“So, You Want to be a Shrimp Farmer?”
Ohio Aquaculture Conference
Wooster, Ohio
February 9, 2013
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.
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/lb
Commodity Production

✍️ Technical Feasibility

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

✍️ Economic Viability

 سورية Capital Cost = $3 to $5.00/lb
 سورية Operating Cost Near $1.00/lb
 سورية 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

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design &amp; Engineering</td>
<td>$100,000</td>
</tr>
<tr>
<td>Land</td>
<td>$25,000</td>
</tr>
<tr>
<td>Site Work</td>
<td>$150,000</td>
</tr>
<tr>
<td>Building</td>
<td>$450,000</td>
</tr>
<tr>
<td>Tanks</td>
<td>$2,500,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>$1,500,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$4,725,000</strong></td>
</tr>
</tbody>
</table>
# Production Cost – 1 Acre

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pl’s @ $6/1000</td>
<td>$250,000</td>
</tr>
<tr>
<td>Feed @ .40/lb</td>
<td>$675,000</td>
</tr>
<tr>
<td>Chemicals</td>
<td>$50,000</td>
</tr>
<tr>
<td>Energy</td>
<td>$85,000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>$50,000</td>
</tr>
<tr>
<td>Labor</td>
<td>$96,000</td>
</tr>
<tr>
<td>Administration</td>
<td>$60,000</td>
</tr>
<tr>
<td>Processing @ .50/lb</td>
<td>$750,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$2,016,000</strong></td>
</tr>
<tr>
<td><strong>Total / lb</strong></td>
<td><strong>$1.34 / lb</strong></td>
</tr>
</tbody>
</table>
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:
- Without Depreciation, Interest, & Taxes: $2,670,000 = 57%
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

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pl’s @ $15/1000</td>
<td>$8,000</td>
</tr>
<tr>
<td>Feed @ .75/lb</td>
<td>$22,500</td>
</tr>
<tr>
<td>Chemicals</td>
<td>$5,000</td>
</tr>
<tr>
<td>Energy</td>
<td>$15,000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>$5,000</td>
</tr>
<tr>
<td>Labor (2 @ part time)</td>
<td>$25,000</td>
</tr>
<tr>
<td>Administration</td>
<td>$40,000</td>
</tr>
<tr>
<td>Processing @ $1.50/lb</td>
<td>$20,400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$140,900</strong></td>
</tr>
<tr>
<td><strong>Total / lb</strong></td>
<td><strong>$10.21 / lb</strong></td>
</tr>
</tbody>
</table>
## Profit & Loss – Niche Proj.

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-30’s, Retail Price, Local, Green, etc.</td>
<td>$12.00 / lb.</td>
</tr>
<tr>
<td>Lbs Sold</td>
<td>13,600 lbs</td>
</tr>
<tr>
<td>Total Sales</td>
<td>$163,000</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$140,900</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>$22,300 = 15.8%</td>
</tr>
</tbody>
</table>

Gross Margin is calculated 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?