

# AQUATIVITIES

*Academics with Attitude-Building the Foundation for Student Success*

*A weekly KSU Aquaculture Calendar*

Friday, June 7, 2013

## Alex Squadrito Finishes Thesis Research Project

Alex's thesis is titled "Effect of live versus prepared diets on growth and survival rates of larval paddlefish (*Polyodon spathula*)". His thesis experiment was broken down into two phases.



Phase 1 began on April 29, 2013, when 2000 larval paddlefish were placed into each of six 350 gallon tanks in the greenhouse at the ARC. Three tanks were then assigned to each of the two dietary treatments being fed either daphnia, a naturally occurring zooplankton, or Otohime, a commercially prepared diet from Japan. The fish were fed at 10% body weight for three weeks until they obtained a size of approximately 5-6 cm.



At the end of trial 1 fish from the daphnia treatments were then transferred into the Phase 2 of the experiment. A total of twenty four 32 gallon tanks were stocked at a density of one fish per gallon. These fish were then fed one of six dietary treatments at 10% body weight with four replicates per treatment: treatments included naturally occurring daphnia, a floating commercially prepared Chinese feed, a 50/50 ratio combination of daphnia and Chinese feed, the sinking Japanese Otohime feed, a sinking American Cargill feed, and a neutrally buoyant American Golden Pearl commercial marine feed. Phase 2 of the study lasted for an additional two weeks at which point the fish were measured, photographed and frozen to be analyzed for proximate analysis at a later date.

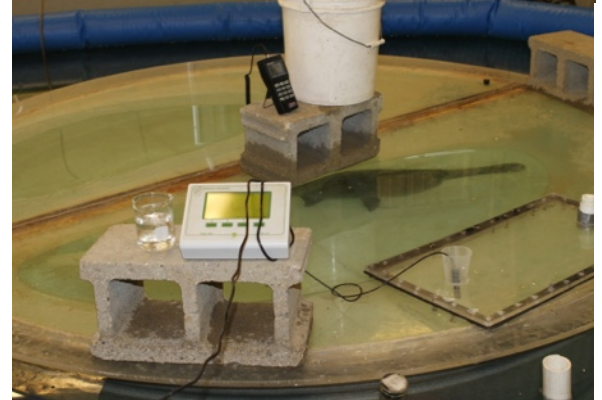
The goals of the study were to determine the effect of live feeds versus prepared feeds as well as the effect of floating feeds versus sinking feeds. Alex observed how well the fish grew in this 4-5 week period which is about how long it takes the fish to be large enough to obtain a larger, more commercially available diet that farmers have been successfully using.



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## Graduate Students Completes his Research Project

KSU Aquaculture graduate student Noah Nelson has finished his thesis research project. For the past two years Noah has worked with Dr. Mims a project aimed at finding the standard metabolic rate in a bioenergetics model for reservoir ranched paddlefish. Hopefully this will assist in finding the optimum stocking density and carrying capacity for different sizes of paddlefish in a reservoir environments. The research project involves correlating respiration and muscle activity in order to find the standard metabolic rate in paddlefish of different sizes. A respirometer is used to measure oxygen consumption at different temperatures and using Coded Electromyogram Tags from Lotek to measure muscle activity. After a statistical correlation is found muscle activity of paddlefish will then be monitored in reservoirs. This data along with other variables will be analyzed to solve our bioenergetics equation. This research has never been conducted on paddlefish and Noah is excited to see the results will show.





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**Thursday April 4, 2013**

## Paddlefish and Hybrid Catfish Production Study

With the arrival of spring, Dr. Mims, Dr. Cuevas, Dr. Saidu, and their staff stocked paddlefish and hybrid catfish at the KSU Aquaculture Research Center. The fish will be used in a production study to compare growth and survival of the two fish species under KY climate. Catfish has been the number one aquaculture species in the United States but in recent years with cheaper catfish products imported from Asia, there has been a drastic decline in the US catfish industry. This study is to observe if paddlefish may serve as an alternative species for fish farmers in certain parts of the US. In addition, paddlefish have shown promise in blue-green algae control and may assist in controlling off-flavor in fish ponds. This study will measure the blue-green algae levels in ponds stocked with catfish only, paddlefish only and in polyculture with paddlefish and catfish. Phillip Henderson and Dustin Casey, AFE undergraduate students and Matt Palmer with Franklin Co. High School and Chase Mahoney, Western Hill High School will be assisting with this project this summer.



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