COMPONENT FOR FLEXIBLE AND SCALABLE SETUP OF GROWSPACE IN HYDROPONIC AND AQUAPONIC FACILITIES

APONIX BARREL – VERTICAL MODULAR GROWING COMPONENT

Discover the vertical growing barrel by aponix –
An alternative vertical NFT cultivation system for medium and large scale urban farming.

- Assemble ring segments from 6 1/6th parts.
- Stack ring segments into barrel corpus, add more barrels to your system.
- Attach irrigation to the top of each barrel, add pump, connect to your reservoir.
- Grow high density lettuce and herbs >60plants per sqm.

„WE CHANGE HOW AND WHERE SMALL VEGETABLES, SALADS AND HERBS CAN BE GROWN IN THE FUTURE!“

Marco Tidona
Inventor and director at aponix

Aponix provides the flexible, robust and cost-efficient solution for setting up high density urban farming systems.

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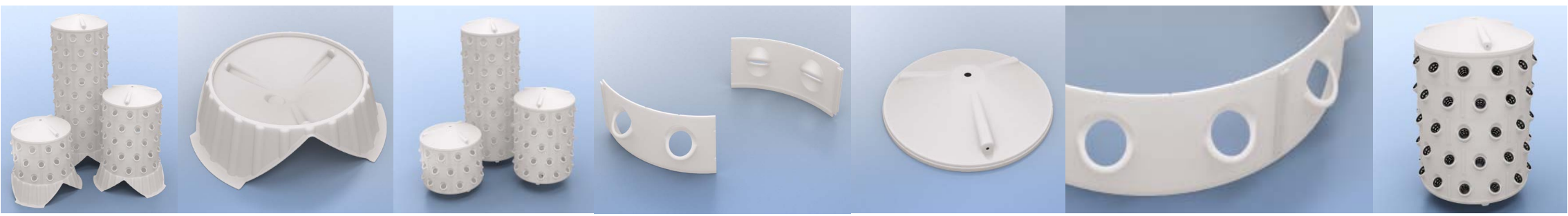


Aponix is a project of Manticore IT GmbH, Heidelberg, Germany. Inventor and director: Marco Tidona

INNOVATION BY APONIX

With increasing world population a comprehensive 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 exiting hydroponic or aquaponic facilities much like a normal NFT, but with much higher plant density and flexibility.

Modular Lego System

The barrel comes as hanging or standing version using 2-3 basic parts:

- A 1/6th part that can be assembled using 5 more parts of this kind,
- one universal lid, serving as top and bottom lid for the hanging version,
- stand serving as bottom lid at the same time.

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.

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

Vertical Cultivation

Each ring segment (consisting of 6 1/6th parts) has a diameter of 57cm, a height of 15cm and provides 12 growspaces.

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

Example: A barrel with 14 ring segments has a height of 2,3m incuding lid and stand and provides 168 single growspaces. Each growspace provides an insert for a standard 2" netpot caying one or more plants.

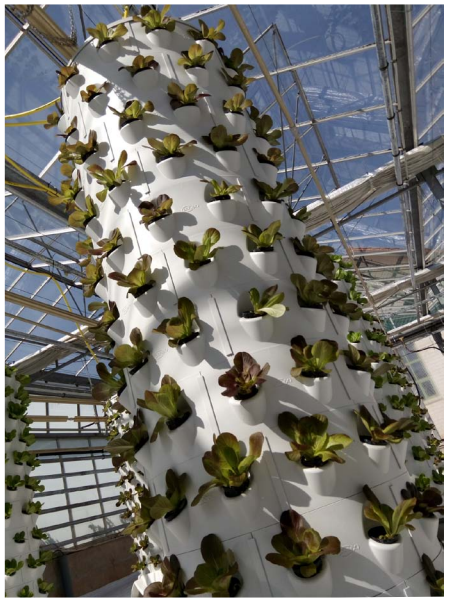
Other specialized adapters for the

1/6th part will be provided in the future.

Every growspace provides horizontal and vertical space of 15/30cm for each plant to mature until harvest. Just the right size for leafy greens and strawberries.

Irrigation from the Top

To provide the nutrients for your plants all barrels are connected to your existing nutrient circulation system via an additional pressure



pump, drawing liquid fertilizer from your reservoir. Either a spray nozzle or a simpler sprinkler create a drizzle inside each barrel to feed your plants.

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 or spray nozzle.
- High yield per available sqm/ cubic meter, cost effective, durable.
- Reduced water usage, soilless.
- Suitable for greenhouses or indoor growing with artificial lighting.
- Color of parts can be adapted to corporate identity.

EXAMPLE INTEGRATION INTO AN EXISTING PRODUCTION FACILITY