



Germina

GO ADAPTIVE

There's no planet B

In 2057 the global population is set to reach 10B.

In 2022 humanity already uses 50% of inhabitable land for Agriculture, while causing 60% of tropical deforestation by searching new soil for intensive cultivation. Critical resources of water, soil and fertilizer are being depleted, accelerating climate change.



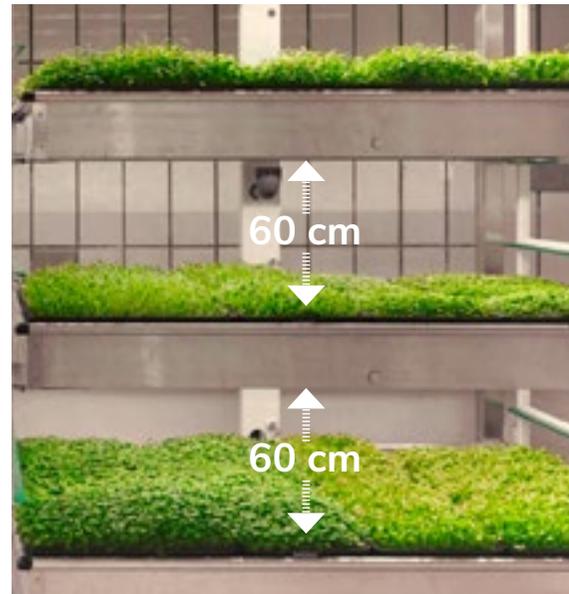
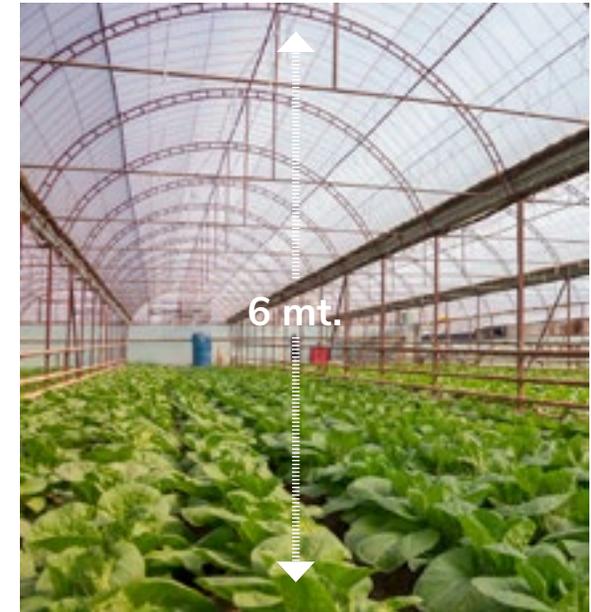
Time to move on

Agriculture needs a turn.

Traditional Greenhouses

Greenhouses manage a cultivation volume much wider than is actually needed.

Over 1M hectares worldwide are dedicated to greenhouses, incurring huge energy costs and pollution, due to the inefficient air volume conditioning related to the growth stage of plants.



Vertical Farm

Vertical farms waste up to 60% of energy consumption.

Fixed shelves are spatially inadequate for plant growth stages causing low production efficiency, high energy consumption and a deep impact on the environment.

Tailored to the plants

Made to fit the plants growth.



The Adaptive revolution

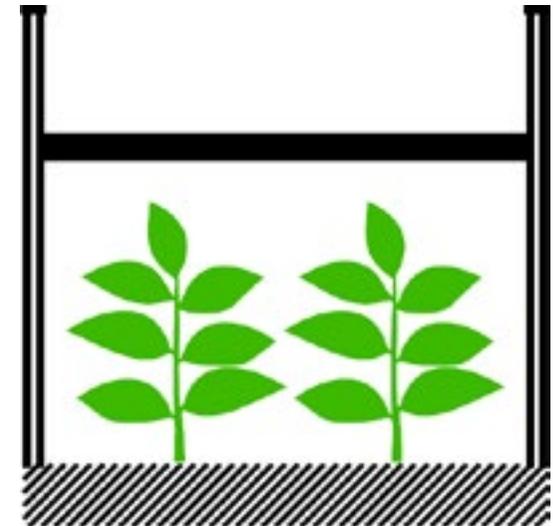
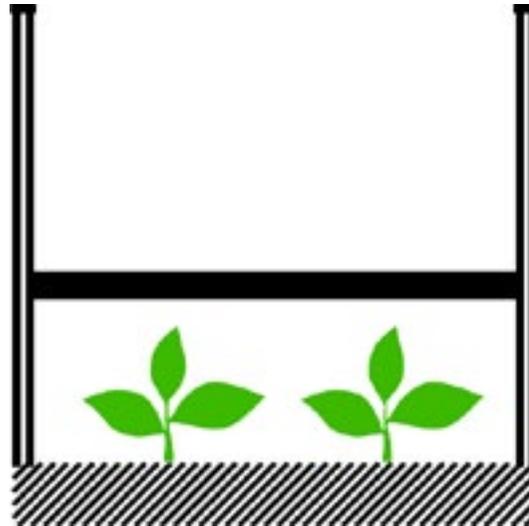
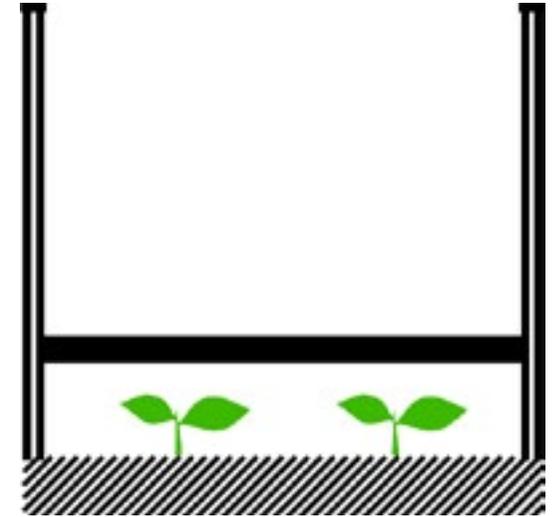
A turning point in Agrotech.

Germina's Patented Adaptive Systems overcome inefficiency and high operative cost of traditional agricultural systems, adapting the cultivation space to the plant's needs.

Every millimeter counts

Making the box adapt to the plant.

As any other living organism, plants require variable space from sowing to harvesting. Cultivation space must adapt to plants and not vice versa.





Application Scenarios

The Adaptive technology is applicable to several types of greenhouses.

It guarantees significant energy saving, increase in production yield and protection against pathogens and parasites.



AGF

Adaptive Greenhouse Farm

Typically, in traditional greenhouses a huge air volume is conditioned relative to the true needs of the plants, resulting in much higher production costs than actually required. On the contrary, in the Adaptive Greenhouse Farm only the air volume necessary for the plants is conditioned.

Maintaining optimal ambient parameters within the greenhouse additionally impacts on production cycles, production yields, energy consumption, environmental pollution and various maintenance costs.

AGF Main advantages

Compared to the use of Traditional Greenhouses is evidenced:

- 1** Significant decrease in airflow conditioning energy consumption.
- 2** Diminished environmental impact due to reduced energy needs.
- 3** Decreased maintenance costs of conditioning equipment.
- 4** Increased production yield due to optimal cultivation conditioning.
- 5** Cultivation space sealed from ambient space in which the workforce operates, therefore limiting exposition to pollutants or pathogens.



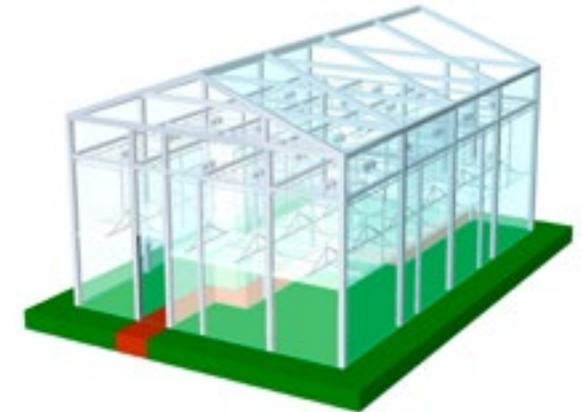
-83%
energy consumption



+25%
production yield



-46%
operational costs





AVF

Adaptive Vertical Farm

In Traditional Vertical Farms the cultivation shelves are fixed, causing a lower production level due to inefficient volume usage from sowing to harvesting. On the contrary, the Adaptive Vertical Farm through its vertical moving shelves optimizes production levels. Using cultivation volume dynamically, the Adaptive Vertical Farm permits an increase of production yield greater than 108% compared to a traditional one in the same timeframe.

AVF Main advantages

Compared to Vertical Farms is evidenced:

- 1** Significant increase of the production yield per volume unit in the same timeframe.
- 2** Seeding phase planned with AI software, allowing maximum production yield per unit of time.
- 3** Separation of cultivation shelves with possibility of creating distinct cultivation climates for heterogeneous and non coeval cultivations.
- 4** Important reduction of energy needs for cultivation climatisation.
- 5** Smarter usage of resources, encompassing soil and water.



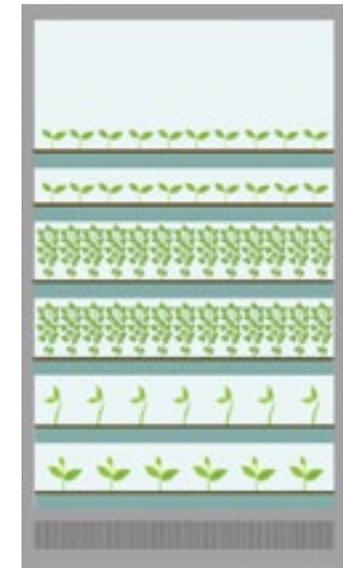
-43%
energy consumption



+108%
production yield



-35%
operational costs





AHC

Adaptive Home Cultivator

Home cultivators are an innovative commercial proposition for consumers. The performance of these home appliances is directly proportional to their production yield. Due to fixed shelves, the number of cultivations and crops per timeframe is scarce, rendering them inconvenient.

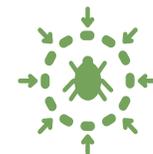
Germina is developing the first Adaptive Home Cultivator referred as HORTO for the consumer market. Currently in pre industrial stage.



+65%
cultivation area



+46%
production level



-78%
pollutants

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