



Fair of the "4 per 1000" international Initiative – Promoting Regenerative Farming in Hong Kong

3 May to 13 June 2021 | Online

EU GREEN WEEK 2021 PARTNER EVENT

The Story of Eva's Farm



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Background

Eva's husband and his sibling grew up in the 0.65 hectare family farm/residence. Eva's in-laws practiced subsistence farming for a long time. As the story goes, they converted to conventional practice when chemical fertilizer and pesticides became fashionable and showed promising result (little did we know then). The farm was laid fallow for 12 years since the in-laws retired while the younger generation was busy making a living in the city. Only when Eva and her husband retired, the idea of reviving the residence farm came about. But the question was HOW.

The Beginning

The couple revived the farm using organic practices avoiding chemical fertilizer and pesticides. They carved out plots for neighbors and friends of like minds. They made enzymes from fruit peels, cold composting and occasionally applied chicken manure pallets. This went on for 7 years and yet the crops were prone to pests.

The Awakening

By chance, Eva attended a HomelandGreen talk on regenerative farming (RF) in which the wonder of soil biology and bartering system between plants and soil microbes were introduced. The idea of feeding the soil (actually the critters in the soil too) and not the plants is foreign. Yet it makes sense. Plants are not alone. They live in an inter-dependent ecosystem. Plant health depends on the environment as much as we do. All the farmers need to do is to nurture the soil ecology and get the ball rolling. They just need to observe what the plants tell them. In other words, farmers are facilitators.

Farmers, academics, environmentally minded people and university students attended the talk. Of course, there were skeptics. Some agree that it looks good in theory. A number of them showed interest. Eva was one of few shortlisted due to HLG's limited resources and participants' determination on collaboration.

Walk the talk

Eva was willing to walk the talk. She approached HomelandGreen and the relationship started in September 2020. HomelandGreen devised a strategic conversion scheme after multiple farm visits and meetings with the couple, provided the compost from its thermal composting facility and mobilized volunteers in the initial setup.



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Soil condition

Soil is sandy with little organic matter as in most farms in Hong Kong. So ingrained with the belief that weeds compete for nutrients, farmers clear plots of weeds exposing bare soil. Most of them do not believe in mulching and have little information on the science behind it. It does no good to soil biology to leave the soil exposed to the elements.



Subtropical backyard garden

The farm is like a backyard garden. Various tree types native to the Southern China subtropical climate intermix with hedges surround the farm. The trees provide shelters for birds and other insects higher in the food chain. It is observed that crops near the trees are less prone to pest infestation in the farm.



Subtropical backyard garden surrounding planting plots



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Strategy

HLG volunteers identified the perennial trees and shrubs in the farm with plans to trim and remove the sick ones to maximize biodiversity in the farm in the effort to practice agroforestry and integrated pest management strategy.

Soil penetration and pH test were done to get the baseline data for soil improvement strategy. Talks were held at site to brief and educate the volunteers on soil biology, the tasks at hand and the goal of this project.

With limited amount of compost on hand, the strategy is to give the seedling roots all the help it needs. A hole is dug and filled with compost when transplanting the seedlings. Then compost tea is applied. The idea is to boost the microbiology around the seedlings. During the life of the crops, compost tea and soil bacteria concoction are applied periodically.

The farm starts to make thermal composting pile on-site using the tree leaves, cuttings and commercial food waste like soybean residue.

Soil bacteria concoction was made from fermented rice water, milk and molasses. Seaweeds, fresh farm wastes, nuts wastes, etc. can be added to enrich the nutritional content and varieties of the concoction to serve different plants' needs.

Johnson-Su Bio-reactors are in the making. Gardening firms and residential estate management companies will provide tree cuttings.



Soil Penetration Test



Briefing session

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Use of micro Biometer
Measuring microorganism concentration in the compost tea and the respective fungi-bacteria ratio



Brewing compost Tea with DIY parts



on-site thermal composting



Soil bacteria concoction

HLG adopts the Zero risk approach in which the collaborative farmer bears zero risk. HLG provides all necessary material, expertise, resources and manpower for the farmers to begin their journey of transition.

Regenerative farming principles are being tried out here coupled with Principles of nutritional management of John Kempf of AEA and Graeme Sait of Nutri-tech. HLG explored and brought in compost from the Mainland China, SOBE fertilizer and various products from the USA and Australia to supplement HLG's home-brewed soil and plant nutrients.

HLG also helps to connect the Eva and Hong Miu Farm (another HLG target project) with a community of organic minded consumers. The intention is to create a CSA network.

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Results

The change is remarkable. Eva uses the above strategy each time she plants new crop in a plot essentially converting one plot at a time while neighbors and friends continues on with organic practices using mostly chicken manure.

They grew the same thing. Below are cabbages from the same farm. The left is grown in the plot with organic practices (chicken manure) and right is from the converted RF plot.



The cabbage on the left is crying for help. It is heavily bitten, infested by insects whereas the one on the right shows little signs of damages. Now is where the science comes in.

When the plants experience nutrient imbalance, e.g., too much nitrogen from chicken manure, the most used organic fertilizer in Hong Kong, nitrogen in the form of peptides or simple amino acids stay in the leaves without being able to be transformed into proteins. These are perfect food for insects. Contrary, insects do not have the necessary enzymes to digest full proteins. Nutrient integrity can be attained by proper soil amendment and plant nutrients and this is being tried out in Eva's RF plots.

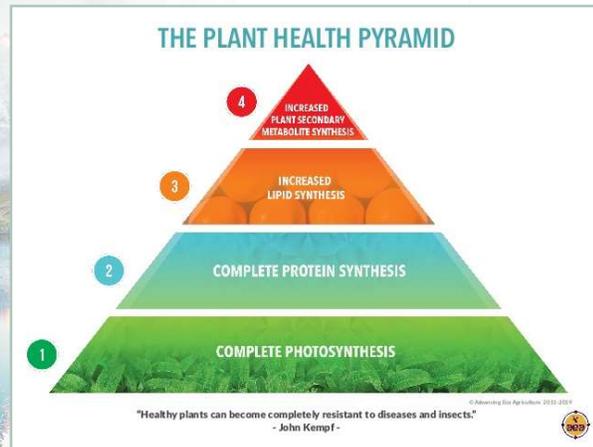
Obviously, the practice of adding excessive chicken manure is wasteful in both sense of cost and the result.



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[John Kempf's Plant Health Pyramid, Presentation](#)

Happily ever after with hiccups along the way

Eva's plots are converted within 6 months. Though there are much work ahead, the result to-date is very encouraging.

The journey is not smooth sailing all the way. Not all compost are the same. Recent application of compost produced by a local NGO kitchen waste processing plant causes infestation of insects in the applied pok choi (brassica) plot. HLG helps and teaches farmers to read the signs of the plants and choose the proper soil amendments and plant nutrients to deal with various issues of different crops in different seasons.



Inputs used in soil bacteria concoction and compost pile are residue from farm, gardening firms and food processing plants. The cost is minimal compared to commercial fertilizer. The fellow farmers in Eva's farm will probably follow suits when they see the difference.

Seeing is believing.

Farmers must learn to make compost properly or assess the quality of compost in terms of the biological content.

Both nutritional management and soil science work hand-in-hand and equally important. It is essential to understand and practice them to produce successful crops.

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