

## ECHO in Latin America and the Caribbean

by Cecilia Gonzalez

Dear ECHO Community members,

It has been delightful to serve with ECHO these past months in supporting your efforts to reduce hunger and malnutrition, and improve lives in Latin America and the Caribbean. Notice we have changed the name of our Regional Impact Team to be more representative of our membership in [ECHOcommunity](#) working in the region: more than 2,500 members from Argentina to Canada.

We have had the honor to meet some of you in person here at ECHO's Global Farm, and even visit with some of you and see your work first hand in Nicaragua,



Honduras, Guatemala and Cuba. I am grateful for such wonderful hospitality! I was privileged to attend the 1st International Conference on Family Farming in Honduras, organized by the Ministry of Agriculture and Zamorano University this past September. The words of Central American small-scale farmers sharing about their hard work and innovations, and their hopes and desires for their families and communities will remain in my mind and guide me in my work.

From these experiences, I have gotten a better idea of the potential for Latin America and the Caribbean to feed a growing world population. How can we produce not just more food, but more *nutritious* food in *sustainable* ways to feed our people and help them thrive? There is much potential for improvement, learning and sharing of experiences in answering this complex question in practical ways.

We at ECHO focus on providing practical information and training that can help those working with small-scale farming families in the tropics. These practices and information come from people like you, who by living and working together with small-scale farmers are able to try new and better practices. We encourage you

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## Experimenting with Medicinal Plants in Matagalpa, Nicaragua

Summary by Sarah Hornsby

From the ancient wisdom of indigenous people we inherit a healthier lifestyle for ourselves, our neighbors and the planet. In this article I share my journey with medicinal plants of Nicaragua, which started after my husband and I retired in Matagalpa.

### First, the reforestation project:

The site of the reforestation project was purchased land in a secondary forest of



**Figure 1.** Brigithe with Nursery of Cedar seedlings and seedlings from the Mayor.  
Source: Sarah Hornsby

to share those experiences with ECHO Community. In order to facilitate this, we have created an online form in [English](#) and [Spanish](#). If you are ready to share, please email us the completed form to [lac@echonet.org](mailto:lac@echonet.org). You can also contact me at [cgonzalez@echonet.org](mailto:cgonzalez@echonet.org).

I look forward to hearing from you, and continuing to learn from each other through ECHO Community.

Cecilia Gonzalez  
Team Leader, Latin America / Caribbean  
Regional Impact Team

### In this Issue

- 1 ECHO in Latin America and the Caribbean
- 1 Experimenting with Medicinal Plants in Matagalpa, Nicaragua
- 3 Staff Highlight
- 3 Tech Note Spotlight: "Introducing new seeds overseas"
- 3 Tech Note Spotlight: "Introduction to Tropical Root Crops"
- 4 Echoes from our Network
- 4 Books, Web Sites and Other Resources
- 5 Upcoming Events
- 5 Message from the editor

Honoring God by empowering the undernourished with sustainable hunger solutions.

### ECHO Latin America / Caribbean Impact Team

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the Arenal Forest Reserve. Overcoming soil contamination and inexperience in growing 5,000 seedlings from 19 native species were the first steps of the project. Preparation for planting of the trees entailed adding fencing and gravel; 1,500 'marsallana' stakes (*Dracaena fragrans*, also known as massangeana or corn plant) to use as wind-breakers, the purchase of hundreds of coffee stakes, 1,200 donated seedlings and visits from government inspectors.

A second nursery was established with the assistance of a local producer who contributed his extensive knowledge of trees, tropical seasons, and planting and harvest times. Hundreds of cedar tree seeds and coffee beans were planted for future use. The moringa trees did not thrive.

### **Finding resources for medicinal plants**

My interest in medicinal plants grew from a rediscovered book on Nicaraguan Indian's use of medicinal plants. The book referenced many of the trees in our property. The vast knowledge and shared resources of Dr. Gloria Corrales, a medical doctor and specialist in medicinal plants, was invaluable to the success of the medicinal plants experiment. Additionally, she contributed a variety of medicinal plants to the project.

In 2015, we visited Alan Bolt to see his reforestation work in Peñas Blancas, north of Matagalpa. Due to Alan's interest and emphasis on 'reclaiming' the rainforest, we witnessed a flourishing forest where, fifteen years earlier, laid a ruined, overworked, treeless pasture. Through his Center for Development with Nature, we accessed a book he had compiled on Medicinal Plants in Peñas Blancas, including scientific studies of sixty-three plants and trees, with recipes of popular medicinal use of the plants that his Nicaragua Indian grandmother, and others, had made available to him.

### **Medicinal plant nursery**

The theme for our first medicinal plant nursery came from Ecclesiasticus 38:4, 'The Lord has created remedies that spring from the earth. The prudent person makes use of them.' With the assistance of Dr. Gloria and other experienced collaborators, we obtained and grew a variety of medicinal plants.



**Figure 2.** Deisi in Medicinal Plant Nursery. Source: Sarah Hornsby

### **Processing of plants**

Plants are processed in a tunnel used for drying coffee. A removable, non-metallic hardware cloth is placed on top of frames. As plants develop, they are carefully pruned and the leaves separated by type. Each leaf is pulled and prayed over, thanking God for the use of the health giving properties of the plant, as was the custom of the Mayan ancestors. The leaves are turned as they dry. Depending on the weather, size and density of the leaves, seeds or roots, they are left until crisp but not burned. If moisture is left in the raw material, the leaves will mold when packaged.

Each kind of leaf is labeled and dated. Dried, bagged leaves are not allowed to stand in the sun as the sweating bag creates humidity and the leaves mold when stored. Dried leaves, roots and seeds are stored in separate containers in a cool, dark room. They then are repackaged and labeled for clinical or personal use.

### **Five Medicinal Plants of Nicaragua**

#### **Boldo (*Boldus fragans, Peumus boldus*)**

**Other names:** Boldea Boldu. (Sosa)  
**Parts Used:** The bark and leaves  
**Medicinal use:** multiple uses including cleansing the liver, blood and kidneys

#### **Dandelion (*Taraxacum officinale; Erechites valeriani folia*)**

**Spanish:** Diente de León  
 Family Asteraceae  
**Other names:** Achicoria, Silvestre, Chicora, Corona de Fraile (Bolt)  
**Parts used:** all of the plant; leaves, root and dried root.

**Medicinal use:** multiple cleansing and purifying uses

#### ***Lippia Alba (Lippia alba)***

**Spanish:** Guanislama, Juanilama  
 Family Verbenaceae  
**Other names:** Mirto, Orozul, Quitador, Prontoalivio (Sosa, Uriarte)  
**Parts used:** Leaves, flowers, and stems.  
**Medicinal use:** calming effects

#### ***Chamomile (Matricaria chamomilla)***

**Spanish:** mansanilla  
 Family Asteraceae.  
**Other names:** Caspi, Manzanero, Camamilo. (Uriarte)  
**Parts Used:** All  
**Medicinal use:** multiple uses including as a remedy for sleeplessness.

#### ***Oregano (Origanum vulgare, Lippia graveolens, Majorana hortensis)***

**Spanish:** Oregano Menudo  
 Family Lamiaceae (Mint Family) and Verbenaceae, (Uriarte, Soza, and Dr. Gloria Corrales).  
**Parts used:** The leaves, flowers and stems.  
**Medicinal use:** coughs, inflammation, other uses.

Nicaragua has a partial answer to addressing people's need for affordable medicine. The project goal is for clinics to have gardens of medicinal plants in the communities they serve.

As I learn about, use and work with the plants, I am convinced of God's provision and of the wonderful healing properties that plants freely give us.



**Figure 3.** Deisy, Sarah and Yamileth in the drying tunnel. Source: Jim Hornsby

## STAFF HIGHLIGHT

### Holly Sobetski

**Country:** USA

**Workplace:** ECHO Global Farm

Holly is the Seed Bank Manager at ECHO, in Ft. Myers, Florida. Holly's passion for working with small scale farmers in developing countries was ignited by her childhood backyard gardening. This interest lead her to pursue an undergraduate degree in Agricultural Missions, followed by a one-year internship at ECHO. The internship equipped Holly for the 5 years she later spent in Cambodia teaching agriculture to youth.

Managing the seed collection at ECHO entails growing, harvesting, drying, sorting,



germinating, storing, and packaging seeds of underutilized tropical crops, and lastly, distributing these seeds through ECHO's global network. In addition, Holly teaches interns, visitors and community residents about seed saving.

Holly's appreciation of the joys and challenges of field work is informed by her work in Southeast Asia.

The seed bank, working at ECHO, and stories of people from around the globe have heighten her understanding of the importance of access to quality seeds and the value of knowing how to save seeds from season to season. Holly enjoys the opportunity to continue to learn about plant breeding and how to improve varieties in the field and still preserve genetic diversity.

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### Tech Note Spotlight: Introducing new seeds overseas

*Summary by Libby Arcia*

ECHO technical notes are designed to address important agriculture development issues and to help answer critical questions that impact the delivery of appropriate services. In this edition we present a short excerpt of "Introducing new seeds overseas", written by Dr. Martin Price. This is an important document which helps address a question we are frequently asked by individuals and/or groups traveling on short-term mission or volunteer trips. What seeds should we take? Or, what will grow best in a particular area of a given country?

*Dr. Martin Price is co-founder of ECHO and its first Executive Director. Dr. Price has authored numerous publications in which he shares his vast knowledge and years of expertise on many agriculture subjects.*

The complete article is available at [ECHOCommunity.org](http://ECHOCommunity.org).

This article explores critical elements to consider when introducing seeds abroad. Some of the technical aspects regard climatic and soil conditions which would lend themselves to the successful production of cultivars for the particular zones. Other considerations address the social, economic and cultural aspects of food consumption. How do you determine what products appeal to the particular community? What will sell in the market? What is the economic impact on a community to which seeds are given for free? Who should receive and who should distribute free seeds. What is the viability of the seeds?

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### Tech Note Spotlight: Introduction to Tropical Root Crops

*Summary by Libby Arcia*

*Adapted from a video produced by ECHO in 1993 featuring Dr. Frank Martin (1928 – 2014). Revised by ECHO staff in 2015.*

*Dr. Martin Price, co-founder of ECHO, first met Dr. Frank Martin when the latter was director of the US Department of Agriculture's Research Station in*

*Mayaguez, Puerto Rico. When Dr. Price began at ECHO, one of the first things he did was to buy a plane ticket to visit Dr. Martin in Puerto Rico.*

*Dr. Frank Martin is best known for his research on sweet potato and other tropical root crops, but his knowledge is much*



**Figure 4.** Butterfly pea (*Clitoria ternatea*) seeds in winnowing basket and healthy seed plants.

*Source: Stacy Reader*

There is much to learn from an initial visit before deciding what fruits and vegetables will work best for the community. At stake is not only the success of production but your and your host's credibility.

*broader than that. He has written on many topics, both for ECHO and for numerous technical refereed journals in the scientific community.*

Tropical root and tuber crops are a valuable option for producing food under challenging growing conditions. This document aims to familiarize readers with their strengths and weaknesses under different tropical environments.

## Based on their use, edible plants are classified as:

**Cereal grains** - include wheat, rice, and corn. They contribute energy in the form of carbohydrates, and are a good source of B vitamins.

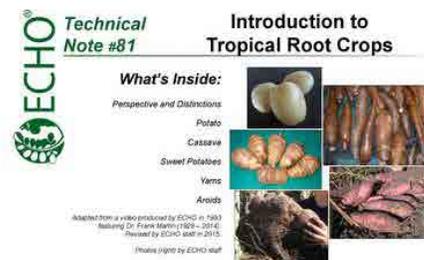
**Grain legumes** produce edible seeds, including beans and soybeans. They are high in protein content. Grain legumes can be a good source of protein in place of meat.

**Vegetables / Edible leaves** are the most abundant in the tropics. Leafy vegetables are a source of diverse nutrients, vitamins A and C, protein, and minerals.

**Roots and tubers** are classified as vegetables and considered a “poor man’s crops” by many. They mainly contribute

carbohydrates, starches and some sugars to the diet, but they all contain other nutrients. The leaves of some of these crops are edible and provide protein, minerals and vitamins (Hahn 1984).

Out of thousands of existing tubers, only about 25 species are considered of primary importance. Examples include potato, sweet potato, cassava, yams and aroids. The significance of these varies between regions. Cassava, for example, only provides 1.6% of the world’s plant-based calories; however, it accounts for over half of plant-derived calories in Central Africa (FAO 1998). Each of these five aforementioned important root and tuber crops are discussed in the complete article which provides information on life cycles, propagation and storage, leaf usage, and food processing. This summary presents a brief outline of a few roots and tubers.



© Martin Pils, co-founder of ECHO, the late Dr. Frank Martin when the latter was director of the US Department of Agriculture Research Station in Managua, Nicaragua when the book began at ECHO, and Dr. Frank Martin (1924-2014) who led the first ECHO seed list project.

© Frank Martin for his research on the sweet potato and other tropical root crops, but his knowledge is much broader than that. He has written or co-written books for ECHO and for numerous technical extension journals in the specialty community.

© Cover for this publication is derived primarily from a table by Dr. Frank Martin. However, it is supplemented with illustrations gathered from a number of other sources. References for these sources are noted in the references section. Credits for each reference include the URL, address for those interested in accessing additional information on the internet.

### PERSPECTIVE AND DISTINCTIONS

#### Importance of Roots and Tubers

Tropical root and tuber crops are consumed as staples in parts of the tropics and should be considered for their potential to produce impressive yields in similar regions. They provide valuable options for producing food under challenging growing conditions. Cassava and yam, for instance, are excellent choices for growing in poor or marginal areas, respectively. If this document, tropical root crops are compared both to enable people to recognize and appreciate them as well as to inform readers with their strengths and weaknesses in different tropical environments. Though tropical root crops, which seem to be very similar in their uses, they exhibit important differences.

To learn with, consider the entire group of root and tubers in relation to other groups of plants. Approximately 20,000 edible plant species have been documented (FAO 1998). 100-200% of the world's food supply depends on only a small number of crops - 2 to 120 depending on how the data are analyzed (FAO 1998, Prescott and Prescott 1999). All edible plants can be classified into a few categories based on use.

This article is available in full at [ECHOCommunity.org](http://edn.link/rootcrops) (<http://edn.link/rootcrops>)

## ECHOES FROM OUR NETWORK

**ECHO's Technical Response Unit (TRU) has the answer to your questions. Here is one of interest.**

**Q.** I'm looking for [a] carbon rich source ingredient to build compost in the Dominican Republic. Do you have region specific information?

**A.** Carbon rich sources for composting include crop residues such as corn stalks, corn husks, rice hulls, rice straw, and sorghum or millet chaff. Cut and dried leaves are high in Nitrogen and could be the green component of compost even if dry. Fallen

leaves are naturally high in carbon. Sugar cane bagasse (the leftover stalk and pulp from pressing sugar cane) is a high carbon source. Saw dust or wood chips could be used to make a fungal dominated compost, but take longer to break down.

When choosing ingredients consider how they are used by farmers. For example, corn stalks could be used to feed cattle or left in the field to prevent erosion. If so, their use for compost might be of less value. On the other hand, a material that is not usually used or is discarded would be helpful in making compost.

**Comments from one of our newest ECHOcommunity members:**

*"I have finally had a chance to look at the information on ECHOcommunity.org. I have also had the opportunity to contact my co-workers in Costa Rica, tell them about the site and all the information. It is great because you offer just what we are looking for."*

*Keep asking! Send us your questions to [lac@echonet.org](mailto:lac@echonet.org) or through the Contact Us form on [ECHOcommunity.org](http://ECHOcommunity.org).*

## BOOKS, WEB SITES AND OTHER RESOURCES

**Wuqu' Kawoq (The Maya Health Alliance)** – Nutritionist Andrea Guzman and Jose Casia produced the video “**Food Rainbow**” which illustrates the effectiveness of consuming nutrient rich, wholesome foods versus consuming processed foods.

Please provide feedback as Andrea will be developing “after the video” teaching aids.

<http://edn.link/ga4nx9>

Language: Spanish  
Duration: 8.34 minutes

**The SPRING Project – Linking Agriculture and Nutrition** - SPRING promotes global understanding of how agricultural programming strengthens nutritional outcomes. SPRING’s team of experts are

mobilizing stakeholders to improve nutrition through agricultural interventions around the world.

<http://edn.link/j9m23m>

Language: English

**Access Agriculture** provides training videos in various languages. A few examples follow.

**Managing aflatoxins in groundnuts during drying and storage** – shows what aflatoxins look like and how they impact the financial goals of small scale producers.

**Languages:** English, Spanish, French, Quechua, others  
**Duration:** 15.40 minutes

**The wonder of earthworms** - easy to follow instructions demonstrate fast and easy ways to make earthworm compost on a small piece of land.

**Languages:** English, Spanish, French, Quechua, Bangla and Aymara  
**Duration:** 13.4 minutes

<http://edn.link/accessagriculture>

Visit **ECHO Conversations**, created for your networking and information needs. Learn from your peers, share best practices, and ask questions. This is for you!

## UPCOMING EVENTS

### *ECHO Latin America / Caribbean Events:*

#### **“Las Cañadas,” Veracruz, Mexico**

<http://www.bosquedeniebla.com.mx>

#### **Healthy and Sustainable Cooking**

December 18 - 22, 2017

#### **Introduction to Sustainable Living**

December 27 - 29, 2017

### **BioNica, Managua, Nicaragua**

<http://bionica.org/>

CCID BioNica, ADAR and the National Agrarian University

#### **GROW BIOINTENSIVE(tm) Teacher Certification workshop**

December 18 – 22, 2017

*Location:* Centro Agroecológico Biointensivo Guanacastillo (UNA El Plantel)

*Cost:* USD 300 per participant

Instruction will be in Spanish with translation available. Shared accommodations through Casa Nica in Masaya. For more information

about CCID BioNica and ADAR please go to [BioNica.org](http://BioNica.org) or contact John Wyss at: [adar.nicaragua@gmail.com](mailto:adar.nicaragua@gmail.com); [john.wyss@bionica.org](mailto:john.wyss@bionica.org). Cell/WhatsApp: +505 88820966. Registration closes Friday December 8.

#### **ECHO Florida Events:**

Location: ECHO Global Farm, USA  
Presented by: ECHO

#### **Tropical Agriculture Development: The Basics**

January 15-19, 2018

#### **Tropical Agriculture Development: The Basics**

July 23-27, 2018

#### **Introduction to underutilized and tropical crops: Growing, harvesting, preparation**

September 10-14, 2018

#### **Introduction to Permaculture**

- email [rgill@echonet.org](mailto:rgill@echonet.org) for more information

#### **Tropical Agriculture Development: 101 (geared towards University students)**

- email [rgill@echonet.org](mailto:rgill@echonet.org) for more information

### **ECHO Asia Event:**

#### **2018 Asia Pacific Sustainable Agriculture & Development Conference**

February 6-9, 2018

Location: Asia Pacific Theological Seminary (APTS), Philippines

Presented by: Samaritan's Purse Canada, ECHO Asia, and The SEED Project

### **ECHO East Africa Events:**

#### **Strong Harvest Moringa Peer Educator Training Seminar**

November 3-4, 2017 (English)

November 6-7, 2017 (Swahili)

Location: ECHO East Africa Impact Center

Presented by: Strong Harvest

#### **Best Practices in Pastoralist Areas**

March 6-8, 2018

Location: Sportsman's Arms Hotel, Nanyuki, Kenya

Please watch ECHOcommunity for further information. More information and registration details can be found on [www.ECHOcommunity.org](http://www.ECHOcommunity.org).

We are happy to publish your events. Please send us details to: [larcia@echonet.org](mailto:larcia@echonet.org)

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Dear ECHO Community Members,

Please share Your Experiences with ECHO Community

At ECHO, we believe the resources we provide are of great value to our members. Much of this information is valuable because of the shared experiences, lessons learned and connections made by members through [ECHOcommunity.org](http://ECHOcommunity.org). It is reassuring to hear from new development workers asking for contacts in the country in which they serve, or reaching out to us for answers to country or region-specific questions. Those of you who have a few years of laboring under your belts may remember what it felt like to find a credible source of information and direction to help guide your first steps.

I want to take advantage of this space to reiterate and invite you again to share those experiences with your fellow ECHO community members. We ask for your sharing and collaboration in practices, techniques or approaches you have implemented that bore positive results or valuable lessons that would benefit others. If you want to write about your experiences in certain areas, projects or with a particular cultivar, please do! We have created a profile/article request form accessible online to facilitate this. You can view it and download it in [English](#) and [Spanish](#). You can email the completed form to [lac@echonet.org](mailto:lac@echonet.org). We want to learn about you and your vision, your experiences, lessons learned, community impact, and how can we better support you.

At times we come about a great book, article or resource which we find extremely helpful or interesting. I invite you to share these in the form of a book or resource review. Tell us of this nugget and why it shines.

If you are ready to answer the call, or if you want to discuss your idea, please contact me at [larcia@echonet.org](mailto:larcia@echonet.org).

We look forward to hearing from you!

Libby

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This issue is copyrighted 2017. Individual issues of LACN may be downloaded from our website ([www.ECHOcommunity.org](http://www.ECHOcommunity.org)) as pdf documents in English (1-3), and Spanish (1-3). ECHO is a non-profit, Christian organization that helps you help the poor to grow food.

**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 LACN? What did or did not work for you? Please let us know the results!**