



Florida Aqua Farms



33418 Old Saint Joe Road.
Dade City, FL 33525 U.S.A.

Telephone: 352-567-0226

FAX: 352-567-3742

WEB SITE: www.Florida-Aqua-Farms.com

Email: Sales@Florida-Aqua-Farms.com

Florida Aqua Farms Inc. (FAF) founded in October 1984, is basically considered the manufacturing entity. We are unique among aquaculture suppliers since the original founders, Frank Hoff, William Hoff and Terry Snell have been directly involved in aquatic research, applied aquaculture and the aquarium industry since 1966. Coupled with our past expertise is our continued involvement in research and consulting within the aquaculture community. Current and past endeavors include; new product development, culturing micro and macroalgae, zooplankton culture, spawning and rearing freshwater discus and angelfish, saltwater clownfish, pompano, seabass and numerous other aquatic animals. Florida Aqua Farms Inc. continuously researches, formulates, updates and manufactures products found in this catalogue. Of considerable importance to you is the fact that the owners of Florida Aqua Farms use or have used most products found in this catalogue in their current or previous facilities. Using our product line allows us to make modifications and changes that benefit our customers.

Our expertise is concentrated in the controlled conditioning, spawning, larval rearing and early juvenile growout of fish and invertebrates in closed recirculating systems. Our product line is purposely concentrated into our specialized fields of expertise. A significant portion of our product line leans towards intensive, closed culture of live foods including microalgae, rotifers, Artemia and daphnia. Many products are best suited for indoor, closed system, hatcheries, wet-labs, pilot scale projects or experimental work. Most of our products are traditionally found in scientific research labs and educational facilities but, are often difficult for aquatic farmers to locate or obtain. Other products are more common in the aquarium industry but are not usually found in aquaculture. This unique blend of products makes Florida Aqua Farms Inc. USA a special entity rather than just another "me-too" manufacturer and supplier.

Prices are purposely not included in our catalogue in an effort to conserve trees and the costs of continuously printing catalogues. We know this is a inconvenience to some customers however, we hope you can clearly understand our position. Prices routinely change and even though we provide a price list with our catalogue we will not guarantee these are the most current prices. However, we routinely update our price list on our web site. In addition, the web site will provide a complete updated catalogue, new products, technical information and sale items. Please routinely visit our web site at (www.florida-aqua-farms.com), call, or fax for the up-to-date information and prices.

Customers are number one to our business. We will make every effort possible to help and advise you. We personally express our thanks for being one of our faithful and valued customers.

Frank H. Hoff
Owner & Founder of
Florida Aqua Farms Inc.
FAFUSA

Year 2003 Marks Our
20th Year Of Service To The
Aquaculture Industry

CATALOGUE ARRANGEMENT

Florida Aqua Farms Inc is a manufacturer that sells in various levels and entities including; aquaculturists, zoos, aquariums, pet shops, schools and hobbyists. In addition, we have established several aquaculture distributors that also handle our product lines. Items in this catalogue are arranged by related categories. Price list is arranged alphabetically using the first two letters of the item code.



Culture all the microalgae you want - It's easy!

See our Culture Kits including our new U-Grow Algae Kit which will make 2 quarts of algae in just 7-10 days.



MICROALGAE DENSITY MEASURING STICK
AC-DM9

MICROALGAE AND ROTIFER STARTER CULTURES

MICRO ALGAE DISKS™, MICROALGAE INOCULANTS

Want a guaranteed live alternative for not so live hobby liquid algae cultures? Then our "Micro Algae Disks" are the answer. Convenient live inoculants of microalgae ready to use when you need them. Unialgal, petri-dish cultures of microalgae specially sealed for extended shelf life. Simply store at normal cool room temperature in a dark area, "Micro Algae Disk™" cultures can survive for 6+ months. No liquids involved, small, compact, lightweight, easy and less costly to transport. Disks eliminate the need to maintain liquid sub-starter cultures in the lab. Cost of one disk is cheaper than hobby liquid culture. Place sterile culture water on disk, cover, provide moderate light, for 12 to 24 hours then rub off cells with a sterile cotton Q-tip, add to 250 - 500 ml culture water, fertilize (see our Micro Algae Grow), aerate and incubate in 16-24 light for 7-10 days then use as an inoculant for larger cultures. Five popular saltwater species available.

Nanochloropsis (Japanese Chlorella) and *Nannochloris* can be grown in either saltwater or freshwater. Others tolerate low salinities but best growth normally obtained in 15 to 25 ppt. Sizes shown are maximum. *Nanochloropsis*, *Tetraselmis* and *Isocrysis* are considered the most important alga in culturing zooplankton such as rotifers and ciliates. *Chaetoceros*, a diatom is normally used in clam and shrimp culture. *Tetraselmis*, and *Isocrysis* are motile alga, normally used to culture zooplankton like rotifers and *Artemia*.

AA-NCP *Nanochloropsis*, green, non-motile 4 to 6 µm diameter 2 oz
 AA-NAN *Nannochloris*, green, non-motile, 1.5 to 2.5 µm diameter 2 oz
 AA-TET *Tetraselmis*, green, motile, 10L x 14W µm 2 oz
 AA-ISO *Isocrysis*, golden brown, motile, 4 to 8 µm diameter. 2 oz
 AA-CHA *Chaetoceros*, diatom, non-motile, 13L x 16W µm 2 oz

LIQUID MICROALGAE CULTURES

We provide 25 and 125 mls of unialgal liquid inoculant cultures of the above species. Liquid cultures have a shorter shelf-life and must be used within two to four weeks. All species are usually available but call before ordering. Contracts for specific routine volumes can be arranged. Normally we can provide larger volumes of *Nanochloropsis* from our daily cultures. Florida Aqua Farms product.

AA-LQ Pure Liquid Cultures, List Species Desired 25 ml 3 oz
 AA-LQ125 Pure Liquid Cultures, List Species Desired 125 ml 13 oz
 AA-LQ1 Unialgal, mass cultures of *Nanochloropsis*, 1 quart 2 lbs
 AA-LQ4 Unialgal, mass cultures *Nanochloropsis*, 1 gallon 9 lbs

MICROALGAE DENSITY MEASURER

Simple device allows you to estimate microalgae cell densities. Based on the Secchi principle. White dot mounted on a calibrated plastic stick is lowered down into a well lighted microalgae culture until the dot disappears. Depth is recorded off the scale and approximate cell density is obtained from chart provided. Chart provides density conversions on *Nannochloropsis*, *Chlorella*, *Isochrysis*, *Tetraselmis*, *Pyramimonas*, and *Nannochloris*. Manufactured by Florida Aqua Farms Inc. Can be easily calibrated to suit your specific microalgae and conditions.

AC-DM9 Micro Algae Density Measure 2 oz

PLANKTON CULTURE MANUAL, FIFTH EDITION

Detail instructions for culturing microalgae, rotifers, *Artemia*, ciliates, daphnia and clam or oyster larvae, mysid shrimp, amphipods and microworms. An excellent manual by Florida Aqua Farms. See page 25.

ROTIFER CULTURES, "RESTING ROTIFERS™"

Rotifers, like *Artemia*, produce resting eggs or cysts. Yet, rotifers are uniquely different since they reproduce asexually (without sex) and only one rotifer becomes millions in a matter of days. Florida Aqua Farms pioneered this process and offer vials of lab cultured rotifer cysts. Cysts stored in a freezer can last over two years. Remove cysts from the vial, place in 1/2" of water, cover, place in continuous low light. Hatching and feeding commences within 24 to 36 hours and reproduction about 18 hours after hatch. Resting eggs of the saltwater rotifer *Brachionus plicatilis* (specified by S) and the freshwater rotifer *Brachionus calyciflorus* (specified by F) are now available. We offer only the "L" strain which are 130-340 µm long compared to new hatched *Artemia* which are 450-500 µm long. Smaller strains can be cultured by consistently sieving normal cultures for smaller individuals and culturing them. To determine what size inoculant would best suit your needs we offer a theoretical calculation of inoculant size and the approximate days for a population to reach 1 billion. Results vary depending on water quality, food and temperature.

AB-R1(S or F) Lab cultured "L" Strain Rotifer Cysts, 3-5000 cysts 1 oz
AB-R10(S or F) .. Lab cultured "L" Strain Rotifer Cysts, 15-20,000 cysts 1 oz
AB-RC12 Lab cultured "L" Strain Rotifer Cysts, 1 million cysts 1 oz

LIVE ROTIFER CULTURES (SHIPPED IN USA ONLY)

Small quantities (1 to 10 million) of live "L" strain marine rotifers are usually available as an immediate inoculant or emergency live food. Contracts can be arranged for specific projects and routine shipments. At times we may have live freshwater rotifers. Before ordering check about availability of either. About 250,000 to 500,000 thousand per quart. Cultured by Florida Aqua Farms

AB-RLS Live Rotifers "L" strain, 1/4+ million, 1 quart volume 2 lbs
AB-RLF Live Rotifers Freshwater strain 1/4+ million/qt allow 4 wks 2 lbs

LIVE MOINA CULTURES

Moina are small freshwater crustaceans, commonly called "water fleas", belonging the Daphnia family. This common name is the result not only of their size, but their short, jerky, hopping movement in water. Many species of the freshwater family Daphniidae (order Cladocera) occur throughout the world and are collectively known as daphnia. The genera *Moina* are diverse and are a major food for both young and adult freshwater fish. Literature abounds on the capture, biology, culture, and use of *Daphnia* sp., but little exists on *Moina*. Yet, within the Oriental countries, *Moina* is the number one live food for rearing freshwater tropical fish. *Moina* are often used as a *Artemia* substitute. Adult *Moina* (700-1500 µm long) are larger than newly hatched brine shrimp (400-500 µm), and approximately 3 to 5 times the length of adult rotifers. Newly hatched *Moina* average 430 µm and are slightly larger than the smallest strain of newly hatched brine shrimp, and twice as large as adult rotifers. Common *Daphnia* are approximately twice the length of adult *Moina* and, as a result of their large size, are not suitable for the fry of many fish larvae. *Moina* are generally more tolerant of poor water quality than *Daphnia*. They live in water where the amount of dissolved oxygen varies from almost zero to supersaturation. Florida Aqua Farms is currently offering live cultures and will provide resting eggs in the future. They can be easily cultured using the information in our Plankton Culture Manual.

AB-MC Live Moina Culture, 1 quart 2 lbs



PLANKTON CULTURE MANUAL

By Frank Hoff & Terry Snell

Published by

Florida Aqua Farms Inc.

SALT AND FRESHWATER ROTIFERS

Inoculant Size to Reach 1 Billion

100 rotifers	20 days
1,000 rotifers	18 days
10,000 rotifers	15 days
100,000 rotifers	12 days
1 million rotifers	9 days
10 million rotifers	7 days
100 million rotifers	5 days

Rotifers Cysts

Just one female rotifer multiplies to a million in just five days

Over 70 species of fish have been documented to have been reared on rotifers.

Cultured by FAFUSA



LIVE MOINA

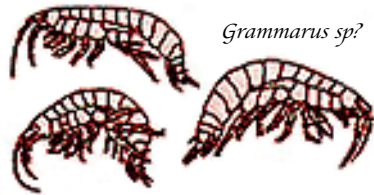
(Daphnia Specie)

STARTER CULTURES

Cultured by FAFUSA

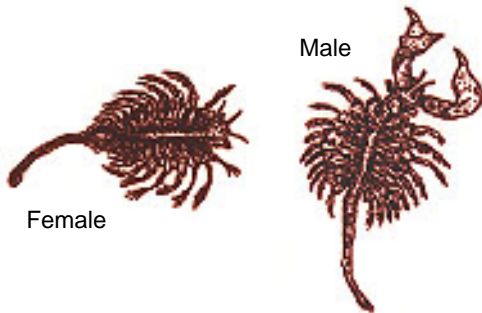
FOR ROTIFER COLLECTORS
&
FOR ARTEMIA COLLECTORS
SEE PAGE 19

Live Amphipods



Excellent Live Food For Seahorse

Cultured by FAFUSA



Female

Male



Maxi Culture Kit

Made by FAFUSA

LIVE AMPHIPODS (GRAMMARUS)

Shrimp-like animals of the family Talitridae and genus *Orchestia sp.* They are negatively phototrophic and feed only at night. Reside in damp macroalgae mats along shorelines and have gills for respiration. Feed on decaying macroalgae which is the major food in their diet yet, they will feed on carrion. Sexual reproduction occurs within the damp algae mats or nests they construct on the sides of tanks along the surface. Females store fertilized eggs in brood chamber and a clutch of 50 to 750 eggs typical. Development is directly from the chamber and small amphipods mature in a matter of weeks under proper temperature and nutrition. Excellent live food for many fish especially seahorses. Florida Aqua Farms has developed a culture habitat which will allow you to raise small quantities of these animals. Starter culture can be used as a direct live food source or as an inoculant. If you are not going to culture amphipods, they will survive for 2 to 4 weeks in the refrigerator. See our Plankton Culture Manual for instructions.

AB-LF860 Starter Culture of Amphipods, 20 animals 5 oz
 AB-LF880 Culture habitat 2 lb

BRINE SHRIMP CYSTS

BRINE SHRIMP CYSTS

Florida Aqua Farms offers one and three ounce bottles of high quality Artemia cysts. These are Great Salt Lake Utah cysts, grades A (90%+ hatch) or B (85%+ hatch) depending on market demand and supply. Our cysts are processed by INVE, the oldest, most respected, company in this field. Cyst moisture content is 6 to 7%, with 225,000 to 250,000 cysts/gram. Volume of hatched nauplii per 5 grams of cysts within 24 hours hatch is 50 cc's at 27° C. Nauplii per gram of cysts is 220,000 to 230,000. Average size of nauplii at 24 hours is 458 microns. Fatty acid profile is excellent but can be enhanced by feeding live microalgae about 12 hours after hatching. Keep in mind how fast they are utilized once the bottle is opened. Moist, hot, climates, like those found in hatcheries cause eggs to deteriorate quickly. Proper storage of cysts is an important consideration. Shelf life of opened or unopened cans is extended if stored at cold temperatures (below 50°F or 10°C) preferably in a refrigerator or freezer. Optimal hatching conditions are; Temperature 25-30°C (77-86°F), pH of 7.5 to 8.5, lighting for 24 hours at 2000 lux and salinity of 25 to 25 ppt (1.0183 to 1.0260). Hatch is usually at 24 to 36 hours. Unhatched eggs sink to the bottom and can be restarted. Hatched eggs float to the surface and nauplii are situated in the water column. To obtain optimal hatch see our hatchers and our Plankton Culture Manual.

AB-BS1 Brine Shrimp cysts, 1 oz 2 oz
 AB-BS3 Brine Shrimp cysts, 3 oz 4 oz
 AB-BS Brine Shrimp cysts, 15 oz 17 oz
 AB-BSC Brine Shrimp cysts, 15 oz, 12 cans (case) 17 oz

MICROALGAE, ROTIFER, MOINA & BRINE SHRIMP CULTURE KITS

MAXI CULTURE KIT™, FOR MICROALGAE AND ROTIFERS

For beginning or teaching purposes we have assembled our plankton culture products and associated hardware into a complete starter kit. Kit includes; Plankton Culture Manual™, 4 Micro Algae Disks (*Nanochloropsis*), 2 Resting Rotifer Eggs (specify fresh or saltwater), 2 Roti-Rich (6 oz bottles), 1 Micro Algae Grow (6 oz bottle), 6 glass-bead airstones, 6 plastic metering valves, 6 pre-cut rigid tubes, 10 feet airline, 10X magnifier, Plankton Collector, and Microalgae Density Measurer. You provide culture vessels, lights, and air pump. Specify fresh or saltwater rotifers. Made by Florida Aqua Farms Inc. USA

GA-MACK Maxi Culture Kit, 20%+ savings 4 lbs

MINI CULTURE KIT™, FOR MICROALGAE AND ROTIFERS

Scaled down version of our Maxi Culture Kit. Includes; Plankton Culture Manual™, 2 Micro Algae Disks (Nanochloropsus), 1 Resting Rotifers (specify fresh or salt-water), 1 Micro Algae Grow (6 oz), 1 Roti-Rich (6 oz), and Plankton Collector. Specify if you want fresh or saltwater rotifers. Manufactured by Florida Aqua Farms Inc. USA.

GA-MICK Mini Culture Kit, 20%+ savings 3 lbs

ALGAE CULTURE KIT™, FOR MICROALGAE

For culturing microalgae. Include; Plankton Culture Manual™, 3 Micro Algae Disks (Nanochloropsus) and 1 Micro Algae Grow. Mfg. Florida Aqua Farms Inc.

GA-ACK Algae Culture Kit, 20%+ savings 2 lbs

U-GROW™ ALGAE CULTURE KIT™

Complete mini algae culture kit for growing microalgae (greenwater) when you need them. No longer do you have to determine if the liquid algae you purchase is still good or alive? Each kit produces two quarts of live microalgae in 7 to 10 days. Microalgae is the primary food source of the food chain and ideal for feeding zooplankton (rotifers, artemia, daphnia etc.) and invertebrate filter feeders such as sponges, feather dusters, clams, oysters, scallops, corals etc. Our petri-dish cultures of live microalgae are specially sealed for extended shelf life. "Micro Algae Disk™" live algae cultures can survive for 6+ months when stored at normal room temperature and in low or dark lite area. Liquid microalgae cultures normally sold in pet markets actually live only 5 to 10 days while the actual number of live cells diminishes over time. NCP disks contain over 3 billion live cells of *Nanochloropsus* which can be grown in salt or freshwater. Whereas, our TET (*Tetraselmis*) disk is strictly for saltwater use only. You can have two quarts of "greenwater" in just 7-15 days. Simply place a small amount of sterile culture water on disk, replace cover, provide moderate light, for 12 to 24 hours then rub off cells with a sterile cotton Que-tip (provided), add to 2 liters of culture water, fertilize (provided), aerate (attach rigid tube and airline provided), seal top of container to prevent contamination (Parafilm stretch film provided). Provide moderate to strong aeration. Light of 16 to 24 hours per day, (bright but not hot light). Maintain temperature of 73°-83°F (23°-28°C). More detailed instructions on microalgae and plankton culture can be obtained in our Plankton Culture Manual™ and see our other culture kits.

GA-UGN U-Grow mini algae culture kit *Nanochloropsus*, 1 lb

GA-UGT U-Grow mini algae culture kit *Tetraselmis* 1 lb

MOINA CULTURE KIT™, FOR MICROALGAE AND MOINA

Culture Kit. Includes; Plankton Culture Manual, culture tank, 2 Micro Algae Disks (Nanochloropsus), 1 Live Moina Culture, 1 Micro Algae Grow (6 oz), 1 Dry-Roti-Rich (2 oz), and collecting net. Manufactured by Florida Aqua Farms Inc.

GA-MOCK Mini Culture Kit, 20%+ savings 4 lbs

BRINE SHRIMP CULTURE KIT

As brine shrimp grow they change from a high fat content to a high protein content which is more suitable for juvenile and adult fish. Artemia do not feed for at least 12 hours after hatch and require food after this point to grow and survive. Kit includes: Plankton Culture Manual, culture tank, airline, gang valve, sponge filter, 3 oz brine shrimp cysts, Roti-Rich invertebrate food and net..

GA-BRCK Brine Shrimp Culture Kit 6 lbs

AMPHIPOD CULTURE KIT

Maintain a sustaining culture of amphipods for live feed. Kit includes our Plankton Culture Manual, culture tank, rigid air tube, airline, gang valve, sponge filter, starter culture of amphipods, Roti-Rich invertebrate food, spirulina flakes, conditioning, starter culture of macroalgae.

GA-AMCK Amphipod Culture Kit 6 lbs



Mini Culture Kit

Made by FAFUSA



Algae Culture Kit

Made by FAFUSA

Other Culture Kits

U-GROW Mini culture kit

Made by FAFUSA

Guaranteed live microalgae (greenwater) that you can grow when you need it. You provide the container, light and air supply.

- Kit Includes:
- 1 Micro Algae Disk
- Vial of nutrients
- Sterile Que Tip
- Airline tubing
- Rigid air tube
- Parafilm lid sealer
- Salt mix



AA-UGN & UGT

AMPHIPODS

- Kit Includes:
- Amphipod culture
- Tank with lid
- Rigid air tube
- Airline tubing
- Gang valve
- Plankton Manual
- Dry Roti-Rich
- Spirulina flakes
- Collecting net

MOINA

- Kit Includes:
- Moina culture
- Tank with lid
- Culture habitat
- Rigid air tube
- Airline tubing
- Gang valve
- Starter algae
- Plankton Manual
- Roti-Rich
- Collector



Made by FAFUSA

GA-MOCK

BRINE SHRIMP

- Kit Includes:
- 2 oz of cysts
- Tank with lid
- Rigid air tube
- Airline tubing
- Gang valve
- Plankton Manual
- Dry Roti-Rich
- Collecting net

GA-BRCK



EQUIPMENT KITS & SUPPLIES

PRIMARY CULTURE EQUIPMENT KIT

We have assembled equipment kits that will allow you to culture 500 mls (about 1/2 a quart) of algae per day up to 19 liters (5 gallons). The primary kit is designed for maintaining starter cultures or provide about 500 mls of algae per day. Normal grow out of microalgae is 7-10 days and then it is restarted from the starter or mother culture that you always maintain. Starter algae cultures are available in kit form or you may purchase them individually. If you desire 1 liter (about 1 quart) of algae per day then our Secondary Equipment Kits are more suitable. For larger volumes from 11 to 18 liters (3-5 gallons) per week or day then choose from our Complete Equipment Kits. The only variance between the kits are the number and size of the culture vessels. All kits will include culture vessels consisting of glass flasks and/or large plastic carboy culture vessels. Opaque water storage bottles for the started cultures. Air manifold and manifold prefilter. Rigid and soft airline tubing with quick disconnects. Parafilm, a sealant film for covering the neck of the flask culture vessels. Laboratory soap and flask cleaning brush. Minimal culture instructions are included for more detailed instructions see our Plankton Culture Manual and Plankton Culture Kits. These kits can also be used for culturing microalgae and zooplankton such as rotifers, Artemia and Daphnia. The kits are suitable for fresh or saltwater culture.

*Items In
Culture
Equipment
Kits*

500 ml flasks **1000 ml flasks** **3 gal. vessels** **5 gal. vessels**
Opaque water jugs **Manifold outlets** **Manifold prefilter** **Quick disconnects**
Rigid tubing **Airline tubing** **Parafilm** **Alconox soap**
Flask Brush **Minor instructions**

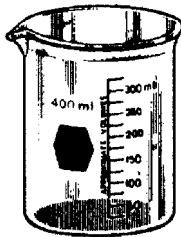
	500 ml flasks	1000 ml flasks	3 gal. vessels	5 gal. vessels	Opaque water jugs	Manifold outlets	Manifold prefilter	Quick disconnects	Rigid tubing	Airline tubing	Parafilm	Alconox soap	Flask Brush	Minor instructions
Primary Kits														
CJ-701	8	N	N	N	4	12	1	8	8'	20'	20'	8	1	Y
CJ-705	12	N	N	N	6	12	1	12	12'	25'	22'	8	1	Y
Secondary Kits														
CJ-711	8	8	N	N	8	16	2	16	16'	35'	30'	12	1	Y
CJ-715	12	12	N	N	12	24	2	24	24'	45'	35'	12	1	Y
Complete Kits														
CJ-717	8	N	3	N	4	12	2	11	11'	25'	20'	16	2	Y
CJ-719	N	8	6	N	4	14	2	14	14'	25'	20'	16	2	Y
CJ-721	8	8	N	6	8	36	3	22	22'	40'	35'	32	2	Y

CK-F1000



Glass Culture Flasks

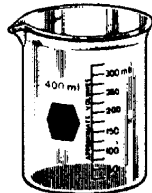
CK-F500



CK-B1000



CK-B500



**Glass
Beakers**
CK-GB100 to
CK-GB800

Opaque Water Storage Bottles

- CJ-701 Primary Culture Equipment Kit 500 ml/day lbs
- CJ-705 Primary Culture Equipment Kit 500+ ml/day lbs
- CJ-711 Secondary Culture Equipment Kit 1000 ml/day lbs
- CJ-715 Secondary Culture Equipment Kit 1000+ ml/day lbs
- CJ-717 Complete Culture Equipment Kit 4000 ml/day lbs
- CJ-719 Complete Culture Equipment Kit 4000+ ml/day lbs
- CJ-721 Complete Culture Equipment Kit 4000++ ml/day lbs

For those who wish to buy just a few items or replace broken equipment we offer the following related culture equipment.

CULTURE FLASKS

Glass erlenmyer flasks made of fused borosilicate. Graduations painted on the sides.

- CK-F500 500 ml glass flask 4 oz
- CK-F1000 1000 ml glass flask 6 oz

BEAKERS

Glass beakers made of fused borosilicate. Graduations printed on the sides.

- CK-GB100 100 ml in 10 ml increments, 66mm x 80mm high 3 oz
- CK-GB250 100 ml in 25 ml increments, 76mm x 97mm high 5 oz
- CK-GB800 800 ml in 50 ml increments, 108mm x 135mm high 10 oz

OPAQUE WATER STORAGE BOTTLES

Use for storage of sterile culture water. These are wide mouth bottles. Can be microwaved repeatedly. Come in two sizes, 500 ml and 1000 ml.

- CK-B500 Opaque storage bottle 500 ml 3 oz
- CK-B1000 Opaque storage bottle 1000 ml 5 oz

GRADUATED CYLINDERS

Quality fused borosilicate glass graduated cylinders. Scale with metric numerical graduations on sides. Wide octagonal bases help prevent tipping. Come with plastic hexagonal bumper to prevent breakage and roll.

- CK-GC10..... 10 ml capacity, 0.5 ml grad. 13 mm dia x 180 mm high 2 oz
- CK-GC25..... 25 ml capacity, 0.5 ml grad. 20 mm dia x 210 mm high 3 oz
- CK-GC50..... 50 ml capacity, 1.0 ml grad. 26 mm dia x 200 mm high 4 oz
- CK-GC100..... 100 ml capacity, 1.0 ml grad. 31 mm dia x 244 mm high 5 oz

PIPET

Glass serological pipet for taking samples of rotifers or other zooplankton. Can be cleaned and reused. Volume is 1 ml with 0.01 graduations.

- CK-PGV1 Pipet, 1 ml, 4 mm dia x 345 mm long 1oz

DEPRESSION COUNTING SLIDE

Excellent heavy duty 10 well slide (2 rows 5 wells/row) made of molded pressed glass. Wells have concave bottoms, are 1 cm in diameter and hold 0.15 to 0.20 ml each. Slide is 108 mm L x 57 mm W and 4.5 mm thick. Excellent for dividing samples of rotifers or other zooplankton for counting population densities. Can be used with a 10X magnifier or dissecting microscope.

- CK-M6220 Ten Well Depression Slide 2 oz

HAND COUNTER

Easily fits in hand and can be operated with thumb. Registers advances by one digit up to 9999, each time the button is pressed. Turn knob on side to reset to zero. Convenient tool for counting anything. Chrome plated metal construction except adjusting knob.

- CK-3509 Hand Counter 3 oz

QUICK DISCONNECTS

Best and easiest way to disconnect air or water line tubing. Ideal for low pressure use. Ideal for flask cultures.

- CK-QD316..... 3/16" tubing (common aquarium tubing) 1 oz
- CK-QD727 1/8" to 7/32" tubing (common aquarium tubing) 1 oz
- CK-QD729..... 1/4" to 3/8" tubing 1 oz
- CK-QD731 1/2" to 5/8" tubing 1 oz

AIRLINE TUBING

Standard 3/16" common aquarium airline tubing. Purchase by the roll or by the foot (minimum 20').

- CK-AT500 Airline tubing full 500' roll 11 lbs
- CK-AT20 Airline tubing 20' section 3 oz

RIGID AIR TUBE

Clear acrylic rigid tubing. Come in 3' sections only except our 3/16" tubing. CK-RT419 to 421 connect to standard 3/16" aquarium tubing.

- CK-RT419 3/16" - 8 Rigid tubes, 18" bent on top sections 3 oz
- CK-RT420 3/16" - 8 Rigid tubes, 18" straight sections 3 oz
- CK-RT421 3/16" - 8 Rigid tubes, 18" straight sections 4 oz
- CK-RT423 3/8" - 2 Rigid tubes, 36" straight sections 4 oz
- CK-RT425 1/2" - 2 Rigid tubes, 36" straight sections 4 oz
- CK-RT426 5/8" - 2 Rigid tubes, 36" straight sections 4 oz
- CK-RT427 3/4" - 2 Rigid tubes, 36" straight sections 5 oz
- CK-RT428 1.0" - 2 Rigid tubes, 36" straight sections 5 oz

AIRSTONE, FUSED GLASS BEAD

Quality, fused glass bead airstone 1/2" diameter by 13/4" long. Delivers fine to medium bubble. Can be cleaned in weak acid solutions. Minimum order 6 stones.

- CK-AG6 6 Glass bead airstones 2 oz

FLASK CLEANING BRUSH

Used for cleaning erlenmyer flasks and other hard to clean containers or tubes.

- CK- BR1780 Erlenmyer brush 3 oz

BOTTLE BRUSH CLEANING BRUSH SET

Set of three small bottle brushes for cleaning tubes etc. 1/2", 3/4" and 1 3/8" diameter.

- CK-BR2085 Bottle brush set of 3 3oz

ALCONOX LAB GRADE CLEANING SOAP

Lab grade made of biodegradable ingredients. Standard powered concentrated soap used in scientific communities. We offer two sizes.

- CK-ALCO12 1/2 lb of Alconox soap 9 oz
- CK-ALCO 9 lbs box of Alconox soap 9 lbs

Glass Graduated Cylinders

With Bumper Guards
CK-GC10 TO CK-GC100

CK-3509

Hand Counter



CK-M6220

Glass Depression Counting Slide



CK-PGV1

Glass Pipet



Quick Disconnects For Air Tubing

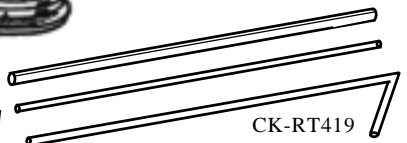
CK-QD727, QD729 & QD731



Standard Airline Tubing

CK-AT500 & AT20

Rigid Tubing



CK-RT419

Glass Bead Airstones

CK-AG6

Flask Brush



CK-BR1780

CK-ALCO12 & ALCO



Alconox Lab Soap



Bottle Brush Set

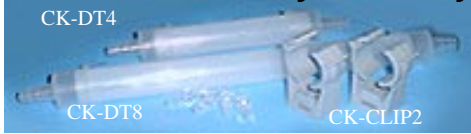
CK-BR2085

Parafilm Sealing Tape

CK-PF250



Inline Air Filter & Optional Clips



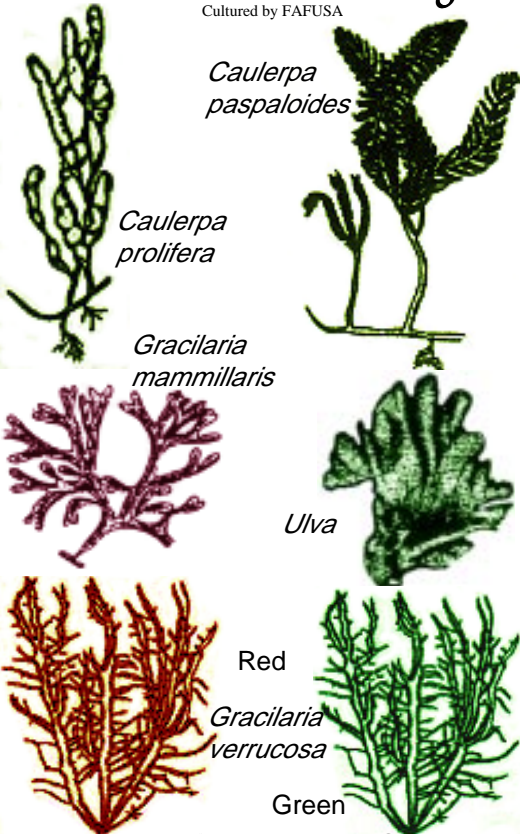
CK-DT4

CK-DT8

CK-CLIP2

Tank Raised Macroalgae

Cultured by FAFUSA



Caulerpa paspaloides

Caulerpa prolifera

Gracilaria mammillaris

Ulva

Gracilaria verrucosa

Green

Red

ROTI-RICH™

Liquid & Dry Form
Invertebrate Food

Formulated and Packaged by FAFUSA



Microalgae substitute. Culture and growth media for rotifers, Artemia, filter feeders and other invertebrates.

Ingredients: Fortified inactivated yeast, Spray dried Microalgae, Vitamin mixture, Growth enhancers, Trace mineral mixture

PARAFILM SEALING TAPE

Roll sheet of flexible thermoplastic sheet film. Seals quickly and firmly to itself. Used to seal flasks from contamination. We offer two lengths.

CK-PF20 Parafilm, 4" wide, 20' long 3 oz
CK-PF250 Parafilm, 4' wide, 250' long 1.5 lbs

INLINE AIR FILTER FOR CULTURES

Strongly suggest that inline air filters are used between the air source and your microalgae cultures. Place sterile cotton in tube to stop contaminants. Fits 3/16", 1/4" or 3/8" tubing. Adapters for 3/16" tubing included. Mounting clamps optional

CK-DT4 4" Inline air filter, 3/16" connectors 2 oz
CK-DT8 8" Inline air filter, 3/16" connectors 3 oz
CK-CLIP2 Two mounting clamps 3 oz

CULTURED MACROALGAE

CULTURED MARINE MACRO ALGAE

In addition to microalgae, Florida Aqua Farms Inc. cultures several species of saltwater macroalgae including several species of *Caulerpa*, *Gracilaria* and *Ulva* that are cultured in our 15,000 gallon closed recirculating system. Some species are obtained from aquatic farmers or collected from natural populations. As opposed to all other suppliers of macroalgae, we sell only algae that have been acclimated and enhanced for a minimum of two weeks or longer in our closed facilities. Good for ammonia and nitrate removal in closed systems. Some are good live food items for invertebrates and fish. We sell only plants which are known to survive in the average marine aquarium.

HA-PRO *Caulerpa prolifera*, 12" length of plant 1 oz
HA-PAS *Caulerpa paspaloides*, 12" length of plant 1 oz
HA-GRAM *Gracilaria mammillaris*, Maroon, 3" dia. bush 1 oz
HA-GRAG *Gracilaria verrucosa*, Green, 3" dia. bush 1 oz
HA-GRAR *Gracilaria verrucosa*, Red, 3" dia. bush 1 oz
HA-ULV *Ulva*, Green sheet type algae 6" 1 oz

ENRICHMENT DIETS

ROTI-RICH™, MAINTENANCE DIET FOR INVERTEBRATES

Utilization of live foods such as *Artemia* and rotifers for rearing larval fish, shrimp, and other invertebrates is a common practice in aquaculture. Domestication practices of spawning and rearing live foods or invertebrates in high density closed systems often results in unbalanced dietary needs. Our formulation of invertebrate food is a special yeast, microalgae based food that is fortified with a rich, full, vitamin mixture and specific essential trace nutrients. Tested and used at Florida Aqua Farms for over 13 years. Use in conjunction with or without microalgae for feeding a variety of zooplankton including rotifers, *Artemia*, daphnia and various filter feeders including sponges, clams, scallops, squid, etc. Use as a supplement to a straight yeast or microalgae diet to enhance reproduction and produce more nutritious zooplankton. Available in liquid and dry forms. Commercial use only dry forms, save money in shipping, packaging and storage space. Shelf life of liquid formulation 8 months. We have expanded our offerings or dry Roti-Rich to include smaller packs for use in hobby and smaller applications. Dry Roti-Rich can be used directly for rearing artemia and daphnia.

Liquid Roti-Rich™

DA-RR2 Roti-Rich, 2 oz (70 ml) bottle 3 oz
DA-RR6 Roti-Rich, 6 oz (200 ml) bottle 8 oz
DA-RR32 Roti-Rich, one quart 2.5 oz
DA-RRG Roti-Rich, one gallon 9 lbs
DA-RR5G Roti-Rich, five gallons 45 lbs

Dry Roti-Rich™ (must be stored in freezer until mixed)

DA-RR16D Dry Roti-Rich, pack makes one pint (1 pack) 5 oz
DA-RR32D Dry Roti-Rich, pack makes one quart (1 pack) 8 oz
DA-RRGD Dry Roti-Rich, pack makes one gallon (1 pack) 1.1 lbs

GEL BASE FOODS

GELLY BELLY™ FOOD MIX, BY FLORIDA AQUA FARMS

Gelatin based food mix formulated by Frank Hoff over 28 years ago to feed pompano. Unflavored gelatin serves as the binder to a mixture of vitamins, minerals, krill meal, special mixture of fish and invertebrate feeds, microalgae and pigment enhancers. Diet can be further extended by adding fresh shrimp, clams etc. Just add hot water, mix, chill and freeze excess food. Cut in cubes, strips or crumble. Packaged in sealed cans to extend shelf life.

DF-GB77	Gelly Belly Mix, 4 oz, sealed can	6 oz
DF-GB78	Gelly Belly Mix, 8 oz, sealed can	10 oz
DF-GB79	Gelly Belly Mix, 16 oz sealed can	18 oz

FOODS & INGREDIENTS

KELP MEAL

A very important enriched natural marine algae (*Ascophyllum nodosum*). Harvested in its live state, dehydrated to a specific moisture content by sun-drying and/or mechanical dehydration. It is then ground to specific particle sizes. Greenish-brown to greyish-brown with a characteristic odor. Kelp meal is very rich in minerals, trace metals, amino acids and carbohydrates. Normally used in a food mix at 2% of total feed for fish and 2 to 10% for shrimp and prawns. Shown to increase weight and reduce susceptibility to disease. Size #200 mesh (<90 μ±) which is a flour consistency.

EA-KP1	Kelp Meal, 1 lb	1.2 lbs
EA-KP5	Kelp Meal, 5 lbs	5.5 lbs
EA-KP10	Kelp Meal, 10 lbs	11 lbs
EA-KP40	Kelp Meal, 40 lbs, 5 gallon bucket	44 lbs

SPIRULINA. SPRAY-DRIED MICROALGAE

Rich in pigments, proteins and growth promoting factors. Low levels stimulate feeding responses, digestive processes, growth, reproductive processes, increase hatches, survival rates, enhance overall health and coloration in aquatic animals and a immune stimulator in fish. *Spirulina* is a high quality spray dried, edible, micro blue-green algae. In a feed mixture less than 5% should be used. Higher dosages normally do not produce better results and may actually interfere with vitamin E uptake. Approximate analysis - Protein 55-70%, Fat 4-7%, Carbohydrates 15-25%, Ash (minerals) 5-13%, Fiber 2-7% and Moisture 2-7%. Plus several amino acids.

EA-S	Spirulina Algae, 1/2 lb	9 oz
EA-S1	Spirulina Algae, 1+ lbs	1.2 lbs
EA-S5	Spirulina Algae, 5+ lbs	5.5 lb
EA-S25	Spirulina Algae, 25+ lbs	27 lbs
EA-S50	Spirulina Algae, 50+ lbs	55 lbs

YEAST, INACTIVE

Quality food grade, inactive, yeast (*Saccharomyces cerevisiae*), which is an excellent food for many zooplankters such as rotifers, daphnia, and Artemia. Not a by-product from brewers or paper mills this product meets Federal standards for human utilization. When rearing Artemia, rotifers or other invertebrates keep in mind that yeast alone is not as nutritionally balanced as our enriched yeast formula (Roti-Rich™). Nutritional value of zooplankton is directly related to their diet. A combined diet of microalgae, yeast and Roti-Rich™ will promote excellent nutritional value and growth. Approximate analysis; protein 45-52%, fat 2.1%, lipids 5.6%, carbohydrates 29.4%, ash 8.0%, calcium 0.12%, phosphorus 1.5%, moisture 3.3-7.0%. Rich in vitamins niacin 500 mcg/gm, pantothenic acid 112 mcg/gm, riboflavin 70 mcg/gm, thiamine 18 mcg/gm, folic acid 12 mcg/gm, pyridoxine 17 mcg/gm and biotin 1.2 mcg/gm plus many essential amino acids.

EA-IY14	Inactivated Yeast, 1/4 lb	4 oz
EA-IY12	Inactivated Yeast, 1/2 lb	8 oz
EA-IY1	Inactivated Yeast, 1+ lb	1.2 lbs/lb
EA-IY5	Inactivated Yeast, 5+ lbs	1.2 lbs/lb
EA-IY10	Inactivated Yeast, 10+ lbs	1.2 lbs/lb
EA-IY50	Inactivated Yeast, 50+ lbs	1.2 lbs/lb



Kelp Meal, Dry Analysis

(*Ascophyllum nodosum*)
Protein = 10%, Crude
Fiber = 6%, Ash = 22%,
Moisture = 12%, Ash
(minerals) = 22%,
Fat = 2%,
Carbohydrates = 52%
Metals and Minerals

Aluminum	20-100 ppm
Magnesium	0.5 to 1.0%
Asenic	<3 ppm
Manganese	0 to 5 ppm
Barium	15-50 ppm
Molybdenum	<1 ppm
Beryllium	<1 ppm
Nickel	1-5 ppm
Boron	80-100 ppm
Nitrogen	0.6 to 2.0%
Calcium	1.0 to 3.0%
Phosphorus	0.1 to 0.2%
Cadmium	<1 ppm
Potassium	2.0 to 3.0%
Chlorine	4.0%
Selenium	3 to 4 ppm
Chromium	<1 ppm
Sodium	2.4 to 4.0%
Cobalt	1-10 ppm
Strontium	100-200 ppm
Copper	4-15 ppm
Sulphur	2.0 to 2.3%
Iron	0.015 to 0.10%
Titanium	3-6 ppm
Iodine	0.05 to 0.08%
Tin	<10 ppm
Lead	<1 ppm
Vanadium	2-5 ppm
Zinc	35-100 ppm

Vitamins

Biotin	0.1 to 0.4 ppm
Thiamin	1 to 5 ppm
Carotene	30 to 60 ppm
Tocopherols	150 to 300 ppm
Folic acid	0.1 to 0.5 ppm
Vitamin B12	< 0.004 ppm
Niacin	10 to 30 ppm
Vitamin C	200-2000 ppm
Riboflavin	5 to 10 ppm
Vitamin E	2-35 mg/100
Vitamin K	< 10 ppm

Carbohydrates

Alginic acid	18 to 27%
Laminarin	2.0 to 5.0%
Mannitol	3.0 to 8.0%
Other sugars	20 to 22%

Amino Acid Breakdown

gm of amino acid nitrogen per 100 gm of Protein Nitrogen

Alanine	3.8 gm
Lysine	1.33 gm
Arginine	0.22 gm
Methionine	1.39 gm
Aspartic Acid	5.44 gm
Ornithine	0.0 gm
Citulline	0.0 gm
Phenylalanine	2.82 gm
Cystine	trace
Proline	4.42 gm
Glycine	3.16 gm
Serine	0.14 gm
Glutamic Acid	10.0 gm
Threonine	1.27 gm
Histidine	0.42 gm
Tryptophan	trace
Isoleucine	1.94 gm
Tyrosine	1.80 gm
Leucine	4.84 gm
Valine	3.46 gm

Spirulina Typical Analysis

Physical Properties	100% spirulina microalgae
Composition:	fine, uniform powder
Appearance:	dark blue-green
Color:	0.35 - 0.55 Kg per liter
Bulk Density:	100% will pass through 64 mesh
Particle size:	
General Composition	
Protein	60 - 70%
Carbohydrates	15 - 25%
Fats (Lipids)	4 - 7%
Vitamins per 10 grams	
Beta carotene	14 mg
Pro Vitamin A	23,000 IU
Vitamin E (a-tocopherol)	1.0 mg
Vitamin B1, thiamin	0.35 mg
Vitamin B2, riboflavin	0.40 mg
Vitamin B3, niacin	1.40 mg
Vitamin B6, pyridoxine	80 mcg
Vitamin B12	320 mcg
Inositol	6.4 mg
Folic acid	1 mcg
Biotin	0.5 mcg
Panthenic Acid	10 mcg
Minerals per 10 grams	
Calcium	100 mg
Phosphorus	80 mg
Magnesium	40 mg
Iron	15 mg
Sodium	90 mg
Potassium	140 mg
Enzyme Activity per 10 grams	
Superoxide dismutase	15,000 units
Amino Acids per 10 grams	
Alanine	470 mg
Arginine	430 mg
Aspartic Acid	610 mg
Cystine	60 mg
Glutamic Acid	910 mg
Glycine	320 mg
Histidine	100 mg
Isoleucine	350 mg
Leucine	540 mg
Essential Fatty Acids per 10 grams	
Linoleic	80 mg
Pigments per 10 grams	
Phycocyanin (blue)	1,500 mg
Chlorophyll (green)	110 mg
Carotenoids (orange)	37 mg

Gelatin

Protein 86%, Carbohydrates 1% max, Fats <0.5%, Moisture 12% max, Ash 2% max, Calorie content 3.5 cal/g

Nutritional Information

Typical analysis per 100 grams

Protein = >83 gms, Sodium = 220 mg, Fat = 0 gm, Saturated fat = 0 gm
Cholesterol = 0 gm, Carbohydrates 0 gm, Total dietary fiber = 0 gm, Total sugars = 0 gm. Vitamin A = 177 IU, Vitamin C = 0 mg, Calcium = 35 mg, Iron = 4 mg, Total calories = 350

Mineral Content per 100 grams

Sodium .. 100-500 mg	Potassium 10-50 mg	Calcium 100-100 mg
Iron 0.5-1.5 mg	Phosphorus . 0.05-0.1 mg	Zinc 0.2-0.5 mg
Copper 0.2-0.5 mg	Chloride 100-500 mg	

Amino Acids % by Weight

Alanine 11%	Arginine 8.8%	Aspartic Acid 6.7%
Glutamic Acid .. 11.4%	Glycine 27.5%	Histidine 0.78%
Hydroxyproline 14.1%	Leucine & Iso 5.1%	Lysine 4.5%
Methionine 0.9%	Phenylalanine 2.2%	Proline 16.4%
Serine 4.2%	Threonine 2.2%	Tyrosine 0.3%
Valine 2.6%	Cystine trace	

VITAMIN MIX

Water Soluble
Dosage 1 lb/100 lbs food
Guaranteed Analysis/pound (453g)

Vitamin A, USP Units	325,000
Vitamin D3, USP Units	65,000
Vitamin E, IU Units	32,500
Vitamin K, mgs	793.65
Vitamin B12	10.08
Riboflavin, mgs	3,250
p-Panthenic acid, mgs	15,600
Niacin, mgs	19,500
Choline, mgs	2,600
Thiamine, mgs	2,600
Pyridoxine, mgs	2,600
Folic acid, mgs	780
Ascorbic acid, mgs	87,100
Biotin, mgs	40
BHT, mgs	200
Inositol, mgs	13,000

PRODUCT GRADE NOT INTENDED FOR HUMAN CONSUMPTION
Formulated and Packaged by
Florida Aqua Farms Inc.
Dade City, Florida

Formulated & Packaged by FAFUSA

MINERAL MIX

Water Soluble
Dosage 1 lb/1000 lbs food
Concentration analysis based on
11.34gm (0.4oz)/4.53Kg (10 lbs) feed
Approximate Analysis

Manganese	60 ppm
Zinc	50 ppm
Iron	40 ppm
Copper	4.0 ppm
Cobalt	0.5 ppm
Iodine	40 ppm
Selenium	0.4 ppm

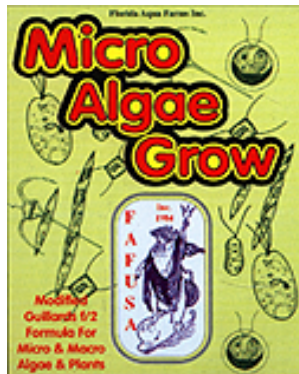
PRODUCT GRADE NOT INTENDED FOR HUMAN CONSUMPTION
Formulated and Packaged by
Florida Aqua Farms Inc.
Dade City, Florida

Formulated & Packaged by FAFUSA

Microalgae Grow & Mass Packs Guillard's f/2

Micro Algae Grow
Formulated for the culture of microalgae Guillard's f/2

Formulated & Packaged by FAFUSA



GELATIN

An ideal binder for moist based foods. Simply heat food ingredients to 30° C and gelatin will melt into the ingredients. Usually 3% to 7% gelatin, depending on ingredients used and liquid content. Will bind food together underwater for 3 to 8 hours. Moist binding of foods helps reduce water pollution due to excess food particles. Food can be prepared, frozen, and defrosted without loss of binding characteristics of gelatin. Edible grade.

EA-GEL1	..... Gelatin, 1+ lb.	..... 1.2 lbs/lb
EA-GEL5	..... Gelatin, 5+ lb.	..... 1.2 lbs/lb
EA-GEL10	..... Gelatin, 10+ lb.	..... 1.2 lbs/lb
EA-GEL25	..... Gelatin, 25+ lb.	..... 1.2 lbs/lb

VITAMINS & MINERALS

VITAMIN PREMIX, SOLUBLE

Formulated specifically to Florida Aqua Farms specifications. This same blend has been used by us for over 15 years. Water soluble, dissolves well with little residual. Good additive for those who blend their own feeds. Average dosage for fish is 1 lb (453 gm) per 100 lbs (45.3 Kg) of food. Good item for enhancing freeze dried and flake foods. Simply soak just enough dried feed to soak up all the fluid to make them moist.

EB-V14	..... Vitamin Premix, 4 oz	..... 5 oz
EB-V12	..... Vitamin Premix, 8 oz	..... 9 oz
EB-V1	..... Vitamin Premix, 1+ lbs	..... 1.2 lbs
EB-V5	..... Vitamin Premix, 5+ lbs	..... 5.5 lbs
EB-V10	..... Vitamin Premix, 10+ lbs	..... 11 lbs
EB-V25	..... Vitamin Premix, 25+ lbs	..... 27 lbs

MINERAL PREMIX, FLORIDA AQUA FARMS

Another item formulated and used for years to culture clownfish. It is a full bodied mineral mix designed for use in limiting diets or one type of diet. Although it is speculated that minerals are not needed in marine conditions the statement is basically speculation and not well founded. Many new studies indicate subtle to significant changes due to the utilization of wide array of micro metals and minerals. The premix contains mostly proteinated trace minerals. Potassium chloride and calcium carbonate are used as carriers. Recommended use is 5 lb/2000 lbs although higher levels should be considered in close system situations. Manufactured by Florida Aqua Farms.

EB-M	..... Mineral Premix, 4 oz	..... 5 oz
EB-M1	..... Mineral Premix, 1+ lbs	..... 1.2 lbs
EB-M5	..... Mineral Premix, 5+ lbs	..... 5.5 lbs
EB-M10	..... Mineral Premix, 10+ lbs	..... 11 lbs

MICRO & MACROALGAE NUTRIENTS

MICRO ALGAE GROW™, GUILLARD F/2 FORMULATION

Florida Aqua Farms, modified, complete, one-part, liquid Guillard's fertilizer formula. This formula has been used in the aquaculture and scientific community for culturing a wide spectrum of unicellular microalgae for over 30 years. Sizes listed are suitable for small volume microalgae cultures or subcultures. Shelf life over two years. For large scale cultures and a great cost savings, we suggest using our dry Mass Packs. (f/2 = 1/2 full strength, full strength is listed as f). Formulated and manufactured by Florida Aqua Farms Inc.

FA-MIS	..... Micro Grow 200 ml, (400 L at f/2 level)	..... 8.5 oz
FA-MIL	..... Micro Grow 1 L (2,000 L at f/2 level)	..... 2.6 lbs
FA-MI4L	..... Micro Grow 4 L, (8,000 L at f/2 level)	..... 9 lbs
FA-MI5G	..... Micro Grow 19 L, (40,000 L at f/2 level)	..... 45 lbs

MICRO ALGAE GROW MASS PACK™, GUILLARD F/2

Popular commercial formulation for large volume microalgae cultures. FAF product, used throughout the world on the largest shrimp and invertebrate farms. A modified, premeasured, dry Guillard's f/2 fertilizer formula. Eliminate costs of obtaining and maintaining large inventories of ingredients and the time needed to weigh out major and minor ingredients. Premeasured technical and reagent grade ingredients eliminate costly mistakes by inexperienced technicians. Mass Packs include major and minor nutrients, you just add the water and mix. Majors, nitrate, phosphate and iron are in dry form or moist form and minors including vitamins and trace metals, are liquid. Light weight mix provides great savings in shipping costs over standard liquid formulations. One box only weighs 2.2 pounds which is enough to fertilize 10,000 L (2,645 gallons) at f/2 level at a very low cost per gallon or per liter (100 pack price without shipping costs). Liquid fertilizers weigh about 7.5+ lbs. for the same amount of fertilizer. Why pay for water? This stable wet/dry formulation assures longer shelf life and is easily mixed. Once mixed, store in a cool dark area to help reduce precipitation and deterioration, lasts 3-4 months after mixing. Considered a 5.1 hazard class chemical in dry form. Large volumes, must be sent by truck or ship. However we offer a moist formula which is suitable for normal shipping in low volumes.

MASS PACK™ with out silicate (1.005 gm = 2.2 lb)

FA-MPI	One Mass Pack (specify dry or moist pack)	2.2lbs
FA-MP10	10 Mass Packs (specify dry or moist pack)	24 lbs
FA-MP20	20 Mass Packs (specify dry or moist pack)	46 lbs
FA-MP40	40 Mass Packs (specify dry or moist pack)	92 lbs
FA-MP100	100 Mass Packs (specify dry or moist pack)	230 lbs

MASS PACK™ with silicate (wt. 1,312gm = 2.9 lb)

FA-MPSI	One Mass Pack with silicate(specify dry or moist pack) .	2.9 lbs
FA-MPS10	10 Mass Packs with silicate (specify dry or moist pack) ...	31 lbs
FA-MPS20	20 Mass Packs with silicate (specify dry or moist pack) ...	60 lbs
FA-MPS40	40 Mass Packs with silicate (specify dry or moist pack) ...	120 lbs
FA-MPS100	100 Mass Packs with silicate (specify dry or moist pack) ...	300 lbs

MICRO ALGAE GROW TRACE PACK™, GUILLARD F/2

Just add a primary nitrate source (sodium nitrate, ammonia chloride or urea), phosphate, water and silicate if needed. FAF trace pack includes all the trace metals and vitamins. Enough to fertilize 10,000 liters (2,645 gal) at f/2 strength. Significant savings on shipping since the major weight difference between our Mass Packs and Trace Packs are the major nutrients, nitrate, phosphate, silicate and packaging. Weight 113 gm (4 oz.). We can also provide trace solutions in gallons or five gallon buckets. Formulated and made by Florida Aqua Farms Inc.

FA-TPI	One Trace Pack	5 oz
FA-TP10	10 individual Trace Packs	3.2 lbs
FA-TP40	40 individual Trace Packs	12.5 lbs
FA-TP100	100 individual Trace Packs	31.2 lbs
FA-TPL1	50 Bulk pack, 1+ gallon liquid + dry iron	lbs
FA-TPL5	270 Bulk Pack, 5 gallons + dry iron	lbs
FA-TPL8	540 Bulk Pack, 10 gallons + dry iron	lbs

PLANT FUEL

Complete soluble, stable source of supplemental trace metals and vitamins. Principally formulated for commercial aquaculture to enhance growth and color of large (macro) freshwater and saltwater plants and algae. This formula has been used in Florida Aqua Farm's plant division for over 17 years. Primary nutrients, nitrate and phosphate, are not present in *Plant Fuel*. Formulated for use in aquaria and ponds that have established populations of fish and/or invertebrates that are being fed. Metabolism of waste products and excess food normally provide suitable levels of nitrate and phosphate. If you intend to grow only plants we suggest our full strength formula *Plant Fuel Too*. Both *Plant Fuel's* are enriched with chelated iron, iodide and other essential aquatic trace metals and vitamins including B12, biotin thiamin and others.

FA-MAS	Plant Fuel, 6oz (200 ml) , serves 379 L at f strength	8 oz
FA-MAL	Plant Fuel, 1 qt (1 L) , serves 1516 L at f strength	2.5 lbs
FA-MA4L	Plant Fuel, 1 gal (4 L) serves 6064 L at f strength	9 lbs



MASS PACKS COMMERCIAL F/2 NUTRIENT FORMULA FOR MICROALGAE AND DIATOMS

Formulated & Packaged by FAFUSA



TRACE PACKS

Add major ingredients, nitrate and phosphate. We provide the trace nutrients including metals and vitamins. Save on freight and cost.

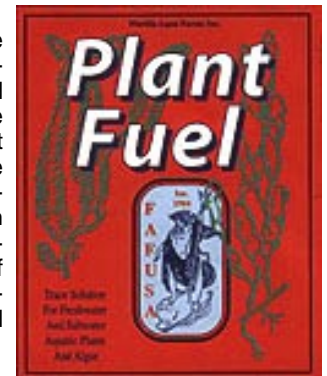
Formulated & Packaged by FAFUSA

Ingredients: Iron, Zinc, Cobalt, EDTA, Iodide, Manganese, Molybdate, Vanadium, Selenium, Cyanocobalamin, Biotin, Thiamine, Copper

Formulated & Packaged by FAFUSA

Plant Fuel

For aquarium use where the major nutrients, nitrates and phosphates, are usually present. Not the same as the FAF trace pack formula. Enriched with invertebrate stimulants. Source of trace nutrients including metals and vitamins.



Microalgae & Diatom Nutrient Ingredients

For Commercial or Educational Culture Work

Channel catfish, rainbow trout, Pacific salmon and tilapia daily recommendations are >50 mg/kg (22 mg/lb) of feed. Increase demands for vitamin C are evident in certain spawning fish. Stress including low dissolved oxygen, high temperatures or rapid temperature changes are help by increased vitamin C.

VITAMIN C

MICRO AND MACRO ALGAE VITAMINS AND MAJOR NUTRIENTS

VITAMINS

Cyanocobalamin
Biotin, Vit H
Thiamin Hydrochloride

MAJOR NUTRIENTS

Manganese Chloride
Sodium Nitrate
Sodium metasilicate
Sodium phosphate
Iron EDTA 13%

LIQUID SILICATE SOLUTION

Concentrated silicate solution for diatom growth.

FA-SS6 Silicate solution, 6oz (200ml) 7 oz
FA-SS32 Silicate solution, 32 oz (1 quart) 3 lb

VITAMIN C, GRANULAR AND ENCAPSULATED

Ascorbic acid (Vitamin C) deficiencies are well documented. Deficiencies include internal and external hemorrhages, reduced bone collagen, lower jaw erosion, anemia, structural deformities, fin erosion, scoliosis (bent-back), poor growth, mortalities etc.

EB-VC14 Granular, food grade vitamin C, 4 oz 5 oz
EB-VC18 Granular, food grade vitamin C, 8 oz 5 oz
EB-VC16 Granular, food grade vitamin C, 1+ lbs 17 oz
EB-VC55 Granular, food grade vitamin C, 55 lbs 60 lbs

VITAMINS FOR MACRO AND MICROALGAE CULTURE

These are pure food grades of vitamins commonly used in feeds, as supplements or in nutrient mixtures for alga culture.

EB-V112 Cyanocobalamin, Vit B12, 1 gm vial 1 oz
EB-V114 Biotin, Vit H, 1 gram vial 1 oz
EB-V116 Thiamin Hydrochloride, Vit B1, 500 gms 1.2 lbs

NUTRIENTS FOR MACRO AND MICROALGAE CULTURE

These are major nutrient ingredients that are usually used in culturing micro and macroalgae. We offer these to those who make or use their own formulas.

Manganese Chloride

EB-V117 Manganese Chloride 1/2 lbs 9 oz

Sodium Nitrate

EB-SN1 Sodium Nitrate 1 lb 1.2 lb
EB-SN10 Sodium Nitrate 10 lbs 11 lbs
EB-SN50 Sodium Nitrate, bucket 50 lbs 55 lbs

Sodium Metasilicate (for Diatoms)

EB-SM1 Sodium metasilicate 1 lb 1.2 lb
EB-SM10 Sodium metasilicate 10 lbs 11 lbs
EB-SM50 Sodium metasilicate, bucket 50 lbs 55 lbs

Sodium Phosphate

EB-SP1 Sodium phosphate 1 lb 1.2 lb
EB-SP10 Sodium phosphate 10 lbs 11 lbs
EB-SP50 Sodium phosphate, bucket 50 lbs 55 lbs

Iron EDTA (13% chelated iron)

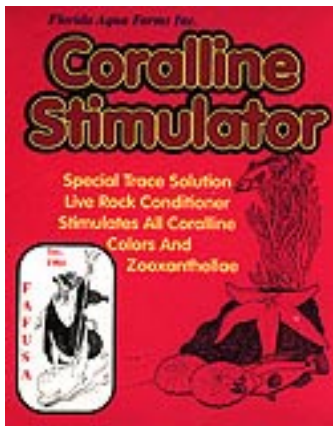
EB-FE1 Iron EDTA 13% 1 lb 1.2 lbs
EB-FE10 Iron EDTA 13% 10 lb 11 lbs
EB-FE50 Iron EDTA 13%, bucket 50 lb 55 lbs

WATER NUTRIENTS & TREATMENTS

CORALLINE STIMULATOR™

Coralline Stimulator is a complete, soluble, stable source of supplemental trace metals and essential vitamins. Principally formulated for enhancing growth and all colors of corals and other invertebrates. Stimulates zooxanthellae growth (microalgae) found in invertebrate tissues such as corals, anemones and clams. Retards hair algae. Does not alter pH. Use in either fresh or saltwater. Use in conjunction with reef formers of calcium hydroxide and strontium chloride. This exact formula has been used by researchers at Florida Aqua Farms Inc. for over 20 years. Primary nutrients, nitrate and phosphate, are purposely limited in Coralline Stimulator since it is intended for use in aquaria that have established populations of fish and/or invertebrates that are routinely fed. Metabolism of waste products from these animals normally provide sufficient levels of nitrate and phosphate. Coralline Stimulator is enriched with chelated iron, iodide, strontium and other essential trace metals and vitamins including B12, biotin, and thiamin. Formulated and manufactured by FAF.

FA-C Coralline Stimulator, 2 oz (1000 gal @ suggested dose) 4 oz
FA-CS Coralline Stimulator, 6 oz (1000 gal @ suggested dose) 8 oz
FA-CSL Coralline Stimulator, 1 qt (5333 gal @ suggested dose) 2.5 lbs
FA-CS4L Coralline Stimulator, 1 gal (21332 gal @ suggested dose) . 2.5 lbs



Trace Metals and Vitamins for Reef Tanks

FA=C

Made by FAFUSA



Calcium and Carbonate Additives for Reef Tanks

TC-20230
Two bottle set



CORAL REEF ADDITIVES

Hardness and Alkalinity Plus is a complex of the major, minor and trace chemicals separated into a buffering solution and a calcium enrichment solution. When they are both added simultaneously there is an abundance of calcium and carbonate ions available for growth of calcium secreting organisms. Unlike the addition of carbon dioxide, there is no drop in pH when this complex is used. As carbonates are extracted these ions are replaced by the buffering effect of Alkalinity Plus. As calcium is extracted these ions are replaced by the concentrated calcium complex in Hardness Plus. The net result is the availability of both carbonates and calcium without altering the chemical ratios of the water. When used with our Coralline Stimulator you have a complete major and minor nutrient mix for enhancing coral growth. Test kits are listed on page 24.

TC-20230 Two bottle set, 1 qt (32 oz) each 5 lbs

IODIDE SOLUTION, TRACE NUTRIENT

We have experimented with iodide solutions for over 25 years. In closed systems it quickly becomes limited and contributes to a multitude of problems including goiter or tongue growths in fish, delayed metamorphosis of fish larvae, adverse coral growth etc. Further discussion of use can be found in our new book Conditioning and Spawning of Fish with Emphasis on Clownfish (VA-FAF3).

FA-P200 Iodide Solution, 6 oz bottle 8 oz

FA-P1L Iodide Solution, 1 qt bottle 2.5 lb

FA-P4L Iodide Solution, 1 gal bottle 9 lbs

DEFOAMER, 10% LIQUID SILICONE

Food grade liquid silicone based defoamer. Active emulsion is 10% polydimethylsiloxane and silica. Widely used in the food and cosmetic industries. FDA approved. Can be easily diluted in a blended with distilled water. Used in aquaculture to eliminate surface foam. A little goes a long way, 25 ml or less will treat 1000 gallons (3.8 m³).

TC-DF22 Defoamer, 6 oz, 10% active lbs

TC-DF24 Defoamer, 1 quart, 10% active 2.5 lb

TC-DF26 Defoamer, 1 gallon, 10% active 10 lbs

PH WATER TREATMENTS

We offer a variety of pH treatments for ornamental or backyard culture ponds or tanks. The buffer water treatment (TC-566189) is used to prevent pH swings by stabilizing the buffering capacity of the water. Buffer stabilization is essential for the nitrification process. At times the pH may swing up in an undesirable alkaline range or down in the acid range. PH up (TC-566702) safely raises the pH when it is 6.0 or lower. PH down (TC-566193) is used when the pH is 9.0 or higher. Desired range in freshwater is 7.0 - 7.5 and in saltwater 7.8 - 8.2. See test equipment for determining pH and other pond water conditions.

TC-570193 pH stabilizer, buffers water, 20 oz. treats 5,000 gallons . 1.4 lbs

TC-570192 pH up, increases pH, 0.6 lb treats 5,000 gallons 0.7 lbs

TC-570193 pH down, decreases pH, 1 lb treats 10,000 gallons 1.2 lbs

WATER CLARIFIER

It's Clear™ is a natural, "reef safe" water treatment for removal of suspended organic particles including protozoan stages of oodinium and cryptocaryan. Useful in controlling microalgae and bacterial blooms. Restores brightness and clarity to the cloudiest saltwater or freshwater. Will not damage filters or equipment. Not a bacteria based product. This is a patented cationic polyelectrolyte made from a deacetylated form of chitin called chitosan which is derived from crustacean shells. This positive charge, combined with a high molecular weight and high charge density makes it ideal for flocculating organic turbidity. **It's Clear** is non-toxic to fish, mammals and aquatic plants when used as instructed. This is a clear viscous solution that will not discolor aquarium water. Does not create a gummy or gelatinous mat on filter beds like alum sulfate. Filters do not have to be turned off and water exchanges are not required after treatment. A six ounce bottle will treat upto 4000 gallons based on full dose levels. Excellent shelf life


TC-V899 It's Clear, 2 oz bottle 3 oz

TC-V906 It's Clear, 6 oz bottle 9 oz

TC-V910 It's Clear, 1 quart bottle 3 lbs

TC-V920* It's Clear, 1 gallon bottle 11 lbs

TC-V930* It's Clear, 55 gallon drum. 600 lbs



IODIDE SOLUTION

Iodine becomes limiting in closed or high intensity culture systems. Iodine deficiencies have an adverse affect on metamorphosis of algae, invertebrates and fish. Levels (60 µg/liter) which are 10 times natural seawater are often used to induce metamorphosis in a timely manner in marine clownfish. Use 2 drops per liter to achieve 60 µg per liter. See page 135 of our Conditioning and Spawning book for more info.

Formulated By
Florida Aqua Farms
Dade City Florida

Formulated & Packaged by FAFUSA



10 PERCENT
DEFOAMER
**Foodgrade
Silicone**
TC-DF22 to DF26

Formulated & Packaged by
FAFUSA

PH Buffers

TC-507192



TC-507189



TC-507193

PH Adjusters PH Up & Down

It's Clear Water Clarifier

TC-V899 to
TC-VC930

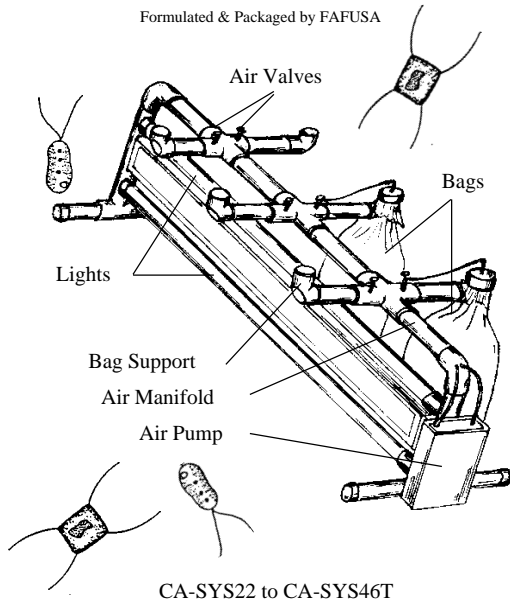


Formulated & Packaged by
FAFUSA

**Sodium Thiosulfate
CHLORINE/CHLORAMINE
REMOVER**

Dry form, just mix and use

*Lab Size,
Plastic Bag Culture Systems
For Microalgae, Rotifers, Etc.*



CA-SYS22
Made by FAFUSA



CH-PS41

Backyard Culture Systems

Made by FAFUSA

CHLORINE REMOVER, SODIUM THIOSULFATE

Sodium Thiosulfate is used to neutralize chlorine or chloramines in water. Administered in liquid form. Dissolves quickly, 158 grams make a molar solution.

EB-ST1	Sodium Thiosulfate	1 lb	1.2 lbs
EB-ST5	Sodium Thiosulfate	5 lbs	5.8 lbs
EB-ST10	Sodium Thiosulfate	10 lbs	11 lbs
EB-ST100	Sodium Thiosulfate, bucket	50 lbs	55 lbs

PLANKTON CULTURE SYSTEMS

CULTURE SYSTEM FOR MICROALGAE/ROTIFER/ARTEMIA

Compact ready to use, counter top culture units. Suitable for subculture work, experimental research, school projects or for maintaining small phytoplankton and/or zooplankton inoculant populations. Utilize 6 to 10, disposable plastic culture bags, 3 to 5 on each side depending on model. All models come with built-in lights, light protectors and splash guards, built-in air manifold system including valves and connections, rigid PVC support frame, rigid air tubes, contamination caps, airline tubing, airstones and 36 square bottom culture bags. Optional equipment includes mounted air pumps and starter kits which include; 2 Micro Algae Disks, 1 Micro Algae Grow, 2 Roti-Rich (6 oz. size), 1 Plankton Collector, 1 Manual, and 2 vials of either fresh or saltwater rotifers must be specified. Single sided units (SYS420 & 430) can be placed against the wall. All units can be easily connected to your existing air system or adapted to our air pumps. Units 2' long use 7.5 L bags and 4' units use 17 L bags. Taller model SYS44T uses 30 liter bags. Prices do not include the optional mounted air pump or starter culture equipment. Allow 3-4 weeks. Mfg. Florida Aqua Farms USA

Code #	Bulbs	Bags	Lights	L X W X H	Weight
Two Sided Culture Systems					
CA-SYS22	2'	6-7.5 L	2	28" x 16.5" x 16"	(OS) 19 lbs
CA-SYS23	2'	6-7.5 L	3	28" x 16.5" x 16"	(OS) 23 lbs
CA-SYS42	4'	10-17 L	2	52" x 16.5" x 16"	32 lbs
CA-SYS43	4'	10-17 L	3	52" x 16.5" x 16"	38 lbs
One Sided Culture Systems					
CA-SYS420	4'	5 - 17 L ...	2	52" x 12" x 16"	30 lbs
CA-SYS430	4'	5 - 17 L ...	3	52" x 12" x 16"	30 lbs
Tall System, Two Sided					
CA-SYS44T	4'	8-30 L	4	52" x 12" x 24"	33 lbs
Tall System, One Sided					
CA-SYS46T	4'	4-30 L	4	52" x 12" x 24"	30 lbs
Optional Equipment					
CA-SYSA	Mounted air pump				5 lbs
CA-SYSSC	Starter Culture Kit				3 lbs

PLASTIC CULTURE BAGS

Linear polyethylene plastic, 3 mil square bottom bags or clam seam (single seam on bottom like a pillow) . Sold by 36 or by the case.

TG-BAG34LP	34 L square bottom bag, 14" x 14" x 22" --	36 bags	5 lbs
TG-BAG34LC	34 L square bottom bag, 14" x 14" x 22" --	250 bag cs	32 lbs
TG-BAG17LP	17 L square bottom bag, 7" x 7" x 22" --	36 bags	3 lbs
TG-BAG17LC	17 L square bottom bag, 7" x 7" x 22" --	250 bag cs	20 lbs
TG-BAG8LP	7.5 L square bottom bag, 6" x 4" x 22" --	36 bags	2 lbs
TG-BAG8LC	7.5 L square bottom bag, 6" x 4" x 22" --	250 bag cs	12 lbs
TG-BAG30LP	30 L pillow clam seam bag, 20" x 36" --	36 bags	2 lbs
TG-BAG8LC	30 L pillow clam seam bag, 20" x 36" --	250 bag cs	12 lbs

BACKYARD CULTURE SYSTEMS

BACKYARD FISH AND PLANT CULTURE SYSTEMS

Grow fish and vegetables year round in small, compact, closed recycling culture systems utilizing either a low watt, economical, water or air pump. This is a series of economical backyard and tabletop aquaponic culture systems. Systems range from 40 gallons for table top units to 160 gallons. Units are portable. Ideal for teaching and avid hobby use. Particle wastes are concentrated in the clarifier which can be removed and used as nutrients for terrestrial plants. Suitable for fish or invertebrate culture. All include a tank with a mounted window, water and/or air pump, clarifier tray, biowheel or fluidized biological filter, a mounted hydroponic plant tray, heater, all needed parts, assembly instructions and a manual on tilapia culture. We can provide blue tilapia fry and appropriate feeds.

FAF Tabletop Culture Systems

We selected oval tanks for space saving and excellent circulation. We offer one 40 gallon. Kit includes the tank, viewing window, air pump, airlifts, clarifier unit, one of two types of biological filters, fittings, instructions and a culture manual. 40 gallon system is suitable for growing up to 4+ lbs of tilapia and 110-160 gallon systems can handle upto 25 to 50+ lbs tilapia. If desired larger systems can be elevated on platforms for easier viewing.

Table Top Culture System

CH-FS41 Fish culture system, 40 gallon, with biowheel filter

Ground Level Culture Systems

CH-FS111 Fish culture system, 110 gallon, with biowheel filter

CH-FS161 Fish culture system, 160 gallon, with biowheel filter

Larger ground level units sent by truck.

SEE FILTER SECTION FOR SEPARATE BIOWHEELS

HYDROPONIC SUPPLIES

ROCKWOOL SUBSTRATE

We offer rockwool propagation blocks and net containment cups for the rockwool blocks. Rockwool is an ideal substrate for growing almost any plant. It is made from natural volcanic rock which is reheated and formed into "wool-like" fibers. These fibers are sterile and are ideal for proper root growth. Seeds or small rooted plants are placed in the block which goes into the containment cups which are placed into the hydroponic culture trays or tubes. Larger cubes (HP-843) have a 1 1/2" diameter hole that will accept the smaller cube. Used for larger plants like tomatoes, cucumbers, early stage of trees and bushes etc. Rockwool blocks can only be used once since the roots grow within the substrate.

HP-800 Rockwool cube, 1 1/2"L x 1 1/2"W x 1 1/2"H, 98/pack 4 lb

HP-846 Rockwool cube, 1 1/2"L x 1 1/2"W x 1 1/2"H, 46/pack 2 lb

HP-823 Rockwool cube, 1 1/2"L x 1 1/2"W x 1 1/2"H, 23/pack 1 lb

HP-843 Rockwool block, 3"L x 3"W x 2 1/2"H, 8/pack 1 lb

HP-853 Rockwool sheet, 36"L x 1 6"W x 3"H, 1/pack 2 lb

CONTAINMENT MESH POTS

Rockwool blocks are placed into these cups and then placed into a holder which floats on a water surface. We offer two sizes, 2" and 3" diameter.

HP-860 Mesh pot, 2"H x 2" diameter at top, 25/pack 1 lb

HP-864 Mesh pot, 2"H x 3" diameter at top, 25/pack 1 lb

HYDROPONIC NUTRIENTS

If you do not intend to use an integrated hydroponic system which utilizes dissolved nutrients from fish or invertebrate wastes then you must add nutrient sources to the water. Products like our Mass Packs and Micro Algae Grow can be used for some plants. We offer several dry hydroponic formulas for use.

HP-900 MaxiGro, general growing formula, 1 lb can 1.2 lbs

HP-904 MaxiGro, general growing formula, 5 lb can 6 lbs

HP-910 Maxibloom, high performance complete formula, 1 lb can 1.2 lbs

HP-914 Maxibloom, high performance complete formula, 5 lb can 6 lbs

HP-920 FloraMajic, high performance complete formula, 1/4 lb can 5 ozs

HP-922 FloraMajic, high performance complete formula, 1 lb can 1.2 lbs

HP-926 FloraMajic, high performance complete formula, 5 lb can 6 lbs



Made by FAFUSA CH-PS161

Backyard Culture Systems
Complete Turn Key Units
 You Provide The Fish and Plants



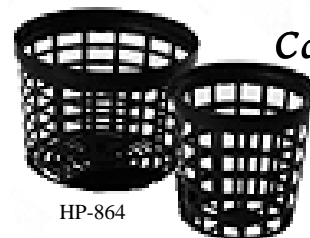
HP-800 TO 823

Rockwool Growth Medium



Larger Growth Block

HP-843



Containment Mesh Pots

HP-864

HP-860

Hydroponic Nutrient Sources



Hydroponic Test Kit Page 24



CH-PK2

Water Garden Kit



Pond Liners

Premade or by the roll



Dig a hole



Put liner in place and secure edges



Decorate sides with stones etc. and install optional pump and fountain

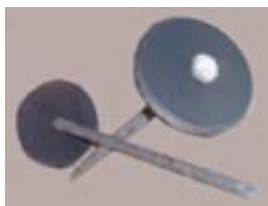
Instead of a pond perhaps make a stream by putting a pump at one end and underground plumbing back to the stream head.



Liner Holders

CF-HS22

Made by FAFUSA



WATER-GARDEN KIT

POND AND FOUNTAIN KITS

These attractive kits offer an alternative to an inground pond. Kits come complete with: kiln-dried redwood frame and butterfly connectors; glazed ceramic tiles; fish-friendly 20 mil liner; 95 gal, energy efficient, submersible pump with flow control valve; and a telescopic fountain stem with two fountain patterns. We offer two models. CD-PK2 is octagon in shape with a capacity of 36 gallons and water surface area of 4.8 square feet. Height is 13.5" and 32" in diameter.

CD-PK2 36 gallon Wooden Pond complete lbs

POND LINERS, KITS, & ACCESSORIES

SUPER, FLAT, LINERS

New age, high-tech, pond liners. Liner material is 20 mil in thickness, puncture resistant, does not require underlayment, is plant and fish friendly and UV resistant. Liner has an embossed finish with small raised bumps that increase the surface area for attachment of beneficial bacteria. Black with a 20 year warranty.

CF-PLS810 10' x 8' Super Liner 13 lbs
 CF-PLS1015 10' x 15' Super Liner 24 lbs
 CF-PLS1520 20' x 15' Super Liner 48 lbs
 CF-SLB10100 10' x 100' Super Liner roll, FOB Factory 160 lbs
 CF-SLB15100 15' x 100' Super Liner roll, FOB Factory 240 lbs
 CF-SLB20100 20' x 100' Super Liner roll, FOB Factory 320 lbs
 CF-PLS2 Custom cut in 5' linear increments Price/linear foot

EPDM FLAT LINERS

Fish-friendly heavy-duty liners made of 45 mil EPDM (ethylene propylene diene monomer). Liner material is rubber-like, stretches and more flexible than the more common PVC or polyethylene liners. Good for rugged conditions. Other sizes available by special order.

CF-PL810 10' x 8' EPDM Liner 24 lbs
 CF-PL1015 15' x 10' EPDM Liner 45 lbs
 CF-PL1520 20' x 15' EPDM Liner 90 lbs
 CF-PL2430 24' x 30' EPDM Liner 216 lbs
 CF-PL10100 10' x 100' Super Liner roll, FOB Factory 300 lbs
 CF-PL15100 15' x 100' Super Liner roll, FOB Factory 450 lbs
 CF-PL20100 20' x 100' Super Liner roll, FOB Factory 600 lbs

LINER PATCHING AND SEALING MATERIAL

We offer several alternatives for repairing or putting two liners together.

CF-PLRK Patching kit for EPDM or PVC liners lb
 CF-PT6R Patching tape 6" wide, 25' long lbs
 CF-PT6 Patching tape 6" wide, sold by 3'+ sections lbs
 CF-ST2R Seaming tape 2" wide x 50' long, double sided lbs
 CF-ST2 Seaming tape 2" wide, sold by 3'+ sections lbs
 CF-ST4R Seaming tape 4" wide x 75' long, double sided lbs
 CF-ST4 Seaming tape 4" wide, sold by 3'+ sections lbs

LINER HOLDERS

Attachment spikes for holding liner in position. These are used in lieu or in conjunction with rocks or boards that are used to hold the liner in place along the bank. We recommend that they are used every 2' to 3' depending on the steepness of the bank. Just fold over the liner lip, puncture in a hole and insert the spike and holding lip and pound into the ground.

CF-HS22 Holding stakes, sold by each lb

HATCHERS & CULTURE VESSELS

BRINE SHRIMP HATCHER, HATCH-RITE 1™, 4.5 GALLON

Our popular, well proven product that is used throughout the world. Our Hatch-Rite 1™ and our larger Hatch-Rite 2™ are basically inverted pyramids. These designs allow you to hatch large amounts of Artemia with little waste and a small amount of water. These have been personally used in our facilities since 1972. Our hatcher CA-BSH1 will handle up to 300 cc (20 tablespoons) of cysts in just 4.5 gallons of water. Because of the unique design and circulation pattern just 2 quarts water is all that is needed for smaller hatches. Made of 1/4" thick plexiglass. Unit is 24" tall by 12" square at the top, provides no horizontal flat surfaces to trap cysts.. Equipped with replaceable drain valve at the bottom for removing hatched nauplii and cleaning. Comes with rigid air tube, tubing, air-stone, plastic globe valve, tubing adapter, and cleaning sponge. Manufactured by Florida Aqua Farms Inc. USA. Patent Pending

CA-BSH1..... Hatch-Rite1 - 4.5 gallon (17 L) 10 lbs

BRINE SHRIMP HATCHER, HATCH-RITE 2™, 13.5 GALLON

Our newest commercial size hatcher. The well proven pyramid shape is ideal for hatching brine shrimp cysts, fish eggs, etc. Made of high density polyethylene. Three sides are opaque with a plexiglass window in the front. Comes with lid that can be drilled for placement of a heater, air tube, etc. Bottom is equipped with a valve for removal of hatch brine shrimp and draining. Fits our single hatcher stand CA-BSH6. Hatcher is 20" x 20" wide and 30" high. Maximum capacity 13.5 gallons (50 liters). Can handle a full 15 ounce can of brine shrimp cysts.

CA-BSH2..... Hatch-Rite 2 - 13.5 gallon (50 L) 10 lbs

BRINE SHRIMP HATCHER SUPPORTS, HATCH-RITE 1™

PVC supports for our commercial hatchers (CA-BSH1 & CA-BSH2) listed above. Floor models come in 1 to 4 compartments for our hatchers. Multiple stands are for CA-BSH1 hatchers only. Made of heavy grade PVC furniture fittings and pipe. Can be disassembled for storage and shipping or glued together for permanent installations. Manufactured by Florida Aqua Farms Inc.

CA-BSH6..... Floor stand for single BSH1 and BSH2 hatchers 10 lbs

CA-BSH7..... Floor stand for 2 BSH1 hatchers 20 lbs

CA-BSH8..... Floor stand for 3 BSH1 hatchers 29 lbs

CA-BSH9..... Floor stand for 4 BSH1 hatchers 40 lbs

BRINE SHRIMP, HATCH-RITE 3™, HATCHER, TWO LITER

Smaller version of our cone shaped hatchers. Can be used for hatching brine shrimp, rearing algae or rotifers or aerating fish eggs. Clear molded acrylic plastic cone for ease of viewing and concentrating hatches. Holds two liters of water and can be used to hatch a maximum of about 35 cc (2 tablespoons) of cysts. Unit comes equipped with a plastic drain valve at the bottom for ease of drawing off new hatched nauplii. Includes; rigid PVC support stand, splash cap, rigid air delivery tube, air regulating needle valve, airline tubing and collecting cup with cap. Unit also ideal for growing microalgae, rotifers etc. Cone shape with round bottom provides perfect circulation patterns for maximum hatch. Manufactured by Florida Aqua Farms Inc. USA.

CA-BSH3..... Hatcher with Stand, 2 Liters 2 lbs

CA-BSH3A Hatcher without Stand 8 oz

CA-BSH3B Stand only 1.5 lbs

CA-C06 Extra clear cap 1 oz

BRINE SHRIMP HATCHER, MINI HATCH-RITE 4™, 400 ML

New item for 2003. This is the smallest version of our hatchers. Our mini hatcher is designed for those who have little room and/or a low demand for live brine shrimp, rotifers or microalgae. Comes with a 400 ml (13.5 oz.) hatching tube with an attached stand, bottom drain valve, airline valve, rigid air tube and cap. Height 12" and width 4" x 4". Neat and very compact .

CA-BSH4..... Brine Shrimp Hatcher, 400 ml 1 lbs

Commercial Brine Shrimp Hatchers Hatch-Rite 1 & 2™

Formulated & Made by FAFUSA



Brine Shrimp Hatcher Hatch-Rite2



Hatch-Rite3

Hatch-Rite4

Hatch-Rite 3 & 4
Manufactured By
Florida Aqua Farms

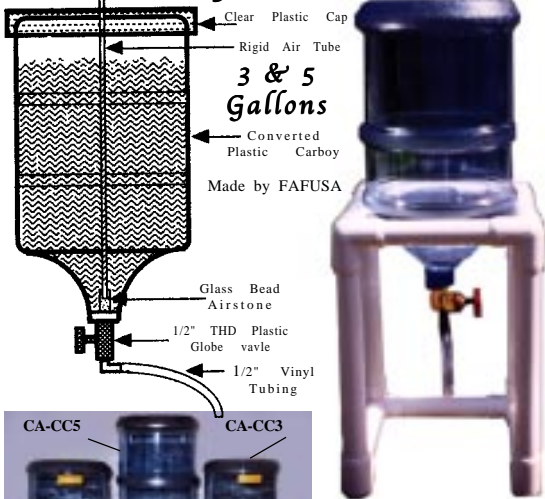


Hatching Jars **NEW**

Comes with mounted delivery tube with valve regulating assembly and return overflow tube. Hangs on side of standard aquaria or on our complete hatcher assembly CA-H26

Made by FAFUSA

Culture-Boy™ Culture Vessels



Culture-Boy™ Multi Vessel Stands



Triple Stand CA-CC3

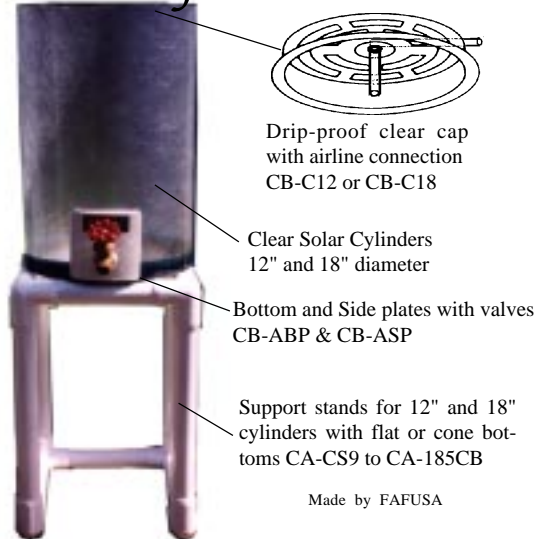
Plastic Carboys

Make your own culture vessels with our conversion kits CA-CK9



CB-CJ3 & CB-CJ5

Solar Cylinder Additions



Drip-proof clear cap with airline connection
CB-C12 or CB-C18

Clear Solar Cylinders
12" and 18" diameter

Bottom and Side plates with valves
CB-ABP & CB-ASP

Support stands for 12" and 18"
cylinders with flat or cone bot-
toms CA-CS9 to CA-185CB

Made by FAFUSA

HATCHING JAR, 2 LITER

Unique, economical 2 liter egg hatching jar. Commonly used for holding pelagic and loose benthic fish eggs, etc. in circulation during incubation. Designed to hang on the side of a tank or use in conjunction with our PVC stand (CA-BSH3B) which is used with our CA-BSH3 brine shrimp hatcher. Cone comes with 1/2" diameter fill tube, valve assembly, and 3/4" diameter return tube. We also offer a complete self contained kit including an plastic aquaria, small water submersible water pump, valve assemble, larval collectors and the egg hatcher.

CA-EH22 Hatching Jar only 2 lbs
CA-BSH3B PVC Hatcher Stand only 3 lbs
CA-EH26 Complete hatching unit 10 lbs

CULTURE VESSELS, CULTURE-BOY 3 & 5™ AND STANDS

Historically plastic or glass water jugs are used to hatch Artemia, culture rotifers, and microalgae. Restricted necks hamper cleaning, servicing and gas exchange. We have came up with a durable, easy to clean, vessel which is ready to use. Light clear blue in color, resists dropping, acid and chlorine. A 6" diameter access hole is on the bottom. Neck fitted with a removable plastic globe valve for draining cultures. Come in 3 (11 L) and 5 (19 L) gallon size and include; rigid air delivery tube, airstone, clear plastic, dripless, decontamination cap, plastic drain valve, tubing adaptor, and drain tubing. Do it yourself conversions kits include clear lid, valve, closure cap connectors, airstone, rigid tube and epoxy glue. We also offer sturdy furniture grade PVC stands 16" high which support one to four Culture-Boy's. Mfg by Florida Aqua Farms.

CA-CC3 Culture-Boy 3™, Culture vessel, 3 gallon size 3 lbs
CA-CC5 Culture-Boy 5™, Culture Cylinder, 5 gallon size 4 lbs
CA-C12 Extra clear tops 3 oz
CA-CS8 Culture Vessel Single Stand, for CA-CC3, CA-CC5 8 lbs
CA-CS9 Culture Vessel Double Stand, for CA-CC3, CA-CC5 14 lbs
CA-CS10 .. Culture Vessel Triple Stand, for CA-CC3, CA-CC5 21 lbs
CA-CS12 .. Culture Vessel Quad Stand, for CA-CC3, CA-CC5 30 lbs
CA-CK9 Culture Boy conversion Kit (everything except carboy) 3 lbs

CULTURE JUGS. PLASTIC- CARBOYS

Carboys, light clear blue, FDA approved polyvinyl. Resistant to repeated washing and shock. Neck ID 40 mm 53 mm OD diameter (Fits #10 stopper). Jugs are 12" in diameter, 5 gallon jugs are 21" high and 3 gallon are 15" high. Sold by the case only (6/case). Volume, light weight item subject UPS 30 lb category. For those who heat-up or pasteurize culture water within standard carboy vessels please see our specially designed 1000 W titanium heater (SB-S140).

CB-CJ3 Plastic Culture Jugs (6/case) (OS) 12 lbs
CB-CJ5 Plastic Culture Jugs (6/case) (OS) 15 lbs

CULTURE CYLINDER PARTS AND STANDS

We manufacture several parts that can be added to the Solar™ culture cylinders Florida Aqua Farms Inc. has further modified these cylinders by manufacturing bottom and side valve adapter plates which are optional. These are made of rigid PVC, tapped and provided with a 1/2" plastic spigot valve and tube adapter. Side mounts are bent to fit curved sides of 12" and 18" cylinders. Just drill hole for drainage and glue plate with silicone or tripolymer glue. In addition, we have a 15" high support stand suitable for 12" and 18" diameter cylinders either flat or cone bottom. Made of rigid furniture grade PVC, modified for access to bottom valves installed on cylinder and easily serviced.

CB-ABP Bottom Plate Adapter with 1/2" valve 8 oz
CB-ASP Side Plate Adapter with 1/2" valve 8 oz
CA-CS8 Support stand for 12" diameter cylinders w/ bottom valves 6 lbs
CA-CS9 Support stand for 18" diameter cylinders w/ bottom valves 8 lbs
CA-124CB . Support stand for 12" diameter cylinders cone bottom 6 lbs
CA-185CB . Support stand for 18" diameter cylinders cone bottom 6 lbs
CB-C12 Clear acrylic cap for 12" cylinders 3 oz
CB-C18 Clear acrylic cap for 18" cylinders 4 oz

COLLECTORS

PLANKTON COLLECTORS, LAB SIZE

Excellent, heavy-duty, small collectors for field sampling or lab scale work. Collectors come in various sizes and mesh. BB-PC to BB-PC7 have permanent mounted screens of high grade polyester plankton cloth. Our 4" diameter, 6" high, 1 liter capacity collectors also include a 1 liter collecting cup. To contain rotifers you would choose at 53 μ mesh and for Artemia nauplii a 120 μ screen is best. Our larger diameter models do not come with collector basins. Our 8" models, BB-PC8 to BB-PC13, feature a mounted rope handle.

BB-PC1	Small 4" dia seive 25 μ , 1 liter with 800 ml collector	10 oz
BB-PC	Small 4" dia seive 53 μ , 1 liter with 800 ml collector	10 oz
BB-PC2	Small 4" dia seive 120, 1 liter with 800 ml collector	10 oz
BB-PC3	Small 4" dia seive 250, 1 liter with 800 ml collector	10 oz
BB-PC4	Mid size 6" dia seive 25 μ , 3 liter, no collector	1' 9 oz
BB-PC5	Mid size 6" dia seive 53 μ , 3 liter, no collector	1' 9 oz
BB-PC6	Mid size 6" dia seive 120 μ , 3 liter, no collector	1' 9 oz
BB-PC7	Mid size 6" dia collector 250 μ , 3 liter, no collector	2' 8 oz
BB-PC8	Large size 8" dia collector 25 μ , 6 liter, no collector	2' 8 oz
BB-PC9	Large size 8" dia collector 53 μ , 6 liter, no collector	2' 8 oz
BB-PC10	Large size 8" dia collector 120 μ , 6 liter, no collector	2' 8 oz
BB-PC11	Large size 8" dia collector 250 μ , 6 liter, no collector	2' 8 oz
BB-PC12	Large size 8" dia collector 475 μ , 6 liter, no collector	2' 8 oz
BB-PC13	Large size 8" dia collector 1000 μ , 6 liter, no collector	2' 8 oz
BB-PC14	Large size 10" dia collector 25 μ , 6 liter, no collector	oz
BB-PC15	Large size 10" dia collector 53 μ , 6 liter, no collector	oz
BB-PC16	Large size 10" dia collector 120 μ , 6 liter, no collector	oz
BB-PC17	Large size 10" dia collector 250 μ , 6 liter, no collector	oz
BB-PC18	Large size 10" dia collector 475 μ , 6 liter, no collector	oz
BB-PC19	Large size 10" dia collector 1000 μ , 6 liter, no collector	oz
BB-PC20	Large size 12" dia collector 25 μ , 6 liter, no collector	oz
BB-PC21	Large size 12" dia collector 53 μ , 6 liter, no collector	oz
BB-PC22	Large size 12" dia collector 120 μ , 6 liter, no collector	oz
BB-PC23	Large size 12" dia collector 250 μ , 6 liter, no collector	oz
BB-PC24	Large size 12" dia collector 475 μ , 6 liter, no collector	oz
BB-PC25	Large size 12" dia collector 1000 μ , 6 liter, no collector	oz



BB-PC4 to PC7

BB-PC8 to PC13



Rigid Plankton Collectors

Made by FAFUSA

Small 4" Seives come with a collector vessel

BB-PC to PC3

Commercial Rotifer, Artemia, Zooplankton Collector



ZOOPLANKTON COLLECTOR FOR ROTIFER, ARTEMIA, ETC.

Gravity fed collector consists of a heavy-duty polyethylene chamber equipped with an incoming control valve, celcon plastic bag support, nylon mesh bag of 50 μ or larger (specify) and a mounted, threaded outflow bulkhead and drain valve. Collecting chamber is 13" high by 13" in diameter with a capacity of 7 gallons (26 L). A flooded collecting chamber is used during collecting to help reduce stress and damage from forcing the plankton to stick on the mesh bag wall. When finished, simply slip bag off the bag support and lift out. Mesh replacement bags (50 μ and 120 μ) are available. Mfg. Florida Aqua Farms Inc. USA

BB-RAC	Rotifer, Artemia, Zooplankton Collector	10 lbs
BB-BAG50	50 micron mesh bag, 18" long, 7" diameter	12 oz
BB-BAG120	120 micron mesh bag, 18" long, 7" diameter	12 oz

PLANKTON COLLECTING NET

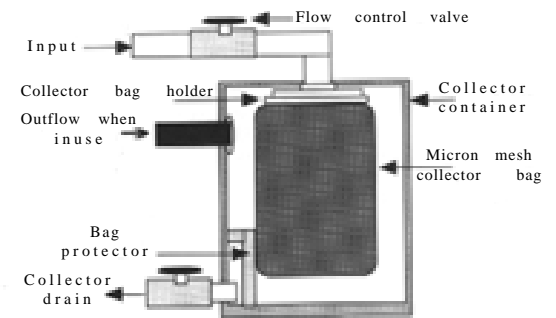
Ready to use high quality nets manufactured to our specifications and designed for long use. Not cheap poorly constructed imitations. These small plankton collecting nets are ideal for sampling ponds or for small scale plankton cultures. Net is conical in shape, 5" in diameter by 15" long with a 1" threaded female PVC outlet for easy attachment of any type of collector or piping you desire. Comes with two screw-on, 50 ml, conical, removable collecting tubes. Brass mouth ring and harness for towing included. Mesh sizes, 50 and 153 microns.

BB-PCN1063	Plankton Collecting Net, 50 μ m	3 lb
BB-PCN1064	Plankton Collecting Net, 153 μ m	3 lb

PLANKTON CLOTH

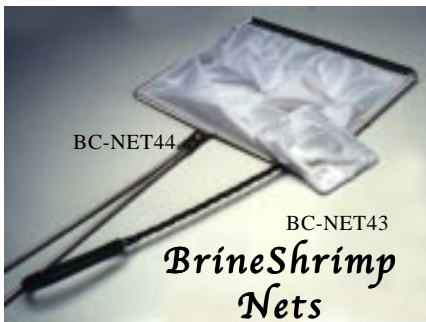
We offer a limited amount of high quality polyester plankton cloth for repairs etc.

B-PES10	10 micron, sold by linear foot only, width 40"	0.5 lb
B-PES25	25 micron, sold by linear foot only, width 40"	0.5 lb
B-PES53	53 micron, sold by linear foot only, width 40"	0.5 lb
B-PES120	120 micron, sold by linear foot only, width 40"	0.5 lb
B-PES250	250 micron, sold by linear foot only, width 40"	0.5 lb
B-PES475	475 micron, sold by linear foot only, width 40"	0.5 lb
B-PES1000	1000 micron, sold by linear foot only, width 40"	0.5 lb



BB-PCN1063 & BB-PCN1064

Small Sampling Plankton Net Two 50ml Collecting Tubes



BC-NET44

BC-NET43

**Brine Shrimp
Nets**



**Acclimation
Baskets**

BC-242M TO
BC-243F

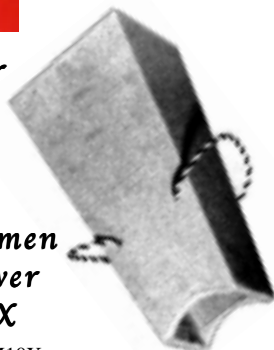
**Underwater
Viewer**

ID-AS2160



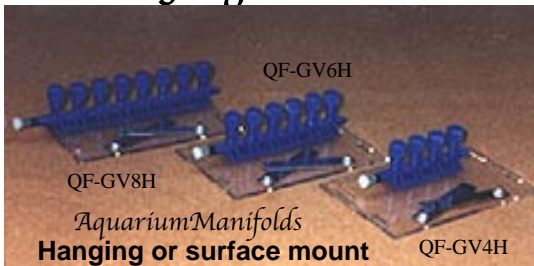
**Specimen
Viewer
10X**

VD-M10X



Made by FAFUSA

Gang Valves



QF-GV6H

QF-GV8H

QF-GV4H

**Aquarium Manifolds
Hanging or surface mount**

Made by FAFUSA

**Standard Linear Manifolds
With Choice Of Valves**

QF-GVC4 to GVC12



Standard
Manifolds

Made by FAFUSA

**Custom Made
Air or Water
Manifolds**

Made by FAFUSA



Custom
Manifold

HAND NETS

BRINE SHRIMP HAND NETS

We offer two styles. BA-NET43 is made of fine nylon mesh with a twisted metal vinyl coated handle. The net is 4" x 3" and about 3" deep. BA-NET44 is a custom made net, made with fine nylon mesh and a solid aluminium handle. Net is 8" x 10" x 8" deep. Net on this frame can be replaced when needed.

BC-NET43 4" x 3" x 3" deep, Brine shrimp net 2 oz
BC-NET44 8" x 10" x 8" deep, Brine shrimp net 1 lb

HANGING BASKET, FOR ACCLIMATION OR HOLDING

Cannot fully express how useful these hanging baskets are. Rigid, all porous plastic basket that attaches on the side of a aquaria with high quality stainless steel clips. Clips can be bent to fit tank walls from 1/4" to 1" wide. Excellent item for introducing animals, sorting, culling, rearing, holding or for siphon overflows. Also good for potting plants that live in aquatic environments like mangroves.

Code #	Length	Width	Depth	Mesh	Weight
BC-242M	6"	5.25"	5"	1/8"	4 oz
BC-242F	6"	5.25"	5"	1/16"	4 oz
BC-243M	5.50"	3.50"	3.25"	1/8"	3 oz
BC-243F	5.50"	3.50"	3.25"	1/16"	3 oz

VIEWING BOX

UNDERWATER VIEWING BOX

Unique underwater viewer. Light weight, great for viewing from the boat or into a tank when water surface is disturbed by wind or current. Aqua-scope has a moulded rigid 24" high body with a mounted 9" x 11" window on the bottom and two polypropylene rope holding straps.

ID-AS2160 Aqua-scope, underwater viewing box 4 lbs

HAND MAGNIFIER 10X POWER

Nice little 10X magnifier for viewing rotifers, artemia etc. Glass lens encased in a sturdy plastic frame. Sets on table above specimen. Clear acrylic sides allows full diameter illumination of the object being viewed. Clear view with minimal side distortion. 2" diameter base, 1 3/4" high.

ID-M10X 10X magnifier 4 oz

GANG VALVES & MANIFOLDS

AQUARIUM GANG VALVES, PLASTIC

Heavy duty, rugged, quality acrylic plastic base with attached, adjustable stainless steel clips which can be used for hanging over a tank wall. All plastic needle valves for fine control. Can be easily place on a flat surface or hung. Several can be attached together by just removing included air plug and connecting with aquarium tubing. Come in three models; 4, 6, and 8 outlets. Made by Florida Aqua Farms USA.

QF-GV4H 4-Way Hanging Gang Valve 2 oz
QF-GV6H 6-Way Hanging Gang Valve 3 oz
QF-GV8H 8-Way Hanging Gang Valve 4 oz

CUSTOM AIR OR WATER MANIFOLDS

We can custom make air or water manifolds designed for your particular problem. Units come standard brass (QF-VNR1) valves but nylon valves can be substituted. Manifolds come with mounting clamps and connector of your choice. Length can be variable up to 2'. Longer manifolds quoted with any valves.

QF-GVC4 1/2" dia. manifold 4 brass valves, 12" pipe 1 lb
QF-GVC6 1/2" dia. manifold, 6 brass valves, 12" pipe 1 lb
QF-GVC8 1/2" dia. manifold, 8 brass valves, 16" pipe 1 lb
QF-GVC12 1/2" dia. manifold, 12 brass valves, 24" pipe 1 lb

AIR VALVES

We offer three types of air valves for use with standard 3/16" aquarium tubing. Two come with standard 1/8" pipe thread and the third has to be attached to the surface and are unique in that they clipe together making a manifold.

- QF-VNR1 Standard 1/8" threaded Brass valve 1 oz
- QF-PTV1 Standard 1/8" threaded, white Nylon plastic valve 1 oz
- QF-PVS Surface mount blue nylon plastic inline straight valve 1oz
- QF-PVE Surface mount blue nylon plastic end valve 1oz



Make Your Own Manifolds or We Will

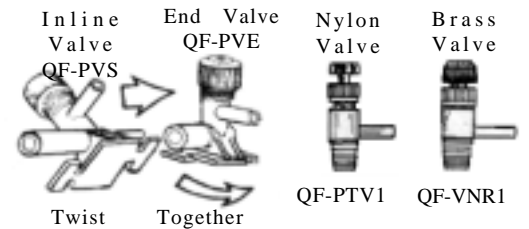
TANK VACUUMS

SIPHON VACUUM FOR AQUARIA

Used for years at Instant Ocean Hatcheries to clean the larval rearing tanks. Small vacuum head, lightly scraps away film and sucks it up at a variable speed which is regulated by pinching the siphon tubing. This small siphon vacuum allows more sensitivity when cleaning larval tanks but is more efficient then spot siphoning of the bottom. Arm length can be easy changed by cutting and attaching or removing desired length. Comes with three different size heads. Manufactured by Florida Aqua Farms, USA.

- MD-V4 Siphon vac with 4" wide head, 2' arm 1.5 lbs
- MD-V6 Siphon vac with 6" wide head, 2' arm 2 lbs
- MD-V8 Siphon vac with 8" wide head, 2' arm 2.5 lbs

Standard Aquarium Air or Water Valves



FILTERS

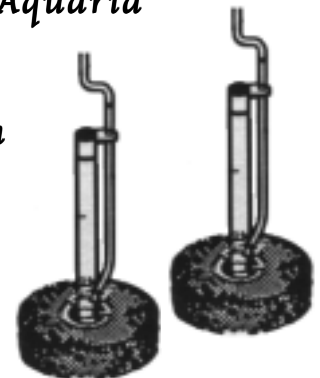
BIO-FILTERS, AIR-LIFT SPONGE TYPES

Include airlift tube and weight to help keep them submerged. To clean, just squeeze the dirt out and return to tank without interrupting biological activity. Suitable under normal biological loads in juvenile rearing tanks, ornamental ponds, and broodstock tanks. Manufactured and used by Florida Aqua Farms since 1985. Commercial sponges (SPF2 & SPF3) have been used in the tropical fish industry for years. SPF2 has 118 square inches surface area (5.0" dia 5.0" high), can be used in tanks up to 200 gallons. SPF3 has 290 sq. in. Can be used in tanks up to 400 gallons. SFF4 is a cylinder (12" x 5" dia., 235 sq. in. surface) which has solid PVC end support plates which suspends the entire filter off the bottom to maximize filtration and ease of cleaning. Both SPF2 and SPF3 can be suspended above bottom with a string for ease of cleaning tank. All sponge filters regardless of the maker, should be presoaked and rinsed in fresh-water for a week prior to use. We now offer two grades of sponge elements, our standard high density, small pore, moderate flow, element and a reticulated, large open pore, high flow, element. Efficiency of sponge filters are directly related to the surface area, flow rate, bacteria inoculation, biological load, and routine cleaning. Ideal for bare bottom culture tanks. Under normal use sponge lasts 2 years before replacement unless high concentrations of chlorine are used in cleaning the filter element.



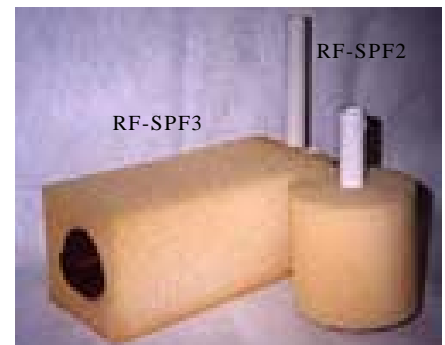
Siphon Vacuums For Aquaria

Aquarium Sponge Filters Air Lift Types



BIO-FILTERS, AIR-LIFT SPONGE TYPES oz

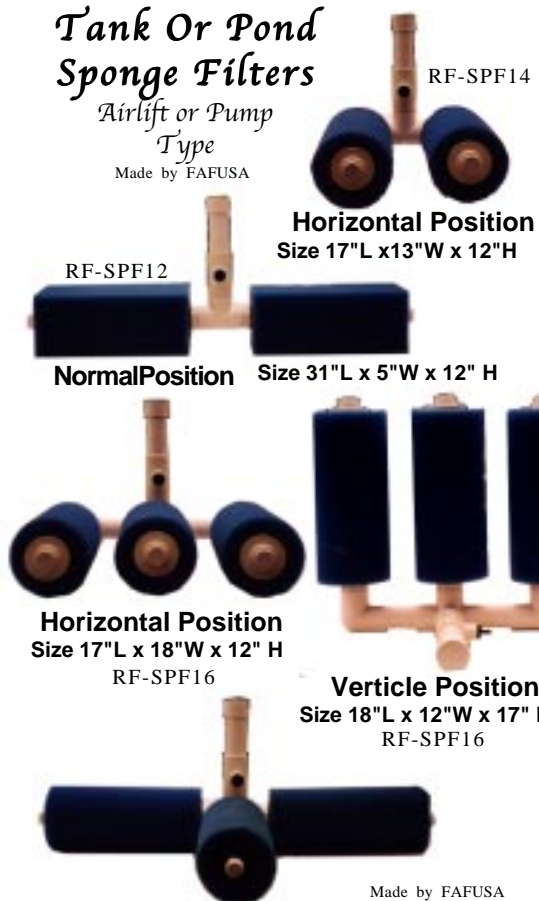
- RF-SPF1 Small mini filter, cylinder, 3.5" dia x 1" < 7 gal 2 oz
- RF-SPF2 Small pore Filter, cylinder, 5.0" H x 5.0" dia < 200 gal. 8 oz
- RF-SPF3 Small pore Filter, rectangle, 12" x 5" x 5" < 400 gal. 1 lb
- RF-SPF4 Small pore Filter, cylinder, 12" x 5" dia < 400 gal. 1 lb
- RF-SPF5 Large pore Filter, cylinder, 5.0" H x 5.0" dia < 200 gal. 8 oz
- RF-SPF6 Large pore Filter, rectangle, 12" x 5" x 5" < 400 gal. 1 lb
- RF-SPF7 Large pore Filter, cylinder, 12" x 5" dia < 400 gal. 1 lb
- RF-SPF2R Sponge replacement, sm pore, 5" x 5" dia cylinder 1 oz
- RF-SPF3R Sponge replacement, sm pore, 12" x 5" x 5" rectangular 1 oz
- RF-SPF4R Sponge replacement, sm pore, 12" x 5" dia cylinder 4 oz
- RF-SPF5R Sponge replacement, lg pore, 5" x 5" dia cylinder 1 oz
- RF-SPF6R Sponge replacement, lg pore, 12" x 5" x 5" rectangular 1 oz
- RF-SPF7R Sponge replacement, lg pore, 12"x 5" dia cylinder 4 oz



Made by FAFUSA

Tank Or Pond Sponge Filters

Airlift or Pump
Type
Made by FAFUSA



Horizontal Position
Size 17"L x 13"W x 12"H

Normal Position Size 31"L x 5"W x 12" H

Horizontal Position
Size 17"L x 18"W x 12" H

Verticle Position
Size 18"L x 12"W x 17" H

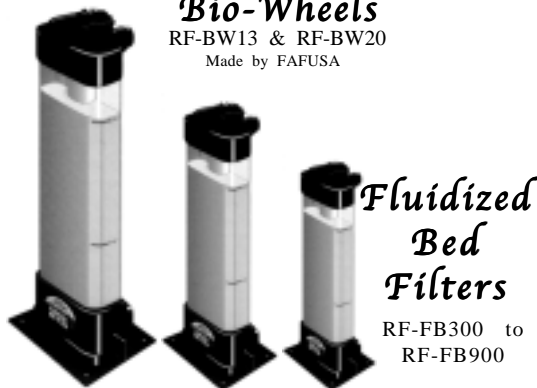
Horizontal Position
Size 31"L x 17"W x 12" H



Normal Position
Size 31"L x 31"W x 12" H



Bio-Wheels
RF-BW13 & RF-BW20
Made by FAFUSA



**Fluidized
Bed
Filters**

RF-FB300 to
RF-FB900

SPONGE FILTERS FOR PONDS OR TANKS, AIR LIFT OR PUMP

These are all coarse reticulated sponge filters designed for use in ornamental ponds or larger tanks. Unique design can be used as a airlift tube filter or with a submersible or external pump. All come with three threaded tube adapters for normal aquarium tubing (3/16"), 3/8" tubing, or 1/2" tubing. To use as an airlift type filter simply remove cap on top of airlift tube, attach an airline to the side tubing adapter and pull the water through the sponge filters by air lift. Airlift shaft can be extended by placing a longer piece of PVC pipe. For use with a pump leave the cap on and just attach intake line on the tubing adapter. Sponges screw off for cleaning or the entire filter can be removed and hosed with sponges attached. Several models RF-SP14 and RF-SP16 and RF-SP18 can be used in a horizontal or vertical position. Tube attachment fitting is not glued and can be rotated into desired position. Made of high quality PVC and large pore reticulated poly foam. Full length manifold intake screens have been installed inside the sponges. Tank size is indicated but is more dependent on bioload. Most Koi ponds are basically considered low bioload situations since you are not actually trying to grow fish but maintain them.

RF-SP12 2 cylinder filter, linear manifold, square sponges <800 gal 2.0 lb
 RF-SP14 2 cylinder filter manifold, round sponges <800 gal 2.5 lb
 RF-SP16 3 cylinder filter manifold, round sponges <1200 gal 3.5 lb
 RF-SP18 3 cylinder filter, "T" manifold, round sponges <1200 gal 3.0 lb
 RF-SP20 4 cylinder filter, "cross" manifold. round sponges <1600 gal .. 3.5 lb
 RF-SPF6R Sponge replacement, lg pore, 12" x 5" x 5" rectangular 1 oz
 RF-SPF7R Sponge replacement, lg pore, 12" x 5" dia cylinder 4 oz

BIO-WHEEL WET/DRY FILTERS

We offer two models of BioWheel filters (rotating biological contactors = RBC) provide high surface areas for beneficial bacterial attachment. There is a distinct advantage when using this type of filter especially when comparing them to submerged filters. Beneficial bacteria work best in high oxygen situations. Water, especially warm water, retains about 3 to 5 ppm oxygen where as air is around 20 ppm at sea level. As the wheel rotates it comes in contact with high oxygen thus promoting more efficient bacterial growth. Submergence helps keep the bacterial substrate wet. Units come assembled you add the supports. Mat media used on these units have a surface area of 0.09 square feet per cubic inch of media. Our 13" diameter units have around 120 square feet of surface area while our 20" units have 283 square feet surface area. Based on this our smallest unit RF-BW13 can support ammonia and nitrite levels equivalent to 13 ounces of feed per day at 80°F (6 oz. at 60°F). Our 20" unit RF-RW20 can support about 2 lbs of feed per day at 80°F (1.28 lbs at 60°F). Units can be driven by airlift pump or submersible pump.

RF-BW13 13" BioWheel Unit 15 lbs
 RF-BW20 20" BioWheel Unit 30 lbs

BIO-FILTER, FLUIDIZED BED FILTERS BY RAINBOW

Fluidized bed filters utilize an upwelling current of water that passes through a sand media causing the sand particles to constantly move in a flowing manner. This filter maximizes and promotes active surface areas by the continuous motion. A cubic foot of common sand media provides 6,200 sq ft of surface area. Fluidized beds are not considered particle filters since they actually tend to break down particles into even smaller pieces which only adds to the BOD. Although the filters are small in size they are rated high in biological activity, capable of handling up to 8+ grams of ammonia per pound of filter media per single pass. Compared to other contained filters these offer low back pressure, (< 4 psi) which allows use of economical low pressure pumps and powerheads. Compact quality moulded assembly. Unit holds more sand then conventional small units on the market. Can be hung on side of tank or floor mounted. Inlet ports provided on top or bottom depending how installed. Increase capacity by installing two or more units in series. As with all fluidized bed filters particle filters should be installed before fluidized bed filters and UV units. Has clear chamber for easy flow adjustment using control valve provided. Come with fine sand media which gives a flow rate of about 2 liters/minute. To increase flow but diminish bio activity larger sand particles can be added. Small submersible pump is needed.

RF-FB300 130 gph, 3 lbs media, 214 sq. ft., 17"H x 7.5"W x 3"D 7 lbs
 RF-FB600 150 gph, 6 lbs media, 428 sq. ft., 27"H x 7.5"W x 3"D 10 lbs
 RF-FB900 215 gph, 9 lbs media, 642 sq. ft., 35"H x 7.5"W x 3"D 14 lbs
 RF-FBS Replacement Sand media, 3 lbs/pack 3 lbs

ALGAE REMOVERS

ULTRASONIC ALGAE REMOVERS

Algae are found throughout the world and can cause nuisance problems in water treatment plants, drinking water supplies, receiving water ponds, lakes, swimming pools and cooling towers. They use not chemicals or produce any chemicals and are considered environmental friendly. These were introduced to the European markets several years ago and have proven to be beneficial.

The units are based on the production of ultrasonic sound waves which attack algae cells. Aquasonics patented technology is developed and based on the resonance effects of ultrasonic waves on the algae cell. These are different frequencies applied, in such a way that the algae cells are subjected to vibrations which they can least resist. The aim of these resonance effects is directed at the vacuole of the algae cell, which is present in practically all metabolically active algae cells. By ripping the vacuole, this effectively destroys and kills the algae cell.

A submerged transducer that is specifically designed and purposely built to be small and water resistant generates the ultrasonic vibrations.

The Aquasonic devices are used in horticulture, aquaculture, potable and waste-water applications. The transducer is capable of emitting ultrasonic vibrations up to a range of 100 meters (325 feet) covering a radius of 180 degrees. The transducer has to be completely submerged under water. Because the angle of the transducer has to be placed to a side wall or in a corner of the water reservoir or pond. Care must be taken to make the transducer cable long enough to accommodate and fluctuations in the water level.

Besides killing algae, it also deals with fungi (i.e. Pythium is killed 100% by the ultrasonic waves).

Smaller versions of the Aquasonic model, like the Poolsonic and the Aquatank are designed for the use in swimming pools and medium sized water surfaces, fishponds and cooling tower basins. The Aquanet is used for smaller applications such as in hobby ponds, large aquariums, etc.

The Aquasonic model (RF-AS1) will not only kill all present algae, but in time will also clean the reservoir of all kinds of other growths; after a while, one will see that the thick bacteria layer has disappeared.

Units include a transducer, cable and a electronic box. The box is made of polycarbonate with a good UV stability. Although the box is weather resistant it is recommended that it is placed in a protected area. The cable between the transducer and the electronic box should never be extended. If needed it is always better to bring the power source closer to the water area to be treated. The cable can be cut to the desired length or place in a crisscross pattern. If place in a roll the coil of wire may function as an induction coil which might influence the wave shape of the ultrasonic signal. When running you should hear a little click every few seconds, simultaneously with the red LED control lamp going on and off.

RF-AS1	Aquasonic, range 100 m x 100 m
RF-AT2	Aquatank, range, 30 m x 30 m
RF-PS3	Poolsonic, range 50 m x 50 m
RF-AN4	Aquanet, 10 m x 10 m



Aquasonic

Range: 100 x 100 m
Consumption: 45 watt
Cable Length: 17 m
Size Float: 40 x 18 cm



Aquatank

Range: 30 x 30 m
Consumption: 30 watt
Cable Length: 10 m
Size Transducer: 16 x 6.3 cm



Poolsonic

Range: 50 x 50 m*
Consumption: 30 watt
Cable Length: 10 m
Size Transducer: 13.4 x 6 cm
*only in chlorinated pools



Aquanet

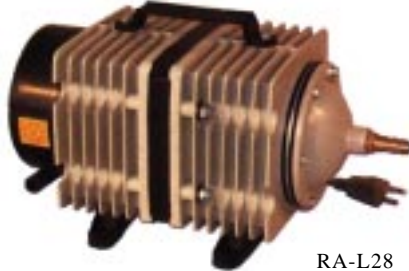
Range: 10 x 10 m
Consumption: 20 watt
Cable Length: 10 m
Size Transducer: 13.4 x 6 cm

AIR & WATER PUMPS

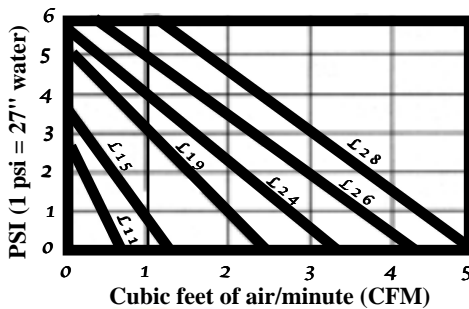


**Linear
Air
Pumps**

RA-L11



RA-L28



LINEAR AIR PUMPS

These are good value Chinese manufactured air pumps. Basically these are small compressors that use a magnetic driven piston and diaphragm. High pressure high volume pumps that are excellent for many applications such as airlift pumps, deep water circulation and multiple airstones. Not UL listed for outdoor use however a protective vented box can be placed over the unit. Outlet is a 1/4" barb but is also provided with a 3/16" barb. Carries a six month warranty. Noise levels are from 54 to 60 dB. Runs on 115V/60 Hz. Power cord included. Repair kits available. Tested for over 1 year for constant output.

RA-L11	Airpump, 16W at 2 psi (1 psi = 27")	4 lbs
RA-L15	Airpump, 34W at 2 psi	7 lbs
RA-L19	Airpump, 51W at 2 psi	14 lbs
RA-L24	Airpump, 60W at 2 psi	16 lbs
RA-L26	Airpump, 105W at 2 psi	18 lbs
RA-L28	Airpump, 130W at 2 psi	23 lbs
RA-L11R	Diaphragm repair kit for L11	1 lb
RA-L15R	Diaphragm repair kit for L15	1 lb
RA-L19R	Diaphragm repair kit for L19	1 lb
RA-L24R	Diaphragm repair kit for L24	1 lb
RA-L26R	Diaphragm repair kit for L26	1 lb
RA-L28R	Diaphragm repair kit for L28	1 lb

AIR BLOWERS

We offer three small blowers complete with intake assembly and output connections. These produce a considerable volume of air (CFM) but less pressure (psi). Therefore, they limited with regards to delivery at depths beyond 50" but produce high volumes of air for many air outlets. Both can be operated on both 115V/230V, 50 or 60 Hz cycles. Output at 50 Hz of both pressure and volume will be reduced by about 30%. UL, CE and CSA approved. Operate at low noise levels. Automatic thermal overload switch protects motor against damage. Will automatically restart when motor cools. Have 3 year limited warranty. Great for larger ponds or a large number of tanks and aquaria.

Code	HP	Run W	Start W	Amp	CFM@	20"	30"	40"	50"	Weight
RA-S11	1/8	198/20"	900	2.0	CFM	13	3	--	--	23 lbs
RA-S21	1/3	377/20"	1800	3.8	CFM	34	19	7	--	28 lbs
RA-S31	1/2	471/20"	2000	5.6	CFM	34	28	21	16	36 lbs

**Air
Blowers**



RA-S11 to S31

WATER PUMPS

We have assembled a variety of submersible water pumps that can serve a variety of applications. Our small Rio pumps have been used in our facilities for several years and are very dependable. Our Little Giant line has been a favorite for many years and is very dependable. All are 115 V/60 Hz.

Little Giant, In-line (1/2" FNPT inlet, 1'2" MNPT outlet) (*=30')

Code	HP	AMP	Watt	GPH@5'	10'	15'	Max	In/Out	Wt
RC-2MDQSC1/30	1.5	96	440	300	300	--	14.4'	1/2"-1/2"	9 lbs
RC-3MDQSC1/12	0.8	85	610	490	290	18'	3/4"-3/4"	10 lbs	
RC-4MDQSC1/10	1.3	150	780	680	560	24.3'	1"-1/2"	10 lbs	
RC-5MDSC	1/8	2.0	200	990	795	655	27.5'	1"-1/2"	10 lbs
RC-TE6MDS	1/2	9.4	835	2500	2200	1600*	22.1'	1"-3/4"	32 lbs

Little Giant, Submersible or In-line (1/2" FNPT inlet, 1'2" MNPT outlet)

Code	HP	AMP	Watt	GPH@1'	5'	10'	Max	Cord	Wt
RC-503103	1/15	3.2	200	500	337	210	17.3'	6'	8.0 lbs
RC-503203	1/15	3.2	200	670	575	460	22.6'	6'	8.0 lbs
RC-504203	1/12	3.5	210	810	745	613	24.5'	6'	8.5 lbs

Rio Pumps, Submersible (3/4" ID tubing outlet)

Code	Watt	GPH@1'	2'	3'	4'	5'	6'	Max	Wt
RC-1700	18	600	500	410	350	200	100	7'	2 lbs
RC-2100	25	670	600	520	380	310	200	8'	3 lbs
RC-2500	35	720	680	590	530	450	400	11'	3 lbs
RC-3100	43	880	840	770	680	580	600	12'	3 lbs



**Little
Giant
Pumps
External
Types**

RC-2MDQSC to
TE6MDSC



**Little
Giant
Pumps
Submersible
Types**

RC-503103 to 504203



Rio Pumps

RC-1700
to
3100

Little Giant, Submersible (1 1/4" FNPT outlet with 1" or 1 1/4" tube connect)
Code HP ... AMP GPH@1' . 5' 10' 15' 20' Max **Wt**
 RC-WGP60 .. 1/8 2.0 1450 . 1250 .. 900 ... 300 -- 18' 13 lbs
 RC-WGP70 .. 1/4 3.0 1960 . 1650 . 1100 .. 520 -- 20' 14 lbs
 RC-WGP90 .. 5/8 7.1 4100 . 3800 . 3350 . 2750 . 2000 28' 15 lbs

SOLAR POWERED WATER PUMP

Enjoy a step into the future. This is a unique power saving solution to provide circulation and aeration to a pond without normal electricity. Pump is powered by a solar panel. Comes complete with a solar powered pump, solar panel with a 15' power cable to the pump and three fountainheads. Maximum fountain height is 39.5" and a maximum water flow capacity is 110 gph. Great teaching item.

RC-SP22 Solar powered pump and solar panel 15 lbs



Solar Powered Pump

RC-WGP60 to WGP90

High Volume Submersible Pumps

WATER TEST KITS

HYDROPONIC TEST KIT

Suitable for home and teaching use. Tests measure nutrient levels. Measures pH (range 4.0-8.0), nitrate nitrogen (5-200 ppm), phosphorus (range 3-30 ppm) and potassium (range 0-250 ppm). Kit and refill pack include enough reagents for 50 tests. Packaged in a rigid plastic carry case. Includes hydroponic manual.

UZ-HP3561 Hydroponic kit 15 lbs

UZ-R3561 Refill pack 1 lb

Hydroponic Water Test Kit

UZ-HP3561



COMBINATION FRESHWATER TEST KIT AQ3, 6 TESTS.

(La Motte) Includes hard plastic foam filled carry case and handbook. Primarily for saltwater aquariums. Measures ammonia-nitrogen from 0.5 to 3 ppm in 4 increments; nitrite-nitrogen 0.5 to 0.8 ppm; alkalinity 0-200 ppm, carbon dioxide (0-50 ppm); dissolved oxygen 0-10 ppm, sensitivity 0.2 ppm; chloride 0-200 ppt sensitivity 0.4 ppt and hardness 0-200 ppm.. Tests use comparator or titration

UZ-AQ3 Freshwater Combined Kit AQ3, 6 tests, 50 tests ea 10 lbs

UZ-AQ3R Refill for Combo Kit AQ 3.5 lbs

UZ-AQ3

Freshwater Test Kit 6 Tests



COMBINATION FRESHWATER TEST KIT AQ2, 9 TESTS

(La Motte) Like above kit except designed for freshwater applications. Includes the following nine tests: ammonia nitrogen 0.2 to 3.0 ppm in 8 increments; nitrite nitrogen 0.5 to 0.8 ppm in 8 increments; pH 5.0 to 10.0; alkalinity (total) 0-200 ppm as calcium carbonate, sensitivity 4.0 ppm; carbon dioxide 0 to 50 ppm, sensitivity 1.0 ppm; chloride 0-200 ppm, sensitivity 4.0 ppm; dissolved oxygen 0-10 ppm, sensitivity 0.2 ppm; hardness (total), 0-200 ppm as CaCO₃, sensitivity 4.0 ppm and temperature, -5° to 45° C, sensitivity 0.5° C.

UZ-AQ2 Combined Freshwater Kit AQ2, 9 tests, 50 tests ea 10 lb

UZ-AQ2R Combination Freshwater Kit AQ2 refill 1 lb

Saltwater Freshwater 9 Tests



COMBINATION SALTWATER KIT AQ4, 9 TESTS

Saltwater testing. Kit includes: ammonia nitrogen 0.2 to 3.0 ppm in 8 increments as ammonia nitrogen; nitrite nitrogen 0.25 to 10 ppm in 8 increments as nitrite nitrogen; nitrate nitrogen 0.25 to 10.0 ppm in 8 increments as nitrate nitrogen; pH, 5 to 10 in 8 increments; alkalinity (total) 0 to 200 ppm in 4 ppm increments as calcium carbonate; carbon dioxide 0 to 50 ppm, sensitivity 1.0 ppm; dissolved oxygen 0 to 10 ppm, sensitivity 0.2 ppm; salinity 0 to 20 ppt t or to 40 ppt by dilution, sensitivity 0.4 ppt and temperature -5° to 45° C with 0.5° increments.

UZ-AQ4 Combination Saltwater Kit AQ4, 9 tests 10 lbs

UZ-AQ4R Combination Saltwater Kit AQ4 Refill 3.5 lbs

REEF TESTING KITS

Three kits. All use titration. UZ-SC920 measures all calcium including gluconate calcium with a sensitivity of 5 mg/l (ppm). UZ-SC922 measures strontium with a sensitivity of 0.5 mg/l (ppm). UZ-SC924 measures magnesium (12.5 mg/l increments) and carbonate/borate alkalinity and total alkalinity in 0.1 meq/l resolution.

UZ-SC920 Calcium test kit, up to 150 tests 1 lb

UZ-SC922 Strontium test Kit, up to 50 tests 1 lb

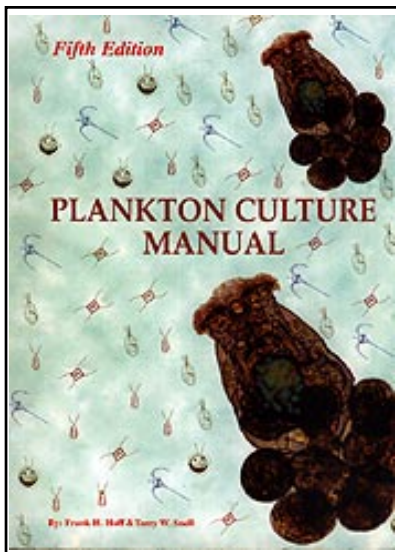
UZ-SC924 Magnesium/carbonate/borate test kit, up to 75 tests 1 lb

Reef Testing Kits

UZ-SC920
 UZ-SC922
 And
 UZ-SC924



BOOKS ON AQUACULTURE



Published by FAFUSA

VA-FAF1

PLANKTON CULTURE MANUAL, 5TH EDITION

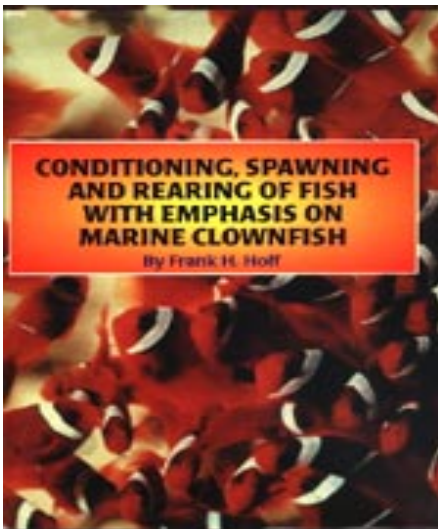
By Frank Hoff & T. Snell. Published by Florida Aqua Farms (5th edition). Expanded version includes identification of microalgae used in aquaculture manual. Manual now includes use of microscope, slide preparation, measuring cells, stains, key to genera, description of cells variations, contaminants in cultures and photos. Provides updated step by step instructions for culturing phytoplankton (microalgae) and zooplankton including rotifers, adult brine shrimp, ciliates, copepods, daphnia, Oyster and clams veligers, amphipods, mysid shrimp and microworms. Easy to read but very informative. We have provided technical data and illustrations to support our instructions in a clear understandable format. Sections include trouble shooting and reasons for failure. Includes simple culture methods and more intensive, large scale methods and designs. This manual serves as a companion to our Conditioning, Spawning Manual below. Extensive references, 8.5" x 11" format, 160 pages, 47 illustrations, 21 tables.

VA-FAF1 Plankton Culture Manual 1.5 lb

CONDITIONING, SPAWNING & REARING FISH WITH EMPHASIS ON MARINE CLOWNFISH

Not your typical aquarist hobby book that is full of pictures but, contains very little information. Our book is a full fledged professional presentation yet written so all can understand. Author, Frank Hoff, is considered a aquaculture pioneer with over 35 years experience in aquaculture. Emphasis is on closed system commercial culture of tropical marine fish with emphasis on *Amphiprion* (clownfish). Information includes work done on other marine fish including pompano, black sea bass, redfish and freshwater species including discus and angelfish. Includes: utilization of live and prepared foods, broodstock management and conditioning, oocyte analysis, utilization of hormones and conditioned spawning, hatching, broodstock management, tank selection, system designs, larval rearing, juvenile grow-out, theory and practice, data gathering and analysis, trouble shooting, cost analysis and future fish culture endeavors. Published August 1996. Page format 8.5" x 11", 64 tables, 67 figures and 25 photos. A must for fish breeders, fresh or saltwater, and serves as a companion manual to the Plankton Culture Manual (VA-FAF1)

VA-FAF3 Conditioning and Spawning 2.5 lbs



Published by FAFUSA

VA-FAF3

CONVERSION TABLES REFERENCE

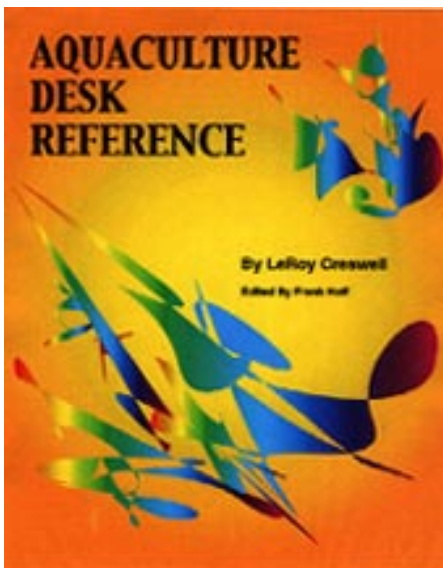
We have put together a small quick reference booklet that is full of conversion multipliers. Includes items like calories to btu, bushels to liters, bars to pounds/sq foot, grams to dynes, grams-calories to foot-pounds etc. Over 800 conversion multipliers. We have added other conversion tables including salinities in ppt and density, temperature, calculating chemical amount needed, oxygen saturation etc. Very handy item. 23 pages, 8.5" x 5.5" page format.

VD-FAF4 Conversion Reference 3 oz

AQUACULTURE DESK REFERENCE

Leroy Crestwell. Florida Aqua Farms has reprinted a long overdue, great, reference book. How often have you searched for conversion tables and equivalents lists? This book is a compilation of graphs, tables and charts. Provides information on water chemistry such a vapor pressure solubility of nitrogen etc. densities and salinities, density in freshwater at different temperatures etc. Converts units of power, geometric formulas, decimal equivalents, units of length, centigrade to Fahrenheit, feet head and water pressure (PSI) etc. Contains enrichment formulations such as "F" enriched seawater, Provasoli's formula, light saturation for macroalgae, using a hemacytometer etc. Hatchery information such as; number of eggs per fluid ounce, oxygen consumption, nitrification rates, UV potency, toxicity levels etc. Plumbing specifications, drill and tap sizes, heat transfer, mechanical properties of various building materials etc. Nutrition composition of feeds, etc. Classification of soil particles, chemicals for disinfect ponds, rotenone required to kill, Secchi readings, flow for given time etc. Chemicals and treatments etc., etc., Original copies sold for \$90-\$100, Florida Aqua Farms is offering this printing at a much lower price. 206 pages, 11" x 8.5" page format.

VD-VNR2 Aquaculture Desk Reference 3 lb



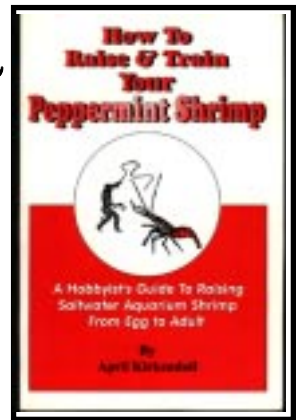
Published by FAFUSA

VD-NR2

HOW TO RAISE & TRAIN YOUR PEPPERMINT SHRIMP

This is a hobbyist's guide to raising saltwater aquarium shrimp from egg to adult. An entertaining, easy to read guide that's packed with all the information you need to successfully raise the saltwater Peppermint Shrimp (*Lysemata wurdemanni*). Includes tips on raising two other species of cleaner shrimp and notes on commercial propagation. Yes there is even a chapter on training your homegrown shrimp. By April Kirkendoll a professional marine aquaculturist who worked with Peppermint Shrimp for 17 years. 147 pages, 8.5" x 5.5" page format. VD-VNR3 Raise & Train Peppermint Shrimp 1 lb

AQUACULTURE BOOKS



VF-VNR3

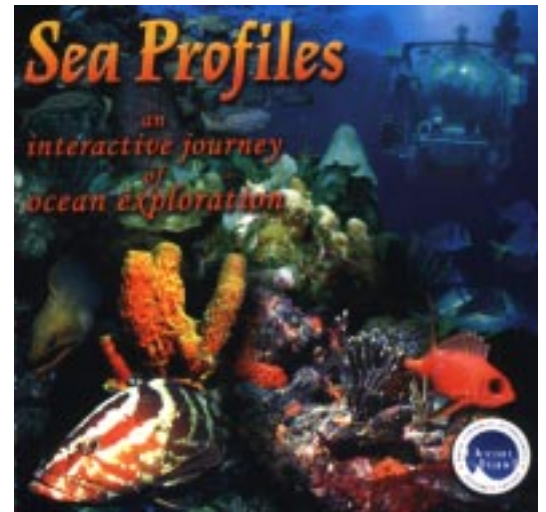
INTERACTIVE CD-ROMS

These are interactive CD-ROMs that you use in your computer containing either Windows 95/98/NT or Macintosh OS8 or higher. Minimum requirements is 32 MB RAM (64 MB or greater recommended), 4X or greater CD-ROM, ability to display high resolution colors, Apple Quicktime 3.0 or later (Quicktime 4,1,2 installer included on disks).

SEA PROFILES

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VE-HB2000 Sea Profiles CD 5 oz



VE-HB2000

AQUACULTURE INTERACTIVE

This a digital aquaculture textbook. Aquaculture is an exciting and complex subject. This revolutionary discipline which at one time was an ancient art and a pioneering science is now establishing itself as one of our best strategies for fulfilling the world's growing food needs. Aquaculture Interactive presents over 1,100 screens of interactive information, including full motion video, audio, animations, illustrations and photographs from around the world. It features a variety of innovative navigational features and helpful resources, including an exhaustive glossary. It is the ultimate desktop resource for anyone interested in learning about the emerging significance of sustainable, environmentally responsible aquaculture for our future. Ideal gift to anyone or any age.

VE-HB2100 Aquaculture Interactive CD 4 oz



VE-HB2200

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CONSULTING SERVICES

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We offer a one-on-one short 12+ hour course in microalgae and rotifer culture on our premisses over a two day period. Participants will be offered hands-on experience in all the procedures including cleaning glassware, sterilizing glassware, cleaning rotifer tanks, setting up new rotifer and algae cultures, utilize liquid and disk microalgae cultures, make and sterilize culture water, take cell and plankton counts, harvest rotifers, set up sub cultures, hatch and start new rotifer cultures, feed rotifers etc.. Instructor, Frank Hoff remains with student(s) (maximum 2) and will freely criticize and/or suggest during the above procedures. Students will be given a Plankton Culture Manual (newest edition) as a guideline to the course. Students are also free to ask about fish and invertebrate culture except current activities and businesses he is involved in.

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