Factors that Affect Catfish Production

- Stocking Density
- Stocking Schedule
- Feeding Schedule
- Others
  - Feed quality
  - Catfish genetics
  - Harvest schedule
  - Predators
  - Pond water quality
  - Diseases
  - Management Skill
Channel Catfish Growth at Different Densities (lb/1000)
Channel Catfish Feed / Gain

- 60 lb/000
- 350 lb/000
- 860 lb/000

Graph showing feed and gain over different months.
Channel Catfish Growth at Different Initial Weights (lb)
What are Stockers?

- Advanced fingerlings
- 80 to 175 lb/1,000
- 6.5 to 10 inches
- $.15 to $.20 per fish
How Should We Feed Catfish?

• As much as they will eat “up to a point”
  – Is 120 lb/Acre/day the limit?
  – Are you stocking too many fish to feed?
  – Reduce feeding during ESC season.

• Target a yield and feed accordingly.
  – 7,000 + lb/Acre/year
  – 1.8:1 feed conversion
  – 12,600 pounds of feed, or average 55 lb/day
Just How Much Will 10,000 Channel Catfish/Acre Eat?
Channel Catfish Weight at Different Stocking Densities (lb)

- 2042/A
- 4000+/A
- 8000+/A

Restricted
Satiated
Feed Quantities at Different Stocking Densities

• Restricted Feeding
  – 2042/A ------ 34 lb/A
  – 4100/A ------ 56 lb/A
  – 8400/A ------ 78 lb/A

• Satiation Feeding
  – 4100/A ------ 112 lb/A
  – 8165/A ------ 224 lb/A
So What Happens in 10 A Ponds?

- Stocking more than are harvested.
- Densities build up, < 12,000 /Acre.
- Have 3,000 to 5,000 pounds standing crop.
- Need more than 1% biomass per day feeding for growth.
- Some fish get what they need, others maintain themselves.
# Pond Yield Verification - Arkansas catfish ponds, 93-96

## Table

<table>
<thead>
<tr>
<th>Pond</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>5,970</td>
<td>6,295</td>
<td>7,860</td>
<td>6,685</td>
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<tr>
<td>Yield Lb/A</td>
<td>4,782</td>
<td>4,173</td>
<td>4,292</td>
<td>3,673</td>
</tr>
<tr>
<td>Survival %</td>
<td>84</td>
<td>66</td>
<td>55</td>
<td>55</td>
</tr>
</tbody>
</table>

Source: University of Arkansas at Pine Bluff
Under –Sized Fish

• For the 5,970 fish per acre stocking rate.
  – 5,014 fish survived on average /Acre
  – But only 4,782 pounds harvested at 1.5 lb/ fish
  – 3,188 fish harvested, 1,828 fish in pond
  – 36% not harvested due to small size.
Why the difference in survival?

- Pond A used a different source of fingerlings
- Pond B fingerlings were stressed at stocking
- Ponds C and D had proliferative gill disease and columnaris infestations
- Pond D had catfish anemia
Critical Questions

• How to get enough feed into the fish to get more than 5,000 pounds of yield/Acre?
• How to keep the feeding rate at a level that allows good water quality?
• How to assure good fish health?
Double Stock System (lb/A)
7700 lb/A/yr (5500/A/yr stock)
Feed Range for Producing 7,700 lb/A/year, Mar-Nov
Double Stock System Standing Crop of Channel Catfish
A Closer Look at Multiple Batch Catfish Production

- Stock fingerlings averaging 66 lb/1,000.
- Fed to satiation with limit of 112 lb/A/day.
- Fed twice a week at 1% Biomass in winter.
- 32% protein floating feed.
- Aeration started at 3.0 ppm.
- Three year trial.
Three Year Multiple Batch System at Two Densities

Year 1
Year 2
Year 3
SCRAP

4500/A
8100/A
Multiple Batch Harvest of 4,500 vs 8,100 catfish/Acre

• Graded with 1 5/8 inch mesh live car.
• Average weight over 3 years = 1.41 or 1.37 pounds but increased as population aged.
• Third year average weights were 1.5 and 1.6 pounds respectively.
• 1,180 pounds residual was left in the winter of the third year for 8,100 fish per acre.
• Losses were 3% and 21%
Single Batch System at Two Catfish Densities

Year 1: 4500/A
Year 2: 8100/A
Year 3: 8100/A
SCRAP: 4500/A
Single Batch Harvest of 4,500 vs 8,100 catfish/Acre

- Greater yield but smaller average weight for single batch system.
- Average weights were 1.3 and 1.08 lb
- Weights did not change over time since harvest was nearly total each winter.
- Fish losses were 7% and 12% respectively.
Size Ranges for Multiple vs Single Batch (lb) – 1 5/8” grade
Marketability vs Batch

- Single batch had more fish < 0.75 lb
- Multiple batch had more fish > 2.45 lb
- 5% of fish in any system are larger than 3.9 lb.
- About 15% of the fish are left in the pond.
- **Revenues based on harvestable fish (>0.75 lb) were greatest in the Multiple Batch at 4,500 per Acre.**
- Fourth year and beyond projections should have yields near 6,000 lb per Acre in M-4,500.