WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: WV2981

Title: Aquaculture Waste Control and Optimizing Nutrient Utilitization Trough Diet Composition and Feeding Strategies

Focus Categories: Agriculture, Water Quality

Keywords: feeding strategies, zeolites, phosphorus bioavailability, nutrient utilitization, waste control, aquaculture

Start Date: 04/01/2001

End Date: 03/31/2003

Federal Funds: $38,627

Non-Federal Matching Funds: $90,094

Congressional District: WV 2

Principal Investigator:
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Abstract

The ultimate source of wastes in an aquaculture system is feed. Phosphorus and nitrogen are major elements of concern in discharge from aquaculture operations. Both are important nutrients for growth of phytoplankton and are present in large quantities in fish feed. Restrictions have been placed on some trout hatcheries for the amount of phosphorus in discharge water (Ketola 1992) and this could apply to West Virginia trout farms thus slowing the development of West Virginia aquaculture industry. Salmonid culture requires continuous water discharge, releasing large amounts of unretained phosphorus and nitrogen an thus contributing significantly to eutrophication of the receiving streams. Reducing aquaculture waste loads and optimizing nutrient utilization through diet composition and feeding strategies will allow for increased production, increased profits for producers and possible offer more affordable foods for consumers. Since West Virginia State College has regained its land grant status, this project will increase the visibility and expertise of the researchers of the college so as to attract students, especially minority students, who traditionally do not enter agriculture and biological sciences. Furthermore West Virginia aquaculture industry has asked that more research be done to better understand ways to minimize wastes that are discharged from culture systems into the environment. The ultimate beneficiary of the result will be the aquatic environment that will receive less nitrogen and phosphorus, the major cause of eutrophication.