

Jacqueline P. Jacob

Assistant Professor

Appointment 25% Teaching, 75% Extension

Research Area Poultry Nutrition and Management

Appointment History 2001-present Assistant Professor

Graduate Program Affiliations

Animal Sciences – Senior Member

Professional and Honorary Societies

Member, Poultry Science Association (PSA)
Member, World Poultry Science Association (Canadian Branch)
Member, American Poultry Industry Historical Society
Member, Canadian Society of Animal Science
Member, Sigma Xi
Member, Council for Agriculture Science & Technology (CAST)

Five Most Significant Publications

4-H Poultry Judging Contest – Interactive Multimedia CD-ROM.

Released 2003 – Over 250 copies sold to date. The CD-ROM was developed using Authorware and includes ‘virtual’ practices for the classes in a poultry judging contest (production hens, market eggs, market poultry). The items to be judged or graded are randomly selected from a library of graphics. It is a stand-alone program that can be run on a PC or Mac. The CD-ROM was primarily developed for use by 4-H members to help prepare for a 4-H poultry judging contest. It can also be used by 4-H coaches to train their poultry judging teams. It allows for participation of 4-Hers who would not normally be able to participate because of an inability to access training materials (live birds, Grade B eggs, etc.).

Ibrahim, S., J.P. Jacob, and R. Blair. 2000. Phytase supplementation to reduce phosphorus excretion of broilers. *Journal of Applied Poultry Research* 8:414-425.

Blair, R., J.P. Jacob, S. Ibrahim, and P. Wang. 1999. A quantitative assessment of the use of reduced protein diets supplemented with amino acids to improve nitrogen utilization and reduce the nitrogen excretion of broilers and layers. *Journal of Applied Poultry Research* 8:25-47.

Nitrogen and phosphorus in poultry manure are potential environmental contaminants. This research was conducted at the University of British Columbia where local producers have to deal with excess manure production - similar to the situation poultry producers are dealing with in the Delmarva Region. Even if all the cropland in the area used only poultry manure as a fertilizer, there would not be enough land to 'dispose' of all the poultry manure produced in the region. This research looked at reducing the nitrogen and phosphorus excretion of meat and egg chickens and thus increasing the amount of manure that can be applied to the land without any detrimental environmental effects.

Jacob, J.P., B.N. Mitaru, P.N. Mbugua, and R. Blair. 1996. The effect of substituting Kenyan Serena sorghum for maize in broiler starter diets with different dietary crude protein and methionine levels. *Anim. Feed Sci. Technol.* 61(1-4):27-39.

Jacob, J.P., B.N. Mitaru, P.N. Mbugua, and R. Blair. 1996. The feeding value of Kenyan Sorghum, sunflower seed cake and sesame seed cake for broilers and layers. *Animal Feed Science and Technology* 61(1-4):41-56.

This research was conducted at the University of Nairobi and its purpose was to reduce Kenya's dependence on imported corn and soybean meal for inclusion in poultry diets.

Refereed Journal Publications and Book Chapters (Last Five Years)

Authored or co-authored the following 2 papers in peer-reviewed journals.

Ibrahim, S., **J.P. Jacob**, and R. Blair. 2000. Phytase supplementation to reduce phosphorus excretion of broilers. *Journal of Applied Poultry Research* 8:414-425.

Blair, R., **J.P. Jacob**, S. Ibrahim, and P. Wang. 1999. A quantitative assessment of the use of reduced protein diets supplemented with amino acids to improve nitrogen utilization and reduce the nitrogen excretion of broilers and layers. *Journal of Applied Poultry Research* 8:25-47.

Invited Lectures

Minnesota Nutrition Conference, "Organic Poultry Production," September 17-18, 2002.

Combined Animal, Dairy and Poultry Science Extension Workshop held at the Joint Animal, Dairy and Poultry Science Association Animal Meeting, 'How Should Extension Support Natural/Organic/Niche Markets?,' July 26, 2004

Public Health Institute, 'An overview of broiler chickens: production to consumption,' June 7, 2004

Minnesota Organic and Grazing Conference, 'Organic poultry production,' January 24, 2003

Minnesota Organic and Grazing Conference, 'On-farm poultry processing,' January 23, 2004

Midwest Poultry Consortium Center of Excellence, Summer 2004. 3 lectures: 'Minerals,' 'Vitamins,' and 'Organic Poultry Production.'

Midwest Poultry Consortium Center of Excellence, Summer 2003. 2 lectures: 'Alternative Feed Ingredients' and 'Feeding Programs for Broilers and Layers.'

Midwest Poultry Consortium Center of Excellence, Summer 2002. 1 lecture: 'International Perspectives on Poultry Nutrition.'

Funding (Last Five Years) – \$285,291

U.S. Poultry and Egg Association. Student Recruitment Funds. 2004-05. \$3,000.

USDA. Organic poultry production. 2002-05. \$197,641.

Elanco Animal Health. Gift. 2004. \$500.

UMN, AES Rapid Response Funds. Microbial safety of chicken raised without antibiotics. 2003-04. \$78,000.

Elanco Animal Health. The effect of tylan supplementation on nitrogen and phosphorus utilization of laying hens. 2002-03. \$6,150.

Graduate Student and Post-doctoral Supervision - Current Advisees

Jeffrey P. Griggs M.S. Animal Sciences

Claude Hebron M.S. Animal Sciences

Courses Taught (Last Five Years)

Designator	Name	Cr	% Effort	Term	Years
AnSc 4609	Analysis of Livestock Prod Systems	2	30%	Fall	2001, 2003
AnSc 4605	Poultry Production Systems Mgmt	4	100%	Fall	2003

Service

4-H activities: national barbecues, judging teams, knowledge bowl committee, etc.

FFA activities: poultry judging workshop for FFA Advisors, (27 participants), poultry judging contests.

Liaison, US Poultry & Egg Assoc. College Career event, International Poultry Expo, Atlanta.

Member, coordinating committee AFSA/COAFES “Cognitive Discovery Labs” project.

UMN rep, Midwest Poultry Research Program (MPRP) grant review committee.

UMN rep, Midwest Poultry Consortium scholarship selection committee.

UMN rep, Midwest Poultry Consortium Coordinating Council (and member, Exec. Com.).

Collaborator, NIH Grant, Food- and Water-borne Diseases Integrated Research Network.

Director, ADDS (Agricultural Databases for Decision Support) Center Board plus Vice-President of the board.

Co-leader, National Poultry Infobase

Lead Editor, Manure and Waste Management and Organic and Free-Range Sections. National Poultry Infobase.

Committee member, National Poultry Extension workshop, PSA

Co-editor, proceedings, National Poultry Extension workshop, PSA.

Program Chair, Extension & Instruction section, 2002, PSA.

Committee member, National 4-H Poultry and Egg conference organization committee.

Reviewer: *Animal Feed Science and Technology Journal*, *Applied Poultry Science Journal*.

Member, Advisory Panel, MDH, public concern with antibiotic use in animal feeds.

Reviewer: National Organic Standards Board.

UMN rep, Executive Council, Faculty Advisory comm., Midwest Poultry Consortium (MPC).

UMN rep, Midwest Poultry Research Program grant review committee, 2001.

Program Chair, egg industry section, Midwest Poultry Federation convention, 2003.

Program Chair, organic poultry production, Midwest Poultry Federation convention, 2004.

Member, Informational Advisory Committee, MISA

Member, MISA Board of Directors

Member, Faculty Advisory Committee, MPC

Member, Executive Council of the Faculty Advisory Committee, MPC

Member, ADDS Board of Directors

Member, PSA Recruitment Committee

Associate Editor, *Poultry Science*

Extension Activities (Last Five Years)

Program Team Involvement and Goals

The major programs include:

Youth Poultry Programs

Audience: Youth associated with 4-H and FFA

Goal: Increase the level and quality of participation in 4-H and FFA poultry events. Educate consumers, through the youth, regarding poultry production and products. The program is also a good recruitment tool for animal science students.

Sustainability of the MN Egg Industry

Audience: MN table egg producers

Goals:

- Improve the knowledge base of table egg producers in the state
- Reduce economic loss related to poultry disease, environmental factors, and stress
- Improve the nutritional value and safety of egg products

Sustainability of the MN Broiler Industry

Audience: MN table egg producers

Goals:

- Improve the knowledge base of broiler producers in the state
- Reduce economic loss related to poultry disease, environmental factors, and stress

Support of Alternative Poultry Enterprises

Audience: Alternative poultry producers

Goals:

- Improve the knowledge base of current and potential alternative poultry producers in the state (organic, pasture-fed, free-range, waterfowl, etc.)
- Develop feeding strategies considering nutrient utilization and alternative ingredients
- Provide one-on-one consultations with individual producers as needed

Consumer Education

Audience: Consumers of poultry products

Goal: Educate consumers regarding poultry production and products.

Layer School – Diseases of Laying Hens, Contributor

Audience: Layer chicken industry professionals

Goal: Educate layer industry personnel on health care practices for commercial layers.

Poultry Processing School, Coordinator

Audience: Poultry processors, students

Goal: Educate poultry processors and others on proper processing techniques.

Product Development (selected materials developed)

- Interactive, multimedia CD-ROM on 4-H Poultry Judging
- Poultry-specific material for the 4-H Quality Assurance and Livestock Ethics program
- Curriculum for Adventures in Food and Fiber summer day camp for youth
- Regular column in the BEAM (Broiler and Egg Association of MN) newsletter, Focus on Feathers
- Poultry Web Site (www.ansci.umn.edu/poultry/index.html)

Program Delivery Events

Programs are delivered in a variety of formats including, workshops, lectures, seminars, conferences, judging competitions, and county and regional meetings. On-going interactions with poultry producers also occur by telephone and email. Some examples include:

- State FFA Poultry Judging Contest (Spring) and FFA Invitational Poultry Judging Contest (Fall).
- State 4-H Poultry Judging Contest
- State Chicken Barbecue Contest
- National 4-H Poultry and Egg Conference
- National Turkey Barbecue Contest
- 4-H Poultry Knowledge Bowl Contest
- National Avian Bowl
- Egg Processing Workshop, Midwest Poultry Federation Convention
- MN Organic and Grazing Workshop in St. Cloud
- Layer School, organized through Vet Med
- Poultry Ventilation School, organized through Vet Med

- Summer Public Health Institute (educational program organized by the Center for Animal Health and Food Safety and The School of Public Health)
- Elementary Field Day in Lamberton, MN
- Poultry Days at the State Capital
- Adventures in Food and Fiber summer day camp for youth

Extension Scholarship

Newsletters:

- Jacob, J.** 2004. EPA warning about the misuse of pesticides in poultry. Focus on Feathers, BEAM. July.
- Jacob, J.** 2004. Waste not, want not – Update. Focus on Feathers, BEAM. July.
- Jacob, J.** 2004. Arsenic and chicken. Focus on Feathers, BEAM. March.
- Jacob, J.** 2003. Antibiotics in poultry feed – what is the debate about anyway? Focus on Feathers, BEAM. December.
- Jacob, J.** 2003. Research being conducted by USDA-ARS. Focus on Feathers, BEAM. October.
- Jacob, J.** 2003. Waste not, want not – continued. Focus on Feathers, BEAM. October.
- Jacob, J.** 2003. A youthful summer at the University of Minnesota’s Department of Animal Science, Focus on Feathers, BEAM. May.
- Jacob, J.** 2003. Designer foods – Chicken. Focus on Feathers, BEAM. April.
- Jacob, J.** 2003. Waste not, want not – update. Focus on Feathers, BEAM. April.
- Jacob, J.** 2003. Designer foods: egg. Focus on Feathers, BEAM. February.
- Jacob, J.** 2002. Waste not, want not. Focus on Feathers, BEAM. December.
- Jacob, J.** 2002. The 2002 State Fair 4-H Poultry Show. Focus on Feathers, BEAM. October.
- Jacob, J.** 2002. Waste not, Want not. Focus on Feathers, BEAM. December.

Other publications:

- Jacob, J.** 2001. Alternative methods of inducing molt in laying flocks. *In: Poultry* (A Northwestern supply company publication). Pages 1 and 7.