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The 2009 Allen D. Leman conference proceedings book is made possible by the generous support of **IDEXX**.

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### **Formatting**

Tina Smith

### **CD-ROM**

David Brown

### **Logo Design**

Ruth Cronje, and Jan Swanson;  
based on the original design by Dr. Robert Dunlop

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# National Swine Nutrition Guide

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## Introduction

Swine nutrition and feeding management is a complex process. Feed is the largest single item among the costs of producing pork, historically accounting for about 60% of all costs in farrow-to-finish systems. Pork producers are encouraged to employ a comprehensive feeding program based on sound principles and tailored to the operation. The National Swine Nutrition Guide, which includes computer software to allow direct application of its contents to practical feeding situations, provides the basis for the development and management of such swine feeding programs.

The 2009 National Swine Nutrition Guide (NSNG) is a practical publication containing nutrient recommendations and feeding guidelines. The guide consists of nutrition factsheets and diet formulation and evaluation software. The guide was written in collaboration with university swine nutritionists and swine industry specialists.

### Steering Committee Members

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The purpose of the National Swine Nutrition Guide is to enhance the understanding of basic nutrition, feeding principles and related management practices and to serve as a reference for pork producers, students, educators and allied industry personnel. Users of the National Swine

Nutrition Guide will be able to estimate the nutritional needs of pigs by considering specific factors that affect nutrient recommendations (Figure 1). The identification and description of the factors in Figure 1 provide the framework for the nutrient recommendations presented in the National Swine Nutrition Guide.

In order to ensure that the National Swine Nutrition Guide is current and relevant to the pork industry, the assistance of several people representing various facets of the pork industry was solicited. Also, in situations where “gray areas” existed, these industry representatives made specific proposals or recommendations. Therefore, the ultimate goal of the project was to utilize the knowledge of respected swine professionals who represent a cross section of the pork industry to improve the application of this publication.

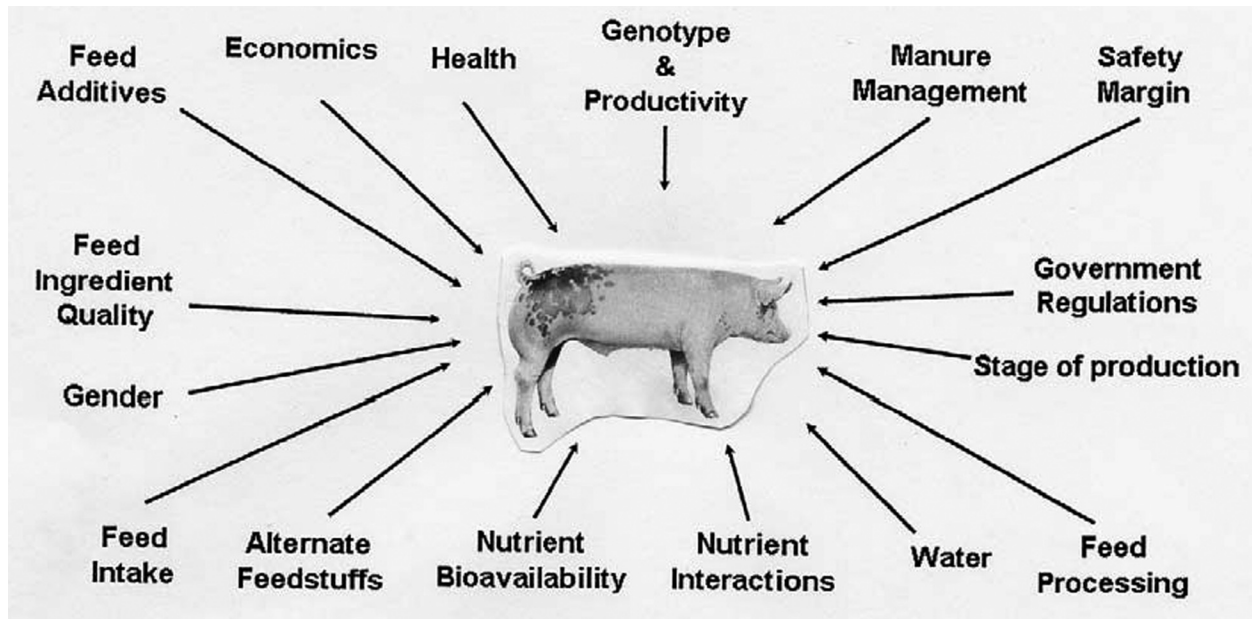
In preparing this publication, a priority has been to discuss contemporary and experimental swine nutrition issues. The discussion of these issues has been focused to emphasize results presented in the scientific literature. Consideration was also given to many additional factors that enter into the decision making process regarding feeding pigs. The ability to properly analyze these factors could have a major influence on the profitability of pork production.

## Table of contents

The written text portion of the National Swine Nutrition Guide is broken down to the following chapters, or sections, that are also available individually as Pork Information Gateway factsheets.

1. Introduction
2. Factors Affecting Nutrient Recommendations
3. Understanding Nutrient Recommendations
4. Nutrient Sources
5. Nutrient Recommendations and Feeding Management
6. Example Diets
7. Water Systems Management

**Figure 1:** Factors that were considered when developing nutrient recommendations



8. Diet and Health Interactions
9. Feed Additives
10. Ingredient and Feed Quality
11. Ingredient Composition
12. Feed Processing and Manufacturing
13. Methods of Supplying Nutrients
14. Feeding Systems
15. Feeding for Niche Pork Production Systems
16. Nutrition and the Environment
17. Nutrition and Pork Quality
18. Conversion Factors
19. Index

### Software supporting the National Swine Nutrition Guide

In addition to the guide, a swine modeling and feed formulation program has also been developed

to allow for immediate practical application of information contained in the guide into on-farm swine feeding programs. This program will allow nutritionists, consultants, and producers to customize their feeding programs specific to their operation(s). Special thanks to Mr. Garland Dahlke, Iowa State University, for providing formatting and programming the software.

The swine modeling program, developed utilizing the NRC (1998) nutrient requirements model, allows the user to enter on-farm production data, including energy intake or concentration, lean growth rate, pig or sow weight, expected gestational weight gain and litter size, lactation length, litter size/litter growth rate, etc... to calculate recommended nutrient levels in the diet for growing pigs and gestating and lactating sows. These nutrient recommendations, calculated by the growth/production model, are then listed as suggested nutrient levels in the formulation portion of the program. Users can use the suggested nutrient recommendations or replace with their own nutrient levels, and formulate diets based on the constraint nutrients they choose, on a least-cost basis. Over 200 ingredients are included in the feed ingredient library, with the ability to change data for each ingredient and also ability to add ingredients to the feed library. Formulation options include use of phytase and ractopamine, allowing for easier inclusion of these products when formulating diets if desired.

### Release of the National Swine Nutrition Guide

The NSNG will be available electronically on the Pork Information Gateway ([www.porkgateway.org](http://www.porkgateway.org)) during the fall/winter of 2009. The guide will also be available in print from the U.S. Pork Center of Excellence, State Extension Services, and in the Pork Industry Handbook.

## **Educational training sessions**

Educational training sessions will be administered by the authors of the guide beginning in January of 2010. The Educational Training Sessions will focus on the use and applications of the guide. They will include an overview of the guide and demonstration of the computer software. More information will be provided as it becomes available. Inquire with one of the Steering Committee members for more information. A tentative schedule of training sessions that are planned includes:

Indianapolis, IN	January 2010
Pullman, WA	February 5, 2010
Kansas City, MO	February 10, 2010
Greenville, NC	February 2010
Sioux City, IA	March 5, 2010
Owatonna, MN	March 11, 2010

