ECHO® Asia Notes

A Regional Supplement to
ECHO Development Notes

Edited by Patrick Trail & Daniela Riley **March 2020 | Issue 41**

A Snapshot of the ECHO Asia Small Farm Resource Center & Seed Bank

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"A regional training & resourcing hub for those seeking to implement sustainable hunger solutions"

Figure 1: *A view of the ECHO Asia Small Farm Resource Center.*

A New Chapter for ECHO Asia

With a new decade upon us, the ECHO Asia team is pleased to highlight the next chapter in its engagement with the Asia regional network. Many of you are well aware of the goings on of ECHO Asia, but for some it may come as news that we have launched a new farm site. We are therefore eager to publicize to our network the opening of the ECHO Asia Small Farm Resource Center & Seed Bank or 'ECHO Asia Farm' (Fig. 1). With this new opportunity ECHO Asia is pleased to share this occasion for growth and expansion.

Two years ago ECHO Asia was blessed beyond measure through the gracious donation of a beautiful tract of land, located just 25 minutes outside of the city of Chiang Mai, Thailand. This 3 hectare (7 acre) parcel of land is located on the site of a former aquaculture enterprise, and has been entrusted to us for the use and benefit of our network partners. We are collectively grateful to God for this blessing, and have chosen to dedicate this site to the service of our network and the farming communities that we ultimately serve.

This ECHO Asia Farm is open to all members of the ECHO network as well as other like-minded individuals and organizations, and it is our hope that each of you may find an opportunity to visit us at some point.

In this article you will find a brief overview of some of the current agricultural practices, crop species, and appropriate technologies that are being showcased on the farm. It is our hope that this farm might become a regional hub for sustainable agriculture practices and appropriate technologies, delivering high-impact trainings for improved food production and livelihoods.

Practices & Technologies Showcased at the ECHO Farm

For over 2 years, the ECHO team here has been working diligently to transform this farm into a living classroom, highlighting a number of practical and innovative resources related to sustainable small-scale agriculture in the tropics. This farm will serve the primary goals of (1) supplying our expanded seed bank with open-pollinated (OP) seeds of locally adapted

Featured in this AN

The ECHO Asia Impact Center operates under ECHO, a non-profit Christian organization that helps you help the poor to produce food in the developing world.

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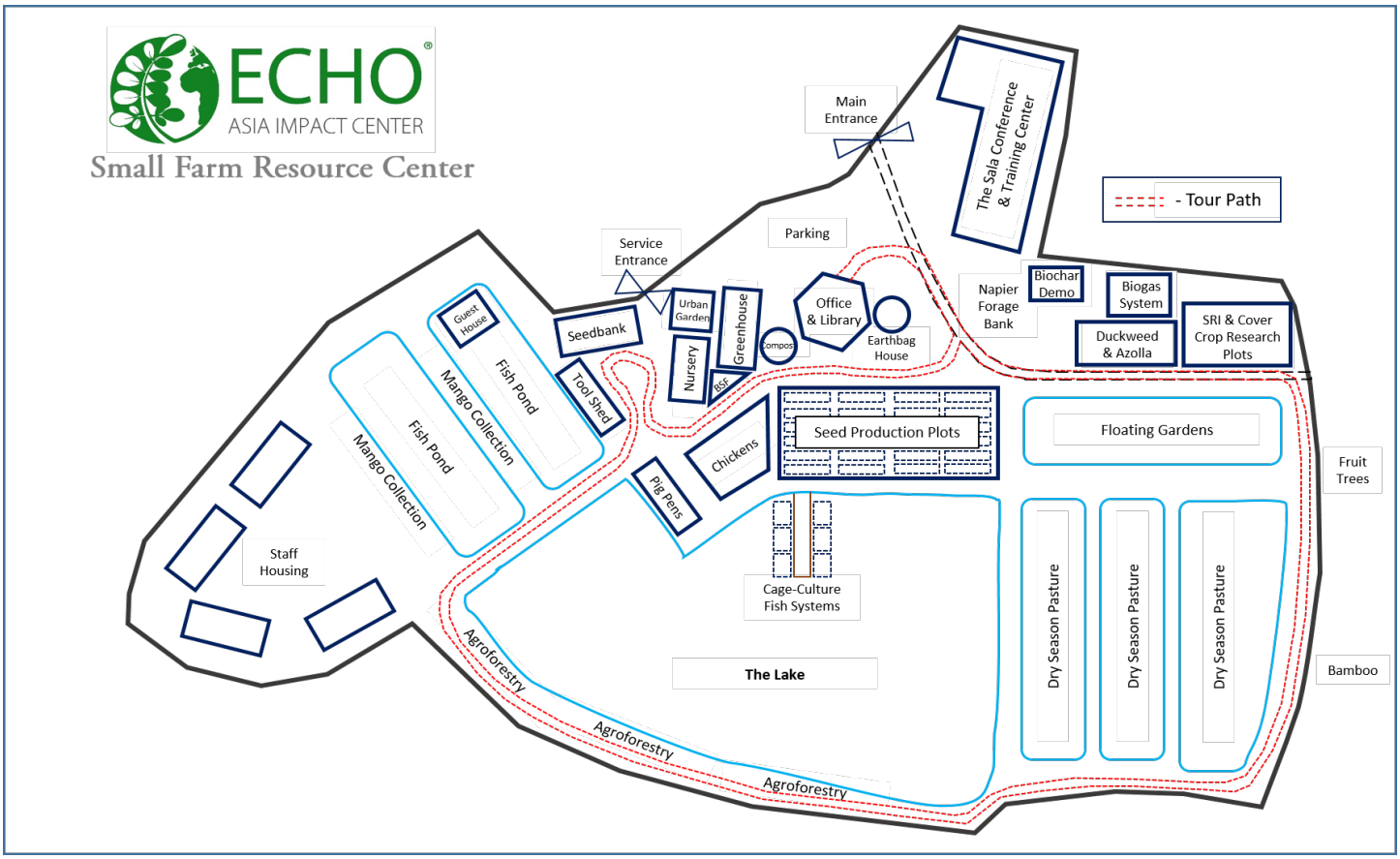


Figure 2: *Map of the ECHO Asia Small Farm Resource Center & Seed Bank showcasing on-going practices and demonstrations.*

crops, (2) training of our partners, through the demonstration of low-cost and innovative agricultural practices and technologies, and (3) verification and trialing of new agricultural practices and approaches with potential for small-scale farming communities in Asia. The map in Figure 2 highlights the many different practices and demonstrations currently housed on this new farm.

An Expanded Seed Bank

With an expanded seed cold storage facility (Fig. 3), and greater capacity for the production of seed, the new ECHO Asia Seed Bank is home to over 500 active accessions of regionally adapted food crop species, with 200 varieties grown out regularly and available for distribution to the Asia network. The new seed cold room has been expanded to a 40-square meter facility, and the farm currently manages over 60 raised garden beds.

This facility employs the low-cost methods of a spray-foam insulated cold-room in combination with two split-unit air conditioners and a CoolBot regulator. The seed bank infrastructure serves as a demonstration of an appropriate 'Organization Level Seed Bank' adaptable to similar organizations. Please note that the ECHO Asia Seed Bank serves its network members operating at the community and grassroots level (community-based service) and does not exist for commercial purposes (for profit).

For a full listing of seed availability through the ECHO Asia Seed Bank, please take a look at our online seed catalog. For ordering trial seed packets or bulk seed, please visit our online store on ECHOcommunity.org. Don't forget that as a member of the ECHO Network, members are entitled to 10 free trial seed packets per year! Our seed catalog classifies seed varieties according to the following categories:

- Fruits
- Grains
- Herbs & Integrated Pest Management

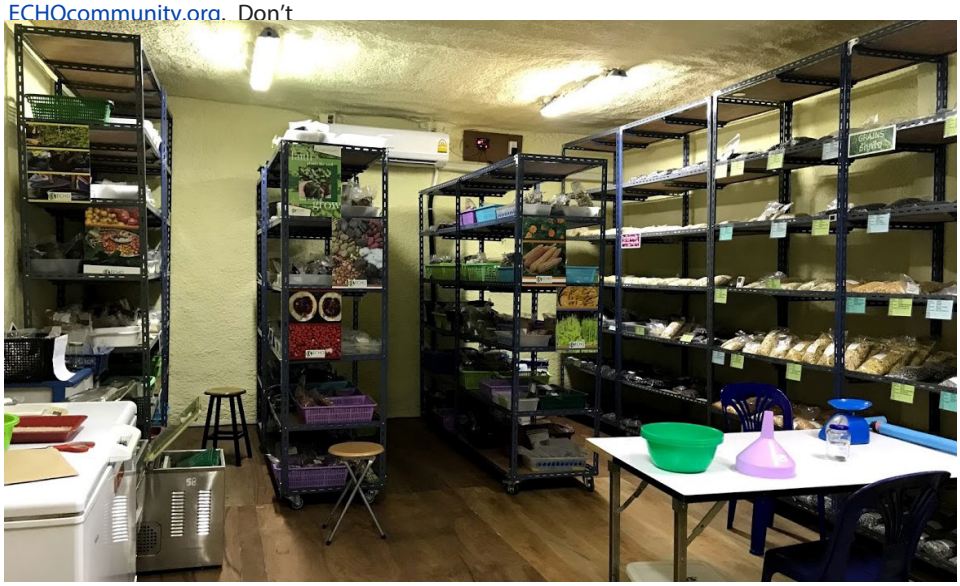


Figure 3: *The newly expanded ECHO Asia Seed Bank cold room.*

- Leguminous Trees
- Oil Seeds
- Pulses & Green Manure Cover Crops
- Vegetables
- Seed Bundles (including Green Manure Cover Crop; Nutrition; Salad Garden; Semi-Arid; and Herb/Flower Bundles)

Integrated Crop-Livestock Systems

Critical to any small-scale farming operation is the integration of its crop and livestock systems. This can be achieved in any number of configurations of species and can lead to multiple benefits on both sides.

Figure 4: *Showing off recently harvested Azolla and Duckweed, on its way to being fed to fish.*

Figure 5: *Mixing fermented banana stems with locally available supplemental feed resources.*

The ECHO Asia Farm uses its feeds resources and transforms livestock manure into usable soil amendments for its crop systems. One of our goals is to minimize the loss of nutrients produced on-farm, while maximizing the production of food and ecosystem services. The following examples are some of the practices happening, on an ongoing basis, at our farm.

Production of On-Farm Feeds

Following ECHO's longstanding mantra of 'using what we have, to make what we need,' it is the goal of our team to maximize our use of on-farm resources. For example, using banana stems, azolla (Fig.4), duckweed, and other forage materials produced on the farm, much of our feed can be made on location in conjunction with locally sourced supplemental materials or ingredients. Feeds are currently being produced on-farm for pigs (Fig. 5), chickens, ruminants, and fish. On-farm feed production also provides opportunity for conversion of what might be considered waste products that might not be suitable for human consumption.

See the ECHO Asia Note called "Rice Hull Gold: 10 On-Farm Uses of Rice Hulls" as one example of integrating a waste product into our daily farm operations.

Biogas System

Two models of biogas digesters attached to our pigpens have been recently installed. Each model demonstrates the potential for producing clean methane cooking gas from biodigested pig effluent. In addition to pork production, the remaining slurry after biodigestion is composted and used as a soil amendment for crop production, such as the bananas and forages grown for the feeding of the very same pigs.

Small-Scale Aquaculture Systems

Due to our location on the site of a former aquaculture farm, ECHO Asia takes advantage of the multiple pre-existing fish ponds. Without focusing intensively on the production of fish, the farm is currently demonstrating some simple 'cage-culture' aquaculture systems for the production of Tilapia (Fig 6.). Fish feed is also currently being supplemented with the azolla and duckweed grown right here on the farm. In addition to the consumption of fish, there is also the potential for using fish waste for the production of fish amino acids (FAA) for use as nutrient sprays for crops.

Figure 6: *Newly established 'cage culture' systems for the production of Tilapia*

Figure 7: *A few examples from the Agroforestry Walk, including Fishtail Palm (*Caryota mitis*), Edible Fern (*Diplazium esculentum*), White-Thorned Rattan (*Calamus viminalis*), and Neem (*Azadirachta indica*).*

Perennial Food Systems

Agroforestry Walk

Planted only 2 years ago, this area of the farm still has much growing and maturing to do, but is filling in at an impressive rate. To date, the agroforestry walk has been planted with over 70 different species of perennial plants, most of which can be classified as Neglected & Underutilized Species (NUS) or Non-Timber Forest Products (NTFP). This demonstration area aims to highlight the benefits of perennial cropping systems and multi-story planting design. In addition to edible species suited for human consumption, species planted so far include medicinal plants, feeds & forages, mulching materials, construction resources, and even species suited for making on-farm pesticides. Some examples include Fishtail Palm (*Caryota mitis*), White-Thorned Rattan (*Calamus viminalis*), Vetiver Grass (*Chrysopogon zizanioides*), Moringa (*Moringa oleifera*), Edible Fern (*Diplazium esculentum*), Neem (*Azadirachta indica*), Snowflake Tree (*Trevesia palmata*), Leaf Pepper (*Piper sarmentosum*) and many more (Fig. 7).

Feeds & Forages Collection

Bananas can be seen growing in large quantity on the ECHO Asia farm, but only represent one of many forage species being demonstrated. The bananas here are produced primarily for their stems and the production of fermented banana stem silage for pigs and chickens, however many other forage varieties are grown that are suited for ruminant livestock such as cattle, goats, and buffalo. These perennial plant species have been selected for their adaptability, drought tolerance, protein content, nitrogen fixing abilities, and palatability for livestock among other things. Some varieties being grown include, Nacedero (*Trichanthera gigantea*) (Fig. 8), Super Napier Grass (*Pennisetum purpureum*) (Fig 9) and even Morning Glory (*Ipomoea purpurea*).

Figure 8: *Nacedero (*Trichanthera gigantea*)*

Figure 9: *Super Napier Grass (*Pennisetum purpureum*)*

Fruit Tree Production & Propagation

Those familiar with ECHO Asia are aware of the services provided through the seed bank, which has been diligently distributing seed varieties to the Asia network for over 10 years. With the transition to this new site comes not only the opportunity for growth of our seed bank, but also the opportunity for the propagation and distribution of plant seedlings. This includes the potential for providing grafted fruit tree seedlings, plant cuttings, and an expanded plant nursery. Seedlings currently available include Chaya (*Cnidoscolus aconitifolius*), Katuk (*Sauropus androgynus*), Perennial Forage Peanut (*Arachis glabrata*), and more.

Appropriate Technology Demonstrations

Oftentimes good sustainable agriculture practices are only as good as the technologies that make them practical and affordable. For this reason, one will find demonstrated throughout the farm a number of appropriate technologies used in conjunction with the many agriculture practices promoted by ECHO. These technologies tend to be low-cost, made of locally-sourced materials, are practically designed, and suited to a number of different tasks related to water systems, waste recycling, crop production, and post-harvest processing, to name a few.

Biochar Production

Using appropriate technologies, we can transform organic waste material into a valuable soil amendment while sequestering carbon. The production of biochar is one example of up-cycling an otherwise wasted resource and converting it into something more valu-

Figure 10: *Demonstrating the use of 'Retort' Biochar production technology.*

able. While demonstrating the use of small household biochar gasifier cookstoves, 200-liter biochar barrel systems, and a larger retort system, we are able to transform waste products like rice hulls, plant debris, recycled bamboo trellises, and other organic materials into valuable soil amendments for our raised bed seed production plots (Fig. 10).

Biochar Water Filtration

In addition to being used as a soil amendment, our biochar is also being used as a key component in the demonstration of a 300 Liter per Day Water Treatment System (Fig. 11). Using a 'blue barrel' system with varying gradients of sand (and biochar), microbial pathogens and even synthetic pesticide residues can be removed from drinking water.

Figure 11: *300 Liter per Day Biochar Water Filtration System.*

Low-Cost Seed Storage Facilities

While our primary ECHO Asia Seed Bank is housed in a larger climate-controlled storage facility, it has always been our desire to provide improved seed storage options at the farm or household level. Therefore, in addition to our own Seed Bank, the farm showcases other options that can be done at low-cost, and in places with no electricity. For this reason we have included the demonstration of some natural building techniques suited for seed storage, such as an earthbag house for seed storage (Fig. 12), andother low-cost sealing options using modified bicycle pump vacuum sealing technology. Various other appropriate technologies related to seed stoage, such as solar seed driers and cleaing technologies, are actively used in the ongoing operation of the Seed Bank.

Figure 12: *Demonstration of an earth bag house used for seed storage, one example of a low-cost natural building technique.*

Urban Garden Demonstration

With much of the world migrating toward urban areas, there is increasing need for urban food production practices that are affordable. Using tire gardens (Fig. 13) and other recycled materials, such as buckets, jerry cans, and discarded construction materials, there are a number of innovative options available for food production on balconies, rooftops, and walls.

Figure 13: *Using old recycled tires for the production of vegetables, significant quantities of food can be produced in urban settings.*

Adaptive Research

ECHO Asia conducts 'use-inspired' research to test, validate, and generate practices and techniques to optimize impact for small-scale farmers. In order to focus our research and take advantage of our comparative strengths, we have opted to keep our research areas within the broader categories of **'Soils, Seeds,** and **Feeds'.** Research at ECHO Asia always stems from direct interaction with partners, and the needs they have passed along. Listed below are examples of ongoing research in each of the three categories

Soils - SRI Research Plots and Tropical Cover Crops

Long-term System of Rice Intensification (SRI) plots have been established. These plots will be used for hands-on training opportunities for learning about SRI, but also as observational study plots for comparison of SRI and traditional paddy production (Fig. 14). In addition, these plots are being used to test a number of tropical Green Manure Cover Crop varieties that may be used in fallow periods in rice cropping systems (Fig. 15).

Seeds – Low-Cost Seed Storage Alternatives

Serving as a hub for a regional network of community-level seed banks, it is incumbent on ECHO Asia to continually test and try-out innovative seed storage methods that are affordable and replicable to farm-level seed savers and community-level seed bankers. Ongoing research includes experiments related to low-cost vacuum sealing technologies (Fig. 16), natural earth building techniques for seed storage, and assessments of current seed bank facilities throughout ECHO Asia's network. See recent ECHO Asia Note #38 for a detailed summary of this research.

Feeds – Farm-Generated Feeds Research

Research and farm staff recently completed phase one of ongoing 'farm-generated feeds' trails for pigs. Pigs given feed produced on the farm using fermented banana stem silage and other other locally resourced maerials were compared to pigs fed only commercial feed. Trials looked at cost of feed, weight gain of pigs, and potential economic returns. Results from this initial comparison of farm-generated feed are summarized HERE and represent the adaptive research that we hope to continue doing. Coming research will expand these trials to that of poultry and fish production, again using farm-generated feeds.

Figure 14: *Hands-On Training on SRI (System of Rice Intensification). SRI plots are one example of how farm demonstrations can be leveraged for training, research, and demonstration.*

Figure 15: *Several Tropical Cover Crop species being tested during the fallow period between seasons of rice production. Varieties tested include (from left to right) Sesbania (*Sesbania grandiflora*), Sorghum (*Sorghum bicolor*), Sunn Hemp (*Crotalaria juncea*), Centrocema (*Centrocema pascuorum*), and Stylosanthes (*Stylosanthes guianensis*).*

Opportunities to Engage with the New Farm?

ECHO Asia seeks to equip its network partners with practical 'know-how' and 'do-how' techniques that may empower more effective outreach to farming communities, households, and families. As such, the ECHO Asia Farm has begun hosting a range of training opportunities for individual development workers and groups from like-minded organizations. Leveraging this farm as a living outdoor classroom, ECHO Asia will be hosting a number of hands-on training opportunities in 2020 and for many years to come.

Figure 16: *Modified bicycle vacuum sealing technique.*

Half-Day Educational Tours provide exposure and an overview of various sustainable agriculture practices and appropriate technologies housed at the ECHO Asia Farm.

One-Day Trainings are designed to provide participants with an overview of select topics offered by the ECHO staff, specifically related to areas of Soils, Seeds, and Feeds, as well as broader Community Development topics requested by partners.

Three to Five Day Trainings provide participants an opportunity to receive more in-depth training on the aforementioned topics, and additional focus areas requested by network members.

The Asia National Internship Program is available to Asia nationals for 2-6 months to train with, and work alongside, the ECHO staff in on-going projects and initiatives. To learn more about these opportunities, please contact us.

For those wishing to visit the ECHO Asia Farm for a tour or training event, please go to ECHOcommunity.org/events to register or fill out our Needs Assessment form to begin the process of responding and planning for a special request for your group/team.

Take-Home Message

The ECHO Asia Farm exists, first and foremost, for the benefit of the network of partners in which we serve. It is therefore our hope that each of you will have an opportunity to one day visit us and take advantage of this amazing living classroom. We welcome you here, and wish to see this place used as a regional hub for the training and resourcing of those seeking to find sustainable hunger solutions.

Black Soldier Fly System of the Frangipani Langkawi Organic Farm

by Anthony Wong
Managing Director
Frangipani Langkawi Resort, Langkawi, Malaysia

[Editor's Note: Anthony Wong is a longtime steward of green initiatives in Malaysia and the region. Using constructed wetland systems, grey water at his hotels are cleaned and recycled, while large amounts of food waste are up-scaled using an innovative Black Soldier Fly system. Mr. Wong was a recent speaker at the ECHO Asia Agriculture & Development Conference in 2019 and has many years of practical hands-on experience. For further reading and details we would also recommend the Black Soldier Fly Biowaste Processing – A Step-by-Step Guide.]

Integrating Black Soldier Flies on the Farm

The BSF or Black Soldier Fly (Hermetia illucens) brings great potential to any farming system through its ability to consume on-farm waste and produce a highly nutritious feed source. The larvae of the BSF can be grown using nearly any organic waste product, and can be used to up-cycle waste materials into a valuable protein source. BSF have the ability to break down waste resources that cannot be directly fed to humans or livestock, or even worms in a vermicomposting system, thereby making these systems valuable in tightening the nutrient cycle on any farm. In addition to the feed that the larvae becomes, the secondary advantage is their ability to rapidly break down food waste to produce a valuable by-product that can be used as an organic soil amendment.

The Frangipani Langkawi BSF System

Located in the Langkawi UNESCO Global Geo Park, the Frangipani Langkawi Resort is neighbor to a hospitality industry where as much as 60 percent of the waste produced is coming from food waste. The remaining waste comes from recyclable trash and other non-recyclable items. According to The News Strait Time dated on June 17, 2018, some 16,000 metric tons of food waste are produced daily in Malaysia, and every day that number is increasing. Of the food being wasted, these numbers include untouched foods from hotels, businesses, private residences, markets, hawker centers and other sources. The local landfill in Kilim faces capacity and it may one day negatively affect the image and tourism industry in the area.

In response, the Frangipani Resort has partnered with 11 nearby hotels to collect all the food waste they produce, and is using it to supply a large-scale BSF system. In this system, the larvae that are produced are fed as a high-protein feed source to fowl and fish, which are then consumed in the hotel restaurants. Through this project, it is hoped that the island can reduce the amount of food waste going to the landfill, while simultaneously raising fish & fowl, and a rich organic compost for building soil.

This Black Soldier Fly system has attracted the attention of local officials for its capacity to consume large quantities of organic waste including fruit, vegetable residues, offal, and pig & poultry manures, transforming it all into high quality protein that can then be fed directly to livestock.

Figure 1: *Food waste that has been shredded and dried, ready to be fed out.*

Collection of Food Waste

Each day, food waste from collaborating hotels is collected and brought back to the Frangipani for processing. Upon arrival, the food waste first undergoes a quality check to insure that none of it contains hazardous contaminants such as plastics, styrofoams, or other synthetic materials. Hard foods such as clam shells and bigger bones are also removed as they cannot be processed in the following stage.

All food waste must be shredded in order to maximize the available surface area, making it easier for the larvae and the associated bacteria to break it down quickly (Fig. 1).

This shredded food waste will then be drained to remove most of its water content. The simplest way is a passive dewatering system (by gravity), whereby the shredded waste is filled into a plastic basket that acts as a filter, allowing the water to drain through the basket into a bucket below. Two kg of desiccated coconut cake will also be added into a 10 kg batch of shredded food waste and mixed well; the purpose for this is to reduce the moisture content of the food waste.

Egg Collection and Pupa Handling

The first (and last) stage of production in our system is what we call the 'Love House'. This is where some of the mature pupae will be transferred before emerging into adult flies. (It is worth noting that adult fly does not possess a stinger, and are not a menace to humans). The 'Love House' is the place where the adult black soldier flies mate and then lay their eggs, thereby beginning the process over again. BSF can be found in nearly every location in the tropics, and tend to frequent farms where manure and other organic waste are present.

The adult black soldier flies do not actually eat, and the food provided in the enclosure is only there for females to know where to lay their eggs. Piecing together 4 to 5 small sections of cardboard, we provide a small 'flute' directly above a food source within the 'Love House', in which the fertile female flies can lay their eggs (Fig. 2). The food below should be kept moist at all times to prevent females from directly laying their eggs on the food source, which will cause inconvenience for management.

Figure 3: *Black Soldier Fly larvae at their final stage, ready to be fed to livestock.*

Once the eggs are laid in the flutes, they are collected daily and brought to the 'feeding house' where the egg clusters will be placed in a container with some processed food waste (Figure 4). After approximately three days, the eggs will hatch (each flute contains approximately 500-800 eggs) and the young larvae will crawl into the food waste and begin to eat, voraciously.

During this stage, larvae will begin to consume food at their maximum rate, and every 1 kg of larvae are capable of consuming up to 1 kg of food waste overnight (Fig. 5). Larvae will stop eating once they have reached the pre-pupae stage, and will begin to crawl out from their food 'biopods' to find a dry and cool place where they can anchor. This act of 'self-harvesting' makes it easy to know when the larvae are ready, as they will separate themselves from the food waste, making them easy to harvest. Pre-pupal BSF will empty their gut during their last molting phase and cannot feed any further after that. At this stage, the larvae have everything they need to sustain themselves as they transform into pupae and finally into an adult BSF or fly.

Production of a Healthy Feed & a Rich Compost

BSF larvae are highly nutritious and can contain up to 35-42% protein, are rich in calcium, fats & lipids, and other nutrients, making it a high quality feed (Dortmans et al., 2017). BSF are at their highest nutritional quality at the final larval stage, prior to transforming into pupae, and should ideally be fed to livestock at this stage (Fig. 3).

Beyond their ability to produce a protein rich feed source, BSF have the amazing ability to transform food waste into a readily usable organic fertiliser sources, by consuming and breaking down previously uncycled waste (Fig. 6).

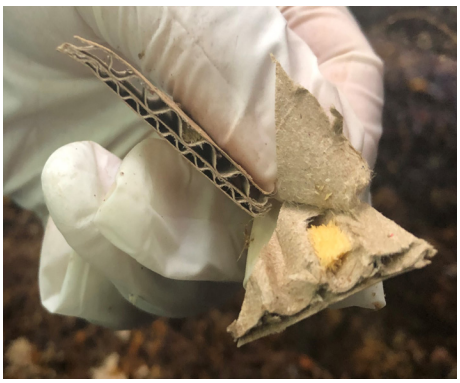


Figure 2: *Cardboard 'flutes' are provided for females to lay their eggs in.*

Figure 4: *Egg 'flutes' are placed on top of a ready food source for hatchlings.*

Figure 5: *BSF 'biopods'.*

Figure 6: *Food waste after being consumed and digested by BSF. The remaining 'compost' is a combination of decomposed organic material and 'frass', not too dissimilar from vermicastings.*

Conclusion

The BSF larvae transform food waste into a readily usable organic fertiliser apart from being a high protein-source feed for livestock. The entire life cycle of the BSF is only 45 days in length (Fig.7), making this one of the fastest producible sources of protein. From egg laying to final larval stage (ready for feeding to livestock), the length of time is as short as 20 days. Indeed, the BSF technology is incredibly economical and it brings about the dual advantage of recycling waste materials and producing a high-protein animal feedstock.

In Frangipani Langkawi Resort, we provide short courses to local communities and guests interested to learn about BSF farming. It is very important to promote awareness about BSF since they do not just reduce the landfill waste and carbon dioxide emissions, but also make our farm operation sustainable.

References

Dortmans, B.M.A., Diener, S. Verstappen, B.M., Zurbrugg, C. 2017. Black Soldier Fly Biowaste Processing – A Step-by-Step Guide. Eawag: Swiss Federal Institute of Aquatic Science and Technology.

Tancho, A. 2017. Maejo Maggots. Thai language resource on BSF. *Available:* https://bookstore.nstda.or.th/shop/product/web-406348-3381

Figure 7: *Black Soldier Fly larvae at their final stage, ready to be fed to livestock.*

ECHO Asia Upcoming Events

ECHO Asia Career Opportunities

As we continue to expand upon the opportunities here at the new ECHO Asia Farm, ECHO Asia is now seeking highly qualified, Thai nationals to apply for the roles of:

Agricultural Training Coordinator

and

Seed Bank Supervisor

Agricultural Training Coordinator

General Description

The purpose of this position is to strengthen the capacity of ECHO to deliver 'high-impact trainings and learning events for improved food production and livelihoods' among its network members and like-minded organizations. The position has a pivotal role in ECHO's Training and Learning Program held at its Small Farm Resource Center and Seed Bank in Chiang Mai, Thailand and overseas within the Asia region.

Highly competent in Training Management, this person is equally equipped with agricultural technical knowledge and skills, which will be handy in delivery of trainings related to agricultural and community development. This position will be based at the ECHO Asia Farm.

CLICK HERE to see the full job description.

Seed Bank Supervisor

General Description

The primary purpose of this role is to lead and coordinate effective operations of the ECHO Asia Seed Bank according to the goals and objectives of the Asia Regional Impact Center. Housed at the ECHO Asia Farm, the Seed Bank primarily serves the needs of network members, as well as other like-minded organizations and individuals operating in the Asia region.

These support services occurring at the Seed Bank can include but are not limited to:

- Identification, selection, and collection of regionally important crops that are open pollinated and underutilized but bearing potentials for improved nutrition, food security and livelihoods;
- Production testing, propagation and multiplication of these seeds and seedlings;
- Processing, packaging, distribution and storage of seeds and planting materials;
- Conduct of applied research on seed saving and storage technologies and techniques appropriate for farming communities and small scale producers; and
- Provision of training and/or learning sessions on Seed Saving and Banking for community development practitioners in general, and community-based Seed Bank operators in particular, including interns and volunteers.

CLICK HERE to see the full job description.

If you know someone who would be a good fit for either or both of these roles, please pass this on!

To apply, please send cover letter and CV to Daniela (DJ) Riley at driley@echocommunity.org

Call for Articles & Insights

If you are new to the ECHO Asia network, we wanted to highlight a few things that you may find add value to your free membership to ECHOcommunity.org and can help you be more effective.

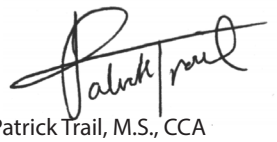
1. Please do remember that a "Development Worker" membership entitles you to 10 free trial packets of seed per year! If you would like more seed packets or larger quantities of some seeds (especially green manure/cover crops), we do have additional seed packets and bulk seeds for sale, and our seed bank catalog is available online.
2. Please also know that besides being written in English, our ECHO Asia Notes are translated and available for free download in Thai, Khmer, Burmese, Mandarin, Bahasa Indonesia, Vietnamese, and Hindi languages.
3. Additionally, we have a special place in the Asia section of ECHOcommunity for additional technical resources, free book downloads, and presentations from past ECHO Asia events and workshops.
4. If you have never joined us for an event, please consider doing so- there are several events happening in 2020 and we would love for you to join! Please go to the events page of ECHOcommunity.org to learn more.

In addition to using our information, we strongly encourage you to provide feedback to us in order to better know how to serve you and help us to refine our resources and delivery.

We encourage you to share success stories, lessons learned, insights, Facebook posts, etc. with us to keep us abreast about what you are trying and what is working in your context.

Additionally, if you have any ideas or would like to write an article for an upcoming ECHO Asia Note, we invite you to do so! Thank you for reading, and please do stay in touch!

Sincerely,



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