2007 University of Arkansas at Pine Bluff Combined Research and Extension Plan of Work

Improving Hatchery Production Efficiency

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

- 301 80% Reproductive Performance of Animals
- 307 20% Animal Management Systems

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Decreasing profit margins on catfish production facilities and recent research advances have re-kindled interest in the production of channel x blue catfish hybrids for food-fish production. Hybrids have been shown to grow faster and survive better than channel catfish, but large-scale production of hybrid finderlings remains problematic. Techniques for utilizing ultrasound technology for selecting females and staging eggs, cryo-preservaion of blue catfish sperm, and the use of geothermal water for out-of-season spawning will be investigated and refined in order to improve production efficiencies of hybrid production. The US runs an $8 billion annual trade deficit for edible seafood. Production of hybrid striped bass could reduce this trade deficit. The hybrid striped bass industry must become more productive and efficient to help reduce the trade deficit. Hybrid striped bass fingerling producers and grow-out facilities would benefit from improved management techniques. Priorities –UAPB has been conducting research on hybrid striped bass fingerling culture for more than a decade. Tank culture of hybrid striped bass offers great potential for increasing production. Fingerling producers would like to move away from pond production in the spring toward tank production year-round.

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

New technologies can be utilized to improve hybrid production efficiencies, hatchery managers are capable of learning hybrid production techniques, food-fish producers will value a genetically superior fingerling. Specific strains or stocks of white and striped bass will be available to producers and researchers. Some subset of those strains will be most appropriate for tank culture If hybrid striped bass fingerling producers see that techniques are established, they will increase tank production and increase production out of season.

2. Ultimate goal(s) of this Program

Increase efficiency of catfish food-fish production, increae the number of catish fingerling operations producing hybrids, and year-round fingerling production in tanks throughout the industry.

V(F). Planned Program (Activity)

1. Activity for the Program

•Conduct field trials •Conduct method demonstrations •Publish results •Give presentations 1. Conduct research to determine the relationship between egg size and size at hatch for hybrid striped bass. 2. Conduct research to re-defined the relation between temperature and egg stage duration. 3. Conduct research to determine ways of reducing cannibalism in tank culture of hybrid striped bass 4. Partner with Keo Fish Farm, Inc. to acquire seed stock from specific males and females