



REQUEST FOR PRE-PROPOSALS

Please Copy and Distribute to All Interested Parties

The USDA-NIFA Southern Regional Aquaculture Center solicits a response from qualified multi-state teams interested in participating in the regional project:

Improving Larval Feeding Performance in Ornamental Fish Species using Feed Modifiers

SRAC's Board of Directors has authorized up to \$450,000 for a 2-year project on *Improving Larval Feeding Performance in Ornamental Fish Species using Feed Modifiers*. This project will be developed using the "comprehensive method" where a team of multi-state scientists having demonstrated records of expertise in the subject complete a single pre-proposal that addresses all project objectives. One proposal will be selected for funding based on a review by a committee of scientists not involved in any of the proposals that are submitted.

Background

Inadequate larval nutrition persists as a major impediment to the successful and efficient culture of freshwater and marine ornamental species on a commercial scale. Reduced growth, survival, feed conversion ratio, and overall health associated with nutritional deficits reduce the economic viability of culture efforts.

While manufactured and live feeds can have adequate nutrient profiles, malnutrition may still be a concern due to issues with reduced incidence of ingestion by the larvae. A potential solution to these inherent shortcomings is the addition of feed modifiers to improve intake. The use of attractants (flavorants), palatability enhancers, texturants, and other stimulants have been shown to promote feeding activity, enhance consumption, and/or modulate the production of critical hormones related to appetite and satiation in many fish species, which in turn leads to higher feeding incidence, specific growth rate, uniformity of animals, and survival.

Objectives

1. Identify feed attractants/palatability enhancers/stimulants that will lead to increased growth and survival in freshwater and marine ornamental species following inclusion into currently available micro-particulate diets or live food items.
2. Evaluate commercially available liquid larval diets as replacements for *Artemia* in freshwater or marine ornamental fishes.

Experimental Approach

Ornamental freshwater or marine species of interest will be offered experimental diets supplemented with feed attractants, palatability enhancers, and/or stimulants. A control treatment must consist of a currently available micro-particulate or live feed commonly used by the industry for the target species without any supplements.

Liquid larval diets at different concentrations should be tested as a replacement for live *Artemia* in incremental levels to establish an optimal replacement ratio. Dietary treatments must consist of different ratios of liquid larval diets and *Artemia* nauplii. A control treatment will consist of 100% *Artemia* nauplii/or the common practice in the industry to rear the fish larvae.

The proposed work must clearly state and have suitable replications and well-developed statistical design. Test animals should be maintained in a system or systems that are appropriate for the research objectives, species, and maintain a suitable culture environment for good growth. Replications and numbers of animal per replicate should be suitable for the experimental design and research approach.

Successful proposals will demonstrate strong linkages with industry. Practical application of research results from the proposed efforts must relate to industry relevant practices and protocols. Proposals must contain plans on the development of Extension materials that can be used to inform and educate producers on how to refine commercial production of ornamental species.

How to Respond

Pre-proposals must address all objectives. Preference will be given to pre-proposals that show a high degree of collaboration and coordination among participants. To meet the criterion for a regional project, the pre-proposal must include collaboration from scientists in two or more states or territories in the Southern Region (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, Puerto Rico, South Carolina, Tennessee, Texas, U.S. Virgin Islands, and Virginia).

The pre-proposal must include a one-page vita for each participant and a proposed budget for each participating institution or organization. Pre-proposals, vitae, and budgets that are not in the proper format will not be considered. See "Guidelines for Writing a SRAC Pre-Proposal (Comprehensive)" file attached or contact Kristen Walters with the SRAC office at 662-686-3269.

Send an electronic copy of the pre-proposal in Word format to Jimmy Avery, SRAC Director as an email attachment (jimmy.avery@msstate.edu) by **August 15, 2022**. Proposals received after that date will not be considered.