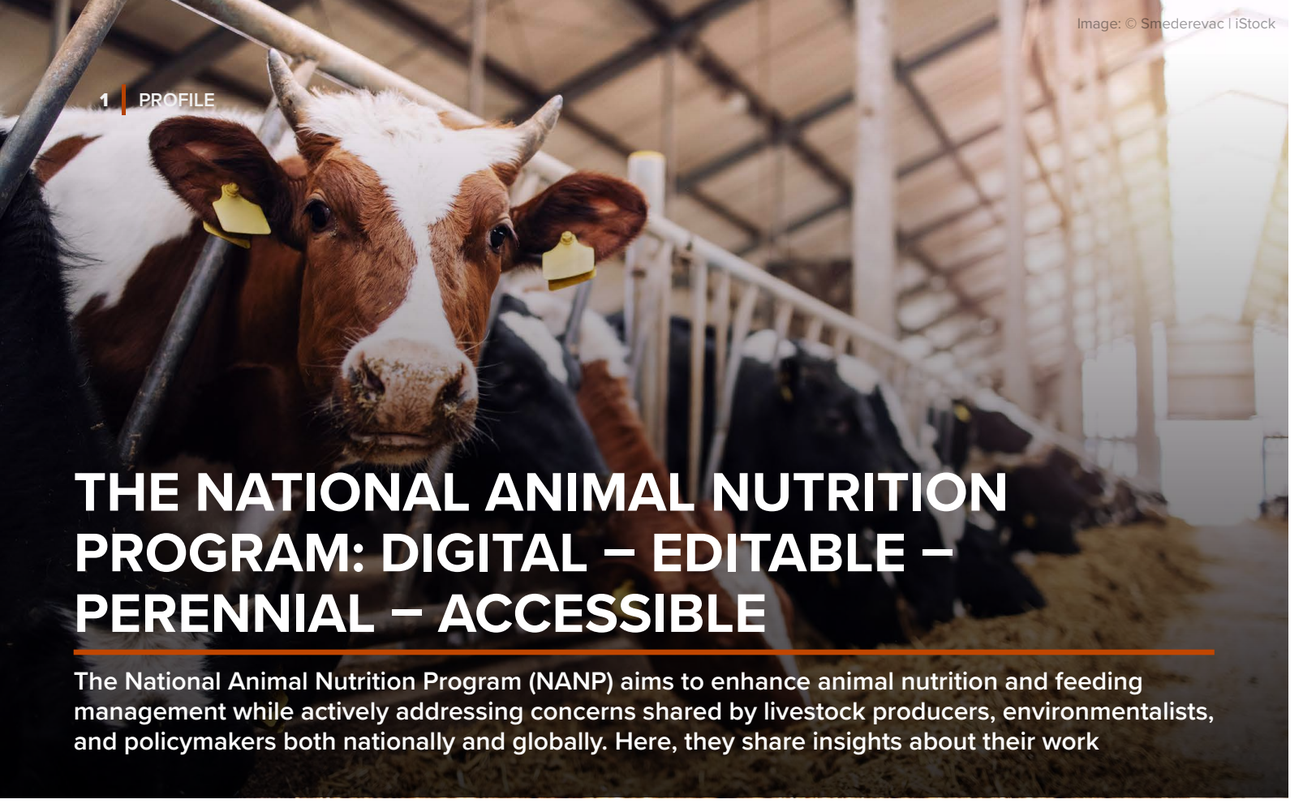

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THE NATIONAL ANIMAL NUTRITION PROGRAM: DIGITAL – EDITABLE – PERENNIAL – ACCESSIBLE

The National Animal Nutrition Program (NANP) aims to enhance animal nutrition and feeding management while actively addressing concerns shared by livestock producers, environmentalists, and policymakers both nationally and globally. Here, they share insights about their work

The National Animal Nutrition Program (NANP) was initially developed as a National Research Support Program-9 (NRSP-9) in 2010 through funding support from agInnovation, the State Agricultural Experiment Stations, the Natural Resource Conservation Service, and Hatch Funds provided by the National Institute of Food and Agriculture, U.S. Department of Agriculture. The NANP provides research-based data on animal nutrient needs, feed ingredients, feeding strategies, and animal performance, as well as software training tools and educational materials to support research.

The impact statement of the NRSP-9 (The National Animal Nutrition Program or NANP) focuses on developing a forum to identify high-priority animal nutrition issues. It provides an integrated and systemic approach to sharing, collecting, assembling, synthesizing, and disseminating science-based information, educational tools, and enabling technologies on animal nutrition that facilitate high-priority research among agricultural species.

Initially, specific objectives were developed to support the development of nutrient ingredient databases, animal nutrition modeling resources, and forums to help educate stakeholders on emerging issues (e.g., sustainability of livestock production; contributions of animal nutrition to human health, nutrition, and wellness); however, over the past five years, National Animal Nutrition Program has gone beyond the proposed objectives by developing new partnerships and plans for a long-term (self-supporting) business model. This will help the NANP maintain relevance and be dynamic in the future. Through these efforts, NANP will expand its footprint as a unified data repository and resource center for the animal nutrition research community specifically, as well as the broader animal research community, continue the training and development of future nutrition researchers in modeling techniques that decrease dependence on singular labor-intensive and expensive nutrition experiments, support the National Academy of Science, Engineering, and Medicine nutrient requirement series that serve as the basis for the entirety of nutrition research in the US, and enable scientists to more effectively and efficiently identify information needed to fill current knowledge gaps.

The NANP's relevance as a national need is evident in its broad scope and far-reaching implications. By focusing on optimizing animal nutrition and feeding management, NANP addresses concerns universal to livestock producers, environmentalists, and policymakers nationwide and globally.

Promoting sustainable animal nutrition

Linking nutrition with other areas of science has resulted in tremendous strides in our knowledge and ability to improve animal agriculture production efficiencies. The NANP has become a coveted resource for providing scientific expertise and data/model assets to examine issues related to greenhouse gas (e.g., methane) mitigation and the effects of animal nutrition on land, water, and air. Recently, the NANP has developed a Climate-Smart Feed Management (CSFM) committee in conjunction with the Natural Resource Conservation Service to address holistically how diet formulation and nutrient management impact the environment and livestock production. These within- and cross-disciplinary linkages are crucial for many areas of animal science, and all contain some component that is grounded in nutrition. A better understanding of these linkages requires collecting and mining large data sets. The data, data repository, and resources provided by NANP provide a critical foundation for these investigations and help to ensure that scientifically sound, contemporary, and consistent information is available for researchers. Making the information publicly available will increase scientific progress through the work of a broader cross-section of the research community. Many of these research areas are expanding, and continued support from NANP activities will promote the efficient advancement of new knowledge. By providing globally accessible research and education tools, the NANP impact extends internationally across sectors of the feed industry and invests in future nutrition researchers. The NANP strives to keep ingredient databases and models digital, editable, perennial, and accessible.

A Coordinating Committee and three subcommittees oversee the NANP activities: the Feed Composition Committee, the Modeling Committee, and the Climate-Smart Feed Composition.

Coordinating Committee

The Coordinating Animal Nutrition Committee represents the groups of animal nutritionists that coordinate, oversee, and integrate the selection process and activities of the Feed and Ingredient Composition Committee and the Modeling Committee. Coordinating Animal Nutrition Committee members are appointed through a competitive process open to all scientists and educators from State Agricultural Experiment Stations and other cooperating organizations. The Coordinating Committee organized a Summit in Washington, D.C., in 2023 that explored the relevance of animal nutrition research to improving global food security and how to produce animal foods efficiently and sustainably.

Feed Composition Committee

The Feed Composition Committee represents the groups of animal nutritionists selected through a competitive process administered by the Coordinating Animal Nutrition Committee and overseen by the Program Leader and Administrative Advisors. The functions of this Committee are to identify and synthesize data and research resources in the area of feed composition, to foster communication among those collecting feed composition information, and to facilitate efficiencies and consistencies in data collection and maintenance. The Feed Composition Committee is working effectively with the NANP Modeling Committee to support needs regarding ingredient composition data as model inputs.

A key accomplishment of the Feed Composition Committee has been the development of a multi-species ingredient database.

Nutrition Modeling Committee

The Modeling Committee represents the groups of animal nutritionists selected through a process similar to the Feed and Ingredient Composition Committee. The functions of this committee are to improve the use of predictive technologies and tools, to utilize the best available platforms, and to work with researchers to effectively share, combine, manage, and analyze models. The Modeling Committee has been proactive in providing modeling resources for researchers. Over the past five years, four modeling workshops (54 presentations) have been conducted at the annual American Society of Animal Science and American Dairy Science Association meetings. These presentations have resulted in 18 peer-reviewed publications.

Feed Management Committee

Recently, National Animal Nutrition Program developed an agreement with the Natural Resource Conservation Service to form a third working committee. This committee's primary role will be to provide accessible and user-friendly feed and animal nutrition information for conservation professionals and deliver targeted educational and training opportunities for various stakeholders.

Future Efforts

The NANP has initiated a non-profit arm to ensure the project's sustainability moving forward. Although traditional livestock and aquaculture nutrition have been the focus in the past, future projects could potentially involve companion animals and wildlife species.

University of Nebraska Lincoln

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Phillip S. Miller
Kermit Wagner Distinguished Professor
Department of Animal Science,
University of Nebraska
Tel: +1 402 472 6421

WEBSITE EMAIL