will include:

- **Biochar for Control of Trace Contaminants in Water** (Josh Kearns)
- **Custom Hay Baling as a Business for Former Street Children in the Kenyan Highlands** (Sjoerd W. Dulker, PhD)
- **Carbon Farming** (Eric Toensmeier)
- **Intercultural Team Leadership** (Sara Lanier)
- **Sustainable Development, Animal Agriculture, and Ecological Restoration** (Robert Pelant, DVM)
- **Creation Care as an Integral Part of Mission** (David Gould)
- **Simplified Low Pressure Drip Irrigation to Raise Small Farm Incomes** (Brent Rowell, PhD)
- **Becoming a Crop Champion** (Penny Rambacher, R.D.)
- **Seed Exchange** (Laura Meitzner Yoder)

If you would like to give an afternoon workshop or evening talk, please submit a speaker interest form when you register online.

For those who are able to stay an extra day after the conference, consider attending a post-conference workshop on Friday, November 21. (An additional fee applies.) Topics this year will include:

- **Food Forests and Perennial Cropping Systems** (Eric Toensmeier)
- **Intercultural Team Leadership, Leadership Transition, and Strategy and Meditation Work** (Sarah Lanier)
- **Production of biomass char for drinking water treatment and biochar** (Josh Kearns)

.....

BOOKS, WEBSITES AND OTHER RESOURCES

Perennial Vegetables: From Artichoke to 'Zuiki' Taro, a Gardener's Guide to Over 100 Delicious, Easy-to-Grow Edibles

by Eric Toensmeier
Reviewed by Bob Hargrave

ECHO has promoted perennial vegetables as part of the home landscape since the beginning.

In this book, Mr. Toensmeier provides a valuable reference to over 100 of the best perennials for temperate North America and Hawaii. Edible parts of plants include leaves, shoots, fruits, pods, beans, flowers and roots! In this collection is an excellent selection of plants for the warmer climates and therefore this book can be useful for gardeners in the tropics as well.

The 71 pages of Part I include tips and techniques that would apply in any setting and serve as a very good overview of growing perennials for the table. That is

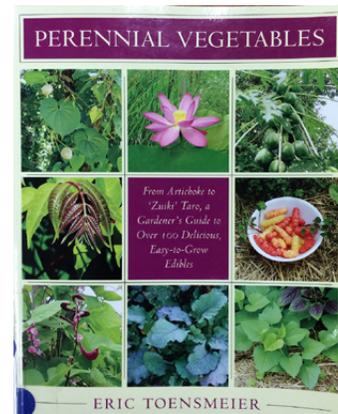
followed in Part II by descriptions of specific plants arranged by plant family. Each profile includes an overview as well as specific information about propagation, care, harvesting, and use of the plant.

Part III, Resources, begins with a very helpful list of species for each of eight climate types found in the US and Canada, including Hawaii. It also includes a list of publications, websites, and sources for plants and seeds.

When Eric Toensmeier first became interested in perennial gardening systems, he searched in vain for a reference on perennial vegetables. Finding nothing and

at the encouragement of friends, he decided to take on the task of writing such a book. The end product, *Perennial Vegetables*, fills that niche admirably.

Perennial Vegetables is available as a book (\$35) or DVD (\$29.95) from the ECHO Bookstore (<http://www.echobooks.net>).



In Memoriam: Richard D. Chapin

July 22, 1917 to June 6, 2014

by Beth Doerr

We would like to take this opportunity to honor Dick Chapin, the "father of drip irrigation," who passed away on June 6th at age 96. When he was 13, his Dad built him a greenhouse and he started a flower business. He created his first irrigation system to reduce the labor of watering these flowers, and by 1960 he had developed the first commercial application of drip irrigation. In addition to designing the drip irrigation tape, he also designed the machines to make it and held 25 U.S. patents.

When he was 57, he took a trip to Senegal and was impacted by the food shortages due to drought. As a result of that experience, he designed a small gravity-fed irrigation system that would help people

grow vegetables during the dry season or during droughts.

I met Dick in 1992, when he was retired from his business but fully engaged in helping people. We were using his "bucket kits" in Malawi to help refugees from Mozambique, and he came over to visit the project. At first we wondered how we would show an elderly 75-year-old man what we were doing, but quickly realized we were the ones who needed to keep up with him and learn as much as we could.

When I left Malawi, I had the privilege of working with Dick for five years with his Chapin Living Waters Foundation. The Foundation provides on-site training in various countries on using drip irrigation for small home gardening. The Foundation has worked closely with ECHO over the years and has sent representatives to introduce "bucket kits" to delegates at almost every ECHO conference. The efforts of the Foundation have impacted people and organizations working in more than 150

countries. These efforts will continue, making new impacts and leaving a legacy.

Dick received many honors in his life. He was recognized by the American Society of Horticulture in 1986, the American Society for Plasticulture in 1991 and the Irrigation Association in 1993. He received the Paul Harris Fellow Award for Humanitarian Service in 2000 from Rotary International, and a historical plaque was placed on Long Island commemorating the site of the first row crop drip irrigation in the U.S. in 1964.

Despite all these honors, his business card read, "If you miss knowing me, you miss nothing; if you miss knowing my Lord and Savior, Jesus Christ, you miss everything." His life impacted many people. We want to add our appreciation and express our thanks for his years of service to others and his example of faith in God.

Dick Chapin's obituary can be viewed at the following address: www.watertowndailytimes.com/article/20140611/OBIT/140619860

PLEASE NOTE: At ECHO we are always striving to be more effective. Do you have ideas that could help others, or have you experimented with an idea you read about in EDN? What did or did not work for you? Please let us know the results!

This issue is copyrighted 2014. Selected material from EDN 1-100 is featured in the book *Agricultural Options for the Poor*, available from our bookstore (www.echobooks.net) at a cost of \$19.95 plus postage. Individual issues of EDN may be downloaded from our website (www.ECHOcommunity.org) as pdf documents in English (51-124), French (91-124) and Spanish (47-124). Recent issues (101-124) can be purchased as a group from our bookstore (www.echobooks.net). Earlier issues (1-51 in English) are compiled in the book, *Amaranth to Zai Holes*, also available on our website. ECHO is a non-profit, Christian organization that helps you help the poor to grow food.