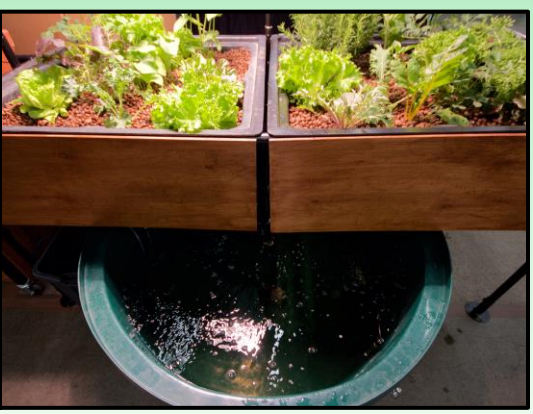
THE Aquaponic SOURCE™

Growing Fish and Plants Together

Products and Services Catalog — 2018 —

Order Online – **TheAquaponicSource.com** Sales & Support – **(855) 285-4252**

Learn • Build • Grow



Aquaponic Systems – Classes – Supplies – Consulting

About Us

We are farmers, educators, and engineers who have a passion for growing healthy food, conserving resources, and improving our planet for future generations. Our team has been dedicated to developing aquaponic systems and solutions for residential, school, community, government, non-profit, and international projects since 2009. We pride ourselves on providing our customers honest and accurate information based upon our experience, industry knowledge, and research in the field.

Owners, Tawnya & JD Sawyer

"Locally grown, sustainable food is the foundation to healthier eating, healthier lifestyles and healthier more vibrant communities"

JD Sawyer

What is Aquaponics?

Aquaponics is the marriage of aquaculture (raising fish) and hydroponics (growing plants in soil-less media). **By combining both systems, aquaponics capitalizes on the benefits and eliminates the drawbacks of each.** The fish waste provides a food source for growing plants, and the plants and nitrifying bacteria naturally filter the water for the fish.

Aquaponics is an integrated and balanced system using the by-product of one species to grow another, mimicking a natural ecosystem.

Aquaponics Fast Facts!

- **Water Wise:** Aquaponics uses **90% less water** than soil-based agriculture – water is continuously recirculated
- **No petro-chemicals:** Aquaponics can't use synthetic fertilizers or pesticides, that would be harmful to the fish
- **Highly Nutritious:** Same day harvesting, no-GMO's, great quality fish and plants
- **Scalable:** Fits into a variety of spaces, from countertop up to full-scale farms
- **Less Risk:** No soil-borne diseases like eColi, Salmonella, no fish contaminants
- **Increased Production:** Greater crop yields since plants receive nutrients and water
- **Very Low Maintenance:** Self-watering, no weeding, tilling or composting
- **Accessible:** Waist High Gardening!

Maximize Your Growing Potential!

Aquaponics in Schools

Aquaponics inspires and engages students with the core STEM (Science, Technology, Engineering and Math) concepts through aquaponic curriculums, the Aquaponic Gardening Book, and online courses content. These resources go great with our full line of aquaponic systems!

The Aquaponic Source has been providing aquaponic systems and educational resources to schools since 2010.

Why Should We Teach Aquaponics?

- Aquaponics is a vitally important way for us to grow food now and for future generations.
- By teaching students sustainable food production, we are creating awareness about where food comes from, making nutritious food choices and the benefits of eating healthy and locally.
- Food can be grown directly in our schools and communities – providing access to nutritious food, creating jobs, and eliminating the huge carbon footprint associated with food transportation miles.

"The aquaponic system is a huge hit here. The kids can't wait for science class. Great product, great service, Thank You!"

-William McGeehan, Adaire Elementary School

Food Miles – A Typical Meal

The Food	Common Place of Origin	WASD*
Tilapia	China, Ecuador, Indonesia	7,626 miles
Salad greens	US, Mexico, Canada	2,055 miles
Tomato	US, Mexico, Canada	1,369 miles
Herbs	US, Mexico, Turkey	3,456 miles
Strawberries	US, Mexico, Chile	1,944 miles

16,450 Food Miles

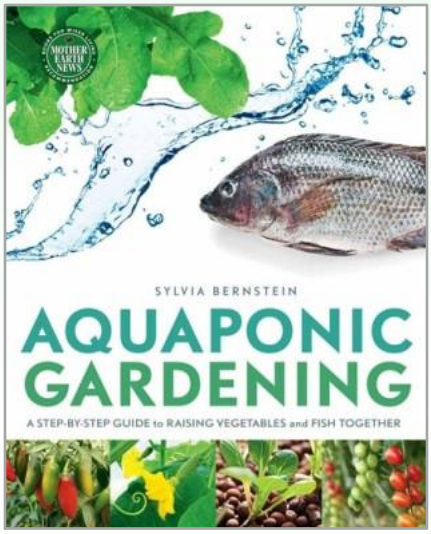
*Weighted Average Source Distance –A single distance figure that combines information on the distances from production to point of sale and the amount of food product transported. - Leopold Center's Food, Fuel and Freeways report, data for Chicago

Aquaponics in Schools

Teaching Tools for Educators

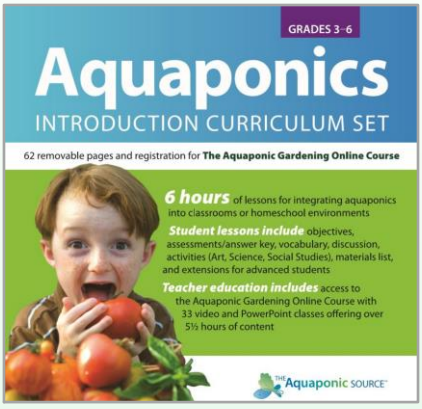
Aquaponics & Education

- Aquaponics is a valuable hands-on teaching tool for core STEM subjects
- **Biology** – Study living ecosystems by observing the interaction of fish, plants, and bacteria
- **Chemistry & Math** – Perform water quality tests and measure growth rates in fish and plants
- **Economics, Marketing, & Nutrition** – Business principles, crop sales, health and wellness

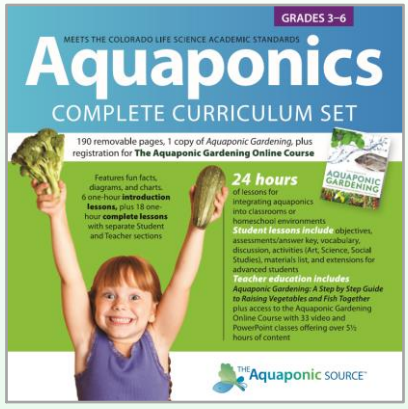


Grades 7 thru 12 Aquaponic Gardening Book
288 pages, 84 photos and diagrams, soft cover
$29.95

Aquaponic Gardening Book with Companion Online Course
5.5 Hours of online instruction - **$59.95**



Grades 3 thru 6 Introductory Curriculum
62 pages - 6 hours of lessons and online course
$99.95



Grades 3 thru 6 Full Curriculum Set
190 pages - 24 hours of lessons, plus online course and Aquaponic Gardening Book
$249.95

Aquaponics Classes

Taught at our farms in Denver, CO!

Basics & Build

- Basics & Build is designed for people new to aquaponics and considering building their own aquaponic system but don't know where to begin
- This class offers detailed instruction of the system components and activities necessary to build and maintain an aquaponic system
- Learn the tricks of the trade and how to grow diverse and abundant crops year round indoors or seasonally outdoors

Aquaponic Immersion

- This two day class will take you through the initial planning process, crop rotations, harvesting your fish, and much more
- Together, we will build our state of the art AquaBundance Modular System to demonstrate the process and learn each step
- We tour two aquaponic farms, discussing the design, construction, and management for greater understanding of aquaponic systems. We will discuss their benefits, costs and how they are serving the community

Online Course

- A comprehensive aquaponic gardening training based on our bestselling *Aquaponic Gardening* book
- The most comprehensive aquaponic gardening training you will find anywhere
- 5.5 hours of organized, fascinating learning content
- 33 streaming videos with PowerPoint "mashup" presentations
- 12 "diving deeper" articles
- 2 downloadable handy tracking charts

THE Aquaponic SOURCE™ Growing Fish and Plants Together

www.TheAquaponicSource.com

Taught at our farms in Denver, CO!

Aquaponics Classes

Greenhouse Design

- A 2 day course teaching passive solar greenhouse design and aquaponic system planning and operations
- Learn how to cut down on energy costs while achieving maximum production from your system
- Learn how to leverage the "greenhouse self-heating" phenomena with the Ground to Air Heat Transfer (GAHT) system

The Farming Course

- The Aquaponic Farming and Business Course is built from years of experience designing, building, and running aquaponic farms
- The 4 day training is for individuals, families, or organizations considering aquaponic farming as a viable business opportunity
- A deep dive into advanced system design, operations, business, financials, farm management, marketing and sales, food safety, greenhouses, monitoring, controls and so much more...

Farming Course Materials

- Can't come to Denver to take our class? Now you can purchase the course materials
- A 250+ page binder with all of the course slides, planning worksheets, resources for your farm, log files, and a glossary of terms, full color laminated plant disease and pest identification guides
- A huge and constantly updated electronic resources library we use daily when working in our farms
- A financial and production planning electronic workbook for developing your business plans

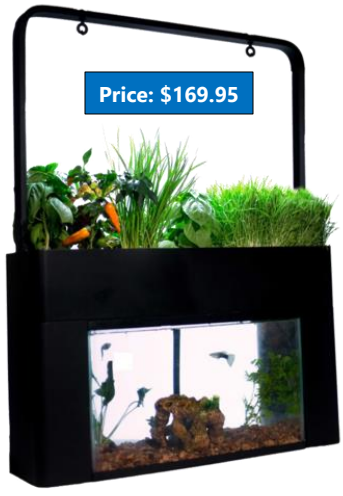
Aquaponic Systems

Countertop Systems

Aquaminiums

- A perfect solution for anyone who wants to brighten their home with both fish and plants.
- Purchase two half-moon tanks to create a complete moon!
- Wick-based, self-watering plant containers absorb the water and nutrients from the aquarium below. Through capillary action, plants will absorb as much water as they need through the wick
- Grow flowers or herbs above a beautiful Beta fish habitat
- LED light illuminates the fish tank and creates great ambiance

Price: $59.95



Price: $169.95

Aquasprouts Garden Kit

- A perfect way to bring aquaponics into your home, school, or office. AquaSprouts teaches the science of an ecosystem, while providing food production
- Grow bed, light bar, and tank housing designed to fit a standard 10 gallon aquarium (tank sourced locally, grow light sold separately)
- Handy tip: 1" of fish per gallon of tank water

Springworks Microfarm

- The Springworks MicroFarm converts any standard 10 gallon aquarium into an indoor garden by harvesting the power of aquaponics.
- A highly productive countertop aquaponic system
- Comes complete with grow bed, media, and light. Just add the 10 gallon fish tank, plants, fish and your ready to start learning and growing

Price: $249.95

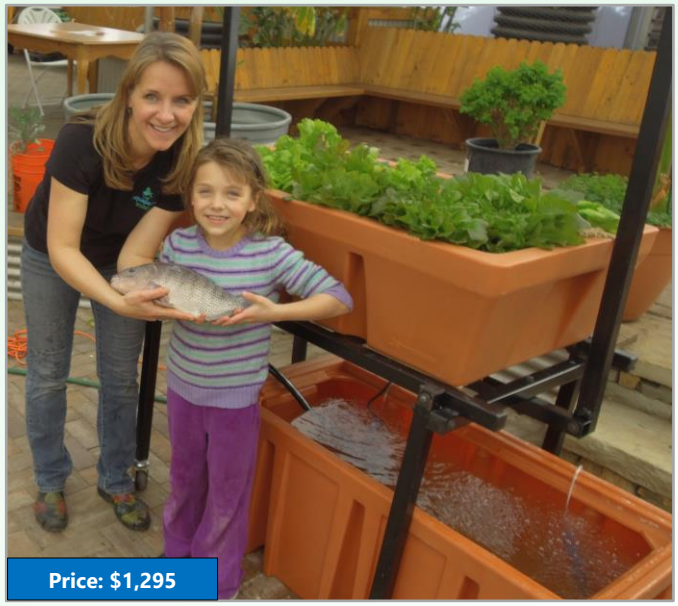
Aquaponic Systems

Small Home Systems

AquaUrban™

AQUAPONIC SYSTEMS FOR MODERN LIVING

- The AquaUrban is a compact system that is high quality, attractive, easy to assemble, and easy to use – all at an affordable price!
- Perfect for both outdoor and indoor use
- Equipped with a 60 gallon fish tank and media-filled grow bed with stand
- Optional light rack for indoor growing
- Comes with everything needed to get growing out of the box
- Attractive terracotta color highlights greenery



AquaUrban Dimensions: 50"L x 28"W x 43"H (w/o light rack)

The Harmony Home Aquaponic System

- Fish tank can raise up to 20 adult fish at a time
- Two 3x3' growing beds with expanded clay media
- Powder coated black metal frame and light bar trellis
- Plumbing uses Qwiklok fittings. No glue required
- Custom grow bed paneling options available
- Easy to follow 3D instructions and assembly video

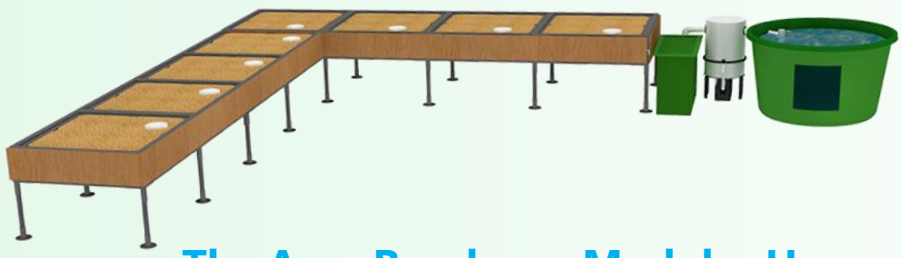
Home & School Aquaponics MADE EASY!

Harmony pictured with birchwood paneling

83" long, 40" wide, 39" tall (no light rack) 99" tall (with light rack)

Aquaponic Systems

The AquaBundance™ Modular System



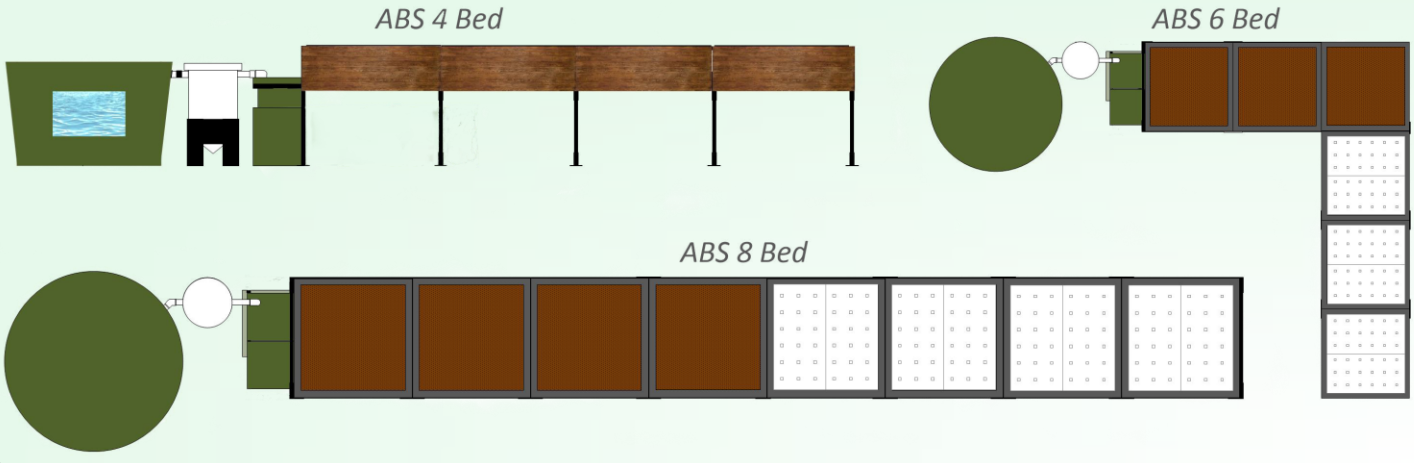
AquaBundance™
FOOD-GROWING AQUAPONIC SYSTEMS

The AquaBundance Modular Home system gives you the flexibility to fit any space, and grow with both Media and Deep Water Culture beds in the same system!

Key features of the AquaBundance Modular System:

- Modular design allows for 3 to 8 growing beds – either in a straight line or "L" shape
- System can utilize both media and deep water culture beds for increased crop variety
- Heavy duty powder coated black metal frame with optional light rack
- ADA Compliant, 30" waist-high beds, no weeding or bending over
- Spiral Flow Filtration System™ for better nutrient availability with less maintenance
- Low wattage pump with low energy consumption and optional backup oxygen system
- All plumbing fittings prebuilt with Qwiklok connectors – No cutting or gluing!
- Installation services available
- **Try our online system builder to configure your own system and see production estimates**

Maximum Customization
For Maximum Production



Aquaponic Systems

The AquaBundance™ Modular System

Optional Extras

- **Custom wood paneling –** We can create custom paneling to cover and insulate grow bed frames on the AquaBundance and Harmony systems. Contact us for a full range of design options
- **Light hanging rack/trellising bar –** Use the light bar to turn any indoor space into a productive garden (grow lights sold separately), or use bar to trellis vining crops
- **Grow light packages –** We carry a full range of grow light solutions to fit your needs and budget. From T5 fluorescents, to ceramics, and LEDs, we can get you growing anywhere
- **AquaBackup Oxygen System –** Essential for off-grid backup power and protecting your fish in case of a power outage. Please see the DIY section of this catalog for more information about AquaBackup
- **Fish Tank Window Kit –** Install a window on your tank to get the best view of your fish
- **Easy-Reach Deep Water Culture™ Trough –** Want to increase production of your AquaBundance system? Take a look on the next page to learn how to add one of our elevated Easy-Reach deep water culture options

Aquaponic Systems

Deep Water Culture Aquaponics

Easy-Reach DWC™ Troughs

- Work at a comfortable height of 31" (ADA compliant)
- The Easy-Reach DWC™ is 4, 6 and 8 ft wide with lengths in increments of 4 ft (8 ft minimun)
- Easy to assemble! No gluing or cutting metal or special tools
- The best way to grow leafy greens, herbs, and more
- Built with heavy duty powder coated metal frame and high-strength Dura-Skrim liner
- Optional light rack available
- Easily connects into any of our Aquabundance systems. Contact us for a design today

Tawnya transplanting in the 4 x 24' Easy-Reach DWC™ at Dahlia Campus Farms

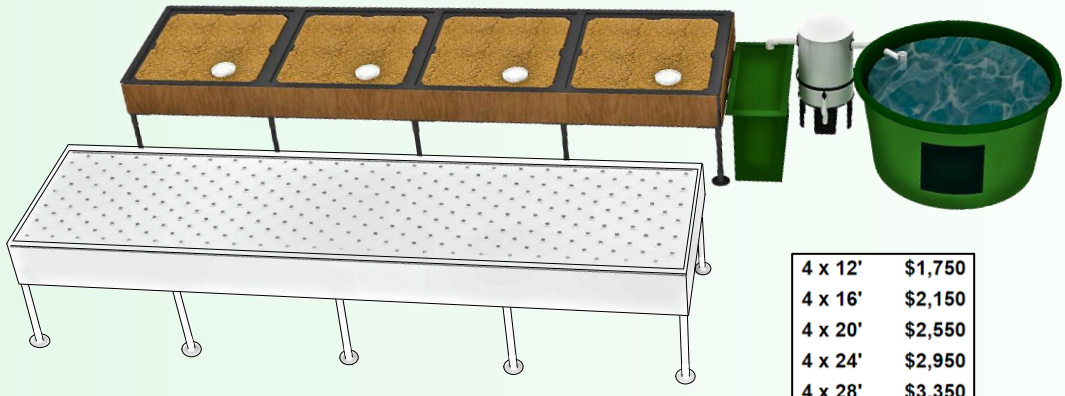


Illustration: 4 x 16' Easy-Reach DWC™ with 4 media bed AquaBundance System

4 x 12'	$1,750
4 x 16'	$2,150
4 x 20'	$2,550
4 x 24'	$2,950
4 x 28'	$3,350
4 x 32'	$3,750

All of our Easy-Reach DWC™ systems come complete with the framing components, installation instructions, food grade raft boards, liner, liner clips, and end walls for bulkhead attachments.

Flourish DWC™

Ground Level Troughs

- Troughs are 4 ft or 8 ft wide by 14" high with lengths in increments of 4 ft (8 ft minimum)
- Tremendous production of leafy greens, herbs, and more
- Systems are built from high strength metal framing and heavy-duty Dura-Skrim liner
- DWC ground mount systems can be installed on any level surface
- No special tools required
- Contact us for a quote

Three 8x64' Flourish DWC™ Troughs at Buttercrunch Farms Eagle, CO

Three 8x76' Flourish DWC™ Troughs at Dahlia Campus Farms Denver, CO

Farm Scale Aquaponics

The Flourish Aquaponic Farm™- 23'x40'

Designed by Farmers for Farmers

- After years of aquaponic farming, we design our farms to meet your goals, while creating the greatest food growing opportunities. We focus on maximizing plant production while minimizing wasted space and energy consumption.

- The farm comes with all of the tanks, media beds, plumbing components, filtration system, multi-deck nursery, Easy Reach Elevated DWC™ trough, 8' x 28' deep water culture trough, aeration and plumbing equipment to fit perfectly in the greenhouse space.

A Highly Productive, Efficient, and Diverse Aquaponic Farm Designed to Flourish!

Rendering shows the Flourish 23' x 40' Aquaponic Farm in a Ceres Passive Solar Greenhouse with an east - west ridge line.

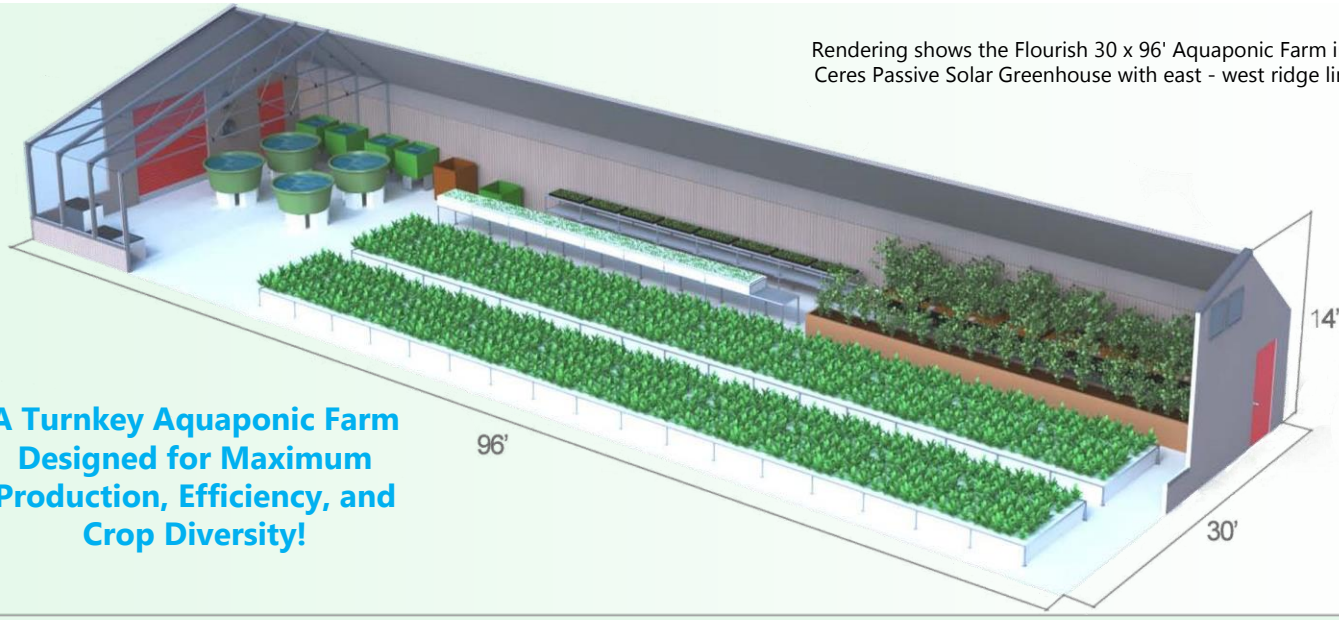
Farm Production Estimates

- **200 lbs of fish annually** - Assumes Tilapia in a two tank rotation with a max stocking density of .5 lbs per gallon with a 40 week growout period
- **230 heads of leafy greens weekly from DWC** – Assumes lettuce, kale, chard and other common greens. 1,400 total planting spaces with an average 5 week transplant to harvest period
- **200 microgreen flats annually** – Assumes 8 microgreen trays planted with a two week seed to harvest period
- **540 lbs of tomatoes seasonally** – A variety of other crops may be desirable but this estimate assumes media beds are fully dedicated to tomatoes. One tomato plant per 4 sq ft with an average seasonal yield of 40lbs per plant

Actual production results will vary depending on available light, system management, water quality, temperature, plant and fish species, humidity and other factors that will influence plant and fish health and growth rates.

Farm Scale Aquaponics

The Flourish Aquaponic Farm™ - 30'x96'



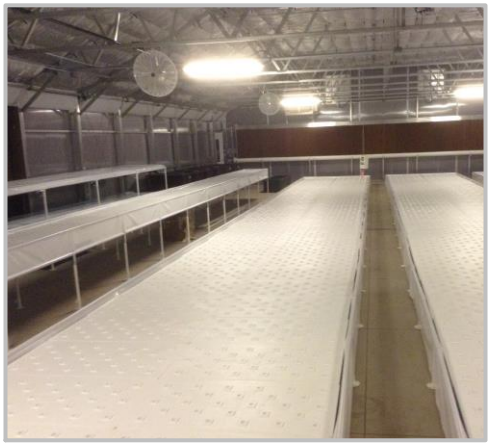
Rendering shows the Flourish 30 x 96' Aquaponic Farm in a Ceres Passive Solar Greenhouse with east - west ridge line.

A Turnkey Aquaponic Farm Designed for Maximum Production, Efficiency, and Crop Diversity!

Features of the Flourish Aquaponic Farm™ 30' x 96'

- Two 8' x 72' deep water culture troughs (DWC) totaling **1,152 square feet** of total production space - **substantially more** than other kit systems in the same footprint
- Four 300 gallon fish tanks allow for a staggered stocking of fish for a steady and predictable harvest. Fish don't need to be moved from tank to tank which alleviates stress
- The **DWC system** is excellent for leafy greens, lettuce varieties, and high value herbs
- The **two deck nursery and Easy-Reach Elevated DWC transplant trough** are designed to work in an optimum rotation with the DWC troughs so the system is producing the highest quantity of produce every week
- Food grade raft boards from Beaver Plastics, and Dura-Skrim liner is used for DWC troughs.

A flexible use ebb and flow trough can be used for bag culture or additional DWC



- Efficient Design
- Production Driven
- Resilient Systems

THE Aquaponic SOURCE™ Growing Fish and Plants Together

www.TheAquaponicSource.com

Farm Scale Aquaponics

The Flourish Aquaponic Farm™ 30'x96'

Where to Farm

Aquaponic farming has become increasingly popular for family home and hobby, schools, retirement centers, housing developments, non-profits, business campuses, restaurants, hotels and anywhere food can be connected with community, here and around the world.

System Decoupling

The fish and plant systems can be easily decoupled from each other should the need arise to run the fish system independently from the plant system. The filtration system is designed to support the mechanical and biological requirements for the fish. The plants can then be grown hydroponically.

A highly productive Flourish Aquaponic Farm combined with an energy efficient Ceres Passive Solar Greenhouse is the ultimate in local, profitable and resilient food production

Production Estimates

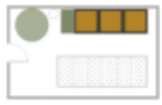
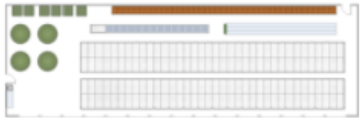
- **1,000 lbs of fish annually** - Assumes Tilapia in a four tank stocking rotation with a maximum adult stocking density of .5 lbs per gallon
- **800 heads per week** - Assumes popular lettuce varieties such as Romaine, Bibb or Green Star lettuce. Many other leafy greens and herbs can be produced such as; kale, swiss chard, mustard greens, basil, mint and collards
- **900 microgreen flats annually** - Assumes 36 microgreen trays planted with a two week seed to harvest period. Many varieties are possible
- **1300 lbs of Tomatoes seasonally** - A variety of other crops may be desirable but this estimate assumes media beds are fully dedicated to tomatoes. One tomato plant per 4 sq ft with an average seasonal yield of 40lbs per plant

**Actual production estimates can vary substantially depending on many factors such as: environmental control, temperature, humidity, pest management, water quality, overall system management, species selection, market forces, planting rotation, product handling, nutrient dynamics, available light and more.*

Aquaponic System Comparison

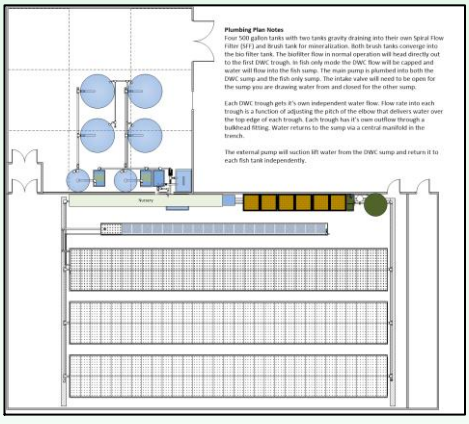
Small Home Systems							
Name	Fish Tank (gallons)	Fish Stocking	Planting Area (sf)	Dimensions (LxWxH)	Produce Estimates	Price	
Aquaminium	1	1 Beta Fish	3x3"	6" x 6" x 10"H	Single plant - decorative	$59	
AquaSprouts	10	8 to 10 aquarium fish	1.5	20" x 11" x 15"	6 to 8 herbs and greens a month	$169	
SpringWorks	10	8 to 10 aquarium fish	1.2	20" x 11" x 13"	6 to 8 herbs and greens a month	$249	
AquaUrban	60	5 to 8 adults	9.5	50" x 28" x 43" (w/o light bar)	90 lbs of tomatoes or 210 heads of lettuce	$1,295	
Harmony	125	10 to 15 adults	18	83" x 60" x 39"	180 lbs of tomatoes or 420 lettuce heads	$1,795	
AquaBundance Modular	DWC and Media growbeds can be mixed in any combinations with a minimum of 2 media beds. Add $150 for an L shaped configuration						
Name	Fish Tank (gallons)	Fish Stocking	Planting Area (sf)	Dimensions (LxWxH)	Produce Estimates	Price	
3 bed	200	10 to 15	27	18' x 54" x 30" (w/o light bar)	270 lbs of tomatoes or 650 lettuce heads	$3,895	
4 bed	200	15 to 20	36	21.5' x 54" x 30" (w/o light bar)	360 lbs tomatoes or 860 lettuce heads	$4,495	
5 bed	200	20 to 25	45	25' x 54" x 30" (w/o light bar)	450 lbs of tomatoes or 1080 lettuce heads	$5,095	
6 bed	200	25 to 30	54	28.5' x 54" x 30" (w/o light bar)	540 lbs of tomatoes or 1300 lettuce heads	$5,695	
7 bed	200	30 to 35	63	32' x 54" x 30" (w/o light bar)	630 lbs of tomatoes or 1500 lettuce heads	$6,295	
8 bed	200	35 to 40	72	35.5' x 54" x 30" (w/o light bar)	720 lbs of tomatoes or 1725 lettuce heads	$6,895	

Aquaponic System Comparison

Flourish Small Family Farm Systems					Connect an elevated deep water culture (DWC) to your AquaBundance Modular System (greenhouse not included)		
Name	Fish Tank (gallons)	Fish Stocking	Planting Area (sf)	Dimensions (LxWxH)	Produce Estimates	Price	
Flourish 12 x 20	200	25 to 30	27 sf media 48 sf DWC	12 x 20 sq ft greenhouse	270 lbs of tomatoes and 1600 lettuce heads	$5,995	
Flourish 12 x 24	300	30 to 35	36 sf media 64 sf DWC	12 x 24 sq ft greenhouse	360 lbs of tomatoes and 2200 lettuce heads	$6,995	
Flourish 12 x 28	300	35 to 40	45 sf media 80 sf DWC	12 x 28 sq ft greenhouse	450 lbs of tomatoes and 2800 lettuce heads	$7,995	
Flourish Farm Systems			Full production farm scale systems for maximum growing potential				
Name	Fish Tank (gallons)	Fish Stocking	Planting Area (sf)	Dimensions (LxWxH)	Produce Estimates	Price	
Flourish 23 x 40	2 x 300	200 lbs annually	54 sf media 288 sf DWC	23'x40' greenhouse	540 lbs of tomatoes, 12,000 heads and 200 microgreen flats annually	Contact us for Quote	
Flourish 30 x 96	4 x 300	1000 lbs annually	120 sf media 1,152 sf DWC	30'x96' greenhouse	1300 lbs of tomatoes, 40,000 heads and 720 microgreen flats annually	Contact us for Quote	

Adult fish are considered approx 1.5lbs such as Tilapia, Catfish, Trout, Bluegill, Bass, Koi

Production estimates are highly variable and depend on temperature, light, water quality, rotation management and other factors affecting plant growth



Custom Home & Farm Systems

Standard AquaBundance™ or Flourish Farm™ system doesn't fit your space?

No problem!

Contact our design team and we will come up with a solution for any space!

Design, Build, and Support Services

Why Custom Design – Build Solutions?

While we have several pre-engineered solutions, many times your goals, space, and budget require something unique. Our approach is to make sure that you have a system that meets your needs. To do this, we have developed a unique farm design program to create an ecologically balanced aquaponic system at any scale. We ensure that your system is based on a wide range of research, industry best practices, sound design principles, and our aquaponic farming experience.

Our Process

❂ **Requirements Gathering** - We will listen to your goals and objectives and gather important information about your project

❂ **Concept Design** - We develop a conceptual plan for the system and work with you to ensure it aligns with your goals gathered in the previous phase

❂ **Design Development** - Once we agree on the concept we develop the design to finalize equipment locations, plumbing, sub floor trenches, pumps, aeration, energy requirements, and more. This phase allows us to create a plan that we can finalize the project budget and build from.

❂ **Pre Construction Coordination** - Work in this phase involves coordination with owners, architects, and contractors to prepare project schedules, attend planning meetings, and begin the equipment procurement process. We will also create a system startup and production schedule so we can establish milestones and deliverables for seeding, transplanting, and first harvest.

Consulting Services

Installation - We offer the option of providing a project supervisor who can oversee your team or we can provide our own installation team to cover all aspects of the aquaponic system construction. Installation timelines and resources will be determined during the design development phase and pre-construction phases.

System Startup - Startup involves the initial fill of the system, testing flow rates, functionality, inspecting for leaks, and initiating the nitrification cycle. Properly cycling will prepare your system for the safe introduction of fish and plants.

Training - We provide onsite training for your farm team as well as classes for farm management and operation at our training center in Denver, CO

Support - Once you are up and running we offer data tracking, monitoring, and support solutions to help answer questions and to make sure your farm is functioning properly

Financial and Value Analysis

We've tied our farm design system into our financial software which can generate financial pro forma scenarios which are important for making an informed decision regarding your investment. This helps you to determine important factors such as projected net income, internal rate of return, produce and fish production, seasonal pricing variations, energy consumption, and startup costs.

As part of the financial analysis we will:

- Estimate capital costs for the aquaponics system and facility
- Project plant and fish revenue based upon the production plan for selected fish and plant species
- Estimate operating costs, cash flow, breakeven and other aspects of financial feasibility
- Identify technical, financial, and market risks associated with the project
- Provide an estimated rate of return on investment
- Highlight opportunities that will improve financial viability

Pro Forma Income Statement - 4 Year

Income	Year 1	Year 2	Year 3	Year 4
Produce Sales	57,467	85,686	88,256	90,904
Fish Sales	241	2,888	2,975	3,064
Misc - Other income	-	-	-	-
Total Sales	**57,707**	**88,574**	**91,231**	**93,968**
Fixed Costs				
City and County Entitlement	-			
Site Development	-			
Greenhouse - Other Structures	141,720			
Aquaponics System	48,000			
Total Fixed Costs	**189,720**	-	-	-
Variable Costs				
Aquaponic Parts and Supplies	1,087	1,087	1,087	1,087
Fish Feed and Supplies	1,538	1,538	1,538	1,538
Seeds, Plants, Media	4,887	4,887	4,887	4,887
IPM Supplies	1,175	1,175	1,175	1,175
Greenhouse Supplies (disposables)	389	389	389	389
Product Packaging	1,121	1,121	1,121	1,121
Lease				
Utilities	3,022	3,022	3,022	3,022
Employee Training				
Payroll	30,000	30,000	30,000	30,000
Insurance - Workers	1,536	1,536	1,536	1,536
Charitable Contributions		-	-	-
Bad Debts/Writes Offs		-	-	-
Advertising/Marketing		-	-	-
Professional Services		-	-	-
Bank Fees		-	-	-
Debt Service (use loan calculator)	9,679	9,679	9,679	9,679
Total Variable Costs	**54,434**	**54,434**	**54,434**	**54,434**
Net Income	(186,447)			
Net income not including capital outlay	3,273	34,140	36,797	39,534

Internal Rate of Return over 10 years	**10.97%**	Calculates the internal rate of return on an investment based on a series of periodic cash flows.
Assumes average of returns yrs 2 - 4)		

Net Present Value	**$252,159**	NPV considers the time value of money;
Discount Rate	5.00%	translating future cash flows into today's dollars
Initial Investment	189,720	and provides a concrete number that managers
Pos/Neg Result	62,439	can use to easily compare an initial outlay of cash against the present value of the return.

Contact us today so we can discuss your project and help you get started!

Filtration Systems

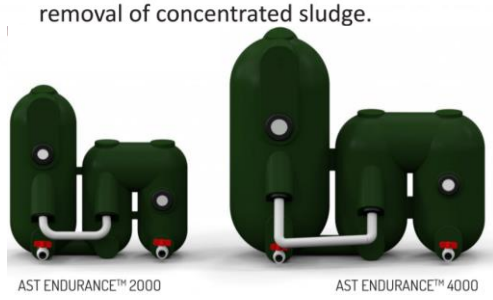
Endurance™ Series Filters from AST™

The new AST Endurance™ Series is designed for long lasting, hands-off operation. The auto-pneumatic backwashing paired with the auto sludge removal feature, enables this unit to operate for extended periods of time without intervention.

AST Endurance™ filters are ideal for tanks or ponds sizes of 500-4000 gallons. The low profile makes the filter suitable for either an airlift or pump configuration. The air driven backwash limits the water loss to the removal of concentrated sludge.

AST™ ENDURANCE™ SERIES

Model	Price	Crating Charge
ED2000	$999.00	$30.00
ED4000	$1349.00	$50.00

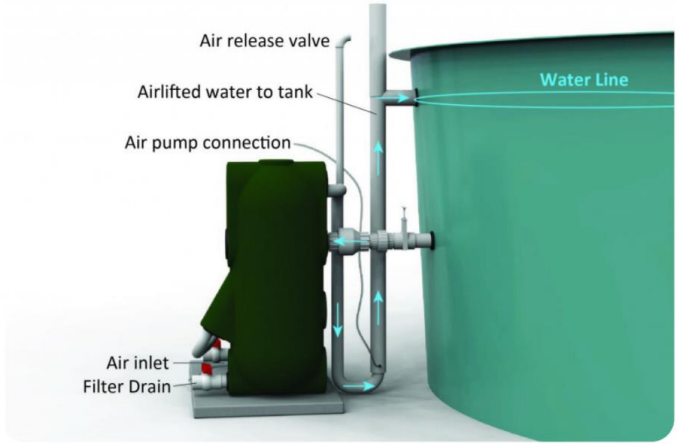


System Overview

Front View

1. Viewing ports
2. Air inlet
3. Trigger
4. Sludge outlet

Airlift Tank Setup

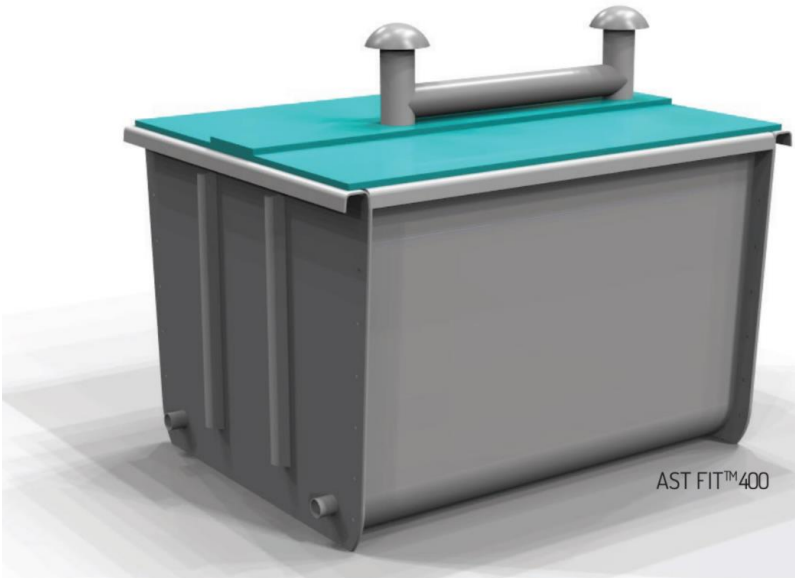


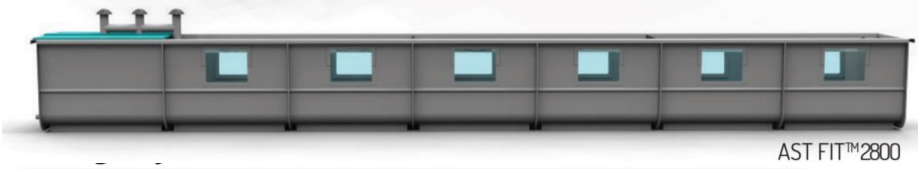
Key Facts	• Compact PolyGeyser® for small applications • Fully automated operation • No moving parts for greater reliability
Ease of Operation	• Suitable for airlift or pump configuration • Low maintenance • Optional auto-purging sludge concentrator
Filtration	• Mechanical and biological filtration in one unit • No media replacement necessary • Auto-pneumatic backwash

ENDURANCE	MODEL 2000		MODEL 4000	
	Fingerling	Growout	Fingerling	Growout
Bead Volume (ft3)	.75		1.75	
Flow Rate (gpm)	5-10		15-25	
Max Pressure (PSI)	5		5	
Fish Supported (lbs)	20	110	43	265
Feed Rate (lbs/day)	.6	1	1.3	2.63
RAS Volume (gallons)	200	200	390	525
Koi Pond (gallons)	2000		4000	

Filtration Systems

AST FIT™ (Filter in Tank) Systems





AST FIT™ (Filter-In-Tank) Systems are suitable for growout, hatchery, bait, aquaponics, and more. These units are easy to operate and maintain, with energy savings up to 60%, compared to typical water pump filtration systems. These systems operate using air for circulation and filter operation. These efficient airlifts provide cost savings and greater reliability.

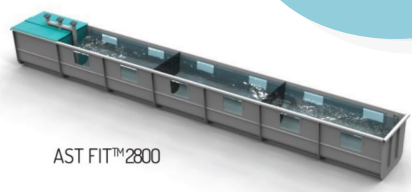
The built-in PolyGeyser® filter automatically backwashes the media, requiring only periodic sludge draining. This filter provides both mechanical and biological filtration in a single unit with minimal water loss.

The AST FIT™ 400 is designed for modularity to keep up with your growing needs. These units can be made as tanks, filters, or a combination depending on your application. Link up as many as seven units for a system volume of 2800 gallons on one filtration unit.

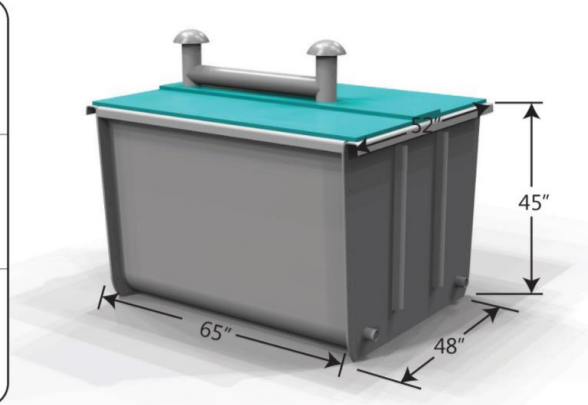
Model	Length (ft)	Tank Volume (Gallons)	Bead Volume (ft^3)	Peak Feed Rate (lb/day)		Approximate Pounds of Fish Supported* (lbs)	
				Fingerlings	Growout	Fingerlings	Growout
FIT 400	5	400	2.5	1.3	2	43	200
FIT 800	10	800	2.5	2	4	63	370
FIT 1200	15	1200	5	4	6	130	600
FIT 1600	20	1600	5	5	8	177	780
FIT 2000	25	2000	9	7	10	223	1000
FIT 2400	30	2400	9	7	12	227	1200
FIT 2800	35	2800	9	7	13	227	1340

Table based on TAN levels below 1.5 and 0.5 for growout and fingerling production respectively
*Based upon a 1% and 3% daily feed rate for growout and fingerling production respectively

Contact us for a Quote



Complete System	• Minimal setup, stand alone aquatic life support • Operates on low pressure air supply • No water pumps necessary
Operation	• Auto-pneumatic backwash • Airlifted circulation provides degassing and aeration • Total unit volume of 400 gallons
Filtration	• No moving bed bioreactor needed • Integrated mechanical and biological filtration • Concentrated sludge reservoir



Aquaponics Products

Nutrients & Adjusters

AquaStart
GET STARTED IN AQUAPONICS

Prices:
Small (less than 100 gal) – $89.95
Medium (100-300 gal) – $99.95
Large (300-500 gal) – $119.95

- Includes everything needed to get your aquaponic system up and running
- Aquaponic Gardening Online Course, API Test Kit, AquaUp & AquaDown, Digital Thermometer, AquaCycle Kit, and Microbe Lift Nitrifying Bacteria
- Small, medium, and large sizes available

AquaUp
FOR RAISING pH

Prices:
1 lb – $9.95
2 lb – $17.95
5 lb – $24.95
10 lb – $39.95

- An essential product for aquaponic gardens of any size!
- AquaUp pH Raising Kit feeds your plants calcium and potassium as it safely maintains pH at optimum levels
- Kit consists of equal amounts of Calcium Carbonate & Potassium Carbonate
- Sizes available as 1 lb, 2 lb, 5 lb, & 10 lb

AquaCycle
AQUAPONICS CYCLING KIT

Prices:
Small – $19.95
Medium – $29.95
Large – $39.95

- Includes nitrifying bacteria for ultra-fast cycling
- Details how the cycling process works, and how to get your system ready before adding fish
- Contents include Bottle of Microbe-Lift Nitrifying Bacteria, Powdered Soluble Ammonia, Powdered Soluble Seaweed, Data Tracking chart
- Small, medium, and large sizes available

AquaDown
FOR LOWERING pH

Prices:
8 oz – $9.95
32 oz – $13.95
1 Gallon – $27.95

- Use to lower pH of aquaponic systems to optimum levels of 6.8 - 7.0
- Specially formulated blend of 18% Phosphoric Acid - safe for use in aquaponic and hydroponic systems
- Comes in 8 oz, 32 oz or 1 gallon sizes

Aquaponics Products

Nutrients & Adjusters

AquaBuffer™

pH STABILIZER

Prices:
1 lb – $13.95
2 lb – $19.95
5 lb – $39.95

- Keep your pH stable to minimize stress on fish and plants
- Use AquaBuffer to maintain water hardness
- Contents include Potassium Bicarbonate and instructions for use in aquaponic systems
- Available in 1 lb, 2 lb, & 5 lb boxes

Aquaponic Elements

Prices:
Single Tea Bag – $4.95
10 Pack – $29.95

- Trace mineral amendment containing: Phosphoric Acid, Soluble Potash, Calcium, Magnesium, and Iron
- Specially designed and blended for media-based aquaponic gardens
- Great for fruiting crops!
- Each bag treats 100 gallons of water for 40-60 days
- Available as single tea bag or 10-pack

Aqualron™

DTPA CHELATED IRON 10%

Prices:
8 oz – $13.95
1 lb – $22.95
2 lb – $40.95
20 lb – $229.95

- Chelated iron product created specifically for aquaponics
- Used for the treatment & prevention of leaf yellowing (chlorosis)
- DPTA is the best form of chelated iron due to 100% effectiveness in pH range of 6.0-7.5
- Available in 8 oz, 1 lb, 2 lb, 20 lb sizes

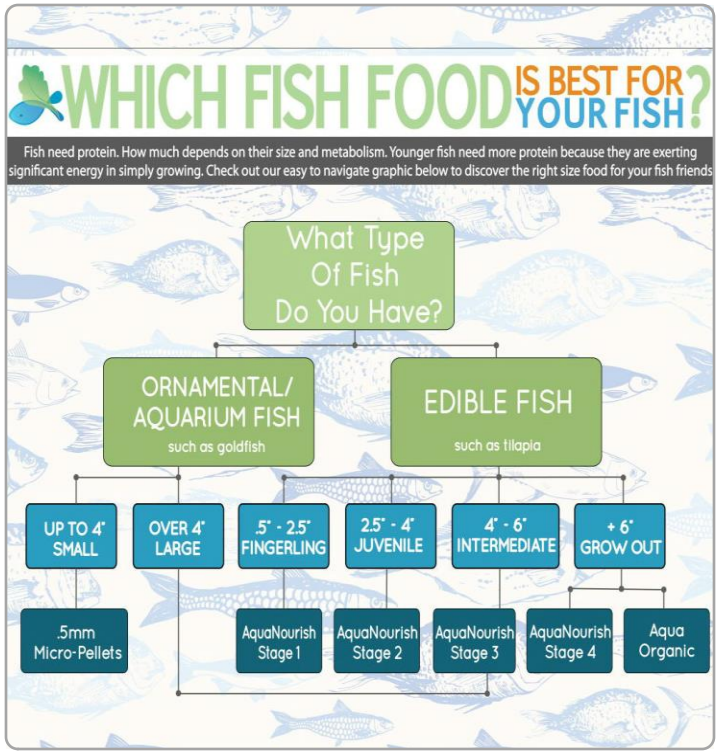
Aquaponics Products

Fish Food

AquaNourish™ OMNIVOROUS FISH FEED

Stage 1:	Stage 2:	Stage 3:	Stage 4:
5 lb – $16.95	**5 lb** – $16.95	**5 lb** – $9.95	**5 lb** – $8.95
10 lb – $29.95	**10 lb** – $27.95	**10 lb** – $19.95	**10 lb** – $17.95
20 lb – $49.95	**20 lb** – $49.95	**20 lb** – $36.95	**20 lb** – $32.95

- AquaNourish Fish Feed floats and is excellent for all omnivorous fish, such as tilapia, catfish, carp, koi, bluegill, and more!
- It has been uniquely formulated and sized to match the needs of your omnivorous fish at each stage of their growth.
- Available in 5 lb, 10 lb, 20 lb weights
- Combo packs of all stages available



AquaOrganic FISH FEED

Prices:
1 lb – $7.95
2 lb – $12.95
5 lb – $22.95
10 lb – $39.95
20 lb – $79.95
30 lb – $99.95

USDA ORGANIC

- Now your fish can be as organic and sustainable as the rest of your aquaponics system
- USDA certified organic, non-GMO, no fish meal, no soy
- Pellet size of 4-10mm, can easily be crushed for smaller fish
- Formulated for optimal fish health and plant growth
- Available in 2lb, 5lb, 10lb, 20lb, and 30lb

AquaOrganic or AquaNourish?	AquaOrganic	AquaNourish
Specially formulated by aquaculture experts for tilapia and other omnivorous pond fish?	yes	yes
Made by small, family-owned businesses in the USA?	yes	yes
Multiple pellet sizes for different stages of growth?	no	yes
Multiple formulations for different stages of growth?	no	yes
Does it float?	partially	yes
Does it contain....		
Fish Meal?	no	yes
GM Corn?	no	yes
Soy?	no	yes
Bovine Animal Parts?	no	no
Organic Ingredients?	yes	no
USDA Certified Organic?	yes	no

Aquaponics Products

Vertical Growing

AquaVertica
Vertical Growing System

- Maximize your growing area by going vertical and hanging over your fish tank or media beds
- Simple to plant and harvest, ideal for high density vertical production for aquaponic or hydroponic growing
- Can be used to plant leafy greens, herbs, strawberries, vining crops such as tomatoes and cucumbers
- 4 ft tower grows up to 11 plants
- Kit includes:
  - 4' tower with planting holes
  - 11 quart sized AquaPouch bags
  - 11 pouch Rings
  - 2 S-hooks
  - 12" of paracord
  - AquaVertica Sock
  - Hose clamp

Price:
4 ft – $59.95

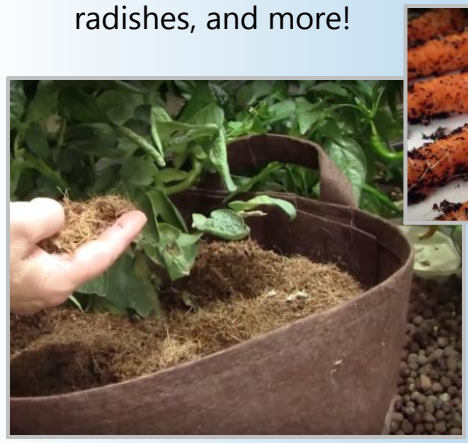
Bags & Plant Holders

AquaPouch™
FABRIC BAGS FOR AQUAPONICS

Prices:
1 Pint – $0.99
1 Quart – $1.35
2 Quart – $1.69
1 Gallon – $1.99
3 Gallon – $2.95

Prices:
5 Gallon w/ handles – $3.95
10 Gallon w/ handles – $5.45
15 Gallon w/ handles – $6.95
Sample Pack (1 of each) – 22.95

- AquaPouch is made from natural fibers and recycled food grade and BPA-free plastic. This creates a highly versatile and sturdy growing environment
- AquaPouch retains moisture more evenly around the container than standard plastic or clay pots
- Use to create a dual root zone
- Plant the AquaPouch directly in your media bed
- Great for growing vining crops or root vegetables such as carrots, beets, radishes, and more!

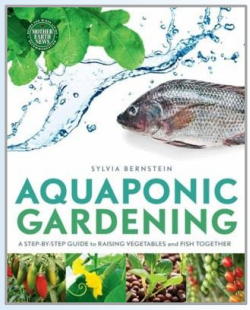


Books and DVDs

Aquaponics, Greenhouses, Aquaculture, Off-Grid

Aquaponic Gardening
A Step by Step Guide to Growing Fish and Vegetables Together

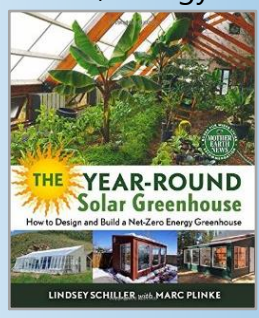
- Our bestselling book! **THE** book to learn aquaponics!
- *Aquaponic Gardening* is the definitive do-it-yourself manual, focused on giving you all the tools you need to create your own aquaponic system and enjoy healthy, safe, fresh, and delicious food all year round.
- 288 pages, 84 photos and diagrams, 8 page color insert, soft cover



Price – $29.95
Case of 20 Price – $459.95

The Year-Round Solar Greenhouse

- The greenhouse enthusiast's Bible!
- Comprehensive coverage of passive solar greenhouse design
- Over a dozen case studies provide real-life inspiration capped off with how-to guidance for building a durable, energy-efficient greenhouse
- Variations include underground and aquaponic greenhouses and integrating solar panels to grow off-grid, year-round
- 304 pages, soft cover



Price – $24.95

Recirculating Aquaculture (Third Edition)
M.B. Timmons & J.M. Ebeling

- Recirculating Aquaculture is the essential reference book on developing and operating RAS systems for food fish production.
- The book provides a tremendous amount of research and engineering detail on critical topics such as:
- Mechanical and biological filtration systems
- Fish health management, nutrition, and feeds
- Mass balancing, loading rates, and fish growth
- Fluid mechanics, disinfection, monitoring, and controls

Price – $149.95

Off-Grid Aquaponics

- Aquaponic systems can be powered entirely by solar and wind energy!
- In this 4-DVD set, explore the basics of solar and wind energy
- Learn about the fundamentals of energy, energy efficiency, and electricity

Price – $49.95

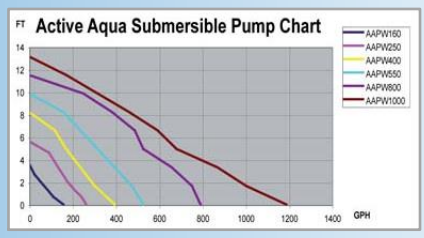
Aquaponic Products

Water Pumps & Aeration

Water Pumps

- We carry a wide range of water pumps for any size system
- Submersible or inline, we have the right pump for your needs
- Replacement impellers are available for every pump we sell

Active Aqua Submersible Pumps



Prices:
160 GPH – $13.95
250 GPH – $24.95
400 GPH – $27.95
550 GPH – $46.95
800 GPH – $59.95
1000 GPH – $69.95

Mag-Drive Pumps

Prices:
Model 2 - 250 GPH – $54.95
Model 3 - 350 GPH – $59.95
Model 5 - 500 GPH – $67.95
Model 7 - 700 GPH – $74.95
Model 9.5 - 950 GPH – $99.95
Model 12 - 1200 GPH – $139.95
Model 18 - 1800 GPH – $169.95
Model 24 - 2400 GPH – $219.95
Pondmaster 1200 GPH Air/ Water Pump Combo – $209.95

Farm-Scale Water Pumps

Proline Hy-Drive 4000 GPH – $232.95

Air Pumps & Diffusers

Active Aqua Air Pumps

Prices:
2 Outlet – $14.95
4 Outlet – $27.95

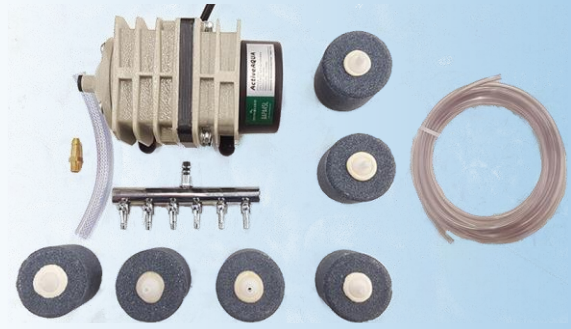
Air Stones

Prices:
Small – $1.95
Medium – $2.95
Large – $4.95

Active Aqua Commercial Air Pumps

Prices:
6 Outlet – $44.95
8 Outlet – $59.95
12 Outlet – $99.95

AquaAeration Kits



- Take the guess work out of aeration
- Each aeration kit contains an air pump, air stones, and silicone air tubing

Prices:
AquaAeration Kit 2 Outlet – $16.95
AquaAeration Kit 4 Outlet – $36.95
AquaAeration Kit 6 Outlet – $69.95
AquaAeration Kit 8 Outlet – $89.95

D.I.Y. Aquaponics

Grow Beds, Rafts and Liner

We offer a full range of parts and supplies for you to build your own aquaponic system. From grow beds, to plumbing kits, pumps, tubing, and fittings, we have it all!

AquaUrban Grow Bed

Prices:
Grow Bed Only – $259.95
Grow Bed with Bell Siphon OR Ebb & Flow Kit – $289.95

- Extra thick reinforced, 1/4" food safe, UV protected PE plastic grow bed
- 12" deep, 28" wide and 44" long
- Includes media guard
- Options include grow bed only, or add a bell siphon or ebb & flow plumbing kit

AquaBundance Grow Beds

Prices:
Easy Reach 50 Gallon – $149.95
Bountiful 75 Gallon – $195.95
200 Gallon Grow Bed – $295.95
300 Gallon Grow Bed – $395.95

- Food grade high density PE plastic with built-in UV inhibitors
- FDA/NSF Approved
- BPA-Free
- Available in 50, 75, 200, (pictured) and 300 gallon sizes

Dura-Skrim Liner

6', 12' and 18' widths available.
Lengths available in 10' increments – Pricing information on website

- DURA-SKRIM® R20WW consists of virgin outer layers of white high-strength polyethylene film laminated together with a black layer of molten polyethylene
- All resins used in the food contact layer are FDA 21 CFR 177.1520 (c) 3.2 compliant
- Dura-skrim has been approved as a material in organic farming

Deep Water Culture Raft Boards

Prices:
Single Boards – $21.95
Large Project? Call for discounted bulk pricing

- Specifically designed for use in both aquaponic and hydroponic deep water culture growing
- Sealed Surface Technology® resists water penetration, ensures durability and longevity, and gives growers a cost-effective system
- The rafts are 2'x4' in size and have 28 holes per board which results in a fully planted density of 3.5 plants per sq ft. These boards are excellent for all leafy greens and lettuce production

D.I.Y. Aquaponics

Plumbing Kits

AquaParts Bell Siphon Kits

Prices:
8" Bell Siphon – $27.95
12" Bell Siphon – $35.95

- Great way to drain your grow bed in a flood & drain aquaponic system
- No timer required
- Comes with media guard and all necessary fittings
- 8" bed depth "Shorty" or 12" bed depth Bell Siphons available

AquaParts Siphon Plumbing Kits

AQUAPONICS PLUMBING KIT

Prices:
S1 Kit – $109.95
S2 Kit – $179.95
SS2 Kit – $249.95
SS3 Kit – $329.95

- Siphon-based grow bed drainage plumbing kit
- All the plumbing parts you need to build a thriving aquaponic system
- S1 kit for 1 bed, S2 for 2 bed systems
- SS2/SS3 for 2 or 3 beds with sump tank

Bulkheads & Hard to Find Fittings

Bulkheads QwikLok Uniseals

- We carry a large variety of hard to find plumbing parts perfect for your DIY build!
- Bulkhead fittings, QwikLok connectors, Uniseals and more
- See the "Plumbing Fittings" page of our website for a complete parts list and pricing

AquaParts Timer Based Plumbing Kits

AQUAPONICS PLUMBING KIT

Prices:
T1 Kit – $89.95
T2 Kit – $149.95

- Timer-based grow bed drainage
- Comes with installation instructions
- T1 kit for 1 bed, T2 kit for 2 bed systems

D.I.Y. Aquaponics

Backup & Heating

AquaBackup

JUST IN CASE

Keep your fish alive if the power goes out!

Prices:
AquaBackup w/ Oxygen Infuser 500 – $329.95
AquaBackup w/ Oxygen Infuser 1100 – $349.95

- When the backup battery control system senses a power failure, it automatically switches power to a battery* which you can use to power the DC oxygen infuser device or water pump
- When electricity is restored, BatteryOn automatically disables the battery and any connected devices will stop
- Two sizes, depending on amount of fish:
  The Oxygen Infuser 500 keeps up to **10 lbs** of fish alive
  The Oxygen Infuser 1100 keeps up to **50 lbs** of fish alive
- All you have to do is install a marine, deep-cycle battery, connect any battery-driven DC device like 12V DC Pump, and plug in the main power cord

***battery not included (sourced locally)**

AquaHeat Heating System

Price – $1,495

- Highly efficient aquaponic system water heater
- For on-grid & off-grid use
- Optional battery tender & solar PV panels available
- Natural gas & propane options available

Electric Fish Tank Heaters

Prices:
50 W – $16.95
100 W – $23.95
200 W – $26.95
300 W – $31.95
350 W – $49.95
500 W – $199.95
1,000 W – $249.00

Rule of Thumb: 4 watts per gallon for every 9 F increase in temp

- Maintain consistent water temperature for your fish with a titanium stick heater and controller
- Available in various wattages, depending on the size of your system

D.I.Y. Aquaponics

Fish Tanks

AquaUrban 60 Gallon Fish Tank

- A compact, attractive and sturdy 60 gallon aquaponic fish tank for use either indoors and out
- Extra thick, food safe plastic with lid
- Available in Terracotta

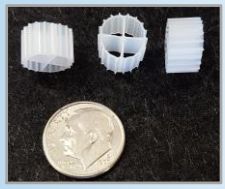
AquaBundance Fish Tanks

Prices:
125 Gallon – $329.95
200 Gallon – $449.95
300 Gallon – $529.95

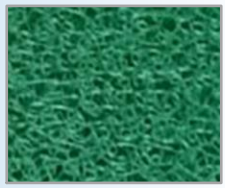
- Extra thick 1/4" food safe, UV protected PE plastic, comes in Forest Green
- 125 Gallon, 200 gallon (pictured), & 300 gallon tanks available.
- DIY tank window kits available
- All sizes fit through a standard door. 200 and 300 gallon tanks are 33" high

Brush Filters

Filter Media



Sweetwater SWX Biomedia



Large Green Solids Filtration Mat

- We carry a range of solids and biofiltration mediums to keep your water clean, clear and promote optimal bacteria growth
- See our website for pricing and more information

All-Purpose 130 Gallon Tank

- This 130 gallon tank works as a fish tank, fry tank, sump tank, wicking bed and anything else you can think of
- Extra thick 1/4" food safe, UV protected PE plastic
- Length-72" Width-24" Height-18.5"

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