



SECOND CHANCES FARM LLC



INDOOR FARMING OF THE FUTURE

With 80% of Suitable Farmland Already in Use, the Only Way to Grow is UP!

By the year 2050, it is estimated that the world population will exceed 10 Billion people, 80% of which will be living in cities and urban areas. This substantial growth will require a 70% increase in crop production and 2.5 Billion new acres of farmland - larger than the area of Brazil. We are outgrowing our little green planet and need a new solution quickly.

Humans have been growing plants in water (**hydroponics**) almost as long as we have been growing them in dirt. Only in the last few decades, however, has technology caught up with this practice enough to support efficient and commercially viable plant production for human consumption.

Within the area of hydroponics exist a variety of methods, but all are based around the idea of using only water and nutrients (no soil) to grow

plants. Methods of hydroponics include "Deepwater," "Drip System," and "**Nutrient Film Technique (NFT)**". These are all just different ways of getting water to the roots of plants being grown.

Hydroponics can use **70 to 95% less water** than traditional, soil-based farming due to reduced evaporation and recycling water in a closed loop system. When coupled with modern innovations in structural technology and LED lighting, we get **vertical farming**.

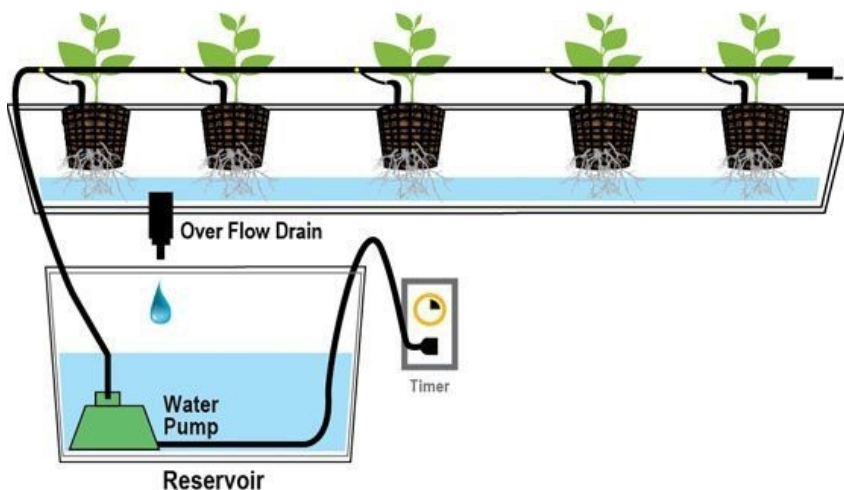
This seemingly futuristic twist on agriculture can be administered inside almost any building and can produce much more crop yield per square foot than conventional, outdoor farming. And right in your home town. Most fruits and vegetables come from more than 1,000 miles away and take a week or more to reach your plate. Vertical



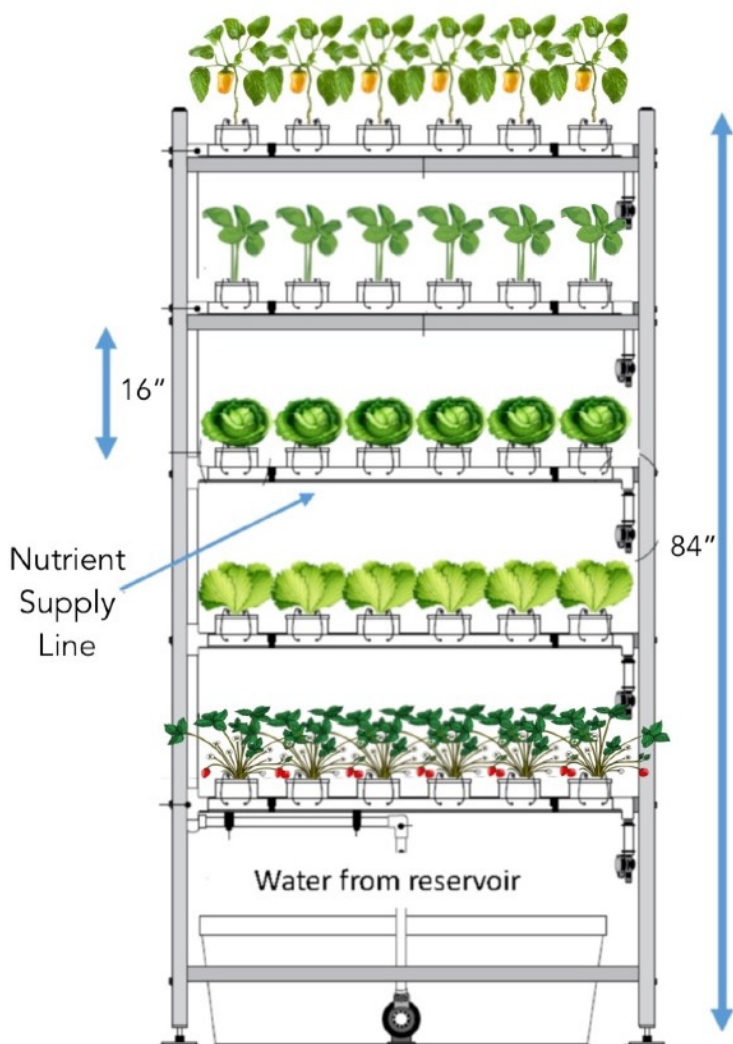
farms can be local and get to consumers in **24 hours or less!**

The truly extraordinary advantage of farming indoors is that we can grow and harvest **locally, 365 days per year**, in any climate, with absolutely **zero pesticides or herbicides**, making it the freshest, healthiest, and most nutritious **organic food** on earth.

The basic idea behind hydroponics involves growing plants in **just water** - no soil. Within these parameters, there are various ways to grow and reap a bountiful harvest, but most hydroponics systems work using the same basic principles: Plants are grown within some type of container, where water - with added fertilizer - can reach the roots and allow the plants to grow. Either natural or artificial light may be used to aid in the plants' process of photosynthesis.



Nutrient Film Technique, or **NFT** for short, is one of the most popular and effective methods of hydroponics used today. In **NFT**, plants are lined up in horizontal channels. Then water from a reservoir, with added nutrients, is pumped periodically through the channels, creating a thin film of nutrient-rich water that flows over the roots, allowing the plants to grow.



GROWING...UP

It has been estimated that 80% of the world's 10 Billion person population will live in urban areas by the year 2050, and just as skyscrapers were designed as a way to make more efficient use of urban space, so must be modern farms. This is where growing vertically becomes key for the future of agriculture.

With the ability to now stack plants like shelves in a factory, we are able to grow almost **100 times more** produce per square foot than traditional farms and even greenhouses. Rapid innovations in **LED lighting** and other tech continuously compound this rise in production, allowing for even more crop yield.

Although leafy greens are the simplest and most cost-effective plants for vertical agriculture, virtually any crops can be grown hydroponically. Some of the most common and capable hydroponic crops include: Lettuce, Kale, Basil, Strawberries, Peppers, Chard, Hemp, and many more.