" ANNUAL REPORT OF ACCOMPLISHEMENTS AND RESULTS"

PROJECT SPECIFICATIONS:

Subcontract No. 68-211-WVSC
Project Sponsor: U.S. Geological Service
Project Title: Aquaculture Waste Control and Optimizing Nutrient Utilization through Diet Composition and Feeding Strategies" for the FY 2003.
Period of Performance: February 28, 2003 to November 30, 2003

SUMMARY: The present report provides an update of the annual accomplishments for the project titled " Aquaculture Waste Control and Optimizing Nutrient Utilization through Diet Composition and Feeding Strategies" for the FY 2003.

SYNOPSIS OF THE RESEARCH COMPLETED DURING THE REPORTING PERIOD: The first objective of this project has been completed. The feeding trial was completed in May 2003 and most of the proximate analyses and the analyses of the data have been done. The feeding trial for the second objective was completed in November 2003 but the proximate and data analyses are pending.

RESULTS: The results from the first study indicates that better protein deposition and food conversion ratio in rainbow trout can be achieved with restricted feeding containing 0.5% phosphorus and 38% protein and 25% fat diet. The results suggest a potential for savings on the protein and phosphorus consumption, an increase in their utilization and resulting decrease in nitrogen and phosphorus output in trout production.

The preliminary results from the effects of dietary supplementation of various types of zeolites on growth of rainbow trout indicates Bentonite and Clinoptilolite have significant effect on the growth of rainbow trout. The effects on feed efficiency, protein deposition, body composition, ammonia and nitrite concentrations have not been determined because all the data have not been analyzed or statistically tested.

PUBLICATIONS: Research study results from the first experiment are being prepared and the manuscript will be submitted for publication upon completion of all data analyses. The results from the second experiment will also be prepared after all the necessary data have been obtained and analyzed. The journals that

these results will be published in will be “Aquaculture” and “Journal of World Aquaculture Society”.

INFORMATION TRANSFER ACTIVITIES: Information transfer activities have not commenced. Results from the first experiment are being compiled and the results will be made available to different stakeholders via diverse printed media, and possibly through television or video.

SUMMARY OF STUDENTS SUPPORTED WITH THE FUNDS: There are two undergraduate students and a research assistant that are supported with funds from the projects. Each student is paid $6.73/hr. during the regular school period and $7.12/hr. during the summer school and the research assistant is paid $6.73/hr. The maximum number of hours per week per student is 20hrs. during regular school period and 40hrs. during the summer school. The research assistant is paid hourly and the maximum number of hours per week is less than 35 hrs.

Category	USGS WRI Award	NIWR-USGS Internship	Supplemental	AwardTotal
Undergrad	2	N/A	N/A	$0
Research assistant	1	N/A	N/A	$0
M.S.	N/A	N/A	N/A	N/A
Ph.D.	N/A	N/A	N/A	N/A
Post-Doc	N/A	N/A	N/A	N/A
Total	3	N/A	N/A	$0

NOTABLE ACHIEVEMENTS AND AWARDS/MATCHING FUNDS/SUPPLEMENTAL GRANTS

Notable achievements include the discovery that the use of appropriate feeding strategy (restricted feeding) with low phosphorus and low protein and high fat can increase body deposition of protein with minimal pollution. Also, there is the potential for using zeolites to increase nutrient utilization in trout. West Virginia State College has spent an estimated sum of $53,073.95 as a matching component to this project for the construction of the laboratory space and utilities ($20,000), salary for the release time for the PI (15,305.53), and indirect on the grant ($17,768.42).

PROGRESS AND SETBACKS: The feeding trials for the first and second study have been completed. Analyses of data for the first study are completed while the analyses of data for the second study is pending.