



Floraponics & Grateful Gardeners

Scaling Year-Round Premium Floriculture

$2.5M Seed Presentation

Gemini Notebook

THE BROKEN $30B FLORAL SUPPLY CHAIN

The US floral market is collapsing under carbon costs, transit times, and an inability to deliver premium product.



80% IMPORT RELIANCE

The vast majority of stems are flown via jet freight from South America (Colombia/Ecuador to Miami).

THE TRANSIT PENALTY

7-10 day delays and heavy cold-chain shrink cause massive product loss.

THE UN-SHIPPABLE VOID

Delicate, high-margin varieties (like Dahlias and Ranunculus) physically cannot survive international air freight without being crushed.

The Solution: Year-Round CEA Local Flower Production

Zero-discharge indoor aquaponics delivering fresh, un-shippable premium blooms 365 days a year.



Climate Independence

Moving high-margin, delicate floriculture indoors to eliminate seasonal harvest windows and weather risk.

Zero-Discharge

A true, closed-loop ecosystem with zero chemical runoff.

EV Local Loop

Delivering via local EV routes within a 50-100 mile radius, cutting carbon emissions to just 0.05-0.15 kg CO2e/stem.

ESG & Carbon Impact

Eradicating the carbon footprint of international air-freight.



The Problem

Over 80% of U.S. cut flowers are imported from South America, generating 3.0–4.5 kg CO_2e per stem across 3,000km of jet freight and cold chain.



The Floraponics Transit Loop

Cultivated locally in zero-discharge aquaponics and delivered via solar-charged EVs within a 50–100 mile radius.

The Impact Metrics

0.05–0.15
kg CO_2e per stem

95–97%
total emissions cut

813 Metric Tons
of CO_2e avoided at the 20,000 sq. ft. seed-scale facility

Proven Commercial Demand: Grateful Gardeners



$1.5M+ Historical Sales

Proven, sustained revenue in the commercial floral market.



200+ Cultivars Grown

From seed to bloom, deep agronomic expertise in premium varieties.

B2B & D2C Dominance

A fiercely loyal customer base spanning commercial florists and direct-to-consumer buyers.

How Our Technology Supercharges Flower Margins

Our proprietary tech stack acts exclusively as an internal OpEx reducer, allowing us to grow flowers **year-round** at **import price parity** with 60%+ gross margins.



OxyMatic™ Nanobubbles

Stops Pythium crop loss; chemical-free pathogen suppression.



BSFL Circularity

Upcycles plant waste to insect meal, eliminating $15k in fish feed costs.





SSU Waste Valorization

Turns waste sludge into Class A Bio-Mineral Fertilizer.



Agrivoltaics

Offsets land and facility energy costs, subsidizing overhead.

De-Risked by Institutional Capital

The fundamental science and R&D are already proven and paid for.

Current Phase ($2.5M Seed Ask)
Unlocks purely commercial scaling and facility infrastructure.

Early Equity ($350,000)
Backed by Family, Friends, & Angel Investors

Non-Dilutive Grants ($1,000,000+)
Backed by competitive funding from TEDCO, MARBIDCO, SARE, and the USDA.

Floraponics Achievements & Progress

Demonstrated operational success across aquaponic biological integration, root health, premium floral yields, and facility scaling.

SYSTEM & ROOT BIOLOGY



Aquaponic & Root Integration

- Closed-loop nutrient recycling with live aquatic fish ecosystem integration.
- Proven deep-root architecture and rapid nutrient uptake rates across cultivars.
- Zero synthetic chemical fertilizers or environmental runoff in primary system operations.

FLORAL HARVEST & QUALITY



High-Value Cut Flowers

- Successful commercial harvest of premium Dahlias and specialty Lisianthus crops.
- Exceptional bloom size, vibrant color saturation, and extended post-harvest vase life.
- Multi-crop validation proving high yield density for wholesale B2B channels.

FACILITY & SCALE



Greenhouse Operations

- Operational commercial greenhouse with automated environmental controls.
- High-density plug tray propagation for rapid crop rotation cycles.
- Modular blueprint established for seamless expansion into regional growing hubs.

Strategic Growth Blueprint: The UrbanStems Partnership Model



D2C Supply Chain Dominance

Building regional supply hubs near major metro areas to supply D2C giants reliant on vulnerable imports.

Exclusive Un-Shippable Stems

Providing exclusive access to delicate, high-margin blooms (Dahlias and Ranunculus).

Hyper-Freshness

Guaranteeing 24-48 hour farm-to-door delivery, radically extending consumer vase life.

Floral Production & Unit Economics

Master layout of a single 20,000 sq. ft. Floraponics Hub



Shade-to-Bloom™ Agrivoltaics

1-acre array over hydrangeas = $142,000/yr ($108k flowers + $34k energy offset).

Indoor Aquaponic Zone

12 active grow benches yielding 72,000 Dahlia stems/yr = $288,000/yr.

Outdoor Season Extension

Twin hoophouses + field cultivation = $250,000/yr.

SageGreens

12 active grow benches = $288,000/yr.

Aquaculture

Tilapia harvest = $35,000/yr.

Target Market & Consumer Trends

Gen Z and Millennials are actively opting out of carbon-heavy imports for sustainable, domestic blooms.



$30B Global Flower Market

A massive legacy industry ripe for domestic disruption.



65% Domestic Preference

Consumers explicitly prefer American-grown flowers when available.



The Sustainability Premium

62% of buyers are willing to pay a 10%+ premium for locally sourced, sustainably grown flowers.



Carbon Footprint Reality

Imported stems generate 3.0-4.5 kg CO2e per stem. The market demands a cleaner alternative.

Institutional Validation & Leadership

Executed by commercial founders; fortified by world-class university science.



Sarah Daken, J.D. (CEO & Co-Founder)

The Commercial Executor.

Legal background (Montgomery County Attorney). Founded Grateful Gardeners, growing 200+ organic cultivars and scaling revenues past $230k/yr. Drives B2B sales, market penetration, and brand scale.



Dr. Tom Precht, Ph.D. (CTO & Co-Founder)

The Systems Architect.

Ph.D. in Neuroscience/Pharmacology. Lead researcher publishing the first commercial aquaponic dahlia data. Secured $500k+ in competitive AgTech grants (TEDCO, MARBIDCO, SARE).

Dr. Allen Place, Ph.D. (Professor, IMET/UMCES)

Metagenomics & Biological Validator.

Over 350 publications. Translates his marine biology and RAS feed expertise into high-throughput 16S/ITS microbiome sequencing to scientifically validate the OxyMatic and BSFL IP.



Dr. Jose-Luis Izursa, Ph.D. (Professor, UMD ENST)

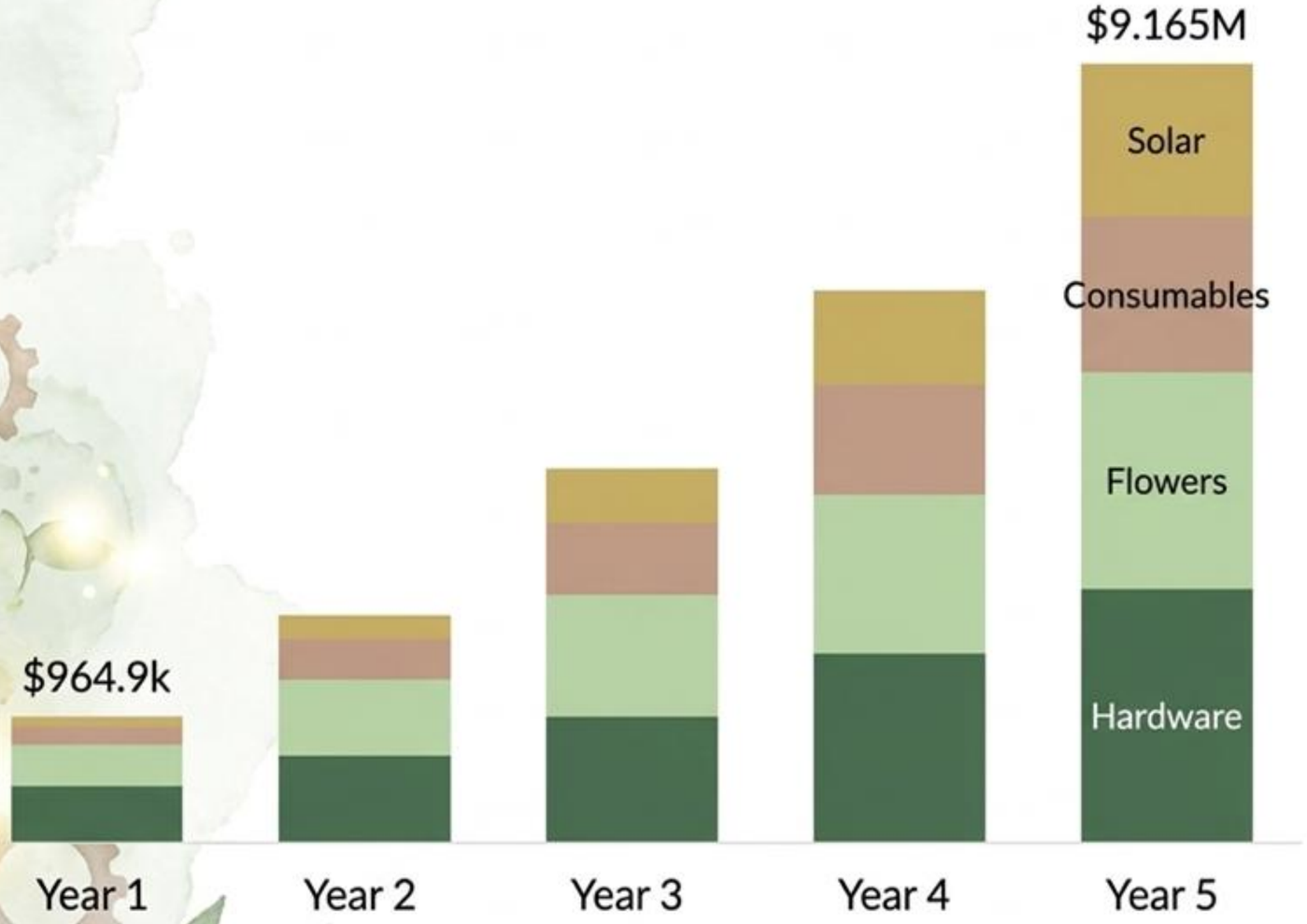
Ecosystem Modeling & Extension Engine.

Leads the UMD Aquaponics Initiative. Provides institutional research advantage by executing regional field trials, ecosystem modeling, and tapping into established grower extension networks.



Gemini Notebook

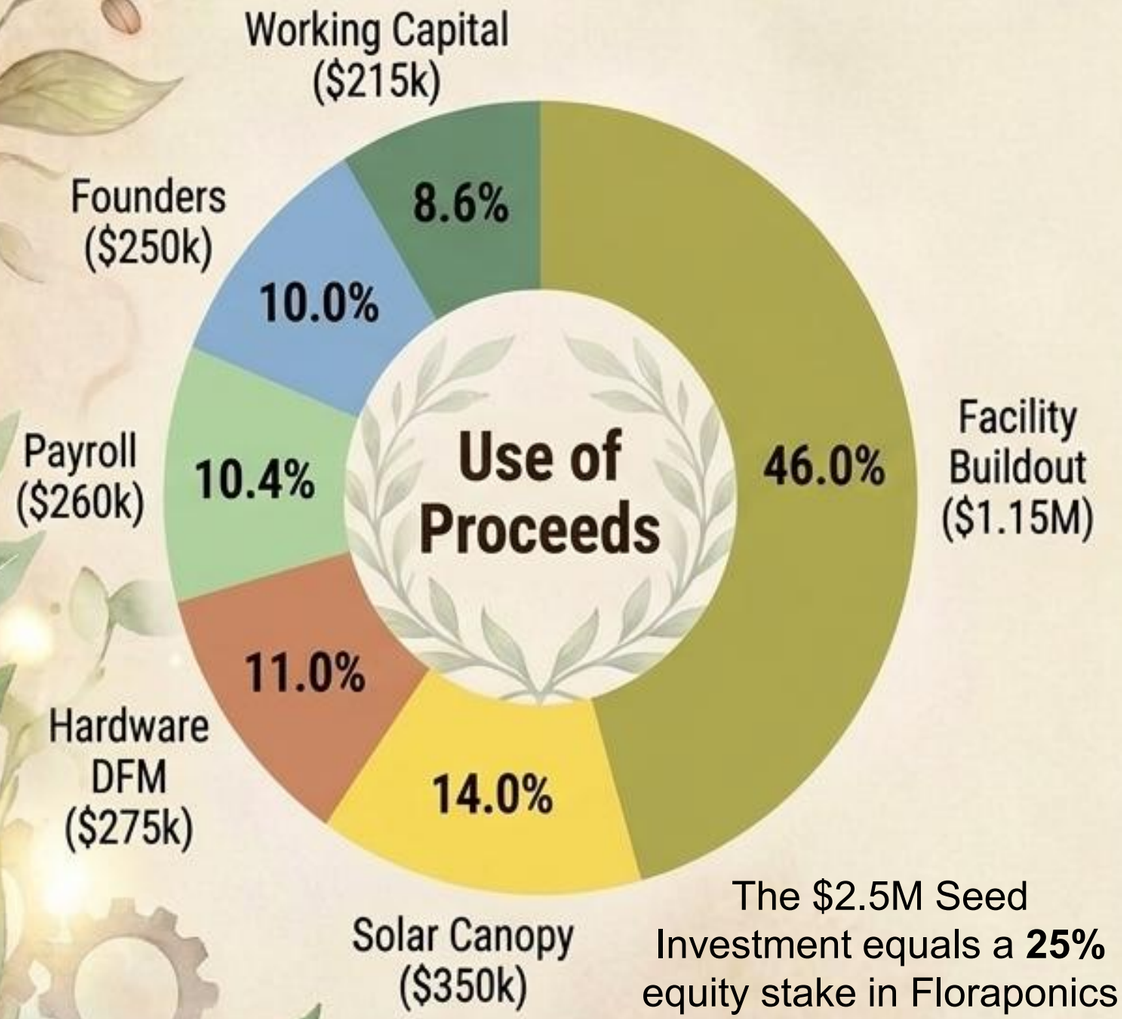
5-Year Financial Pro Forma



The Output

Blended system margin reaches 68% by Year 5 due to circular OpEx offsets, generating $4,505,000 in EBITDA, driven by expanding floral production hubs.

$2.5M Capital Ask & Exit Strategy



The $2.5M Seed Investment equals a **25%** equity stake in Floraponics

Strategic M&A Exit in 5-7 Years

Targeting a $30M to $75M Valuation



Ag & Inputs

Targeting BMF fertilizer IP & indoor floral market share.

Renewable Energy

Targeting Shade-to-Bloom dual-use zoning blueprints.

Water OEMs

Targeting zero-discharge hardware IP.