



ECA Farms, INC.

(Environmentally Conscious Aquaculture)

“So, You Want to be a Shrimp Farmer?”

Ohio Aquaculture Conference

Wooster, Ohio

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Presented By: Russell A. Allen

There are good reasons to farm shrimp in the U.S.A.

 Balance of Trade

 Environment


 Bio-security

 Food Quality

 Value-added
Processing

 Technology
Development

 Stabilize Supply

 Raw materials
consumption

 Jobs

Shrimp Farm Production

- 🍳 Approximately 1000 Hectares
- 🍳 +/-1500 metric tons - 2012
- 🍳 Total = <1% of Western Hemisphere Shrimp Production
- 🍳 80% Semi-intensive - 20% Intensive
- 🍳 # of Hectares in semi-intensive farms reducing every year

Present World Situation



Problems in existing industry

- 🔥 China has become a net importer
- 🔥 New Asian Disease Problems
- 🔥 Economic Problems
- 🔥 Impediments to Increase Production, all the "easy" sites already taken

Disease Problems



Asian Shrimp Diseases

- 🔥 EMS
- 🔥 WSV
- 🔥 TSV
- 🔥 IHHN & others

Latin American Shrimp Diseases

- 🔥 Same as above except no EMS yet

Need to compete!



Nichie Market Production

- 🔥 Small Scale - <1,000,000 lbs/yrs prod.
- 🔥 Sell Retail @ high prices (Buy Local, Green, Etc.)
- 🔥 Little or no Processing
- 🔥 Little or no Competition

 Ohio, you already tried this with other species, never will compete.

Nicaragua Semi-Intensive Shrimp Farm



Capital Costs

- 🏠 \$3 - \$5 capital cost per pound of shrimp produced per year. Typical with extensive and semi-intensive farms
- 🏠 Example: To build a typical farm in the rest of the World that will produce 1,000,000 lbs/year, it will cost \$3 million to \$5 million to build & get in to operation.

Operating Costs

- 📊 During the years of low prices, the shrimp World learned to produce very cheaply.
- 📊 Extensive = +/- \$1.00 / lb (head-on)
- 📊 Semi-Intensive = +/- \$1.50 / lb (head-on)
- 📊 Intensive = +/- \$1.75 / lb. (head-on)

Commodity Production

- 🏭 Need Economies of Scale
- 🏭 >5,000,000 lbs per year
- 🏭 Need Lots of Land or Lots of Technology
- 🏭 Allows for Efficient & Competitive Processing
- 🏭 Wholesale Prices for the USA are based upon New York Green Sheet Prices.

Belize Zero Exchange Shrimp Farm



Commodity Production in a RAS system in the USA



- 📊 Competitive Capital Costs
- 📊 Competitive Operating Costs
- 📊 New Markets – Fresh is New
- 📊 Available Capital on Reasonable Terms
- 📊 Friendly Governmental Regulations

Competitive Capital Costs

🖨️ Need to Plan for Total Construction costs of Less than \$5.00/lb produced per year.

🖨️ It can be done, we have:






- 💧 Available Technology
- 💧 Low Cost Construction & Materials
- 💧 Quality, Inexpensive Equipment

Competitive Operating Costs

- 🍳 Cheapest Commodity Feed Ingredients
- 🍳 Ability to Produce Quality Post Larvae
- 🍳 Cheaper Energy & Energy Efficiency
- 🍳 Good Labor & Ability to Automate
- 🍳 Cheap Shipping Costs
- 🍳 Takes Mother Nature out of the Equation
- 🍳 Need to be @ \$1.00/ lb or less

Processing Costs



-  Economies of Scale
-  Automation
-  Flexibility to Locate Plant in a High Unemployment area with inexpensive Unskilled Labor
-  Need to get Tail Yields of 67% - 70%
-  Processing Costs need to be $< \$0.50/\text{lb}$

Commodity Production

Technical Feasibility

- 🔥 Has to be Indoors
- 🔥 Has to be “Eco” Friendly
- 🔥 Has to have Predictable, Commercially proven Production @ super-intensive production levels

Economic Viability

- 🔥 Capital Cost = \$3 to \$5.00/lb
- 🔥 Operating Cost Near \$1.00/lb
- 🔥 Processing Cost of \$.030 - \$0.50/lb

Technical Feasibility



- 🖨 Indoor Production
- 🖨 150 - 300 animals / sq m
- 🖨 SPF animals
- 🖨 Use Commercial Feeds
- 🖨 Use Artificial Salt Water
- 🖨 Complete water reuse system
- 🖨 "KISS" Principal

Economic Viability



- 🖨️ Competitive with Latin America
- 🖨️ Competitive with Asia
- 🖨️ Produce Value-Added Products
- 🖨️ Sell in the Wholesale Marketplace
 - 💧 can't depend upon "niche" markets, new markets or new marketing methods

100 Ha Semi-intensive Shrimp Farm

 Capital Cost 100
Hectares

 \$1,500,000

 Farm Production per
Year

 400,000 lbs

 Capital Cost Per
Pound of Shrimp
Produced per Year

 \$3.75 / lb

Indoor Shrimp Production System

📊 Capital Cost - 1 Acre
Production Unit

📊 \$4,725,000















📊 Production - 1
Acre/yr

📊 1,500,000 Lbs.

📊 Capital Cost per Lb.
Of Shrimp Produced
per Year

📊 \$3.15 / Lb.

Capital Cost - 1 Acre Unit

 Design & Engineering	 \$100,000
 Land	 \$25,000
 Site Work	 \$150,000
 Building	 \$450,000
 Tanks	 \$2,500,000
 Equipment	 \$1,500,000
 TOTAL	 \$4,725,000

Production Cost – 1 Acre

pl's @ \$6/1000	\$250,000
feed @.40/lb	\$675,000
Chemicals	\$50,000
Energy	\$85,000
Maintenance	\$50,000
Labor	\$96,000
Administration	\$60,000
Processing @ .50/lb	\$750,00
Total	\$2,016,000
Total / lb	\$1.34 / lb

Profit & Loss

📊 26-30's, NY, Feb 12
Wholesale Price

📊 \$4.60 / lb.

📊 Lbs Sold

📊 1,020,000 lbs

📊 Total Sales

📊 \$4,692,000

📊 Total Cost

📊 \$2,016,000

📊 Gross Margin

📊 \$2,670,00 = 57%

📊 Without Depreciation, Interest, &
Taxes

Capital Cost – Niche Facility

🏭 Design & Engineering	🏭 \$25,000
🏭 Land	🏭 \$20,000
🏭 Site Work	🏭 \$8,000
🏭 Building	🏭 \$150,000
🏭 Tanks	🏭 \$75,000
🏭 Equipment	🏭 \$100,000
🏭 TOTAL	🏭 \$378,000
🏭 @20,000 lb/yr	🏭 =\$18.90/lb produced/yr

Production Cost – Niche Project @ 20,000 lbs/yr

🏭 pl's @ \$15/1000	🏭 \$8,000
🏭 feed @.75/lb	🏭 \$22,500
🏭 Chemicals	🏭 \$5,000
🏭 Energy	🏭 \$15,000
🏭 Maintenance	🏭 \$5,000
🏭 Labor (2 @ part time)	🏭 \$25,000
🏭 Administration	🏭 \$40,000
🏭 Processing @ \$1.50/lb	🏭 \$20,400
🏭 Total	🏭 \$140,900
🏭 Total / lb	🏭 \$10.21 / lb

Profit & Loss – Niche Proj.

📊 26-30's, Retail Price,
Local, Green, etc.

📊 \$12.00 / lb.

📊 Lbs Sold

📊 13,600 lbs

📊 Total Sales

📊 \$163,000

📊 Total Cost

📊 \$140,900

📊 Gross Margin

📊 \$22,300 = 15.8%

📊 Without Depreciation, Interest, &
Taxes

Conclusions



A Niche Sized Project Can Work

- 💧 If you want to work 365 days per year
- 💧 If you can get an average \$12/lb
- 💧 If you don't have any competition

A Commodity Project Can work

- 💧 If you have skill & experience
- 💧 If you have a LOT of money
- 💧 If you have proven technology

Thank You!



 Questions?