

National Pork Board Nutritional Efficiency Call For Proposals

The National Pork Board introduces a new Swine Nutritional Efficiency research effort to assist producers to reduce or optimize feed costs. This effort will target areas related to nutritional efficiency and will be directed through a stakeholder consortium coordinated by the National Pork Board Animal Science Committee and a Feed/Nutrition Advisory Group. The primary objectives of the program are:

- To economically maximize production efficiencies through improved feed conversion and reduced/optimized feed costs.
- To help producers lower feed costs through improved feeding technologies and information about the use of lower cost alternative diet components.
- To develop comprehensive research programs to address genomic and cellular level nutrient utilization processes and capabilities in the pig.

Proposals must be submitted following the attached format to be considered. Projects are intended to be funded on a one-year basis. Multi-year projects may be considered based on the project priority and the availability of one time funds sufficient to support this and subsequent years. Consideration for funding subsequent years of multi-year efforts may also be considered based on demonstrated accomplishments of previously funded research efforts toward success of the overall research project as described in interim or final research reports, and submittal of a proposal for each subsequent year's available funding covering the new funding requested. Researchers are encouraged to find matching funds and projects that are multidisciplinary in their approach are strongly encouraged and will be prioritized. Researchers are reminded to submit simple, accurate, clearly understood budgets per the on-line application process that adequately meet the requirements as specified.

All eligible proposals will be reviewed by expert panels for scientific validity. Funding recommendations will be made by the stakeholder consortium based on pork industry priority. Proposals may be returned to the investigator with suggested/requested revisions prior to making a final funding decision. Funding for accepted projects will follow final approval by the National Pork Board.

For information regarding this solicitation, please contact Mark Boggess, Ph.D. by Email at mboggess@pork.org or by phone at (515) 223-2606

Initial Funding Categories:

1. Research:

- a. **Literature/Research Review.** The Pork Checkoff is making a **special call for exhaustive, critical reviews** of relevant industry and peer-reviewed academic literature and research reviews relating to bio-fuel co-product utilization in the pig. A description of the proposed process to identify sources of literature for the review should be included in the project proposal. Research findings and other information should be summarized for industry stakeholder application.

Specifically, this literature review should address the following:

- a. Description of relevant co-products and their application to pork production.
- b. Summarization in separate chapters of all relevant research relating to each co-product and pork production.

Literature reviewed should include, but is not limited to:

- Peer reviewed research articles
- University and industry research reports
- Contemporary articles/publications
- Other public literature or industry information sources

Funding Limit: \$25,000 Literature review

- b. **Refinement of feeding recommendations for swine.** Development of research projects to address the following issues. New research should directly support and enhance current on-going research efforts in the industry:
- i. Estimate net energy values (NE) of co-products for use in swine diets.
 - ii. Describe techniques for more accurate fiber analysis and estimation of fiber digestibility in co-products. Identify enzymes, yeasts, etc that will improve the efficiency of utilization for co-products used in swine diets.
 - iii. Techniques to optimize relevant co-product lipid digestibility and utilization in the pig.
 - iv. Techniques to optimize relevant co-product Lysine digestibility and availability.
 - v. Techniques to optimize relevant co-product phosphorus digestibility and the effect of phytase on co-product digestibility.
 - vi. Techniques to optimize feed consumption at varying levels of DDG inclusion in swine grow-finish diets.
 - vii. Investigate associated reproductive responses in litter size and weight for sows in lactation and gestation fed rations including co-products.
 - viii. Investigate the effect on welfare, including behavior, and longevity produced when co-products are fed in the breeding herd diet.
 - ix. Investigate health effects, particularly the reduction in ileitis, in grow-finish hogs related to inclusion of co-products in swine diets.
- c. **Alternative ingredients and ration building technologies.** Development of research projects to update the nutrient profiles and feeding recommendations for today's national swine herd for ingredients that are alternatives to corn and soybean meal, such as DDGs, glycerol, field peas, barley, wheat, sorghum, milk products, and others.
- d. **Feed systems/innovative technologies.** Development of novel feed systems/delivery solutions to improve production efficiencies and/or address the flowability, processing-pelleting characteristics and other physical barriers to inclusion of co-products in swine diets.
- e. **Product quality, consistency and variation.** Development of real-time and "truck-side" tools to measure product net energy, lysine content and/or mycotoxin contamination levels of co-products and other feedstuffs.
- f. **Implications for pork quality.** Development of research projects to address pork quality issues relating to the inclusion of co-products in swine rations, particularly the effect on lipid saturation and consumer eating satisfaction for bacon and sausage products.
- g. **Biological efficiencies for pork production systems.** Enhance swine nutrient utilization through improving cellular responses to nutrients, genomic influences on nutrient utilization, and other technological improvements. .

2. Educational-Informational Needs

Educational and information needs for pork producers are significant. Producers and stakeholders need tools to evaluate the opportunities and challenges created by corn and other ingredient prices and co-product availability. Educational priorities include:

Producer Support and Education. Development of educational technologies and programs to:

- i. Assist producers with value determination of current and emerging co-products including web based and interactive decision support tools for ration construction, equipment, facilities and/or other infrastructure changes, etc.
- ii. Assist producers with real time decision making and informational support for decisions relating to application of locally available DDGs and other co-products to their system.

Summary Notes

- Proposals will be prioritized for funding by the National Pork Board Nutritional Efficiency Consortium based on scientific review and relevance to stakeholder application and need.
- Multiple year projects will be considered with sufficient justification.
- Additional consideration will be given to proposals that demonstrate interdisciplinary design when appropriate and interinstitutional collaboration where possible.