

**RAISING SPOT (*Leiostomus xanthurus*) COMMERCIALY  
FOR SALE AS LIVE BAIT in the COMMONWEALTH OF VIRGINIA**

by

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**Project dates: 12-1-00 to 10-30-01**

**Project overview - Create a method to raise spot for sale as live  
bait successfully in the Commonwealth of Virginia**

Raising spot (*Leiostomus xanthurus*) for sale as live bait successfully in the Commonwealth of Virginia was proposed by John Vigliotta with the objective to raise spot fingerlings to a size of a quarter of a pound for the purpose of selling them as live bait for use by recreational fishermen.

At the time we applied for this grant, recreational fishermen were demonstrating a strong interest in live juvenile spot for the purpose of live bait for trout, rockfish, cobia, etc.. During that year (2000), this demand was not being met by the natural spot stock being caught by the commercial fishermen. The suppliers of bait spot were receiving \$1.00 to \$2.00 per fish. We felt that this void could be filled by raising spot fingerlings to bait size in captivity.

We obtained fingerling spot from the Virginia Institute of Marine Science in two separate shipments. The first shipment on March 2, 2001 contained approximately 700 fingerlings. The second shipment on April 3, 2001 contained approximately 3000 fingerlings. During the next six months the fingerlings were kept in our recirculating system that was set up according to our grant proposal. We had great grow out in the spot fingerlings. At one point in our project we had to limit the food intake of the fish so as not to encourage growth since we didn't want them to grow over bait size before selling. Our average size went from 26 mm in length to 158 mm in length. Over the course of the summer we experienced mortality due to several different factors. These factors include a pump malfunction, insufficient oxygen and water levels too high causing fish to jump out. Please see included activity report for more details and time line events.

We started marketing the fish in July with limited success. We found that the natural juvenile spot was very abundant this year limiting the demand by the recreational fishermen. They simply were catching their own bait. We advertised in the Gloucester Gazette Journal and contacted several bait shops on a regular basis. In October, as the natural spot supply dwindled renewed interest was seen. We sold 812 spot in early October to local bait shops as opposed to 71 during the summer months.

It is important to note that we sold all of our fish in 4 days as soon as we got into October. We speculate that we could have sold up to 5,000 to 7,000 more due to the feed back from the bait stores. We sold the spot for 50 cents each but believe that we could have received as much as a dollar each later in October and into early November.

Conclusion - We feel that the idea of having live spot available for sale as bait to fishermen is a sound idea. The first objective of this project was successful. It is possible to spawn and raise spot to use as bait. VIMS now has its own data on successfully spawning spot. However, the profitability of this will vary from year to year based on the availability of wild juvenile spot. This year was not profitable largely due to the costs of setting up the holding systems and the demand for spot bait. Once the initial expense of equipment is done the cost to grow the spot to bait size is minimal. Food cost was only \$205 dollars for six months and labor while intensive at first leveled out once the system was established. If this same project had been established last year when supply of small spot was very low the project could have recouped a quarter to half of it's expenses thereby paying for itself and making a profit within three years. Unfortunately, there is no way to foresee what the natural stock of juvenile spot will be from year to year. At the same time if the systems could be used for another grow out in the winter months that would increase the profitability of the system.

Recommendations - Since we are still convinced that the sale of bait spot is a worthwhile venture we will be devising other more cost effective ways to meet the future demand. One possibility we have is to catch wild juvenile spot in early September as they leave for winter. These spot could be held for 1 to 2 months in the recirculating system at a very minimal cost or could be held in a pen in the Ware River until sold as bait in October and November. This change could effect the bottom line enormously.

## Activity Report

- 3/2/01 Received approximately 700 fingerling spot from VIMS  
Fish averaged 26.0 mm in length, 0.27 grams in weight
- 4/3/01 Received approximately 3000 fingerling spot from VIMS  
Fish averaged 44.8 mm in length, 1.5 grams in weight  
Feeding 250 grams per tank per day.  
Fin Fish Hi-Perf 42-16 Floating 3/32 via belt feeder.
- 4/3/01 First batch averaged 63.8 mm in length, 4.5 grams in weight
- 4/9/01 Lost 20 Spot  
Feeding 300 grams in tank 1 per day and 400 grams in tank 2 per day.
- 5/3/01 Batch 1 averaged 100.5 mm in length, 18.4 grams in weight  
Batch 2 averaged 80.9 mm in length, 9.9 grams in weight  
Feeding 500 grams per day per tank.
- 5/14/01 Due to a pump malfunction during the night we lost circulation to one tank.  
We lost 540 bait size spot and 135 small spot. We added additional  
aeration in the event of loss of circulation. The pump was returned to  
Aquatic Eco System under warranty for repairs.
- 6/1/01 Lost 13 fish out of tank to water level being to high and fish jumping  
over side.  
Batch 1 - 116 mm in length
- 6/8/01 Sold 47 spot
- 6/10/01 Sold 24 spot to fisherman
- 7/7/01 Due to unknown reasons we lost another group (120) of fish. We feel that  
the increase in water temperature caused low oxygen levels in one tank. We  
increased aeration and purchased an oxygen meter to be better informed of  
the levels in our tanks.  
Batch 2 - averaged 102.1 mm in length, 20.2 grams in weight.  
Lowered feeding to 400 grams per day per tank.
- 10/2/01 Sold 300 spot to bait company - Averaged 160.6 mm in length and  
77.1 grams in weight
- 10/4/01 Sold 300 spot to bait company - Averaged 158 mm in length and  
72.9 grams in weight.
- 10/12/01 Sold 212 spot to bait company