

## SYSTEM OPERATIONS



### 1. Inspection and Cleaning

Water pumps, ventilation blower controls and switches, humidifier and etc. shall be inspected and cleaned to ensure system functionality and avoid contamination of the new crops.

### 2. Nutrient Preparation

The solution shall be prepared by mixing commercially available nutrient solution with water based, with ratio stipulated by each brand.

### 3. Monitoring and Circulation

Before transplanting, the pump circulation shall be ran to fill the growing racks with nutrient solution. Every day monitoring shall be done to ensure optimum level of solution, pH and TDS.

### 4. Transplanting

Each seedling shall be transplanted on a net pot and placed on the growing rack. Proper distancing of holes shall be secured to fit the net pot containing the vegetable.

### 5. Sytem Running

After transplanting, all components shall be turned on, allowing the system to run by itself until the crops are ready for harvest. The light will operate for 10 hours and pump circulation will run every hour for 15 minutes, while ventilation will function every 30 minutes for 15 minutes.

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# INDOOR HYDROPONIC FARMING

## CONTROLLED ENVIRONMENT AGRICULTURE

**CEA**, also known as **indoor farming**, is the practice of growing of crops while controlling certain aspects of increase yield per unit.



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## ADVANTAGES OF INDOOR FARMING

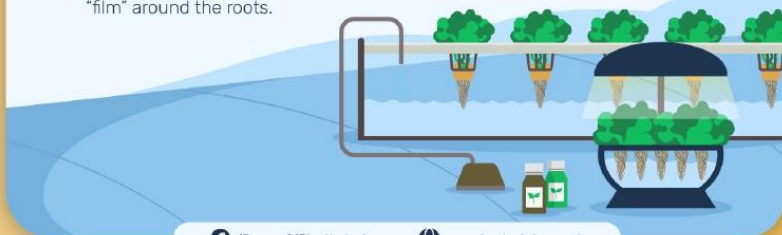
- Increase yield per unit
- Increase use efficiency on water and nutrient
- Avoidance of adverse condition such as rain or drought

## NUTRIENTS AND WATER (NUTRIENT SOLUTIONS)

Two common systems for providing nutrient solution to plants are the **Nutrient Film Technique (NFT)** and **Deep Water Culture (DWC)**.

**Hydroponics** is a method for growing plants without a substrate media. The roots of the plants are encased in a net pot or grow cup that is suspended from a lid with roots dangling in a liquid nutrient solution.

NFT systems are characterized by a permanent flow of nutrients in a thin "film" around the roots.



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## MANAGEMENT OF INDOOR FARMING

The indoor farming system follows the normal crop cultivation system, but on transplanting, seedlings are transplanted not on the prepared garden soil but on a nutrient solution.

### 1. SEED GERMINATION

Crops are germinated on either soil or other growing medium following normal seedling preparation. Seeds are spaced individually in preparation for easy-going transplanting.

### 2. GROWING AND MANAGEMENT

Seedlings are transplanted on a growing rack until ready for harvest.

### 3. SYSTEM OPERATION

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