V(A). Planned Program (Summary)

Program #5

1. Name of the Planned Program

Improved Management Options to Improve Catfish Production Efficiencies and Lower Costs

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
<th>%1862 Extension</th>
<th>%1890 Extension</th>
<th>%1862 Research</th>
<th>%1890 Research</th>
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</thead>
<tbody>
<tr>
<td>302</td>
<td>Nutrient Utilization in Animals</td>
<td>20%</td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>307</td>
<td>Animal Management Systems</td>
<td>20%</td>
<td></td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>308</td>
<td>Improved Animal Products (Before Harvest)</td>
<td>20%</td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>601</td>
<td>Economics of Agricultural Production and Farm Management</td>
<td>15%</td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>602</td>
<td>Business Management, Finance, and Taxation</td>
<td>15%</td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>603</td>
<td>Market Economics</td>
<td>10%</td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100%</strong></td>
<td></td>
<td><strong>0%</strong></td>
<td><strong>0%</strong></td>
</tr>
</tbody>
</table>

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

<table>
<thead>
<tr>
<th></th>
<th>Extension</th>
<th></th>
<th>Research</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1862</td>
<td>1890</td>
<td>1862</td>
<td>1890</td>
</tr>
<tr>
<td>Plan</td>
<td>0.0</td>
<td>0.8</td>
<td>0.0</td>
<td>0.7</td>
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<tr>
<td>Actual</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

<table>
<thead>
<tr>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith-Lever 3b &amp; 3c</td>
<td>1890 Extension</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1862 Matching</td>
<td>1890 Matching</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1862 All Other</td>
<td>1890 All Other</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct field trials
Conduct method demonstrations
Publish results
Give presentations

Develop individual enterprise budgets for catfish producers
Develop news articles on improving farm efficiency
Develop producer workshop targeting efficiency improvements for producers
Work with catfish industry to develop copper sulfate use protocol
Work with fish processing plants in valuing use of copper sulfate for off flavor control. Work with industry suppliers who manufacture copper sulfate on proper use of the product. Initially, a suite of alternative diet ingredients will be screened in pilot studies for potential efficacy in full studies.
1. Candidates for alternative protein sources are cuphea meal, soybean concentrates, poultry meals, and invertebrate meal.
2. Candidates for lipid sources are non-fish sources of n-3 fatty acids such as canola, flaxseed oil, and algal concentrates.
3. Prebiotics and probiotics may include Grobiotic™, Daily™, and Bacillus spores.
Conduct survey of fish and seafood consumers
Develop market-model for catfish industry (known as US Catfish Model)
Analyzed effects of various policy options on US catfish industry
Analyzed market potential of live catfish in north-eastern USA

2. Brief description of the target audience
- Catfish farmers throughout Arkansas
- County Extension agents
- Grocery store managers
- Consumers
- Commercial catfish producers
- Interested potential producers
- Commercial Bankers
- Copper sulfate manufacturers and suppliers

V(E). Planned Program (Outputs)

1. Standard output measures

<table>
<thead>
<tr>
<th></th>
<th>2009 Direct Contacts Adults</th>
<th>Indirect Contacts Adults</th>
<th>Direct Contacts Youth</th>
<th>Indirect Contacts Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>16</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Actual</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted
Year: 2009
Plan: 0
Actual: {No Data Entered}

Patents listed
{No Data Entered}

3. Publications (Standard General Output Measure)
Number of Peer Reviewed Publications

<table>
<thead>
<tr>
<th></th>
<th>2009 Extension</th>
<th>Research</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Actual</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

V(F). State Defined Outputs

Output Target

Output #1
Output Measure
- Number of Refereed Journal Articles
Not reporting on this Output for this Annual Report
Output #2

Output Measure

- Number of Abstracts Published
  Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Number of Presentations at Scientific Meetings
  Not reporting on this Output for this Annual Report

Output #4

Output Measure

- Number of Trade Magazine Articles
  Not reporting on this Output for this Annual Report

Output #5

Output Measure

- Number of Catfish Farms Adopting Recommendations
  Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Number of Catfish Acres Using Recommendations
  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Number of Ponds in Copper Sulfate Demonstrations
  Not reporting on this Output for this Annual Report
V(G). State Defined Outcomes

### V. State Defined Outcomes Table of Content

<table>
<thead>
<tr>
<th>O. No.</th>
<th>OUTCOME NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of commercial pond owners informed of the options to improve water circulation through aerator placement</td>
</tr>
<tr>
<td>2</td>
<td>Number of farm managers considering increased pond circulation in the placement of new aerators</td>
</tr>
<tr>
<td>3</td>
<td>Number of producers responding to project results</td>
</tr>
<tr>
<td>4</td>
<td>Number of producers willing to test successful ingredients or feeding strategies on a commercial scale</td>
</tr>
<tr>
<td>5</td>
<td>Percent of CFAR members aware of effect aerator placement has on circulation</td>
</tr>
<tr>
<td>6</td>
<td>Number of Farmers Gaining Access to Catfish Market Information</td>
</tr>
<tr>
<td>7</td>
<td>Number of Stores Adopting Recommendations</td>
</tr>
<tr>
<td>8</td>
<td>Number of Stores Increasing Sales of Catfish</td>
</tr>
<tr>
<td>9</td>
<td>Number of Arkansans Gaining Access to Catfish Management Information</td>
</tr>
<tr>
<td>10</td>
<td>Number of Arkansans Adopting Management Recommendations</td>
</tr>
<tr>
<td>11</td>
<td>Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management</td>
</tr>
<tr>
<td>12</td>
<td>Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry</td>
</tr>
</tbody>
</table>
Outcome #1

1. Outcome Measures

Number of commercial pond owners informed of the options to improve water circulation through aerator placement

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Number of farm managers considering increased pond circulation in the placement of new aerators

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Number of producers responding to project results

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of producers willing to test successful ingredients or feeding strategies on a commercial scale

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Percent of CFAR members aware of effect aerator placement has on circulation

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

Number of Farmers Gaining Access to Catfish Market Information

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Number of Stores Adopting Recommendations

Not Reporting on this Outcome Measure
Outcome #8

1. Outcome Measures

Number of Stores Increasing Sales of Catfish

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

Number of Arkansans Gaining Access to Catfish Management Information

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

Number of Arkansans Adopting Management Recommendations

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

Number of Arkansans Increasing Efficiency, Profitability Through Improved Catfish Management

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

Number of diets with new ingredients that are commercially available, or number of new feeding strategies implemented by industry

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)
1. Evaluation Studies Planned
   ● During (during program)

Evaluation Results
   (No Data Entered)

Key Items of Evaluation
   (No Data Entered)