

# The San Antonio Aquaponic and TransFarming Group

presents

## Water Conservation with TransFarming and Aquaponics

Here in Texas we face myriad obstacles to growing food in a "sustainable" fashion. What does sustainable mean? Well, it has a lot to do with producing food in a manner that is not interrupted by "outside influences". One of the major outside influences here in Texas is the weather – long seasons of heat, extended periods of cold, rapid changes between those two conditions, and no rain in between.

The entire premise of TransFarming was started on the realization the weather here in Texas can be brutal and a different approach must be taken to combat the elements in light of our modern challenges.

At the core of all this is water. Without water, nothing prospers. TransFarming is about "re-thinking" traditional gardening methods to address *regional environmental challenges* like droughts and water restrictions, while keeping in mind techniques for prosperous food production. These approaches involve growing food in ways that conserve water.



Weather wise, not much has changed from the days of our ancestors, but they used vastly different approaches to dealing with the climate than we do today. Following are a few techniques used to conserve water on a TransFarm.

### **Wicking Beds**

Wicking beds have proven to be a viable solution to the Texas heat and water conservation. These simple structures, based on a raised bed garden, incorporate a reservoir underneath the bed to store water. The garden is watered through an exposed pipe which then wicks water upward through the soil to the roots where water is needed the most. There is minimal evaporation.



## Traditional Raised Bed Gardens

Traditional raised bed gardening involves selecting the correct structure and materials for a specific outcome based on environmental factors such as shading, sun path, wind direction and desired crop. Additionally, soil composition will play a very large part in crop success and water conservation. A simple small hoop house may be desirable to protect from direct sun and winter cold.



## Aquaponics

Aquaponics is the combination of aquaculture (fish farming) and hydroponics (soilless plant production). With Aquaponics, the nutrient-rich water that results from raising fish provides a source of natural fertilizer for the growing plants. As the plants consume the nutrients, they help to purify the water in which the fish live. A natural microbial process keeps both the fish and plants healthy, and helps sustain an environment where all can thrive. Both the plants and fish are harvested.



## HugelKulture

A HugelKulture is a type of raised bed garden that allows one to use organic materials that are too big to go in the compost. Over time, that is 3- 5 years, the materials in the bed decompose, and provide a slow release of nutrients for garden plants.

Because of its three-dimensionality, a HugelKulture raised bed garden combines the multiple functions of rainwater harvesting, catchment, and irrigation using no cistern, pumps, or pvc pipes. Done properly, there may be no need to water all summer!

