

“POMPANO FARMS – 2004”

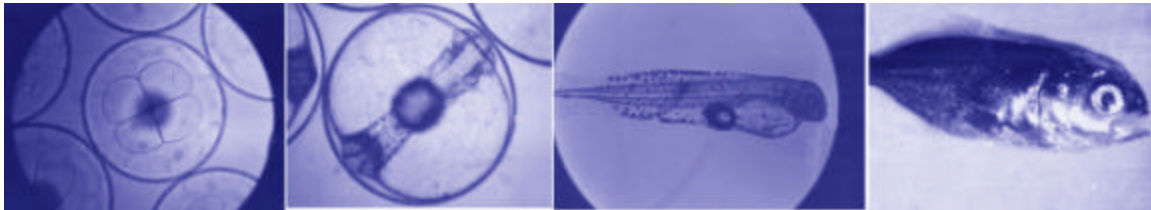
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Background:

The authors of this article are the principals of a Florida Corporation named Mariculture Technologies International, Inc. (MTI). This group was the first to farm the Florida Pompano (*Trachinotus carolinus*) starting in 1971. Developing technical skills and advancing understanding of this and other marine species has been an ongoing lifetime project. At present, MTI operates a new ten acre mariculture site in Oak Hill, Florida. Starting in 2002 the company consolidated its various operations and interests to this new location. Currently these include live and frozen brine shrimp (*Artemia salina*), farmed pompano targeted at the live seafood market, and farmed pigfish (*Orthopristis chrysoptera*) for the live marine baitfish market.

In 2003 the authors presented a technical paper at Aquaculture America in Louisville, Kentucky titled “Prospects for Commercial Pompano Mariculture-2003”. An on-line copy of the complete paper can be found at www.PompanoFarms.com. Pompano Farms and Northeast Brine Shrimp are both registered DBA’s of Mariculture Technologies International, Inc.. In addition to those sites, the MTI corporate site is at www.Mariculturetechnology.com.

Two major points were made in the WAS-Kentucky paper. First, the technology for the monthly production of pompano eggs, hatchery fry and adult fish is well known and practiced (by MTI).



McMaster and Kloth designed and operated a commercial pompano farm in the Dominican Republic as well as a pompano broodstock and hatchery facility in Plantation Key, Florida. The commercial farm was a complete entity with broodstock, hatchery and grow-out (concrete tanks) facilities. During a two-year period, pompano were continuously spawned on a scheduled basis and in excess of 500,000 juveniles were produced. In addition, sexually mature and market size adults were grown.

Some of these adult pompano were spawned and produced F2 generation juveniles.

The second point was that the major limiting factors, then and now, remain the same for pompano commercialization in the United States. A coastal and concrete tank fish farm is not

practical due to high land costs and government regulations. Closed, re-circulating systems will not work, in our opinion, on a commercial scale due to the high cost of infrastructure and operational costs. Additionally, the lack of technological understanding of sea water chemistry issues as they relate to fish physiology further limits this proposed method of farming. Coastal sea cage farming is not viable in the United States due to prohibitive government regulations. Then for pompano farmers the salient question is: where can a pompano farming enterprise be established? Any such enterprise must consider global opportunities. Please see “Prospects for Commercial Pompano Mariculture –2003” for a discussion of pompano sea cage farming.

Lastly, the other potential opportunity for farming the pompano is in saline earthen ponds. This well known method of fish farming is practiced worldwide for marine shrimp, freshwater species, and some marine fish species. In the USA and particularly in Florida, there is a long established and large trade in pond farming ornamental freshwater species. In recent years there have been commercial ventures farming marine shrimp species in very low saline ponds in South Central Florida. Clearly, the Florida Department of Agriculture and other agencies have now allowed this method of farming. Due to this new opportunity; MTI has begun to investigate the salinity tolerance of the Florida Pompano at the Oak Hill farm.

New Results:

Year 2003 Pompano projects at MTI were in part to establish a marine fish hatchery. In May of 2003 the first artificial pompano spawning at the new farm occurred producing over 400,000 eggs. The ongoing project is designed to develop a selected F3 generation strain. Based on past experiences with successive selected generations a better farm strain of pompano can be developed.

Another pompano project underway at Pompano Farms is directed at pompano grow-out in reduced salinity. The life history of the Florida Pompano suggest that it may be possible to farm this species in lower than normal ocean salinities. To our knowledge there have been no previous published reports on this subject. Over the past 25 years many people have asked us if the Florida Pompano could be grown in reduced salinities and we have always had to say we do not know.

The numerous enquires over the last ten years regarding reduced salinity tolerance of the pompano have primarily come from the marine shrimp farming industry in South Texas and South America. The viral disease blight that has seriously damaged that industry prompts those businesses to seek out new species opportunities. These new species are generally considered to be finfish as they appear not to be affected by shrimp viruses. This new species search parallels exactly what has taken place in Taiwan and it's neighboring countries. Today, Taiwan pond shrimp farmers are back in business and producing a variety of marine and estuarine finfish. One of the most popular marine finfish raised in lower salinity ponds in Taiwan is the Yellow Wax Pompano (*Trachinotus blochii*). The Taiwan hatcheries now reportedly produce

tens of millions of this species annually for pond culture (Marine Fish Seed Industry In Taiwan, Shinn-Pyng Yeh 1997).

However, we are now pleased to report that the recently completed phase one of the low salinity testing program was very encouraged. The farm at MTI is supplied with a 480 foot deep well that produces 19-ppt. salinity water. Using a 5,000 liter tank in phase one, it was demonstrated that pompano can not only survive long term but grow in 19 ppt. water. In December 2003, pompano grown in 19-ppt. water were harvested for analysis. The initial size of the pompano was 10 grams each. Acclimation from 32- ppt. to 19- ppt. was accomplished over a two-week period. At the end of a four-month growing period the average size was 110 grams with a average fork length of 16 cm. (6.5 inches). These test pompano color, condition factor, and growth rate were normal. For this phase one test pellet fish food from Melick Aquafeed (protein 43%, fat 10%),(Catawissa, Pa. USA) was used .This initial test was a preliminary first look at the question of salinity tolerance for this species.



Current Plans:

Phase two testing for 2004 will be a more controlled study of growth rates in 19 ppt salinity water and grow-out performances in a 19 ppt earthen pond. The size of the test pond at MTI is approximately 100 X 50 meters by 2 meters deep on the average. Estimated volume is approximately 5.5 million liters (1.5 million gallons). Stocking rate for the first attempt will be conservative at one fry per 378 liters (100 gallons) for a total of 15,000 fry.

In the late 1960's there were reports of fish farmers trying to raise pompano in earthen ponds near the seashore or saltwater lagoons (Finucane, J.H. 1970). To the best of our knowledge

none of these earlier attempts supported a valid commercial enterprise. MTI is optimistic, based on work thus far, that low salinity pond culture can support a commercial pompano enterprise. Further in support of this optimism, is the observations previously mentioned that a related species found in Taiwan, Yellow Wax Pompano (*Trachinotus blochii*), is currently pond farmed in lowered salinities with reported good success (*C.T. Chu, Team Aqua Corporation*).



Initiation of the phase two salinity and pond grow out tests are planned to start in late March, 2004. Artificial pompano spawning is scheduled for early February 2004 and the resultant pompano fry will be available within thirty days. Based on past, normal ocean salinity farming results, the pompano will grow from ten grams to 453 grams (one pound) in nine months.

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