

**DELTA CATFISH PRODUCTION**  
**Assumptions for 250-, 750- and 1,500-acre farms**  
**Using Multiple-Batch Stockings**

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**I. Primary Catfish Production Methods in Use in the MS Delta**

- A. Single batch production system** - not done much and not used in these enterprise budgets.
- 12 batch production system - not all ready in fall, so partial harvest (Atop off@) a couple of times before following June harvest and before then restock with fingerlings
  - these methods may be practiced by 20-30% of delta catfish farmers
- B. Multiple-batch production system** - predominant production system in use and used here.
- stock 5" fingerlings every spring at the rate of 7-10,000/acre
  - cluster around 7,500 fingerlings per acre
  - fixed restocking date every spring
  - maybe practiced by 75-80% of all delta catfish farmers

**II. Assumptions for multiple-batch production system**

**A. Pond construction costs are included.**

**B. No off-flavor or other delays in harvesting are included, this is done in sensitivity analyses.**

**C. Stocking Rates**

These rates will not change by farm-scale size. Fingerlings are stocked at 7,500 per acre every March or sometime between February and June each year. Fish are fed once a day.

Delta fingerling producers will be able to easily obtain 5" fingerlings. In this analysis, 5" fingerlings (30 lb/1,000 fish) stocked in March every year (fish sizes range from 3" - 7"). In a typical delivery of 5" fingerlings the size distribution may be similar to 60% of the fingerlings being in the 4-6" range, 20% may be in the 3-4" range, and 20% may be in the 6-7" range, giving a median size of 5". For this analysis, a narrower fingerling size distribution of 100% of the fingerlings being in the 4-6" range.

Fingerlings stocked in March will be raised to an average 1.5 lbs (minimum 1.25 lb) over a two year period. 30% of the fish will be harvested in May-June of the following year, 30% will be harvested the following August, 20% will be harvested the following November, and 20% will be harvested in March two years after being stocked. A 1.5% per month mortality is applied to all fish.

Obtaining fingerlings will vary depending on farm size:

- On a 250-acre farm, the operation will buy fingerlings
- On a 750-acre farm, the operation will either buy fingerlings and/or operate a hatchery.

This size operation will typically buy fry and raise them to 5" fingerlings for stocking into grow-out ponds. Approximately 10% of total water acreage will be allocated for fry to 5" fingerling production.

- On a 1,500-acre farm, the operation will either buy fingerlings and/or operate a hatchery. At this size operation, a hatchery will be operated on-farm. Brood stock acreage will be approximately 60 acres, and acreage devoted to fry to 5" fingerling production will be 150 water acres or 10% of total water acreage.

**D. Mortality**

The loss rate is approximately 25% over the total production cycle. A 1.5% mortality per month or 18% per year loss rate is used. In these enterprise budgets, the feed conversion ratio is less efficient than for larger-sized farms.

#### **E. Feed Conversion Ratios (FCR)**

The FCR is the ratio of feed fed to pounds of fish grown and may range between 2.2 and 2.4. As farm size increases there are more inefficiencies in feeding fish, therefore for these enterprise budget calculations, the FCR for each farm size will be:

- 2.2 for 250-acre farms,
- 2.3 for 750-acre farms, and
- 2.4 for 1,500 acre farms.

#### **F. Other production inputs**

**1. Hydrated lime** - for eradication of Ram's Horn snail and breaking the pelican-snail-catfish biological life cycle of the trematode. The amount of lime applied per trematode application is based upon applying two treatments per year in locations where birds are a problem (near sloughs, etc.) and at least 1 time per year in other locations.

##### Trematode Treatment Methods:

a) Lime slurry: it costs approximately \$15/acre to treat with a lime slurry; however you must buy a truck load at a time, which is a 2,500 gallon minimum. One truckload costs \$2,500 and will treat approximately 160 acres.

b) Copper sulfate: it costs approximately \$9/acre to treat with copper sulfate and is the treatment used in this analysis. The advantage of using copper sulfate is that the farmer can make up a rig to apply the copper sulfate any time. Copper sulfate treatments for snails is applied at 10 pounds per 250 feet of levee. Treatments are applied in May when only 1 treatment is used. In areas frequently visited by white pelican, two treatments are used and are applied in April and July/August.

Other than for trematode treatment, no lime is required for Delta catfish culture as the alkalinity is sufficiently high naturally.

**2. Salt** - initially added to ponds at a rate of two tons per year and at the rate of one ton per year thereafter. This is done to maintain chloride levels at \_\_\_ which helps keep catfish healthy.

**3. Water pumping** - required to initially fill the pond. The average pond in the delta is now approximately 12 water surface acres having a 15-year life. The average pond depth is 3' in the shallow end and 5' in the deep end, averaging 4 feet. Thus, 48 acre-feet of water are required to initially fill the pond. Relatively shallow wells tap into the underlying aquifer to supply this water.

During summer, evaporation losses are high and the pond water level is maintained by pumping 34" of water to make up for evaporation losses. Well operation costs are based on the January 1996 MAFES Bulletin Number 1039, ARice Water Use and Costs@ that provide operating costs for acre-inch of well pumping for rice field irrigation. These costs should apply for aquaculture as well as the same well depths into the same aquifer is being used.

The well operation average variable cost per acre-inch of water is:

- \$1.54 per acre-inch using electricity powered well pumps. For example, 36 inches of pumped water multiplied by \$1.54 = \$55.44 per 3 acre-feet of pumped water multiplied by a 12-acre pond surface area = \$665.28 to replace evaporation losses for one 12-acre pond.

- \$1.81 per acre-inch using diesel powered well pumps and would cost \$782 per pond. For these enterprise budget estimations, electric water pumps are used. There is 1 well for every 6-7 ponds or 1 well for every 60-80 water acres, therefore for the 250-acre farm there are 4 wells.

**4. Off-flavor prevention** - either copper sulfate or diuron is used to control blue-green algae that can produce off-flavor in catfish. Off-flavor prevents fish from being harvested, which causes additional time and money to be spent raising the fish, so efforts to reduce off-flavor are tried.

a. One to two treatments per acre per year of copper sulfate is applied to obtain a 1.5 ppm dose. It is applied at a 4.2 lb/acre-foot of water multiplied by 4' average pond depth (= 16.8 lb/surface acre), multiplied by 1.5 treatments per acre per year to get a 25.2 lb/acre/year application amount.

b. Diuron usage calculations

$$\begin{aligned}
 & 0.5 \text{ ounce per acre - ft of water} \\
 & \underline{\times 48.} \text{ acre-ft of water in 12-acre (avg 4' depth) pond} \\
 & 24. \text{ ounces of diuron applied per pond, per treatment} \\
 \\
 & \times 5.83 \text{ diuron treatments per pond in the Mississippi Delta} \\
 & \quad \text{(Hanson, MAFES Bulletin No. 1101, March 2001)} \\
 = & 139.92 \text{ ounces applied per pond/year} \\
 & \underline{\times 250} \text{ acres of water} \\
 \\
 = & 34,980 \text{ ounces applied} \\
 & \underline{) 16} \text{ ounces in 1 lb} \\
 \\
 = & 2186.25 \text{ lbs of diuron used} \\
 & \underline{) 4} \text{ lb bag of diuron} \\
 \\
 = & 547 \text{ bags} \\
 & \underline{\times \$24} \text{ per 4 lb bag of diuron} \\
 \\
 = & \$ 13,118 \text{ cost of diuron to treat all ponds}
 \end{aligned}$$

which is \$52 per acre-foot of application. Applications in this analysis are made once in June, 4 times in July and once in August at weekly intervals.

**5. Aeration** - needed to manage water quality and specifically to maintain dissolved oxygen levels above 4 ppm. Aeration will differ by farm size. Most farms use fixed electrical 10-hp aerators with additional tractor powered PTO paddlewheels that are mobile and can be transported to any pond in critical need. Diesel generator usage occurs, but is more dependent on farm location than farm size, i.e., in areas where electricity continuity is in doubt. Electric aeration is used by approximately 90% of delta farmers, with diesel generated aeration electricity being used by the remaining 10% of the farmers (mainly by a small number of larger farm operations).

It is approximated that 60 - 70% of all delta catfish farmers use one 10-hp fixed aerator plus one tractor back-up paddlewheel aerator per 12-acre pond. Furthermore, it is approximated that 30 - 40% of delta catfish operations use two 10-hp aerators plus one tractor back-up paddlewheel aerator per pond.

A general rule-of-thumb is that a fixed 10-hp electric aerator will support 30,000 lb of catfish and a good tractor-driven sidewinder paddlewheel aerator will also support approximately 30,000 lb of fish. One study showed an average of 640 - 720 hours of aeration per pond per year was required to maintain proper dissolved oxygen levels (REFERENCE). An Arkansas Yield Verification study reported 117 hours/acre/year of electric aeration plus 13.5 hours per acre year of emergency tractor-driven aeration for an 11 acre pond stocked at 7,275 fish per acre.

In this analysis, aeration is being applied at the rate of 600 hours of fixed electrical aeration plus 300 hours of emergency tractor-driven aeration per pond. No aeration is applied during the months of January, February, March, and December. Electrical aeration is applied as follows: one week in April and November, two weeks in October, three weeks in May and September, and four weeks in June, July and August. Tractor-driven aeration is applied equally in July and August for four weeks.

**6. Fuel and Lubricants** - (gasoline, diesel, lubricants, electricity)

- Gasoline consumed by trucks is estimated based on mileage driven per year. The price of gasoline used in this analysis is \$0.85/gallon.

- It was estimated that 4,652 gallons of gasoline was used for feeding fish (x \$0.85/gallon = \$3,954).

- It was estimated that 7,500 gallons of gas is used annually in the 250-acre operation for transportation (x \$0.85/gallon = \$6,375).

- It was estimated that 240 gallons of gas is used for boating activities during fish harvesting (x \$0.85/gallon = \$204).

- Diesel consumption is at the rate of 3.4 gal/hr for 45-65 hp tractor (per hour of PTO-driver aerator usage). Diesel fuel cost \$1.05/gallon for this analysis.

- It was estimated that 5,528 gallons of diesel fuel was used for tractor-driven PTO aeration (x \$1.05 per gallon of diesel fuel = \$5,804).

- It was estimated that 651 gallons of diesel fuel was used for mowing grass on levees (x \$1.05 per gallon of diesel fuel = \$684).

- Oil/Grease used to maintain trucks, tractors, aerators, mowers, etc.

- Electricity is used for aeration and well pumping.

- a 10-hp electric aerator uses 8.47 kwh/hr of operation (Keenum & Waldrop, 1988, Appendix Table 16), for example, aeration electricity charges are calculated by multiplying 8.47

kwh/hr of 10-hp aerator operation times \$0.11 per kw/hr of electricity = \$0.72 per hour of electrical aerator operation,

- a 60-hp electric-powered well pump uses 50.85 kwh/hr of operation

Note: electrical utilities also have a per electrical meter charge as well as the cost of electricity.

For this analysis, there is one electrical meter for every four ponds, therefore for the@

- 250-acre farm having 21 ponds (20 12-acre plus one irregular pond of 10-acres) would have 5 electrical meters.

#### **7. Labor requirements** - number of employees vary by farm size.

Diversification of farm operations is the goal of delta catfish farms in the 100 - 120 acre size range and requires 1 manager plus 1 worker. Probably 10-15% of all delta catfish farms are less than 250 acres - this size operation would use custom harvesting. Most delta catfish farms are greater than 250 water acres.

a) For a 250-acre farm, labor would be arranged as follows:

- 1 manager that does the catfish feeding,
- 2 night men, who alternate monitoring dissolved oxygen levels,
- 5 people for levee grass mowing and seine harvesting of fish (no custom harvest at this size farm and thus only a \$0.015 per pound transport expense is charged by the processing company). Alternating d.o. monitoring implies the two men are needed to cover 7 days and all hours or 40 hours per person during summer hours, i.e., 10 hrs/night x 7 days = 70 hours. These workers hours are less during the winter when aeration is not a problem and they would help with seining or chasing birds.

b) For a 750-acre farm, that is contiguous, labor would be arranged as follows:

- 1 manager,
- 1 assistant manager who will do fish feeding,
- 4 night men to monitor dissolved oxygen levels,
- 7 people for levee grass mowing and seine harvesting of fish, and
- 1 bookkeeper.

c) For a 1,500-acre farm, that is not contiguous, labor would be arranged as follows:

- 1 manager,
- 1 assistant manager who will do fish feeding,
- 2 full-time harvest seine crews (5 people per crew) with 1 of the 10 being an assistant manager,
- 2-3 feeders (1 will be manager and 1 will be an assistant manager),
- 1 shop foreman who will have 1 helper,
- 4 night men to monitor dissolved oxygen levels, and
- 1 bookkeeper/secretary position.

Labor compensation rates used in developing the 250-acre Mississippi Delta catfish farm are:

- \$35,000 per year for a manager feeding and running the d.o. crew,
- \$25,000 per year for a foreman who is in charge of fish harvesting, other seining, mowing and levee grading,
- \$15,000 - 18,000 for seining and mowing personnel, and
- \$18,000 for each person in the d.o. monitoring crew.

**8. Bird predation** - from mid November to Mid-March double crested cormorants, white pelicans, and other birds migrate into the Mississippi delta region of aquaculture production and consume a tremendous amount of fish. Additional labor activities during these months include bird chasing, placing pyrotechnics, and shooting of birds (with proper permits).

**G. Equipment** (see table of pond construction, equipment and machinery costs).

**H. Pond configurations** - ponds that have been built in the last 5 - 10 years are generally smaller than in the 1970's and 1980's. The average size pond now is approximately 12 water surface acres.

- A 250-water acre pond will have: 20 12-acre ponds plus 1 10-acre pond. A 12-acre pond will be approximately 518 ft width x 1,045 ft length (3,126 feet circumference (outside dimension)). The main levee will have a 25' wide crown, and 18' will be graveled. The cross levees will have 18' crowns.

Only 18' of the main levee width will be covered with gravel. (Gravel computation: 518' x 10 ponds = 5,180' + 200' for ramps = 5,380' of levee needing gravel. A 6" gravel depth is used. Running gravel levee 18' of gravel on 25' levee = 48,420 cubic feet divided by 27 cubic feet per cubic yard = 1,793 cubic yards divided by 22 cubic yards = 81.5 truckloads of gravel needed multiplied by \$130 per truckload = \$10,597 for graveling the main levee.

Calculations for main levee gravel cost:

5,380 ft 18' wide and 6" deep =	48,420 ft <sup>3</sup>
cost \$13,000	) <u>27</u> ft <sup>3</sup>
	1,793 yd <sup>3</sup>
22 cu yd/truck load	) <u>22</u> yd <sup>3</sup>
\$130 per load	81.5
	<u>x 130</u>
	\$10,597

## Assumptions for a 250-acre Catfish Farm located in the Delta of MS, 2001.

### Farm Size

250 acre of water surface area for grow-out

### Feed Price

\$ 210 per ton for feed in a grow-out phase

15 - 25 months to grow 5" fingerlings (ranging in size from 4" - 6") to 1.5 lb harvest-sized fish  
Approximately 30% of the fish will be harvested in May-June (Year 2) in the year after stocking  
another 30% will be harvested the following August of Year 2, another 20% in November Year 2  
and the remaining 20% will be harvested in March (Year 3) two years after initial stocking.

### Harvest-Fish Info

0.7 \$/lb food fish; FARMER NETS \$ 0.69 AFTER FISH TRANSPORTATION COSTS  
1.5 lb fish final weight NO CHARGE FOR HARVESTING AS IT IS DONE ON-FARM  
2.30 feed conversion rate (lbs feed fed to lbs of fish harvested)  
1.5% monthly mortality rate

### Fingerling Info

Fingerlings are stocked every March over the entire farm water acreage  
0.05 price for 5" fingerling (4" to 6" range)  
30 lb/1,000 5" fingerlings  
7500 fingerlings per acre stocking rate

### Harvest Info

0.000 Seine & harvest of food fish, \$/lb harvested  
**At the 250 acre farm size custom harvesting is not used as hired labor will do harvesting**  
0.015 \$/pound of fish transported

### Interest Rates

Long-term 10% per year  
Medium-term 10% per year  
Short-term 10% per year

### Operating expense constants

Repairs and Maintenance  
27,210 - per year  
2,268 - per month  
35,000 Manager salary, \$/year **see the labor spreadsheet for more details**  
Hired labor, \$/year  
25,000 Foreman  
16,500 Labor for seining, mowing, grading and facilities maintenance  
18,000 Night time labor for d.o. monitoring person, \$/year  
53 Salt, \$/ton  
15 Lime, \$/ton  
32 Copper sulfate, \$/50 lb bag  
24 Diuron, \$/4 lb bag  
9 \$ per diuron treatment, average of 5.83 treatments per pond  
600 Supplies & admin., \$50/month  
0.11 Electricity, per KWhr at off-peak rate  
92 Fuel & lubricants, \$/acre  
6.25 Insurance, \$/acre  
2,500 Telephone, \$/year  
2,400 Accounting/legal, \$/year  
2,000 Bird chasing and ammunition, \$/year  
1.25 gasoline price for agriculture, \$/gallon  
1.05 diesel price, \$/gallon

**Catfish budget for a 250-acre multiple-batch production system in the Mississippi Delta, 2001.**

Acres	250
Final weight, lb	1.5
Stocking rate, fingerlings/acre	7500
Feed fed per pound of fish gain	2.30
Price per lb of fish	0.7
Price to seine harvest-sized fish,\$/lb	0.00 at this size operation on-farm labor does seining
Price to transport harvested fish,\$/lb	0.015
Begin weight, lb/1,000	30
Price of feed, \$/ton	\$ 210
Electricity cost, \$/kw-hr	\$0.110
Interest rates:	Short-term: 10% Intermediate: 10% Long-term: 10%
Hired labor rate, \$/week	\$0
Fingerling price, \$/each	0.05

	Weight Each	Unit	Quantity	Price or Cost / unit	Value or Cost	Per Acre Value	Percent
<b>1. Gross Receipts</b>							
Catfish sales	1.5 lb		1,322,920	0.70	926,044	3,704	2.87
<b>2. Variable Costs</b>							
Feed, food fish	ton		1,899	210	398,706	1,595	47%
Labor							
Management	year		1	35,000	35,000	140	4%
Hired labor, at various wages	year		7	varies	109,000	436	13%
Fingerlings	each		1,875,000	0.050	93,750	375	11%
Transport of harvested fish /1	lb		1,322,920	0.015	19,844	79	2%
Fuel & lubricants							
Diesel	gal		22,332	1.05	23,449	94	3%
Gasoline	gal		12,392	1.25	15,490	62	2%
Electricity							
Aeration	10-hp hr		12,596	0.932	11,736	47	1%
Meter charges	meter-month		60	35	2,100	8	0%
Water pumping	acre		250	55.44	13,860	55	2%
Repairs and Maintenance	month		12	2,268	27,210	109	3%
Bird chasing	year		1	2,000	2,000	8	0%
Chemicals							
Salt	ton		250	53	13,250	53	2%
Diuron, off-flavor control	trt/acre		1,500	9	13,500	54	2%
Copper sulfate, trematode treat.	trt/acre		250	9	2,250	9	0%
Miscellaneous expenses	per acre		250	25	6,250	25	1%
Interest on Operating Capital	dol		787,394	0.10	59,055	236	7%
<b>TOTAL VARIABLE COSTS</b>					<b>846,449</b>	<b>3,386</b>	<b>100%</b>
<b>3. Income Above Variable Cost</b>					<b>79,595</b>	<b>318</b>	
<b>4. Fixed Cost</b>							
Land charge (not included)	dol		240,000	0.10	0	0	0%
Machinery depreciation	dol				41,650	167	35%
Pond depreciation	dol				26,173	105	22%
Taxes (land)	acre		29	250	7,350	29	6%
Interest on Pond Construction Costs	dol.&%		215,020	0.10	21,502	86	18%
Interest on Equipment/Mach. Purchases	dol &%		218,320	0.10	21,832	87	18%
<b>TOTAL FIXED COSTS</b>					<b>118,507</b>	<b>474</b>	<b>100%</b>
<b>5. Overhead /2</b>							
Telephone	month		12	208	2,500	10	27%
Accounting/legal	year		1	2,400	2,400	10	26%
Supplies and Administrative	year		1	600	600	2	6%
Office supplies	year		1	600	600	2	6%
Insurance, general liability	acre		250	6.25	1,563	6	17%
Insurance on equipment, machinery	dol/\$		436,640	0.004	1,747	7	19%
<b>TOTAL OVERHEAD COSTS</b>					<b>9,409</b>	<b>38</b>	<b>100%</b>
<b>6. Total of All Specified Expenses</b>					<b>974,365</b>	<b>3,897</b>	
<b>7. Net Returns Above All Specified Expenses /3</b>					<b>-48,321</b>	<b>-193</b>	
<b>Net Returns Per Acre:</b>							
Above Specified Variable Costs					318	318	
Above Specified Total Costs					-193	-193	
<b>Breakeven Price:</b>							
To Cover Specified Variable Expenses					0.64	0.64	
To Cover Specified Total Expenses					0.74	0.74	

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.  
 /2 Overhead expenses include telephone, accounting, legal, supplies, administration, and insurance (general liability and equipment).  
 /3 Labor and Management expenses have been included, but no expense has been included for land, therefore Net Returns to Land is represented by this budget.

**Sensitivity Analysis - Estimated Net Returns Per Acre Above ALL Expenses At Varied Selling Price and Feed Price**

Feed Price, \$/ton	Price Received for Catfish, \$/lb						
	0.55	0.60	0.65	0.70	0.75	0.80	0.85
190	-824	-559	-295	-30	235	499	764
200	-905	-641	-376	-112	153	493	682
210	-987	-722	-458	-193	71	488	600
220	-1,069	-804	-540	-275	-10	482	519
230	-1,150	-886	-621	-357	-92	476	437
240	-1,232	-967	-703	-438	-174	471	356
250	-1,314	-1,049	-784	-520	-255	465	274
260	-1,395	-1,131	-866	-601	-337	459	192
270	-1,477	-1,212	-948	-683	-419	454	111
280	-1,559	-1,294	-1,029	-765	-500	448	29
290	-1,640	-1,376	-1,111	-846	-582	442	-53
300	-1,722	-1,457	-1,193	-928	-663	437	-134
310	-1,803	-1,539	-1,274	-1,010	-745	431	-216

**Sensitivity Analysis - Estimated Net Returns Per Acre Above Variable Expenses At Varied Selling Price and Feed Price**

Feed Price, \$/ton	Price Received for Catfish, \$/lb						
	0.55	0.60	0.65	0.70	0.75	0.80	0.85
190	-312	-48	217	482	746	1,011	1,275
200	-394	-129	135	400	665	1,005	1,194
210	-475	-211	54	318	583	999	1,112
220	-557	-292	-28	237	501	994	1,030
230	-639	-374	-109	155	420	988	949
240	-720	-456	-191	73	338	982	867
250	-802	-537	-273	-8	256	977	786
260	-884	-619	-354	-90	175	971	704
270	-965	-701	-436	-171	93	965	622
280	-1,047	-782	-518	-253	11	960	541
290	-1,128	-864	-599	-335	-70	954	459
300	-1,210	-946	-681	-416	-152	948	377
310	-1,292	-1,027	-763	-498	-233	942	296



**250-acre Multiple Batch Catfish Production System - Sensitivity Analysis**  
**Sensitivity Analysis - Estimated Net Returns Per Acre Above ALL Expenses**  
**At Varied Selling Price and Feed Price**

Feed Price, \$/ton	Price Received for Catfish, \$/lb						
	0.55	0.6	0.65	0.7	0.75	0.8	0.85
190	-824	-559	-295	-30	235	499	764
200	-905	-641	-376	-112	153	493	682
210	-987	-722	-458	-193	71	488	600
220	-1,069	-804	-540	-275	-10	482	519
230	-1,150	-886	-621	-357	-92	476	437
240	-1,232	-967	-703	-438	-174	471	356
250	-1,314	-1,049	-784	-520	-255	465	274
260	-1,395	-1,131	-866	-601	-337	459	192
270	-1,477	-1,212	-948	-683	-419	454	111
280	-1,559	-1,294	-1,029	-765	-500	448	29
290	-1,640	-1,376	-1,111	-846	-582	442	-53
300	-1,722	-1,457	-1,193	-928	-663	437	-134
310	-1,803	-1,539	-1,274	-1,010	-745	431	-216

**Sensitivity Analysis - Estimated Net Returns Per Acre Above Variable Expenses**  
**At Varied Selling Price and Feed Price**

Feed Price, \$/ton	Price Received for Catfish, \$/lb						
	0.55	0.60	0.65	0.70	0.75	0.80	0.85
190	-312	-48	217	482	746	1,011	1,275
200	-394	-129	135	400	665	1,005	1,194
210	-475	-211	54	318	583	999	1,112
220	-557	-292	-28	237	501	994	1,030
230	-639	-374	-109	155	420	988	949
240	-720	-456	-191	73	338	982	867
250	-802	-537	-273	-8	256	977	786
260	-884	-619	-354	-90	175	971	704
270	-965	-701	-436	-171	93	965	622
280	-1,047	-782	-518	-253	11	960	541
290	-1,128	-864	-599	-335	-70	954	459
300	-1,210	-946	-681	-416	-152	948	377
310	-1,292	-1,027	-763	-498	-233	942	296

Table 1. Summary of the data used in the analysis.

Variable	Number of observations	Number of missing observations	Number of unique values
Age	1000	0	100
Gender	1000	0	2
Income	1000	0	10
Education	1000	0	10
Marital Status	1000	0	3
Health Status	1000	0	2
Employment Status	1000	0	3
Home Ownership	1000	0	2
City	1000	0	10
State	1000	0	50
Country	1000	0	100
Year	1000	0	10
Overall Total	10000	0	1000

**Pond construction and equipment cost for a 250 acre catfish farm in the Mississippi Delta. /1**

Item	Unit	Cost/unit	Number	Cost	Useful Life	Average Investment	Annual Avg. Depreciation /2	Interest on Investment /3	Repairs as a Percent of New Cost	Annual Repairs and Maintenance
<b>A. Capital cost</b>										
Land purchase (not included)	acre	\$ 800	300	\$ 240,000			-	\$ 24,000		
Pond construction	acre	\$ 1,250	250	\$ 312,500	15	156,250	\$ 20,833	\$ 15,625	10%	\$ 2,083
Gravel	cu. yd.	\$ 6	1790	\$ 10,740		5,370	\$ -	\$ 537		
Well, 3,000 gpm, 60-hp electric motor	each	\$ 15,360	5	\$ 76,800	20	38,400	\$ 3,840	\$ 3,840	75%	\$ 2,880
Shop, 30' x 50'	ea	\$ 30,000	1	\$ 30,000	20	15,000	\$ 1,500	\$ 1,500	10%	\$ 150
<b>Subtotal (excluding land cost)</b>				<b>\$ 430,040</b>		<b>\$ 215,020</b>	<b>\$ 26,173</b>	<b>\$ 21,502</b>		<b>\$ 5,113</b>
<b>B. Equipment</b>										
Shop tools and equipment	ea	\$ 10,000	1	\$ 10,000	10	5,000	\$ 1,000	\$ 500	10%	\$ 100
Trucks, 3/4 ton, 4WD	ea	\$ 20,000	2	\$ 40,000	5	20,000	\$ 8,000	\$ 2,000	45%	\$ 3,600
Feed bin, 10 ton capacity	ea	\$ 7,000	2	\$ 14,000	20	7,000	\$ 700	\$ 700	10%	\$ 70
Tractors, 45-65 hp	ea	\$ 20,000	10	\$ 200,000	14	100,000	\$ 14,286	\$ 10,000	75%	\$ 10,714
Aerators, electric 10-hp /4	ea	\$ 4,000	21	\$ 84,000	10	42,000	\$ 8,400	\$ 4,200	50%	\$ 4,200
PTO water pump, used	ea	\$ 1,500	1	\$ 1,500	10	750	\$ 150	\$ 75	45%	\$ 68
PTO aerators	ea	\$ 3,400	10	\$ 34,000	10	17,000	\$ 3,400	\$ 1,700	25%	\$ 850
Bush hog/mower, 6' side mount	ea	\$ 6,940	1	\$ 6,940	10	3,470	\$ 694	\$ 347	20%	\$ 139
Pull-behind mower, 6' width	ea	\$ 5,000	1	\$ 5,000	10	2,500	\$ 500	\$ 250	20%	\$ 100
Truck Mounted Feeder, 2-4 ton with electronic feeder scale, used	ea	\$ 7,500	1	\$ 7,500	10	3,750	\$ 750	\$ 375	25%	\$ 188
DO meter and accessories	ea	\$ 1,500	2	\$ 3,000	10	1,500	\$ 300	\$ 150	202%	\$ 606
Computer	ea	\$ 1,500	1	\$ 1,500	10	750	\$ 150	\$ 75	10%	\$ 15
Boat, motor and trailer	ea	\$ 4,200	1	\$ 4,200	10	2,100	\$ 420	\$ 210	65%	\$ 273
Mobile 2-way radio & base unit	ea	\$ 2,000	1	\$ 2,000	10	1,000	\$ 200	\$ 100	25%	\$ 50
Seine net, 10 ft deep, 1/2" mesh	ea	\$ 4,000	1	\$ 4,000	5	2,000	\$ 800	\$ 200	50%	\$ 400
Hydraulic takeup reel with trailer	ea	\$ 4,000	1	\$ 4,000	10	2,000	\$ 400	\$ 200	50%	\$ 200
2-1/1 ton used boom truck	ea	\$ 15,000	1	\$ 15,000	10	7,500	\$ 1,500	\$ 750	35%	\$ 525
<b>Subtotal</b>				<b>\$ 436,640</b>		<b>\$ 218,320</b>	<b>\$ 41,650</b>	<b>\$ 21,832</b>		<b>\$ 22,097</b>
<b>TOTAL</b>				<b>\$ 866,680</b>		<b>\$ 433,340</b>	<b>\$ 67,823</b>	<b>\$ 43,334</b>		<b>\$ 27,210</b>

/1 For this size operation, 250 acres, an office building is not required, as most paperwork and administration would be conducted out of the home.

/2 Computed by the straight line method with zero salvage value for depreciable items.

/3 Land and pond construction is charged at a long-term interest rate and equipment items are charged at an intermediate-term interest rate.

Charged at 10% on the total value of land with all other depreciable items charged at 10% on one-half of the investment.

/4 One fixed 10-hp aerator per pond is used.

Feeder truck - used 1-ton truck with dual wheel rear end with heavy duty axle.

**Electricity and Fuel**

A. Well pumping to replace 36 acre-inches of water per year. From Jan. 1996 MAFES Bulletin # 1039, "Rice Water Use and Costs":  
 Average variable cost per acre-inch of water is: For electric pumps, \$1.54/acre-inch, (\$1.81/acre-inch with a diesel pump - not used here) therefore:

	36	acre-inches of water pumped annually	
\$	1.54	cost to pump per acre-inch	
\$	55.44	per required acre-inches of water annually	
	250	acres of water	
\$	13,860	annually to flush ponds and replace evaporation or.....	55.44 \$/acre-inch pumped

B. Aeration electricity requirements for one 10-hp aerator per pond. /1

	# of days run	hours per day	# of ponds	Aeration Hours	No. of Kwh per hour of 10-hp aerator operation	Aeration Cost, \$/kwh	Monthly Cost of Aeration
January	0	0	0	-	8.47	0.11	-
February	0	0	0	-	8.47	0.11	-
March	0	0	0	-	8.47	0.11	-
April	7	3	8	168	8.47	0.11	157
May	18	6	13	1,404	8.47	0.11	1,308
June	26	7	16	2,912	8.47	0.11	2,713
July	27	8	16	3,456	8.47	0.11	3,220
August	26	8	16	3,328	8.47	0.11	3,101
September	20	6	10	1,200	8.47	0.11	1,118
October	6	3	7	126	8.47	0.11	117
November	1	2	1	2	8.47	0.11	2
December	0	0	0	-	8.47	0.11	-
<b>TOTAL AERATION HOURS</b>				12,596			11,736

/1 The cost per hour of 10-hp aerator operation is 8.47kwh /hour of operation x electricity cost, or \$ 0.932 per hour of 10-hp aerator operation

There is an additional charge of \$35 per electrical meter. There is usually one electrical meter per every 4 ponds.  
 Thus, 21 ponds / 4 ponds/meter = 5 electrical meters on this farm.

**C. Fuel**  
**DIESEL**

1. PTO-driven aerator - Diesel

45-65 hp tractor used for PTO-driven aerator	
3.4 gallons of diesel used per hour of PTO operation	
300 hours of PTO-driven aeration per pond	
1,020 gallons of diesel for PTO emergency aeration	
21 ponds on 250-acre farm	
21,420 gallons of diesel fuel used for PTO aeration	
1.05 \$/gallon of diesel	
\$ 22,491 \$ for diesel use on 250-acre catfish farm	

2. Mowing - Diesel

from Keenum and Waldrop:	\$ 684	divided by	\$ 0.75	price of diesel	912 gallons used
912 gallons used x	1.05	2001 diesel price =	\$ 958		

**TOTAL DIESEL 22,332 GALLONS**

**GASOLINE**

1. Feeding - Gasoline

Truck Mounted Feeder, 2-4 ton used

from Keenum and Waldrop:	\$ 3,954	divided by	\$ 0.85	price of gas =	4,652 gallons used
4,652 gallons used x	1.25	2001 gas price =	\$ 5,815		

2. Boat and harvesting - Gasoline

from Keenum and Waldrop:	\$ 204	divided by	\$ 0.85	price of gas =	240 gallons used
240 gallons used x	1.25	2001 diesel price =	\$ 300		

3. Transportation around the farm, to processor, to chase birds, check d.o., etc. - Gasoline

from Keenum and Waldrop:	\$ 6,375	divided by	\$ 0.85	price of gas =	7500 gallons used
7500 gallons used x	1.25	2001 diesel price =	\$ 9,375		

**TOTAL GAS 12,392 GALLONS**

Chemical needs for a 250-acre MS Delta catfish farm.

Chemicals

Salt           to bring chlorides up to 100 ppm to prevent brown blood disease  
check chlorides after pond has been filled and add 2 tons of salt per acre  
After year 1 all ponds are treated in the spring at 1 ton acre

Lime           Do not need to add lime to delta waters as their alkalinity level is fine  
However, lime is used as a trematode treatment; costs about \$15/acre  
In this scenario, we have chosen to use copper sulfate for trematode treatment.

Copper sulfate For off-flavor: treat at 5 lb/acre/application when water is above 70F which is about  
20 applications per year  
  
For trematode treatment: apply at  
Cost is approximately \$9/acre

5 lb/acre treatment rate  
20 applications per year

Diuron        For off flavor treatment  
0.5 ounces per acre-foot of water applied weekly for up to 9 treatments per pond  
- In the delta 5.83 applications of diuron were used per pond (Hanson, 2001)

Labor Requirements for a:  
 250 water acre Delta MS catfish farm

Pay Amount	Number	Total Annual Cost, \$	Position and responsibility
<b>Operations Management</b>			
35,000 \$/year	1	\$ 35,000	Manager - overall manager and does feeding
Subtotal		\$ 35,000	
25,000 \$/year	1	\$ 25,000	Foreman - oversees hired laborers
18,000 \$/year /1	2	\$ 18,000	Night dissolved oxygen monitoring workers
16,500 \$/year	4	\$ 66,000	People doing mowing and seining (no custom harvesting)
Subtotal		\$ 109,000	
<b>TOTAL</b>		<b>\$ 144,000</b>	

/1 Two people alternate so only one full-time person cost is included.

Taxes on Delta Catfish Acreage

1 Water and Levee acres

1,250 x construction cost

1250 pond construction value

750 + land use value per acre in the delta of MS

2000 sum of construction value and land use value

300 x 15% assessment rate

0.098 x millage rate

29.4 TAX

7,350 TOTAL TAX FOR THIS SIZE FARM

250 WATER ACRES

Cash flow, Year 1, for a 250-acre catfish farm in the Delta, Mississippi, 2001.

Month	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01	Total
Food fish sales (lb)	0	0	0	0	0	0	0	0	0	-	-	-	-
<b>BEGINNING CASH BALANCE</b>	1,000	500	500	500	500	500	500	500	500	500	-494,684	500	-
<b>Cash Inflows</b>													
Catfish sales \$ 0.70 lb	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL CASH INFLOW</b>	1,000	500	500	500	500	500	500	500	500	500	(494,684)	500	
<b>Operating Expenses</b>													
Feed, food fish \$ 210 ton	0	0	1,365	3,938	9,240	18,375	30,240	55,073	48,510	37,223	1,260	1,260	206,483
Labor													
Farm manager \$ 35,000 year	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	35,000
Hired labor \$ 109,000 year	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	109,000
Fingerlings, 5" (4"-6" range) \$ 0.05 each			93,750										93,750
Harvest /1													
Seining \$ - lb.	-	-	-	-	-	-	-	-	-	-	-	-	-
Transport \$ 0.015 per lb	-	-	-	-	-	-	-	-	-	-	-	-	-
Fuel & lubricants													
Diesel													
- PTO-driven aeration \$ 1.05 gallon						11,246	11,246						22,491
- Mowing \$ 1.05 gallon			120	120	120	120	120	120	120	120			958
Gasoline													
- Transportation \$ 1.25 gallon	781	781	781	781	781	781	781	781	781	781	781	781	9,375
- Boat and harvesting \$ 1.25 gallon													
Utilities													
Aeration + Meter charge \$ 0.93 kw-hr	175	175	175	332	1,483	2,888	3,395	3,276	1,293	292	177	175	13,836
Water pumping to flush ponds \$ 55.44 /3ac-ft/yr					1,386	2,772	4,158	4,158	1,386				13,860
Repairs and Maintenance \$ 27,210 year	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	27,210
Telephone \$ 2,500 year	208	208	208	208	208	208	208	208	208	208	208	208	2,500
Accounting/legal \$ 2,400 year	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Bird chasing \$ 2,000 year	500	500	250								250	500	2,000
Chemicals													
Salt \$ 53 ton			13,250										13,250
Diuron, off-flavor control \$ 9 trt/acre						2,250	2,250	9,000	2,250				13,500
Copper sulfate, trematode treat. \$ 9 acre					2,250								2,250
Supplies & admin. \$ 600 year	50	50	50	50	50	50	50	50	50	50	50	50	600
Taxes (land) \$ 29.40 acre	-	-	-	7,350	-	-	-	-	-	-	-	-	7,350
Insurance \$ 6.25 acre	1,563												1,563
<b>Total Cash Operating Expenses</b>	17,745	16,182	123,052	23,308	20,746	34,782	43,425	25,311	18,306	15,919	15,934	16,182	370,892
Scheduled debt payments													
Intermediate - principal interest	47,459	-	-	-	-	-	-	-	-	-	-	-	47,459
Long-term - principal interest	39,298						9,345	38,704					
<b>TOTAL CASH OUTFLOW</b>	104,501	16,182	123,052	23,308	20,746	34,782	91,474	25,311	18,306	15,919	15,934	16,182	418,351
<b>CASH AVAILABLE</b>	(103,501)	(15,682)	(122,552)	(22,808)	(20,246)	(34,282)	(90,974)	(24,811)	(17,806)	(15,419)	(510,618)	(15,682)	
New Borrowing	104,001	16,182	123,052	23,308	20,746	34,782	91,474	25,311	18,306	15,919	511,118	16,182	
Payment on													
Principal	-									473,081			
Interest	-									22,103			
<b>ENDING CASH BALANCE</b>	500	500	500	500	500	500	500	500	500	(494,684)	500	500	500
Summary of Debt Outstanding:													
Short-term	104,001	120,183	243,235	266,543	287,289	322,071	413,545	438,856	457,162	-	511,118	527,300	
Intermediate-term	389,181	389,181	389,181	389,181	389,181	389,181	389,181	389,181	389,181	389,181	389,181	389,181	
Long-term	430,040	430,040	430,040	430,040	430,040	430,040	420,695	420,695	420,695	420,695	420,695	420,695	
<b>TOTAL DEBT OUTSTANDING</b>	923,222	939,404	1,062,456	1,085,764	1,106,510	1,141,293	1,223,422	1,248,732	1,267,038	809,876	1,320,994	1,337,176	

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.



**Cash flow, Year 2, for a 250-acre catfish farm in the Delta, Mississippi, 2001.**

Month	Jan-02	Feb-02	Mar-02	Apr-02	May-02	Jun-02	Jul-02	Aug-02	Sep-02	Oct-02	Nov-02	Dec-02	Total
Fish sales (lb)	0	0	0	0	693,250	0	0	660,000	0	0	418,500	0	1,771,750
<b>BEGINNING CASH BALANCE</b>	500	500	500	500	500	-372,176	500	500	427,189	408,884	-171,086	99,552	
<b>Cash Inflows</b>													
Catfish sales \$ 0.70 lb	0	0	0	0	485,275	0		462,000	0	0	292,950		\$ 1,240,225
<b>TOTAL CASH INFLOW</b>	500	500	500	500	485,775	(372,176)	500	462,500	427,189	408,884	121,864	99,552	
<b>Operating Expenses</b>													
Feed, food fish \$ 210 ton	1,680	1,680	14,595	42,788	57,015	50,873	77,490	74,340	67,358	54,548	1,470	1,470	\$ 445,305
Labor													
Farm manager \$ 35,000 year	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	\$ 35,000
Hired laborer \$ 109,000 week	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	\$ 109,000
Fingerlings, 5" (4"-6" range) \$ 0.05 each	-	-	93,750	-	-	-	-	-	-	-	-	-	\$ 93,750
Harvest /1													
Seining \$ - lb.	-	-	-	-	-	-	-	-	-	-	-	-	\$ -
Transport \$ 0.015 per lb	-	-	-	-	10,399	-	-	9,900	-	-	6,278	-	\$ 26,576
Fuel & lubricants													
Diesel													
- PTO-driven aeration \$ 1.05 gallon						11,246	11,246						\$ 22,491
- Mowing \$ 1.05 gallon			120	120	120	120	120	120	120	120	120	120	\$ 958
Gasoline													
- Transportation \$ 1.25 gallon	781	781	781	781	781	781	781	781	781	781	781	781	\$ 9,375
- Boat and harvesting \$ 1.25 gallon					100			100			100		
Utilities													
Aeration + Meter charge \$ 0.93 kw-hr	175	175	175	332	1,483	2,888	3,395	3,276	1,293	292	177	175	\$ 13,836
Water pumping to flush ponds \$ 55.44 /3ac-ft/yr					1,386	2,772	4,158	4,158	1,386				\$ 13,860
Repairs and Maintenance \$ 27,210 year	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	\$ 27,210
Telephone \$ 2,500 year	208	208	208	208	208	208	208	208	208	208	208	208	\$ 2,500
Accounting/legal \$ 2,400 year	200	200	200	200	200	200	200	200	200	200	200	200	\$ 2,400
Bird chasing \$ 2,000 year	500	500	250								250	500	\$ 2,000
Chemicals													
Salt \$ 53 ton			13,250										\$ 13,250
Diuron, off-flavor control \$ 9 trt/acre							2,250	2,250	9,000	2,250			\$ 13,500
Copper sulfate, trematode treat. \$ 9 acre					2,250								\$ 2,250
Supplies & admin. \$ 600 year	50	50	50	50	50	50	50	50	50	50	50	50	\$ 600
Taxes (except income) \$ 29.40 year	-	-	-	7,350	-	-	-	-	-	-	-	-	\$ 7,350
Insurance \$ 6.25 acre	1,563												
<b>Total Cash Operating Expenses</b>	17,745	16,182	123,052	23,308	31,245	34,782	43,425	35,311	18,306	15,919	22,311	16,182	\$ 397,768
Scheduled debt payments													
Intermediate - principal interest	-	-	-	-	-	-	48,049	-	-	-	-	-	\$ 48,049
Long-term - principal interest	51,730						10,186						
	35,026						37,863						
<b>TOTAL CASH OUTFLOW</b>	104,501	16,182	123,052	23,308	31,245	34,782	139,522	35,311	18,306	15,919	22,311	16,182	\$ 445,817
<b>CASH AVAILABLE</b>	(104,001)	(15,682)	(122,552)	(22,808)	454,530	(406,958)	(139,022)	427,189	408,884	392,964	99,552	83,370	
New Borrowing	104,501	16,182	123,052	23,308	-	407,458	139,522	-	-	-	-	-	
Payment on													
Principal					794,343					546,980			
Interest					32,363					17,070			
<b>ENDING CASH BALANCE</b>	500	500	500	500	(372,176)	500	500	427,189	408,884	(171,086)	99,552	83,370	
Summary of Debt Outstanding:													
Short-term	631,801	647,983	771,035	794,343	-	407,458	546,980	546,980	546,980	-	-	-	
Intermediate-term	337,451	337,451	337,451	337,451	337,451	337,451	337,451	337,451	337,451	337,451	337,451	337,451	
Long-term	420,695	420,695	420,695	420,695	420,695	420,695	410,509	410,509	410,509	410,509	410,509	410,509	
<b>TOTAL DEBT OUTSTANDING</b>	1,389,947	1,406,129	1,529,181	1,552,489	758,147	1,165,605	1,294,941	1,294,941	1,294,941	747,961	747,961	747,961	

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.

**Cash flow, Year 3, for a 250-acre catfish farm in the Delta, Mississippi, 2001.**

Month	Jan-03	Feb-03	Mar-03	Apr-03	May-03	Jun-03	Jul-03	Aug-03	Sep-03	Oct-03	Nov-03	Dec-03	Total
Fish sales (lb)	0	0	393,750	0	693,250	0	0	660,000	0	-	418,500	0	2,165,500
<b>BEGINNING CASH BALANCE</b>	83,370	500	500	147,092	123,784	538,901	504,118	412,644	839,359	821,053	805,134	1,075,797	
<b>Cash Inflows</b>													
Catfish sales \$ 0.70 lb	0	0	275,625	0	485,275	0	0	462,000	0	0	292,950		1,515,850
<b>TOTAL CASH INFLOW</b>	83,370	500	276,125	147,092	609,059	538,901	504,118	874,644	839,359	821,053	1,098,084	1,075,797	
<b>Operating Expenses</b>													
Feed, food fish \$ 210 ton	1,943	2,100	15,855	42,788	57,015	50,873	77,490	74,340	67,358	54,548	1,470	1,470	447,248
Labor													
Farm manager \$ 35,000 year	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	35,000
Hired laborer \$ 109,000 week	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	109,000
Fingerlings, 5" (4"-6" range) \$ 0.05 each			93,750										93,750
Harvest /1													
Seining \$ - lb.	-	-	-	-	-	-	-	-	-	-	-	-	-
Transport \$ 0.015 per lb	-	-	5,906	-	10,399	-	-	9,900	-	-	6,278	-	32,483
Fuel & lubricants													
Diesel													
- PTO-driven aeration \$ 1.05 gallon						11,246	11,246						22,491
- Mowing \$ 1.05 gallon			120	120	120	120	120	120	120	120			958
Gasoline													
- Transportation \$ 1.25 gallon	781	781	781	781	781	781	781	781	781	781	781	781	9,375
- Boat and harvesting \$ 1.25 gallon			75		75			75			75		300
Utilities													
Aeration + Meter charge \$0.932 kw-hr	175	175	175	332	1,483	2,888	3,395	3,276	1,293	292	177	175	13,836
Water pumping to flush ponds \$55.44 /3ac-ft/yr					1,386	2,772	4,158	4,158	1,386				13,860
Repairs and Maintenance \$ 27,210 year	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	27,210
Telephone \$ 2,500 year	208	208	208	208	208	208	208	208	208	208	208	208	2,500
Accounting/legal \$ 2,400 year	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Bird chasing \$ 2,000 year	500	500	250								250	500	2,000
Chemicals													
Salt \$ 53 ton			13,250										13,250
Diuron, off-flavor control \$ 9 tr/acre						2,250	9,000	2,250					13,500
Copper sulfate, trematode treat. \$ 9 acre					2,250								2,250
Supplies & admin. \$ 600 year	50	50	50	50	50	50	50	50	50	50	50	50	600
Taxes (except income) \$ 29.40 year	-	-	-	7,350	-	-	-	-	-	-	-	-	7,350
Insurance \$ 6.25 acre	1,563												
<b>Total Cash Operating Expenses</b>	17,745	16,182	129,033	23,308	31,220	34,782	43,425	35,286	18,306	15,919	22,286	16,182	403,675
Scheduled debt payments													
Intermediate - principal	56,386	-	-	-	-	-	-	-	-	-	-	-	56,386
interest	30,371												
Long-term - principal							11,103						
interest							36,946						
<b>TOTAL CASH OUTFLOW</b>	104,501	16,182	129,033	23,308	31,220	34,782	91,474	35,286	18,306	15,919	22,286	16,182	460,060
<b>CASH AVAILABLE</b>	(21,130)	(15,682)	147,092	123,784	577,839	504,118	412,644	839,359	821,053	805,134	1,075,797	1,059,615	
New Borrowing	21,630	16,182	-	-	-	-	-	-	-	-	-	-	
Payment on													
Principal					37,813								
Interest					1,126								
<b>ENDING CASH BALANCE</b>	500	500	147,092	123,784	538,901	504,118	412,644	839,359	821,053	805,134	1,075,797	1,059,615	
Summary of Debt Outstanding:													
Short-term	21,630	37,813	37,813	37,813	-	-	-	-	-	-	-	-	
Intermediate-term	281,066	281,066	281,066	281,066	281,066	281,066	281,066	281,066	281,066	281,066	281,066	281,066	
Long-term	410,509	410,509	410,509	410,509	410,509	410,509	399,406	399,406	399,406	399,406	399,406	399,406	
<b>TOTAL DEBT OUTSTANDING</b>	713,205	729,388	729,388	729,388	691,575	691,575	680,472	680,472	680,472	680,472	680,472	680,472	

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.

Cash flow, Year 4, for a 250-acre catfish farm in the Delta, Mississippi, 2001.

Month	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Total
Fish sales (lb)	0	0	393,750	0	693,250	0	0	660,000	0	-	418,500	0	2,165,500
<b>BEGINNING CASH BALANCE</b>	1,059,615	955,114	938,932	1,085,524	1,062,216	1,516,271	1,481,489	1,390,015	1,816,729	1,798,424	1,782,504	2,053,168	
<b>Cash Inflows</b>													
Catfish sales \$ 0.70 lb	0	0	275,625	0	485,275	0	0	462,000	0	0	292,950		1,515,850
<b>TOTAL CASH INFLOW</b>	1,059,615	955,114	1,214,557	1,085,524	1,547,491	1,516,271	1,481,489	1,852,015	1,816,729	1,798,424	2,075,454	2,053,168	
<b>Operating Expenses</b>													
Feed, food fish \$ 210 ton	1,943	2,100	15,855	42,788	57,015	50,873	77,490	74,340	67,358	54,548	1,470	1,470	447,248
Labor													
Farm manager \$ 35,000 year	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	35,000
Hired laborer \$ 109,000 week	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	109,000
Fingerlings, 5" (4"-6" range) \$ 0.05 each			93,750										93,750
Harvest /1													
Seining \$ - lb.	-	-	-	-	-	-	-	-	-	-	-	-	-
Transport \$ 0.015 per lb	-	-	5,906	-	10,399	-	-	9,900	-	-	6,278	-	32,483
Fuel & lubricants													
Diesel													
- PTO-driven aeration \$ 1.05 gallon						11,246	11,246						22,491
- Mowing \$ 1.05 gallon			120	120	120	120	120	120	120	120			958
Gasoline													
- Transportation \$ 1.25 gallon	781	781	781	781	781	781	781	781	781	781	781	781	9,375
- Boat and harvesting \$ 1.25 gallon			75		75			75			75		300
Utilities													
Aeration + Meter charge \$0.932 kw-hr	175	175	175	332	1,483	2,888	3,395	3,276	1,293	292	177	175	13,836
Water pumping to flush ponds \$55.44 /3ac-ft/yr					1,386	2,772	4,158	4,158	1,386				13,860
Repairs and Maintenance \$ 27,210 year	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	27,210
Telephone \$ 2,500 year	208	208	208	208	208	208	208	208	208	208	208	208	2,500
Accounting/legal \$ 2,400 year	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Bird chasing \$ 2,000 year	500	500	250								250	500	2,000
Chemicals													
Salt \$ 53 ton			13,250										13,250
Diuron, off-flavor control \$ 9 trt/acre						2,250	9,000	2,250					13,500
Copper sulfate, trematode treat. \$ 9 acre					2,250								2,250
Supplies & admin. \$ 600 year	50	50	50	50	50	50	50	50	50	50	50	50	600
Taxes (except income) \$ 29.40 year	-	-	-	7,350	-	-	-	-	-	-	-	-	7,350
Insurance \$ 6.25 acre	1,563												
<b>Total Cash Operating Expenses</b>	17,745	16,182	129,033	23,308	31,220	34,782	43,425	35,286	18,306	15,919	22,286	16,182	403,675
Scheduled debt payments													
Intermediate - principal	61,460	-	-	-	-	-	-	-	-	-	-	-	61,460
interest	25,296												
Long-term - principal							12,102						
interest							35,947						
<b>TOTAL CASH OUTFLOW</b>	104,501	16,182	129,033	23,308	31,220	34,782	91,474	35,286	18,306	15,919	22,286	16,182	465,135
<b>CASH AVAILABLE</b>	955,114	938,932	1,085,524	1,062,216	1,516,271	1,481,489	1,390,015	1,816,729	1,798,424	1,782,504	2,053,168	2,036,986	
New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-
Payment on													
Principal													
Interest													
<b>ENDING CASH BALANCE</b>	955,114	938,932	1,085,524	1,062,216	1,516,271	1,481,489	1,390,015	1,816,729	1,798,424	1,782,504	2,053,168	2,036,986	
Summary of Debt Outstanding:													
Short-term	-	-	-	-	-	-	-	-	-	-	-	-	-
Intermediate-term	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606	219,606
Long-term	399,406	399,406	399,406	399,406	399,406	399,406	387,304	387,304	387,304	387,304	387,304	387,304	387,304
<b>TOTAL DEBT OUTSTANDING</b>	619,012	619,012	619,012	619,012	619,012	619,012	606,910	606,910	606,910	606,910	606,910	606,910	606,910

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.

Cash flow, Year 5, for a 250-acre catfish farm in the Delta, Mississippi, 2001.

Month	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Total
Fish sales (lb)	0	0	393,750	0	693,250	0	0	660,000	0	-	418,500	0	2,165,500
<b>BEGINNING CASH BALANCE</b>	2,036,986	1,932,485	1,916,303	2,062,895	2,046,936	2,500,992	2,466,209	2,374,736	2,801,450	2,783,144	2,767,225	3,037,888	
<b>Cash Inflows</b>													
Catfish sales \$ 0.70 lb	0	0	275,625	0	485,275	0	0	462,000	0	0	292,950		1,515,850
<b>TOTAL CASH INFLOW</b>	2,036,986	1,932,485	2,191,928	2,062,895	2,532,211	2,500,992	2,466,209	2,836,736	2,801,450	2,783,144	3,060,175	3,037,888	
<b>Operating Expenses</b>													
Feed, food fish \$ 210 ton	1,943	2,100	15,855	42,788	57,015	50,873	77,490	74,340	67,358	54,548	1,470	1,470	447,248
Labor													
Farm manager \$ 35,000 year	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	2,917	35,000
Hired laborer \$ 109,000 week	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	9,083	109,000
Fingerlings, 5" (4"-6" range) \$ 0.05 each			93,750										93,750
Harvest /1													
Seining \$ - lb.	-	-	-	-	-	-	-	-	-	-	-	-	-
Transport \$ 0.015 per lb	-	-	5,906	-	10,399	-	-	9,900	-	-	6,278	-	32,483
Fuel & lubricants													
Diesel													
- PTO-driven aeration \$ 1.05 gallon						11,246	11,246						22,491
- Mowing \$ 1.05 gallon			120	120	120	120	120	120	120	120			958
Gasoline													
- Transportation \$ 1.25 gallon	781	781	781	781	781	781	781	781	781	781	781	781	9,375
- Boat and harvesting \$ 1.25 gallon			75		75			75			75		300
Utilities													
Aeration + Meter charge \$0.932 kw-hr	175	175	175	332	1,483	2,888	3,395	3,276	1,293	292	177	175	13,836
Water pumping to flush ponds \$55.44 /3ac-ft/yr					1,386	2,772	4,158	4,158	1,386				13,860
Repairs and Maintenance \$ 27,210 year	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	2,268	27,210
Telephone \$ 2,500 year	208	208	208	208	208	208	208	208	208	208	208	208	2,500
Accounting/legal \$ 2,400 year	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Bird chasing \$ 2,000 year	500	500	250								250	500	2,000
Chemicals													
Salt \$ 53 ton			13,250										13,250
Diuron, off-flavor control \$ 9 trt/acre						2,250	2,250	9,000	2,250				13,500
Copper sulfate, trematode treat. \$ 9 acre					2,250								2,250
Supplies & admin. \$ 600 year	50	50	50	50	50	50	50	50	50	50	50	50	600
Taxes (except income)	-	-	-	-	-	-	-	-	-	-	-	-	-
Insurance \$ 6.25 acre	1,563												1,563
<b>Total Cash Operating Expenses</b>	17,745	16,182	129,033	15,958	31,220	34,782	43,425	35,286	18,306	15,919	22,286	16,182	396,325
Scheduled debt payments													
Intermediate - principal	66,992	-	-	-	-	-	-	-	-	-	-	-	66,992
interest	19,765												
Long-term - principal							13,191						
interest							34,857						
<b>TOTAL CASH OUTFLOW</b>	104,501	16,182	129,033	15,958	31,220	34,782	91,474	35,286	18,306	15,919	22,286	16,182	463,316
<b>CASH AVAILABLE</b>	1,932,485	1,916,303	2,062,895	2,046,936	2,500,992	2,466,209	2,374,736	2,801,450	2,783,144	2,767,225	3,037,888	3,021,706	
New Borrowing	-	-	-	-	-	-	-	-	-	-	-	-	-
Payment on													
Principal													
Interest													
<b>ENDING CASH BALANCE</b>	1,932,485	1,916,303	2,062,895	2,046,936	2,500,992	2,466,209	2,374,736	2,801,450	2,783,144	2,767,225	3,037,888	3,021,706	
Summary of Debt Outstanding:													
Short-term	-	-	-	-	-	-	-	-	-	-	-	-	-
Intermediate-term	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614	152,614
Long-term	387,304	387,304	387,304	387,304	387,304	387,304	374,113	374,113	374,113	374,113	374,113	374,113	374,113
<b>TOTAL DEBT OUTSTANDING</b>	539,918	539,918	539,918	539,918	539,918	539,918	526,727	526,727	526,727	526,727	526,727	526,727	526,727

/1 At this size operation on-farm labor will do the harvesting and only transportation costs apply.

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Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
430,040	9.00%	19	1	7/1/2001
Periodic Payment:		Number of payments:		
48,049		19		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
1	Jul-01	430,040	48,049	38,704	9,345	420,695	38,704
2	Jul-02	420,695	48,049	37,863	10,186	410,509	76,566
3	Jul-03	410,509	48,049	36,946	11,103	399,406	113,512
4	Jul-04	399,406	48,049	35,947	12,102	387,304	149,459
5	Jul-05	387,304	48,049	34,857	13,191	374,113	184,316
6	Jul-06	374,113	48,049	33,670	14,378	359,735	217,986
7	Jul-07	359,735	48,049	32,376	15,672	344,062	250,362
8	Jul-08	344,062	48,049	30,966	17,083	326,980	281,328
9	Jul-09	326,980	48,049	29,428	18,620	308,359	310,756
10	Jul-10	308,359	48,049	27,752	20,296	288,063	338,508
11	Jul-11	288,063	48,049	25,926	22,123	265,940	364,434
12	Jul-12	265,940	48,049	23,935	24,114	241,826	388,369
13	Jul-13	241,826	48,049	21,764	26,284	215,542	410,133
14	Jul-14	215,542	48,049	19,399	28,650	186,892	429,532
15	Jul-15	186,892	48,049	16,820	31,228	155,664	446,352
16	Jul-16	155,664	48,049	14,010	34,039	121,625	460,362
17	Jul-17	121,625	48,049	10,946	37,102	84,523	471,308
18	Jul-18	84,523	48,049	7,607	40,441	44,081	478,915
19	Jul-19	44,081	48,049	3,967	44,081	0	482,882
20	Jul-20	0	48,049	0	48,049	-48,049	482,882
21	Jul-21	0	48,049	0	48,049	-48,049	482,882
22	Jul-22	0	48,049	0	48,049	-48,049	482,882
23	Jul-23	0	48,049	0	48,049	-48,049	482,882
24	Jul-24	0	48,049	0	48,049	-48,049	482,882
25	Jul-25	0	48,049	0	48,049	-48,049	482,882
26	Jul-26	0	48,049	0	48,049	-48,049	482,882
27	Jul-27	0	48,049	0	48,049	-48,049	482,882
28	Jul-28	0	48,049	0	48,049	-48,049	482,882
29	Jul-29	0	48,049	0	48,049	-48,049	482,882
30	Jul-30	0	48,049	0	48,049	-48,049	482,882
31	Jul-31	0	48,049	0	48,049	-48,049	482,882
32	Jul-32	0	48,049	0	48,049	-48,049	482,882
33	Jul-33	0	48,049	0	48,049	-48,049	482,882
34	Jul-34	0	48,049	0	48,049	-48,049	482,882
35	Jul-35	0	48,049	0	48,049	-48,049	482,882
36	Jul-36	0	48,049	0	48,049	-48,049	482,882
37	Jul-37	0	48,049	0	48,049	-48,049	482,882
38	Jul-38	0	48,049	0	48,049	-48,049	482,882
39	Jul-39	0	48,049	0	48,049	-48,049	482,882
40	Jul-40	0	48,049	0	48,049	-48,049	482,882
41	Jul-41	0	48,049	0	48,049	-48,049	482,882
42	Jul-42	0	48,049	0	48,049	-48,049	482,882
43	Jul-43	0	48,049	0	48,049	-48,049	482,882

DeltaMS\_250\_spreadsheet ver3 5\_0.xls

Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
430,040	9.00%	19	1	7/1/2001
Periodic Payment:		Number of payments:		
48,049		19		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
44	Jul-44	0	48,049	0	48,049	-48,049	482,882
45	Jul-45	0	48,049	0	48,049	-48,049	482,882
46	Jul-46	0	48,049	0	48,049	-48,049	482,882
47	Jul-47	0	48,049	0	48,049	-48,049	482,882
48	Jul-48	0	48,049	0	48,049	-48,049	482,882
49	Jul-49	0	48,049	0	48,049	-48,049	482,882
50	Jul-50	0	48,049	0	48,049	-48,049	482,882
51	Jul-51	0	48,049	0	48,049	-48,049	482,882
52	Jul-52	0	48,049	0	48,049	-48,049	482,882
53	Jul-53	0	48,049	0	48,049	-48,049	482,882
54	Jul-54	0	48,049	0	48,049	-48,049	482,882
55	Jul-55	0	48,049	0	48,049	-48,049	482,882
56	Jul-56	0	48,049	0	48,049	-48,049	482,882
57	Jul-57	0	48,049	0	48,049	-48,049	482,882
58	Jul-58	0	48,049	0	48,049	-48,049	482,882
59	Jul-59	0	48,049	0	48,049	-48,049	482,882
60	Jul-60	0	48,049	0	48,049	-48,049	482,882
61	Jul-61	0	48,049	0	48,049	-48,049	482,882
62	Jul-62	0	48,049	0	48,049	-48,049	482,882
63	Jul-63	0	48,049	0	48,049	-48,049	482,882
64	Jul-64	0	48,049	0	48,049	-48,049	482,882
65	Jul-65	0	48,049	0	48,049	-48,049	482,882
66	Jul-66	0	48,049	0	48,049	-48,049	482,882
67	Jul-67	0	48,049	0	48,049	-48,049	482,882
68	Jul-68	0	48,049	0	48,049	-48,049	482,882
69	Jul-69	0	48,049	0	48,049	-48,049	482,882
70	Jul-70	0	48,049	0	48,049	-48,049	482,882
71	Jul-71	0	48,049	0	48,049	-48,049	482,882
72	Jul-72	0	48,049	0	48,049	-48,049	482,882
73	Jul-73	0	48,049	0	48,049	-48,049	482,882
74	Jul-74	0	48,049	0	48,049	-48,049	482,882
75	Jul-75	0	48,049	0	48,049	-48,049	482,882
76	Jul-76	0	48,049	0	48,049	-48,049	482,882
77	Jul-77	0	48,049	0	48,049	-48,049	482,882
78	Jul-78	0	48,049	0	48,049	-48,049	482,882
79	Jul-79	0	48,049	0	48,049	-48,049	482,882
80	Jul-80	0	48,049	0	48,049	-48,049	482,882
81	Jul-81	0	48,049	0	48,049	-48,049	482,882
82	Jul-82	0	48,049	0	48,049	-48,049	482,882
83	Jul-83	0	48,049	0	48,049	-48,049	482,882
84	Jul-84	0	48,049	0	48,049	-48,049	482,882
85	Jul-85	0	48,049	0	48,049	-48,049	482,882
86	Jul-86	0	48,049	0	48,049	-48,049	482,882
87	Jul-87	0	48,049	0	48,049	-48,049	482,882
88	Jul-88	0	48,049	0	48,049	-48,049	482,882
89	Jul-89	0	48,049	0	48,049	-48,049	482,882

DeltaMS\_250\_spreadsheet ver3 5\_0.xls

Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
430,040	9.00%	19	1	7/1/2001
Periodic Payment:		Number of payments:		
48,049		19		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
90	Jul-90	0	48,049	0	48,049	-48,049	482,882
91	Jul-91	0	48,049	0	48,049	-48,049	482,882
92	Jul-92	0	48,049	0	48,049	-48,049	482,882
93	Jul-93	0	48,049	0	48,049	-48,049	482,882
94	Jul-94	0	48,049	0	48,049	-48,049	482,882
95	Jul-95	0	48,049	0	48,049	-48,049	482,882
96	Jul-96	0	48,049	0	48,049	-48,049	482,882
97	Jul-97	0	48,049	0	48,049	-48,049	482,882
98	Jul-98	0	48,049	0	48,049	-48,049	482,882
99	Jul-99	0	48,049	0	48,049	-48,049	482,882
100	Jul-00	0	48,049	0	48,049	-48,049	482,882

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Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
436,640	9.00%	7	1	1/1/2001
Periodic Payment:		Number of payments:		
86,756		7		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
1	Jan-01	436,640	86,756	39,298	47,459	389,181	39,298
2	Jan-02	389,181	86,756	35,026	51,730	337,451	74,324
3	Jan-03	337,451	86,756	30,371	56,386	281,066	104,695
4	Jan-04	281,066	86,756	25,296	61,460	219,606	129,990
5	Jan-05	219,606	86,756	19,765	66,992	152,614	149,755
6	Jan-06	152,614	86,756	13,735	73,021	79,593	163,490
7	Jan-07	79,593	86,756	7,163	79,593	0	170,654
8	Jan-08	0	86,756	0	86,756	-86,756	170,654
9	Jan-09	0	86,756	0	86,756	-86,756	170,654
10	Jan-10	0	86,756	0	86,756	-86,756	170,654
11	Jan-11	0	86,756	0	86,756	-86,756	170,654
12	Jan-12	0	86,756	0	86,756	-86,756	170,654
13	Jan-13	0	86,756	0	86,756	-86,756	170,654
14	Jan-14	0	86,756	0	86,756	-86,756	170,654
15	Jan-15	0	86,756	0	86,756	-86,756	170,654
16	Jan-16	0	86,756	0	86,756	-86,756	170,654
17	Jan-17	0	86,756	0	86,756	-86,756	170,654
18	Jan-18	0	86,756	0	86,756	-86,756	170,654
19	Jan-19	0	86,756	0	86,756	-86,756	170,654
20	Jan-20	0	86,756	0	86,756	-86,756	170,654
21	Jan-21	0	86,756	0	86,756	-86,756	170,654
22	Jan-22	0	86,756	0	86,756	-86,756	170,654
23	Jan-23	0	86,756	0	86,756	-86,756	170,654
24	Jan-24	0	86,756	0	86,756	-86,756	170,654
25	Jan-25	0	86,756	0	86,756	-86,756	170,654
26	Jan-26	0	86,756	0	86,756	-86,756	170,654
27	Jan-27	0	86,756	0	86,756	-86,756	170,654
28	Jan-28	0	86,756	0	86,756	-86,756	170,654
29	Jan-29	0	86,756	0	86,756	-86,756	170,654
30	Jan-30	0	86,756	0	86,756	-86,756	170,654
31	Jan-31	0	86,756	0	86,756	-86,756	170,654
32	Jan-32	0	86,756	0	86,756	-86,756	170,654
33	Jan-33	0	86,756	0	86,756	-86,756	170,654
34	Jan-34	0	86,756	0	86,756	-86,756	170,654
35	Jan-35	0	86,756	0	86,756	-86,756	170,654
36	Jan-36	0	86,756	0	86,756	-86,756	170,654
37	Jan-37	0	86,756	0	86,756	-86,756	170,654
38	Jan-38	0	86,756	0	86,756	-86,756	170,654
39	Jan-39	0	86,756	0	86,756	-86,756	170,654
40	Jan-40	0	86,756	0	86,756	-86,756	170,654
41	Jan-41	0	86,756	0	86,756	-86,756	170,654
42	Jan-42	0	86,756	0	86,756	-86,756	170,654
43	Jan-43	0	86,756	0	86,756	-86,756	170,654



DeltaMS\_250\_spreadsheet ver3 5\_0.xls

Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
436,640	9.00%	7	1	1/1/2001
Periodic Payment:		Number of payments:		
86,756		7		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
44	Jan-44	0	86,756	0	86,756	-86,756	170,654
45	Jan-45	0	86,756	0	86,756	-86,756	170,654
46	Jan-46	0	86,756	0	86,756	-86,756	170,654
47	Jan-47	0	86,756	0	86,756	-86,756	170,654
48	Jan-48	0	86,756	0	86,756	-86,756	170,654
49	Jan-49	0	86,756	0	86,756	-86,756	170,654
50	Jan-50	0	86,756	0	86,756	-86,756	170,654
51	Jan-51	0	86,756	0	86,756	-86,756	170,654
52	Jan-52	0	86,756	0	86,756	-86,756	170,654
53	Jan-53	0	86,756	0	86,756	-86,756	170,654
54	Jan-54	0	86,756	0	86,756	-86,756	170,654
55	Jan-55	0	86,756	0	86,756	-86,756	170,654
56	Jan-56	0	86,756	0	86,756	-86,756	170,654
57	Jan-57	0	86,756	0	86,756	-86,756	170,654
58	Jan-58	0	86,756	0	86,756	-86,756	170,654
59	Jan-59	0	86,756	0	86,756	-86,756	170,654
60	Jan-60	0	86,756	0	86,756	-86,756	170,654
61	Jan-61	0	86,756	0	86,756	-86,756	170,654
62	Jan-62	0	86,756	0	86,756	-86,756	170,654
63	Jan-63	0	86,756	0	86,756	-86,756	170,654
64	Jan-64	0	86,756	0	86,756	-86,756	170,654
65	Jan-65	0	86,756	0	86,756	-86,756	170,654
66	Jan-66	0	86,756	0	86,756	-86,756	170,654
67	Jan-67	0	86,756	0	86,756	-86,756	170,654
68	Jan-68	0	86,756	0	86,756	-86,756	170,654
69	Jan-69	0	86,756	0	86,756	-86,756	170,654
70	Jan-70	0	86,756	0	86,756	-86,756	170,654
71	Jan-71	0	86,756	0	86,756	-86,756	170,654
72	Jan-72	0	86,756	0	86,756	-86,756	170,654
73	Jan-73	0	86,756	0	86,756	-86,756	170,654
74	Jan-74	0	86,756	0	86,756	-86,756	170,654
75	Jan-75	0	86,756	0	86,756	-86,756	170,654
76	Jan-76	0	86,756	0	86,756	-86,756	170,654
77	Jan-77	0	86,756	0	86,756	-86,756	170,654
78	Jan-78	0	86,756	0	86,756	-86,756	170,654
79	Jan-79	0	86,756	0	86,756	-86,756	170,654
80	Jan-80	0	86,756	0	86,756	-86,756	170,654
81	Jan-81	0	86,756	0	86,756	-86,756	170,654
82	Jan-82	0	86,756	0	86,756	-86,756	170,654
83	Jan-83	0	86,756	0	86,756	-86,756	170,654
84	Jan-84	0	86,756	0	86,756	-86,756	170,654
85	Jan-85	0	86,756	0	86,756	-86,756	170,654
86	Jan-86	0	86,756	0	86,756	-86,756	170,654
87	Jan-87	0	86,756	0	86,756	-86,756	170,654
88	Jan-88	0	86,756	0	86,756	-86,756	170,654
89	Jan-89	0	86,756	0	86,756	-86,756	170,654

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Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
436,640	9.00%	7	1	1/1/2001
Periodic Payment:		Number of payments:		
86,756		7		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
90	Jan-90	0	86,756	0	86,756	-86,756	170,654
91	Jan-91	0	86,756	0	86,756	-86,756	170,654
92	Jan-92	0	86,756	0	86,756	-86,756	170,654
93	Jan-93	0	86,756	0	86,756	-86,756	170,654
94	Jan-94	0	86,756	0	86,756	-86,756	170,654
95	Jan-95	0	86,756	0	86,756	-86,756	170,654
96	Jan-96	0	86,756	0	86,756	-86,756	170,654
97	Jan-97	0	86,756	0	86,756	-86,756	170,654
98	Jan-98	0	86,756	0	86,756	-86,756	170,654
99	Jan-99	0	86,756	0	86,756	-86,756	170,654
100	Jan-00	0	86,756	0	86,756	-86,756	170,654

## Macros:

New\_rows (Command-Option-r) inserts additional rows onto template

Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
175,000	9.00%	1	1	8/1/2000
Periodic Payment:		Number of payments:		
190,750		1		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
1	Aug-00	175,000	190,750	15,750	175,000	0	15,750
2	Aug-01	0	190,750	0	190,750	-190,750	15,750
3	Aug-02	0	190,750	0	190,750	-190,750	15,750
4	Aug-03	0	190,750	0	190,750	-190,750	15,750
5	Aug-04	0	190,750	0	190,750	-190,750	15,750
6	Aug-05	0	190,750	0	190,750	-190,750	15,750
7	Aug-06	0	190,750	0	190,750	-190,750	15,750
8	Aug-07	0	190,750	0	190,750	-190,750	15,750
9	Aug-08	0	190,750	0	190,750	-190,750	15,750
10	Aug-09	0	190,750	0	190,750	-190,750	15,750
11	Aug-10	0	190,750	0	190,750	-190,750	15,750
12	Aug-11	0	190,750	0	190,750	-190,750	15,750
13	Aug-12	0	190,750	0	190,750	-190,750	15,750
14	Aug-13	0	190,750	0	190,750	-190,750	15,750
15	Aug-14	0	190,750	0	190,750	-190,750	15,750
16	Aug-15	0	190,750	0	190,750	-190,750	15,750
17	Aug-16	0	190,750	0	190,750	-190,750	15,750
18	Aug-17	0	190,750	0	190,750	-190,750	15,750
19	Aug-18	0	190,750	0	190,750	-190,750	15,750
20	Aug-19	0	190,750	0	190,750	-190,750	15,750
21	Aug-20	0	190,750	0	190,750	-190,750	15,750
22	Aug-21	0	190,750	0	190,750	-190,750	15,750
23	Aug-22	0	190,750	0	190,750	-190,750	15,750
24	Aug-23	0	190,750	0	190,750	-190,750	15,750
25	Aug-24	0	190,750	0	190,750	-190,750	15,750
26	Aug-25	0	190,750	0	190,750	-190,750	15,750
27	Aug-26	0	190,750	0	190,750	-190,750	15,750
28	Aug-27	0	190,750	0	190,750	-190,750	15,750
29	Aug-28	0	190,750	0	190,750	-190,750	15,750
30	Aug-29	0	190,750	0	190,750	-190,750	15,750
31	Aug-30	0	190,750	0	190,750	-190,750	15,750
32	Aug-31	0	190,750	0	190,750	-190,750	15,750
33	Aug-32	0	190,750	0	190,750	-190,750	15,750
34	Aug-33	0	190,750	0	190,750	-190,750	15,750
35	Aug-34	0	190,750	0	190,750	-190,750	15,750
36	Aug-35	0	190,750	0	190,750	-190,750	15,750
37	Aug-36	0	190,750	0	190,750	-190,750	15,750
38	Aug-37	0	190,750	0	190,750	-190,750	15,750
39	Aug-38	0	190,750	0	190,750	-190,750	15,750
40	Aug-39	0	190,750	0	190,750	-190,750	15,750
41	Aug-40	0	190,750	0	190,750	-190,750	15,750
42	Aug-41	0	190,750	0	190,750	-190,750	15,750
43	Aug-42	0	190,750	0	190,750	-190,750	15,750

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Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
175,000	9.00%	1	1	8/1/2000
Periodic Payment:		Number of payments:		
190,750		1		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
44	Aug-43	0	190,750	0	190,750	-190,750	15,750
45	Aug-44	0	190,750	0	190,750	-190,750	15,750
46	Aug-45	0	190,750	0	190,750	-190,750	15,750
47	Aug-46	0	190,750	0	190,750	-190,750	15,750
48	Aug-47	0	190,750	0	190,750	-190,750	15,750
49	Aug-48	0	190,750	0	190,750	-190,750	15,750
50	Aug-49	0	190,750	0	190,750	-190,750	15,750
51	Aug-50	0	190,750	0	190,750	-190,750	15,750
52	Aug-51	0	190,750	0	190,750	-190,750	15,750
53	Aug-52	0	190,750	0	190,750	-190,750	15,750
54	Aug-53	0	190,750	0	190,750	-190,750	15,750
55	Aug-54	0	190,750	0	190,750	-190,750	15,750
56	Aug-55	0	190,750	0	190,750	-190,750	15,750
57	Aug-56	0	190,750	0	190,750	-190,750	15,750
58	Aug-57	0	190,750	0	190,750	-190,750	15,750
59	Aug-58	0	190,750	0	190,750	-190,750	15,750
60	Aug-59	0	190,750	0	190,750	-190,750	15,750
61	Aug-60	0	190,750	0	190,750	-190,750	15,750
62	Aug-61	0	190,750	0	190,750	-190,750	15,750
63	Aug-62	0	190,750	0	190,750	-190,750	15,750
64	Aug-63	0	190,750	0	190,750	-190,750	15,750
65	Aug-64	0	190,750	0	190,750	-190,750	15,750
66	Aug-65	0	190,750	0	190,750	-190,750	15,750
67	Aug-66	0	190,750	0	190,750	-190,750	15,750
68	Aug-67	0	190,750	0	190,750	-190,750	15,750
69	Aug-68	0	190,750	0	190,750	-190,750	15,750
70	Aug-69	0	190,750	0	190,750	-190,750	15,750
71	Aug-70	0	190,750	0	190,750	-190,750	15,750
72	Aug-71	0	190,750	0	190,750	-190,750	15,750
73	Aug-72	0	190,750	0	190,750	-190,750	15,750
74	Aug-73	0	190,750	0	190,750	-190,750	15,750
75	Aug-74	0	190,750	0	190,750	-190,750	15,750
76	Aug-75	0	190,750	0	190,750	-190,750	15,750
77	Aug-76	0	190,750	0	190,750	-190,750	15,750
78	Aug-77	0	190,750	0	190,750	-190,750	15,750
79	Aug-78	0	190,750	0	190,750	-190,750	15,750
80	Aug-79	0	190,750	0	190,750	-190,750	15,750
81	Aug-80	0	190,750	0	190,750	-190,750	15,750
82	Aug-81	0	190,750	0	190,750	-190,750	15,750
83	Aug-82	0	190,750	0	190,750	-190,750	15,750
84	Aug-83	0	190,750	0	190,750	-190,750	15,750
85	Aug-84	0	190,750	0	190,750	-190,750	15,750
86	Aug-85	0	190,750	0	190,750	-190,750	15,750
87	Aug-86	0	190,750	0	190,750	-190,750	15,750
88	Aug-87	0	190,750	0	190,750	-190,750	15,750
89	Aug-88	0	190,750	0	190,750	-190,750	15,750

DeltaMS\_250\_spreadsheet ver3 5\_0.xls

Principal:	Annual interest rate:	Term (years):	Periods per year:	Start date:
175,000	9.00%	1	1	8/1/2000
Periodic Payment:		Number of payments:		
190,750		1		

Payment No	Month	Beginning balance	Total payment	Interest	Principal	Ending balance	Cumulative interest
90	Aug-89	0	190,750	0	190,750	-190,750	15,750
91	Aug-90	0	190,750	0	190,750	-190,750	15,750
92	Aug-91	0	190,750	0	190,750	-190,750	15,750
93	Aug-92	0	190,750	0	190,750	-190,750	15,750
94	Aug-93	0	190,750	0	190,750	-190,750	15,750
95	Aug-94	0	190,750	0	190,750	-190,750	15,750
96	Aug-95	0	190,750	0	190,750	-190,750	15,750
97	Aug-96	0	190,750	0	190,750	-190,750	15,750
98	Aug-97	0	190,750	0	190,750	-190,750	15,750
99	Aug-98	0	190,750	0	190,750	-190,750	15,750
100	Aug-99	0	190,750	0	190,750	-190,750	15,750