



## APONIX VERTICAL BARREL

Vertical cultivation system / soil-less or substrate based

- Assemble ring segments from 6 compact parts.
- Each part is equipped with grow adapters to configure vertical cultivation area.
- Stack any number of ring segments into a barrel corpus.
- Add any number of barrels into a production line for your crop.
- Attach irrigation to each barrel, add pump, connect drain to reservoir.
- Grow high density lettuce, herbs and the like >60plants per sqm.



VERSATILE COMPONENT FOR FLEXIBLE AND SCALABLE SETUP OF GROWSPACE IN HYDROPONIC, AQUAPONIC OR SOIL-BASED OPERATIONS



**„WE ENABLE SMALL AND LARGE SCALE EDIBLE PLANT PRODUCTION FOR COMMERCIAL GROWERS AND PROSUMERS!“**

**Marco Tidona**  
Inventor and director at aponix

Aponix provides a usable, flexible, robust and high-quality vertical concept for setting up high density urban farming solutions.

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Substrate-based setup  
Raised bed alternative

Soil-less standing setup  
Single or multiple barrels

Soil-less hanging setup

Aponix is a project of Manticore IT GmbH, Heidelberg, Germany. Inventor/Owner/Grower: Marco Tidona



## HYPERLOCAL EDIBLE PLANTS

With excessive food miles on the majority of products, waste of resources and 1/3 going to waste on the way from harvest to table, it is time to rethink the way we grow and distribute edible plants.

With 1500 food miles on average and the limited varieties the consumer can choose from, production and distribution is no longer a sustainable option for the planet and the consumer's health.

Secure supply with high quality fresh organic food is more and more depending on efficient new growing methods. It will be critical to grow with high density, close to the consumer and in a circular and more sustainable way.

With its modular vertical barrel, aponix offers a vertically flexible base component for professional edible plant production, that can easily be integrated into existing hydroponic or aquaponic facilities much like a normal NFT, but with much higher plant density and vertical flexibility.

**URBAN FARMING** Organic food can be consumed fresh and full of vitamins and minerals, much less logistics involved, much less loss due to transportation of perishable goods from far away, no herbicides and pesticides needed, independence from seasons, 70-95% less water compared to soil based agriculture, possible regeneration of land for forests of former farmland, no over fertilized farm land, less contaminated ground water and oceans, no crop rotation necessary, much more dense and also mixed cultivation possible in soilless systems, new job opportunities in urban areas and cities and there are many more good reasons.

## MODULAR STACKABLE SYSTEM

The aponix barrel consists of stacked ring segments. Each ring segment is assembled using 6 parts that provide different grow adapters.



The reduction to as few parts as possible has many advantages over existing systems (\*see box ,advantages').

Depending on available height, one barrel can be stacked up flexibly high to max the number of available growspaces of your production.

Example: A barrel with 14 ring segments has a height of 2.30m including lid and stand and provides 168 single

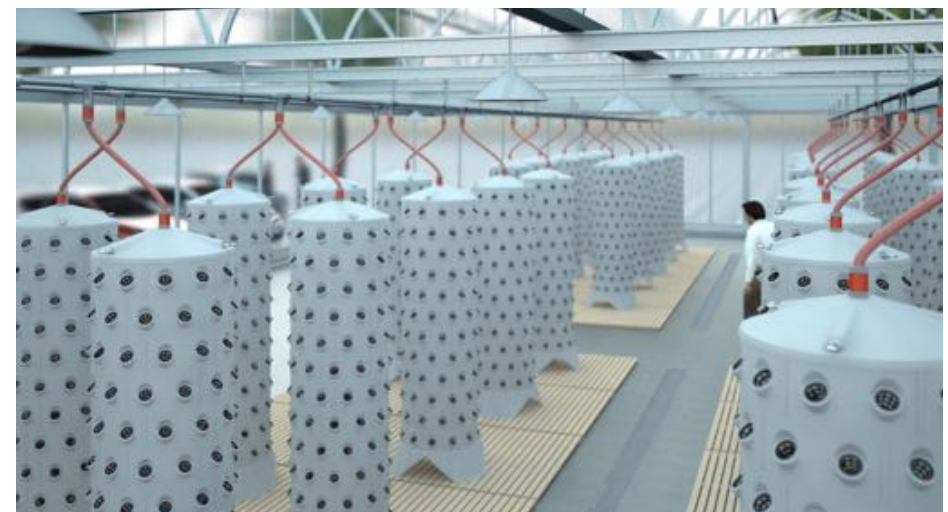


growspaces. Each growspace provides an insert for a standard 2-inch netpot carrying one or more seedlings.

## IRRIGATION FROM THE TOP

To provide the nutrients in a soil-less setup for your plants, each barrel is

connected to a nutrient circulation system via pressure pump with a central reservoir. Regardless of the individual-barrel height, a sprinkler or the filled waterbuffer distributes the liquid to the inside wall. While running down diverted exactly to all root areas by gravity, the liquid is feeding your crop.



## ADVANTAGES

- Simple and fast assembly and even disassembly of barrels.
- Simple and flexible scaling of growspaces.
- Compact storage and transport of parts when disassembled
- Easy integration into existing production systems.
- Robust for handling and regular high pressure cleaning.
- Flexible height and number of growspaces by stacking ring segments without requiring a rack construction.
- Standing or hanging version.
- Integrated irrigation - sprinkler, buffer or individual solution.
- High yield per available sqm/ cubic meter, cost effective, durable.
- Reduced water usage, soil-less.
- Suitable for greenhouses or indoor growing with artificial lighting.
- Color of parts can be adapted to corporate identity.