

How do we grow sustainable food in the desert on small acreage...

There is amazing technology out there that has the possibility to produce sustainable food crops even here in the SW Desert. We plan to use this system or one very similar. Read below what manufacturers and developers have found out. We totally plan to be an incubator to these technologies and show other how they work right here and on the ground.

“What if there was a way to produce an abundance of organic food using 98% less water, while producing up to ten times more food in the same amount of area and time... What if you could achieve this using 1/4 the amount of energy... Imagine producing organic food in a system that does not require fertile soil, saves you labor, makes you a good living and is incredibly sustainable... Well the exciting news is that such a system of growing food exists! It's called Aquaponics. Aquaponics is a combination of Aquaculture and Hydroponics developed by Max Meyers (<http://www.norcalaquaponics.com/>).

Aquaponics is one of the most productive and sustainable food production systems in the world! It is a combination of Aquaculture (farming fish) and Hydroponics (growing plants without soil) in which both fish and plants benefit from one another! The results, production and sustainability of Aquaculture and Hydroponics combined far exceed that of either system alone.

At a time of global climate change, depletion of resources, pollution of water and huge losses of topsoil worldwide, there has never been a more important time to learn about Aquaponics!

Facts about the Myers Aquaponics system:

- Our systems use up to 98% less water than conventional farming methods!
- They produce up to ten times more vegetables and crops in the same amount of space and time!
- They use up to 75% less energy than almost any other farming method!
- They are guaranteed to be free from chemical fertilizers, pesticides, herbicides, fungicides and other chemicals!
- They require only about 1/2 the labor required by almost all other food production methods!
- They virtually eliminate weeds, pests, diseases, viruses and pathogens for both aquatic and plant life alike!
- They can be used in almost any situation and can be any size, from desktop systems to large-scale commercial farms!
- They save time, money and labor in all stages of production!
- No soil is required in Aquaponics enabling otherwise “undesirable” sites or land to be used to produce fish, vegetables, fruit and more!
- Many useful byproducts are created in our systems that can be used to produce other crops, trees, soil, gas and energy!

- By fusing Permaculture and Aquaponics truly sustainable closed loop systems are created that provide all the needs for the system with in the system itself!
- Meyers systems produce virtually all of the system's needs (water, energy, fish, feed, heat, gas, etc.) onsite!

Products of the Meyers systems include; Solar electricity, Solar heated air, Solar heated water, fish, prawns, vegetables, fruit, aquatic plants, algae, minnows, snails, worms, dry and liquid fertilizers, even methane gas!

Growing our food in closed systems that require no soil allows us to farm soil and water outside the system! We plant soil and water in our damaged and depleted landscapes which not only aids in the restoration of the soil, groundwater and native forests, but has the added benefit of offsetting greenhouse gases by removing carbon Dioxide from the atmosphere. This is one of the practices used in what we call "Carbon Farming".

Soils contain approximately 75% of the carbon pool on land — three times more than the amount stored in living plants and animals. Did you know that 1" of healthy topsoil spread over 1 acre of land sequesters the same amount of carbon a healthy forest of the same size does annually? It is estimated that our crop and rangelands lose 4 tons of topsoil every year for every person alive! That's 21 gigatons of soil washed or blown out to the sea and lost for productive use on land, releasing vast amounts of carbon in the process (New Scientist, December 2006).

Being able to use land considered "Undesirable" by conventional farming; Aquaponic farmers have the added benefit of access to cheap lands and lease agreements. Often using otherwise unused space such as fill, gravel, concrete, abandoned commercial sites, even roof tops.

As we say in Permaculture 'the only limit to our designs is in the mind of the designer!'

***Taken from the website <http://norcalaquaponics.com>

Now here is another take on the same subject just to show this isn't just one person's or one company's idea. It is science that is even now being applied around the world. This issue applies to metro Atlanta as well as to rural Kenya.

"Local food is the whole point.

Just a little bit of study will reveal that we have no control over our food supply, its quality or its economy. The world food market is simply one of profits and political power. Nutrition and quality are secondary factors.

It's good that here in America we can rely on 24/7 availability of food on store shelves. But look closely at what is being sold and why. You'll see that it's all about profitability. Your job is to consume, not to produce and not to profit.

Go to a typical Big Box grocery and try to find the food. Subtract the bottled water, sugared drinks, starchy snacks, candy, sugared cereals, factory meats, frozen meals and fat-laden desserts, what is left? Just about as much as would fit into a 1932 corner grocery.

Although there are many brands represented, the parent corporations are few, very few. Their business is to understand the "sweet spot" of consumers' eating habits, the starchy, sugary, creamy sensations that drive our daily food choices and end up making us sick.

So "local food" is really an issue of control over how we live and work. Growing food gives us nourishment, something to do in times of unemployment, a potential income stream, a family focus and high educational values.

Real food brings us together. Growing it was once the foundation of our economy and culture. On the up side, communities today are already producing a small amount of fish and vegetables, chickens and eggs and mushrooms to eat...sometimes to sell.

People can work and profit cooperatively, sharing creative ideas across cultural and political boundaries. And remember that even Wal-Mart has a local food section. Yet it's mostly empty because there is not enough production.

Whose fault is that?"

***From <http://aquaplanetonline.com>

Okay, and here is another possibility we will almost certainly explore;

Protein and Vitamins in Mushrooms

"Mushrooms are high in protein and are considered by the F.D.A. to be an excellent food source. The National Institutes of Health are funding research into the different medicinal qualities of mushrooms. Meanwhile, doctors worldwide are recognizing mushrooms as a food that is valuable for their nutritional and medicinal qualities. (1)

Mushrooms are found to be very low in fat and simple carbohydrates, however they are rich in protein, complex carbohydrates (polysaccharides) and antioxidants. Protein content ranges from 3% for hardwood conks, to 33%, 34% and 35% for shiitake, nameko, and portabello, respectively. They are a good source of dietary fiber (ranging from 20%-50%), B vitamins-B2, B3, B5-, as well as ergosterols which convert to pro-vitamin D2 when exposed to ultraviolet light. Mushrooms are also good sources of essential minerals; copper, selenium, and potassium, and contain numerous medicinal compounds. (1)

Western doctors are starting to recommend mushrooms as a preventative, or in adjunct therapies for dealing with several medical conditions. In addition, mushrooms help fortify health and have been used to help with treating adult onset type 2 diabetes, obesity, and immune deficiency. They can also

hyperaccumulate vitamin D; one 20 gram serving of fresh maitake provides 460 IU of vitamin D per 100 grams, at least 30% of your Reference Daily Intakes (RDI). (2)”

Reference:

(1) Paul Stamets, Mycelium Running pg 197

(2) Paul Stamets, Mycelium Running pg 203

All rights reserved©

MycoRiseUp©

Research written by Carrie Zoll

<http://MycoRiseUp.com>

Not only are they good for food and health, but they are good for healing the planet. Here is further information about that from the same website.:

Creating Value from Waste

Many valuable products can be created from biological wastes, which are made from restaurants, breweries, and coffeehouses, as well as from agriculture and farming. It has been found that mushrooms grow quite well from these waste streams and that this type of “closed loop system” can help curb these industries’ costs of production. By cycling wastes, communities can create value added products such as mushrooms, compost, and ultimately gardens.

We are witnessing a change of culture, which is necessary as a result of rising costs in food production, shipping and managing waste. As we step into this realization of our impact on Global Health and conservation measures, we will ultimately begin to understand that the creation of closed looped systems within our city and state infrastructure is imperative for long term maintenance of culture. These types of systems are sweeping the world through models such as the Transition Town, and Green Movements, and can be found to be highly effective for sustaining the needs of society.

Restoring land and water using fungi is a relatively new concept, developed by mycologist Paul Stamets. In his book Mycelium Running, How Mushrooms Can Help Save the World; Paul outlines particular methods for decontaminating toxin-laden landscapes and waterways.

MycoRiseUp continues this legacy, by helping to initiate restoration projects worldwide, motivating communities to utilize these methods.

Mulching on Contaminated Sites

“The effects of using mushrooms on contaminated landscapes has been proven to be highly efficient. Nature has been at this for millions of years and we have now been given the keys to help the process happen more quickly.

What has been discovered is that when we plant mushrooms and give them the appropriate shade, moisture, food and oxygen, they produce in mass. When the

mushrooms fruit and begin to decompose, they attract insects, which then attract birds and other mammals, which then drop seed and begin the cycle of life.

There are mushrooms that have digestive enzymes, which can break down wide ranges of toxins, which have molecular bonds similar to wood. These can be placed into two subgroups, brown rot and white rot fungi. It has been found that white rot fungi produce certain enzymes, which break down hydrocarbon bonds found in nature.

Apparently, only the white rot fungi produce manganese-dependant peroxidase, which mineralizes wood and is efficient in breaking down hydrocarbon bonds. The Oyster, Maitake, Artist Conk, Turkey Tail, and Reishi are some of the more potent white rot fungi. The enzymes, which are secreted by their mycelium, include lignin peroxidases, manganese peroxidases, and laccases (Schliephake et al. 2003). Through this process, fifty percent of organic mass dissipates as carbon dioxide and ten to twenty percent as water.

Many of the bonds that hold wood together, are similar to the bonds found in petroleum-based products. It has been scientifically proven that mushroom mycelium are quite suitable for breaking down the toxic elements found in oil, diesel, pesticides, and more, making fungi our best allies for restoration to date!"

You Tube Video Paul Stamets: 6 ways mushrooms can save the world. A fascinating look at basic science of mushroom properties. Paul holds 2 key patents for the application of mushroom properties. Check it out:
http://www.youtube.com/watch?v=XI5frPV58tY&feature=player_embedded

Reference:

Paul Stamets, Mycelium Running, page 84
All rights reserved MycoRiseUp

So these guys and girls think that mushrooms can help save the world, and so do we. For more information please contact these people directly.
<http://MycoRiseUp.com>