Aquaculture Program  
The Ohio State University  
Project Guidelines

A. Administrative Information

Title: Freshwater Prawn Production

Objective: Produce 250 pounds of freshwater prawn in (1) ¼-acre pond from June-September 2013.

Investigators: Aquaculture Boot Camp 2013 (Tiu)

B. Biological Information

<table>
<thead>
<tr>
<th>Species</th>
<th>Size</th>
<th>Source</th>
<th>Post-Study Deposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater Prawn</td>
<td>Juvenile-market</td>
<td>Calala’s Water Haven</td>
<td>Class Processing/Preparing</td>
</tr>
</tbody>
</table>

C. Physical Requirements

Location: Piketon

Category

Containment Type: Pond

How Many: 3343 (ordered 4000, short on delivery)

Pond Size: ¼ acre

When (Months): June-Sept 2013

Desired Water Temperature: Ambient

D. Fish Maintenance – Disease - contact PI if 1) Off feed

E. Feeding

<table>
<thead>
<tr>
<th>Fish Size</th>
<th>What</th>
<th>When</th>
<th>How Much</th>
<th>Feed Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>juveniles-market</td>
<td>Enviroflight ($0.30/lb)</td>
<td>AM, PM</td>
<td>5-7% Body weight</td>
<td>Piketon</td>
</tr>
</tbody>
</table>

June 8-July 6 = 5 lbs/day
July 6 – July 27 = 7 lbs/day
July 27-Aug 24 = 8 lbs/day
Aug 24 – Sept 14 = 10lbs/day

F. Notes / Special Instructions

1. Check Dissolved Oxygen and Temperature Daily in AM.
2. Notify investigators if D.O. at or below 6.0, and/or temperature is 28 C or higher.
Did we make any money?
We initially wanted to stock 4000 prawn in a ¼-acre pond to equal 16,000 shrimp/acre. However, we only received 3343 shrimp upon delivery.

**Investment Items – $20,000.00.** Depreciated value of $2000/year/pond $2000.00
Land, Pond, Aerator, D.O. Meter, Water Quality Kit, Harvest Baskets, Nets, Holding Tanks, Air Pump
Most people neglect to consider this cost.

**Labor and Operating Costs – estimated at $1.00/expected pound** $250.00
Total Fixed (Investment + Labor and Operating) $2250.00

<table>
<thead>
<tr>
<th>Variable Expense</th>
<th>Number</th>
<th>Individual Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrimp juveniles</td>
<td>3343 ea.</td>
<td>$0.10</td>
<td>$334.30</td>
</tr>
<tr>
<td>Delivery</td>
<td></td>
<td></td>
<td>$100.00</td>
</tr>
<tr>
<td>Feed (FOB Yellow Springs)</td>
<td>1000 lbs</td>
<td>$0.30</td>
<td>$300.00</td>
</tr>
<tr>
<td>Harvest supplies (ice/bags/ad)</td>
<td></td>
<td></td>
<td>$200.00</td>
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<tr>
<td>Electric for Aerator</td>
<td>$7.68/day</td>
<td>98 days</td>
<td>$752.64</td>
</tr>
</tbody>
</table>

Total variable ¼ acre $1686.94
Total fixed ¼ acre $2250.00
Total costs ¼ acre $3936.94

**Results: Harvest Numbers**

- Total pounds harvested 117.2 lbs (expected at least 200 pounds)
- Average Individual Weight .976 oz or approximately 1 oz
  (or 16 whole shrimp/pound (typical size))
- Number of Individuals Harvested (estimated) 1875
- Number of Individuals Stocked 3343
- Survival (frog infestation, snapping turtle) 56% (typically see around 80%)
- Total feed fed 750 pounds
- Feed conversion ratio (FCR: total feed/net wt gain) 6.41 pound feed/pound shrimp

**Let’s calculate our breakeven price:**
2013 Actual Cost = Total cost ($3936.94) divided by total pounds (117.2) = $33.59/lb
2013 Cost (with good survival) = $3936.94/200 = $19.68/lb of shrimp
Conclusion: Shrimp sell for $12/lb. Hard to make money on ¼ acre pond

**One acre pond scenario (what if we had a bigger pond?)**
Total variable for one acre pond (do not multiply delivery or electric) $4188.64
Total fixed for one acre pond (also stays nearly the same) $2250.00
Total costs 1 acre $6438.64

If we harvested 468.8 pounds of shrimp (2013 numbers) from 1 acre pond breakeven = $13.73/lb
If you harvested 800 pounds of shrimp from 1 acre pond (typical production) breakeven = $8.04/lb
If you sold the shrimp for $12.00/lb, you would make $4.00/lb profit or $3200.00 for 100 days.