How to make VERTICAL FARMING that uses 95% LESS WATER

Hydroponic models

Hydroponic models use 5-10% less water and lead to 20 times more harvest volume. In the crate system, the water flows from the main collection pipe and seeps from the first crate to the last, then it is collected at the bottom. In the vertical towers system, farmers plant their crops using perforated holes within a pipe.
At the bottom are mapal troughs that collect the water flowing within the towers, which is eventually recycled back into the system. Pouches are made with permeable material, so the water flows from one pouch to another all the way down and collected then recycled back to the main tank. An A-frame system has two models, first is where there is a supply on one end and collection on the other, second is the flooding system.

Types of hydroponic models

In the crate system, the water flows from the main collection pipe and seeps from the first crate to the last, then it is collected at the bottom. The water passes through a sieve then flows back to the main collection pipe and the recycling cycle continues. In the vertical towers system, farmers plant their crops using perforated holes within a pipe which has mapal troughs that collect the water flowing within the towers.
Pouches are made with permeable material, therefore the water flows from one pouch to another all the way down and is then collected and recycled back to the main tank. An A-frame system has two models, first is where there is a supply on one end and collection on the other, second is the flooding system.

Technology and hydroponics

Some of the aspects of technology integrated into hydroponic farming are smart water level sensors and monitoring gadgets.

Smart water level sensors update the farmer in real time on the percentage of their water left within the green house. The sensor also helps the farmer understand which kind of crop consumes more water.
A monitoring gadget is installed with sensors such as temperature sensor, light intensity sensor, humidity sensor, PH sensor, and water level sensor. The gadget captures real time data using the sensors and relays them to the back-end where the information is processed and sent to the farmer using SMS or USSD short code.

Advantages of hydroponics

Hydroponic models have a goal of maximizing the land space available to obtain maximum volume of harvest. As compared to open field farming, hydroponic models use 5-10% less water and lead to 20 times more harvest volume. Hydroponic models also have a 95% automation, which means that there is very little work for the farmer to actually do.
These models can also grow up to 70% of consumable crops eg kales, lettuce, basil, strawberries, and spinach. The technological aspects merged with hydroponics models allow the farmer to receive real time information on their crops , which is relayed to them using SMS or USSD short codes.