ROGER BUELOW, CTO

AEROFARMS®

Agricultural Outlook Forum

February 2022

AeroFarms Commercial Farm
Newark, New Jersey

Vertical Farm Technology in Agriculture

Innovating Vertical Farming at Scale for 15 Years

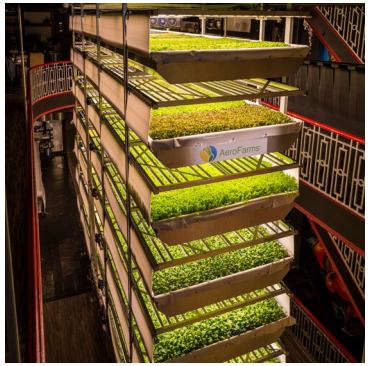
Understanding how innovation in vertical farming scales is important. Since its founding in 2004, AeroFarms has differentiated from the industry, proving its technology, testing innovation and evolving its design through five generations of farm models.

2004

Model 1

Model 1 farm launches with **first leafy greens sales**

2013



Technology update

Refines and **optimizes technology for commercial use**

2016

Large-scale farming

Builds world's largest vertical farm in Newark (including automated components) and begins large-scale farming

2019

Improvements

Improves grow towers and innovates in numerous **ancillary equipment** around the farm to reduce costs and improve major KPIs

2020

New projects

Achieves major KPIs at scale and announces new projects in Abu Dhabi and Jersey City

AgX facility in Abu Dhabi

2021 and beyond

Next commercial farm in Danville, Virginia

Scale and development

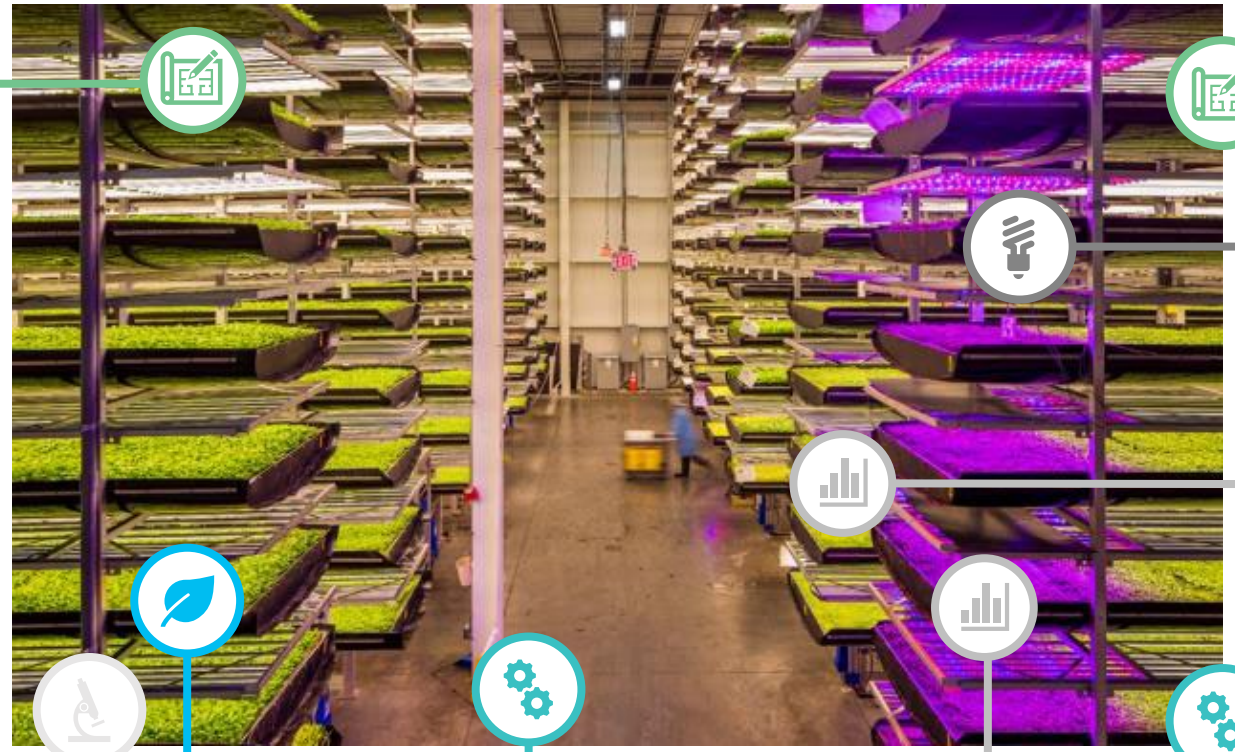
Construct **additional facilities** around the world, introducing **Model 5 and future generations of the farm model** to expand scale and improve farm-level unit economics

Components of the AeroFarms Technology Platform

Over the last 15 years, AeroFarms has systematically evolved its farm design through multiple generations of technology, de-risking key components of operations, reducing costs, and proving its ability to grow at scale.

Advanced grow towers

- **Aeroponic technology** allows plant roots to receive optimal amounts of nutrients, water, and oxygen
- Proprietary cloth grow medium is typically **reusable** and/or **recyclable**



Expertise in **HVAC and building design**

Unique **horticulture luminaire** and LED technology

Machine vision capabilities and AI-enabled drones co-developed with Nokia Bell Labs

Traceability and extensive library of 200+ **standard operating procedures**

Automated **nutrient delivery system**

Plant genetics, optimized for indoor plant growing

Automation across loading, unloading, seeding, growing, harvesting, packaging

Digital controls, including:

- **Integrated algorithm** for every stage of grow cycle (including custom lighting)
- **agSTACK** software with integrated PLC and SCADA systems

Vertical Farming Technology

UNPRECEDENTED ENVIRONMENTAL CONTROL

- Ability to provide the plants with optimized conditions

DEMONSTRATING PRODUCTION AT SCALE

- New Danville Virginia farm being built now is about 4x capacity of our Newark Farm, ribbon cutting later this year

CEA R&D LEADERSHIP

- AeroFarms SBIRs, working with USDA-ARS scientists, FFAR and PIP-funded research, building the largest vertical farming research facility in the world in Abu Dhabi

agSTACK Machine Vision

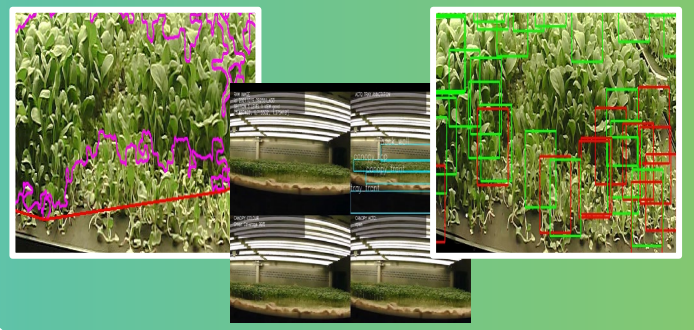
AeroFarms is working with Nokia Bell Labs to implement Machine Vision to monitor plant health in large scale farms.

Autonomous Drones Capture Daily Images

NBL LTE & 5G Technology Enables:

- Multi-Drone flight coordination to provide full farm coverage in 4 hours
- Fully autonomous flight with safety override
- Daily images of every flat throughout the farm

Machine Imaging Processing



Machine Vision Algorithms Identify Plant Health and Yield Prediction

Metrics Captured:

- Canopy Coverage Percentage
- Canopy Closure Date
- Plant Color
- Plant Spotting/Browning

New CEA Crops: Strawberries

Harvesting berries since

2017

Grown over

7,000

berry plants to date

Actively partnering with

8 leaders

in breeding, grow environment, horticulture, and sensory

Consistently achieving Brix[1] of 11

~1.5x

higher than the industry average of 6 – 8

[1] Measure of soluble sugar content

New CEA Crops: Blueberries

Multi-year blueberry and caneberry partner

Hortifrut

global business platform leader in berries marketing, distribution and production

New CEA Crops: Tomatoes

High-Value Nurseries: Growing Best Quality Young Plants

INDUSTRY CHALLENGES

- Nursery plants suffer from diseases and vary in quality
- Limited availability of plants – stressed by outdoor climate change and indoor grower expansion
- Breeders of a new variety are limited by speed and quality of nursery partners

CEA OPPORTUNITY

- Disease-free, robust nursery plants sold year-round to field and indoor farmers
- Faster release of new varieties to growers
- CEA Nursery plants for strawberries, tomatoes, hops and others

SPEED BREEDING & HIGH-VALUE NURSERIES

- Partnership with AB InBev

- AeroFarms R&D strawberry nursery to propagate disease-free, plug plants

- Partnership with Cargill for research focused on indoor cocoa production

Representing Our Platform With The World's Top Agriculture Universities

Greenhouse Lighting and Systems Engineering (GLASE)

AeroFarms is on the Industry Advisory Board member recommending research on controlled environment agriculture

Cornell University · Rensselaer · Rutgers

OptimIA

AeroFarms is a member of the economics committee and a member of the research advisory committee to focus on optimizing indoor agriculture for leafy greens production

The University of Arizona · Michigan State University · The Ohio State University · Purdue University

Lighting Approaches to Maximize Profits (LAMP)

AeroFarms is a member of the research advisory committee, working to maximize the ROI of lighting systems

Cornell University · Rutgers · UtahState University · University of Georgia · Colorado State University

Sky High Consortium

AeroFarms manages three projects funded by the PIP Consortium to study conditions for lettuce, strawberries and tomatoes in vertical farms

Wageningen University & Research

PRECISION INDOOR PLANTS CONSORTIUM

Adapting Crops to Grow in Indoor Environments

OVERVIEW

- Pre-competitive funding consortium
- Data sharing between companies
- Data release to build RFAs for public benefit (public institutions)

PIP PARTNERS

Aerofarms, GreenVenus, Benson Hill, Priva, BASF, Fluence Bioengineering

OTHER PARTNERS

Signify, Own Greens, GrowX, Rockwool, Certhon Build, Bosman Van Zaal, Van Bergen Kolpa Architects, Holland, Fresh Forward, Solynta, Unilever Innovation Center Wageningen, Amsterdam Institute for Advanced Metropolitan Solutions, NWO

FOCUS

- Browning
- Accelerated growth w/o tip burn

FOCUS

- Tip burn
- Speed breeding
- Photoperiod & diel cycle
- Much more…

FOCUS

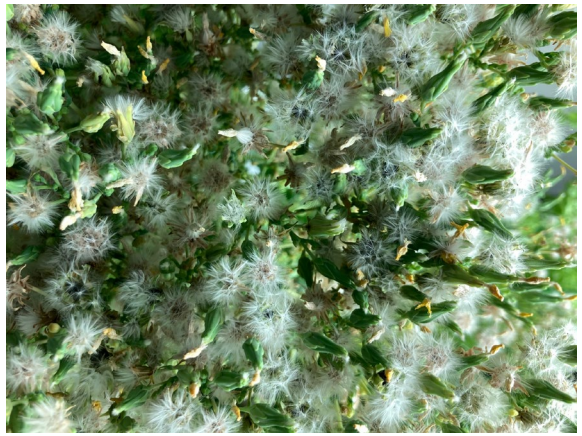
- Flavor
- Architecture
- Announced 01/2022

FOCUS

- Premium Flavors
- Released 10/2021

Important Collaborations with USDA and FFAR

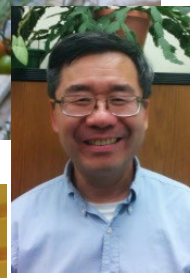
FFAR



PIP new lettuce genetics

The AeroFarms team on a FFAR Harvest

USDA



USDA Research Plant Pathologist – Kai-Shu Ling

AeroFarms joins project collaborators at Cornell, OSU, UDC, and other universities, as well as NASA, FFAR, Department of Energy, and other USDA agencies, including Office of Chief Scientist, APHIS, and NIFA on USDA-ARS Grand Challenge Advisory Board.

USDA Research Plant Geneticist – Kim Lewers, Agreement to trial her new strawberry with novel tropical flavor

USDA Food Quality Lab / Environmental Microbial and Food Safety Lab – Yaguang “Sunny” Luo, Collaborating on CEA food safety and nutrition

2022 R&D Priorities: Partner Ready

CORE FOCUS AREAS

- Building farms to scale CEA production of leafy greens and microgreens
- Commercialization of CEA strawberries

EXPLORING NEW CROPS

- Blueberries
- Tomatoes
- Peppers
- Cane Berries

NEW TECHNOLOGIES

- Tunable Light and Environmental Recipes
- Extending AI and Machine Learning
- Pollination and Harvest Automation
- Circular Production and Energy Efficiency

NEW MODELS FOR AGRICULTURE

- High-value nurseries for clean plants to growers
- Use CEA environmental control to understand impacts of climate change
- Community farm units to bring fresh produce production to communities