



**Healthy, Continuous, Environment Friendly**



## Every seed is a miracle

Being the foundation of life, a seed is indeed a miracle... A miracle small in size but great in capacity, sprouting and perishing as soon as we water it... An incredible miracle containing all the information of a plant, which determines its species, colour, shape and taste...

# FARMINOVA

## plant factory

It all began with a woman accidentally dropping a seed of wheat to the soil.

Around 10,000 years ago, fate of humanity dramatically changed with cultivation of wheat in southeast Turkey. Hunter-gatherer lifestyles were replaced with permanent settlements.

**We can neither feed the world through conventional agriculture nor keep our planet unpolluted**

The Industrial Revolution introduced modernization in primitive agricultural methods; therefore the second phase of agriculture began. However, with the huge upsurge in population growth following World War II, arable lands were cultivated uncontrollably to meet the growing need for food, along with the increase in the use of chemical fertilizers and pesticides. What did not pose a threat then is now causing big problems.

The third phase of agriculture began after greenhouse cultivation had been developed in the second half of the 20<sup>th</sup> century. And thus, more varied crops began to be produced in longer seasons and in smaller spaces.

By 2050, the world population is expected to reach 12 billion people, and agricultural lands are projected to diminish. On the one hand, conventional agriculture is trying to meet the world's food demand, but on the other hand, all those pesticides, fertilizers, and nutrients harm human health and the environment. Soil, water and air are polluted along with the food we consume, posing a big threat to the growing world population.

## THE HISTORY OF AGRICULTURE

### 1<sup>st</sup> PHASE

Traditional Agriculture

### 2<sup>nd</sup> PHASE

Industrial Agriculture

### 3<sup>rd</sup> PHASE

Controlled Agriculture

### 4<sup>th</sup> PHASE

Plant Factories, Agriculture 4.0





FARMINOVA  
aeroponic plant factory





## FUTURE FARM 4.0

But we can save our planet,  
by working for humanity and  
nature through Agriculture 4.0

We are bringing natural ways back to agricultural practices through Farminova Plant Factories by increasing the production and efficiency through green technology as never before. We are paving the way for farming in indoor-facilities to grow healthy and constant crops 7 days a week, 24 hours a day in any desired place and time without polluting the environment. Unlike conventional farming, we produce eco-friendly and sustainable plants with minimum use of water to yield high quality of products. We make the best of the miracle of seeds. We are going up to Agriculture 4.0, the fourth phase of agriculture.

## Plant factories, the future of agriculture, supports food security

“Food Security” becomes increasingly more important all around the world.

It needs to be ensured that people must have constant and affordable access to diversified and healthy food.

New technologies ensure food production in higher quantities with less effort in places where agricultural yield is difficult or not possible to get.

The agricultural practices, implemented with hydroponic methods in fully controlled environments, break new ground beyond imagination.



# Why Plant Factory?





## Chemical residues induce adverse effects

Use of pesticides and manures adversely affects the environment and thus crop yielding fields. Pesticides used for combating insects, herbicides used against weeds and fungicides used against fungal diseases threaten our health and also pollute the water resources.



## Our Water Supplies are Decreasing

While climate change increasingly shrinks fresh water supplies, conventional farming methods use up more water, and our underground water sources are running out.



## Agricultural lands are diminishing

Land allocated for residential and industrial purposes increases by the day. Impacts of rural to urban migration and poor farming practices are decreasing fertile and healthy farming land rapidly.



# Why Plant Factory?



## Our population is growing

80 million people are added to the current world population each year, and that means providing food for 800 millions new people in 10 years.



## Agriculture is a culture in itself. Not everyone can manage agricultural production

Agriculture and farming are a culture descending from father to son.

Rapid rural-urban migration and young people's reluctance to pursue agriculture cause this culture to disappear.



## Dealing with climate becomes increasingly difficult

The fact that greenhouse gases in the atmosphere have increased causes climate change.

And the biggest threat to agriculture is unanticipated weather conditions.

Having a primary impact both on the quality of harvest and prices of the produce, weather conditions put food security at risk.



## Pesticide-free agriculture is important

Organic and hygienic seeds are used at plant factories. Healthy food products that are produced in an area, where hygiene and sanitary controls are ensured, do not contain pesticides, herbicides and fungicides.



## Up to 95% of water saving

Plant factories require 85-95 % less water use compared to outdoor farming. The foods produced in hygienic environment are ready for consumption with no need for washing.



## Continuous and fixed cost product supply 24 hours a day throughout

### 365 days a year

Producing food crops in controlled conditions enables all types of leafy vegetables to be put on the market any desired time and the costs are always controlled.



## Shorter harvesting time

Since the conditions required by a plant are provided in the computer controlled system, harvesting times get shorter, the product quality increases.



## High productivity in small area

The amount of agricultural crops produced within an area of 8.000 m<sup>2</sup> with conventional farming methods can be obtained in an area of 500 m<sup>2</sup>.

Therefore, convenient plots, vacant warehouses and depots can be made available for farming.



## Longer shelf life

Pathogens do not have harmful impact on food crops produced through pesticide-free and natural way due to technical and hygienic methods used at plant factory. That is why plant factory products have longer shelf life compared to traditional agriculture products. In addition, they are more aromatic and tasteful.

# The benefits of plant factory

## You are in charge of your factory

Special software of your plant factory helps you control remotely all kinds of growth parameters. You can access to any detailed information from all over the world through either your mobile phone or computer.



**WATER**



**LIGHT**



**FERTILIZER**



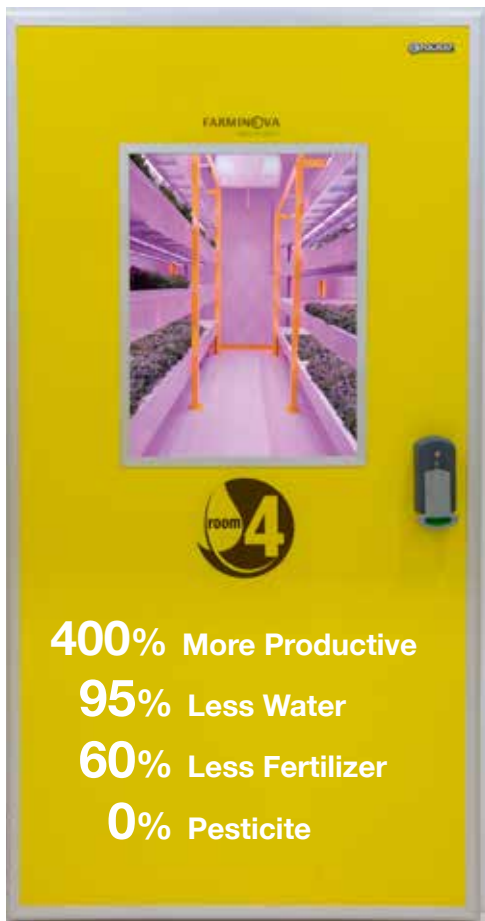
## All Investors will be producing agricultural products by investing at plant factories

Producing through almost fully automated systems at the Farminova Plant Factories provide great convenience for investors.

Investors will not have to deal with any pests, adverse climatic conditions, soil and chemicals, and since all these issues are handled at the very beginning, all that remains for investors to do is marketing their products.



LARGE VARIETIES CAN  
BE PRODUCED IN  
FARMINOVA PLANT  
FACTORIES





## GREEN LEAF PLANT



Green Curled Leaf



Red Curled Leaf



Red-Green Lettuce



Romaine Lettuce



Endive Lettuce



Spinach

## AROMATIC PLANT



Basil



Parsley



Rocket



Cress parsley

## FRESH HERBS



Fennel



Sage

## SPROUTS



Soybean Sprout,  
Sprout, Basil

## FRUIT



Strawberry

## MEDICINAL AROMATIC PLANT



Cannabis

## MICROGREENS



Curled Cress Seeds

# FARMINOVA

plant factory



# Plant Factory Project

## **PLANT FACTORY MODELS FOR** 1.000 - 20.000 Heads/Day Lettuce Production

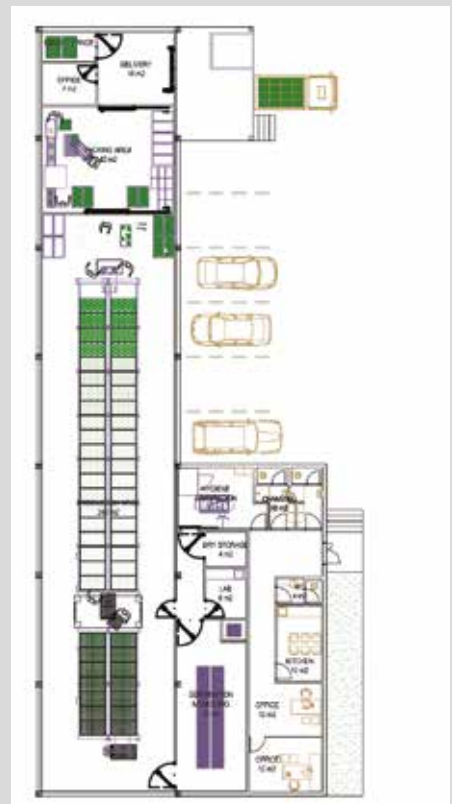


Production cost analysis of all plants which can be produced at Farminova Plant Factory, is determined in detailed manner. Thus, it is easy to prepare investment feasibility with exact market figures.





## BASIC PLANT FACTORY



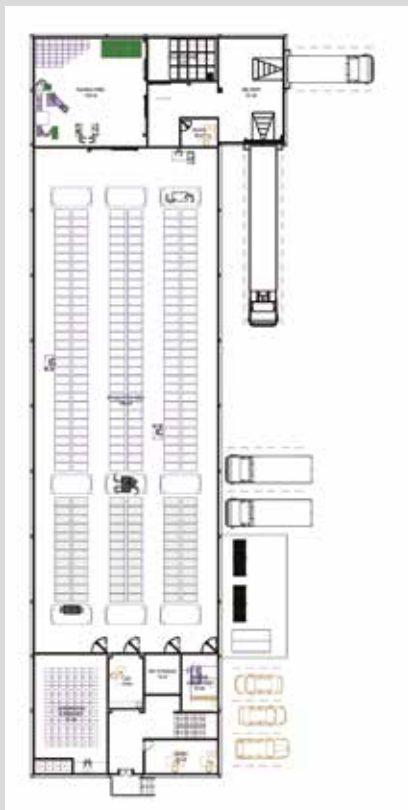
## 1.000 Heads/Day Lettuce Plant Factory





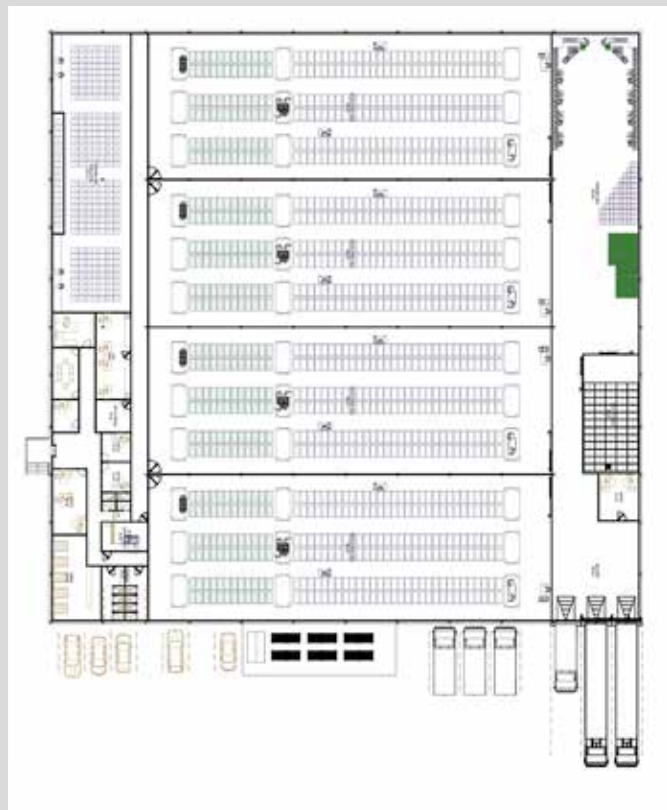
# Plant Factory Project

## CITY MODEL PLANT FACTORY



5.000 Heads/Day Lettuce Plant Factory

## METROPOLITAN MODEL PLANT FACTORY



20.000 Heads/Day Lettuce Plant Factory

### PLANT NUTRITION TECHNIQUES

- \*Aeroponic
- \*Hydroponic

### LED LIGHTING ALTERNATIVES FOR PHOTO-SYNTHESIS

Illumination between 150 - 300 micromoles

### OTOMATION SETTINGS

- \*Day/Night Conditioning
- \*CO<sup>2</sup> Setting
- \*Humidity Setting
- \*PH Control
- \*EC Control

### CONTROLLED CLIMATISATION

#### PLANT NUTRITION SETTINGS

#### REMOTE MONITORING



## PERFECT AGRICULTURE INVESTMENT

- \* Farming in any place, in every condition
- \* 365 days efficient production
- \* Always high product quality and best taste
- \* Minimum water consumption, up to %95 saving
- \* Isolation from adverse external impacts
- \* Easy and risk-free production



We are a big team of entrepreneurs, engineers and agriculturists composed of nature lovers, humanists and innovators. Through our extensive experience in food production, storing and processing practices, we have achieved an excellent job by contributing to agricultural revolution, future of humankind and food security.

We are establishing facilities to do indoor farming in controlled environments to provide SUSTAINABLE, HEALTHY AND ECO-FRIENDLY products for you and our planet regardless of your location in the world. Our delicious products will be consumed safely with no need for washing and will be offered to the world with more favourable conditions than conventional agriculture could ever offer.

by **CANTEK**  
INNOVATION IN FOOD SECURITY

**28 YEARS OF EXPERIENCE**  
**13.000 CLIENTS**  
**50 + COUNTRIES**



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