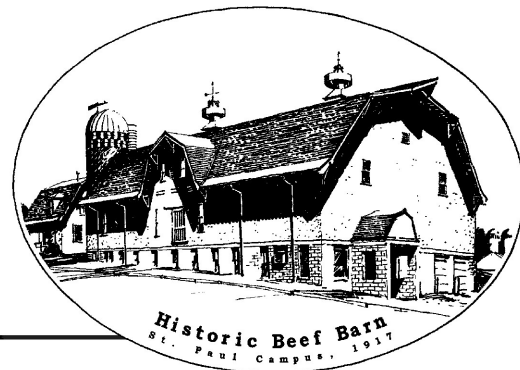


AnSci

Connection



Department of Animal Science, University of Minnesota

Issue 57

January/February 2004

## Notes from the Department Head

By F. Abel Ponce de León

From time to time, I read Minnesota and national newspaper columns regarding the advantages and disadvantages of various animal agricultural systems. Generally, these descriptions tend to be marketing schemes pitching one system to consumers as environmentally friendlier, products taste better and animals are treated more humanely than in other systems.

From a 50,000-mile height view, one can see that none of the above is even reasonable. None of the animal production systems currently in place can rightfully claim they are perfect or even better than others. Almost no scientifically acceptable comparisons among systems have been carried out to assert that one system is better than another. The only truth is that all systems are complex. The reasons for their financial success or failure differ as much as one farm differs from another. The important consideration for all production systems is that they should comply with standards of sustainability (profitable and friendlier to the environment, people and community) and the humane treatment of animals. Taste variations in animal products are influenced by the type of feed animals consume, the physiological state of the animals when slaughtered and their genetics. To some, these assertions might sound too simplistic, but they are true. Things can be this simple. They only become complex when we are pursuing other political objectives, which do not have anything to do with agricultural systems and animal products, but much to do with social engineering and vegetarianism.

Another level of controversy is the "family farm" vs. the "corporate farm" or, expressed in other terms, the small farm vs. the big farm. The questions are several. What is a family farm and what is a corporate farm? What is small and what is big? In trying to answer these questions, one soon finds that answers change through time. What was a family farm in the early 1900's is not the same in the 21st century. Over 50% of the U.S. population was farming in the early 1900's and less than 2% are farming today. While these changes, in the perspective of 100 years, are easily acceptable, it is more difficult to accept the same trends and same proportional changes when they occur in smaller time spans. In essence, through time, family farms have become larger and more mechanized. Is this bad? If you are bound to a roman-

**ANNOUNCING...** AnSci Connection is going "paperless"! Plans are underway to reduce the waste and expense of providing a printed version of the Departmental newsletter. You will find our newsletter posted on the Web at <http://www.ansci.umn.edu/newsletters.htm>. In the future, we will notify you by email that the most recent issue has been posted. The next issue is due out in April. If you do not receive an email message notifying you of the publication, please contact Bonnie Rae (612-624-4995 or [bjrae@umn.edu](mailto:bjrae@umn.edu)).

tic idea of farming, these changes are bad. If you are a realist, these changes are good. In a nutshell, agriculturalists have been successful. We are producing more with less. Yes, today one cow produces more milk than four cows in the 1900's. How could the latter be environmentally detrimental? Less feed is needed and less manure is produced per pound of milk today than in the early 1900's. As a result, we have just about the same fallow acreage as in the 1900's, in spite of having a population that is 6 times larger.

Manure as an environmental contaminant (nutrients, run off and odor) vs. manure as organic fertilizer (nutrient and erosion control) is yet another theme of controversy. As far as I know, and before the advent of chemical fertilizers, bird droppings amassed through centuries in small-uninhabited Pacific Ocean islands were collected from around 1850 to 1930 and transported to Europe and America as prime agricultural fertilizer. Yes, prior to chemical fertilizers, manure was the prime agricultural fertilizer. Animal manure has been and is utilized by almost every culture in the world as fertilizer and fuel. Organic farming is based, among other practices, on the utilization of animal manure. What has changed? Why is manure postulated as an environmental contaminant? What has happened is that as animal farms get larger and urban sprawl gets out of hand, manure is visible and odorous when accumulated in manure lagoons. While solutions have been postulated to overcome odor (biofilters), urban sprawl is not under control and it is encroaching on prime agricultural land. I contend that it is far more beneficial to accumulate manure at one site and then spread it over the land as needed than having animals roaming around and delivering manure in a natural but erratic manner.

*Continued on Page 2*

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**AnSci Connection** is a monthly newsletter of the Department of Animal Science at the University of Minnesota.

If you would like to contribute information (articles, upcoming events, announcements of special achievements, etc.), please contact Bonnie Rae, Editor.

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The next issue of  
**AnSci Connection**  
will be published  
in March.

**The deadline for  
submitting articles  
is 12:00 p.m. on  
February 27.**

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## Notes from the Department Head, continued from Page 1

These are but a few of the controversies playing out within rural and between rural and urban communities. Time and time again, all these issues are part of the dilemmas confronted by agriculture throughout the developed world. Animal Agriculture is at a crossroads, not only in Minnesota but also in our society as a whole. However, Animal Agriculture is clearly a value added economic activity crucial to the revitalization of our rural communities. This is a time for cooperation among all producers (small and big, organic and non-organic, without distinction to species of preference) and not a time to continue arguing about small differences of opinion.

The Minnesota Agri-Growth Council, the University of Minnesota and the Minnesota Department of Agriculture with the support of Minnesota Soybean and Corn Growers Associations have promoted a study to assess the state of animal agriculture in Minnesota. The study conducted by Dr. Brian Buhr (Applied Economics, University of Minnesota) identified that animal agriculture generates \$5.2 billion in direct value added economic activity and over 90,000 direct and indirect jobs. It was also found that while swine, beef and poultry commodities are growing and/or thriving, dairy is at a turning point and an urgent priority. As a result, Governor Tim Pawlenty appointed a Livestock Task Force to provide recommendations for improving Minnesota's competitiveness for livestock production and processing. A significant opportunity to turn the state of animal agriculture around in Minnesota is at our doors. In the spirit of cooperation, and based on the sustainability standards described above, let's take this opportunity to share ideas on how we can best continue the promotion and growth of Animal Agriculture in Minnesota.

## *Graduate Student Profile:* **Luis Espejo**

Luis Espejo was born in Chile and grew up in Venezuela. Luis' parents, Horacio and Ema, his older brother, Horacio, and his dog, Peticles, currently live in Santiago, Chile. After a year of studying engineering in Venezuela, Luis decided to change his major. He returned with his family to Chile and graduated with a degree in Veterinary Medicine from the Universidad de Chile in 2001. In his last year of Veterinary School, Luis became interested in learning more about dairy production. In fact, his thesis was a study on milk quality of dairy herds in Chile.

After receiving his DVM, Luis worked for 2 years at the Official Veterinary Service "Servicio Agrícola y Ganadero", which is part of Chile's Department of Agriculture. There he worked in the epidemiological surveillance section on the Foot and Mouth Disease Prevention Program and on the outbreak of Avian Influenza in Chile. That job gave him the opportunity to learn more about epidemiology; however, he never forgot the area he worked in as a student (dairy production).

While in Veterinary School, Luis met Dr. Jeff Reneau who was speaking at a conference in Chile in 2000. When Dr. Reneau returned to Chile for a sabbatical in 2002, they had the chance to spend more time together and get to know each other. Later, Dr. Reneau highly recommended Luis to Dr. Marcia Endres as a prospective graduate student. From there, Dr. Endres contacted Luis and... here he is! working on his Master's degree in dairy cow management and behavior.

In his free time, Luis likes to go out with his friends and drink a few beers or a glass of red wine while they listen to music. He thinks Minnesota is a beautiful place to live, except for the cold weather. His most important objective while here is to meet people from different cultures... and, of course, earn a degree!!!

## *Congratulations...*

Drs. Scott Fahrenkrug and Scott O'Grady were awarded an AHC Faculty Development grant of \$ 249,000 for "Development of a Transgenic Cystic Fibrosis Pig."

Asia and Jan Lukas welcomed a 5-lb, 12-oz baby girl into the world on November 8, 2003. Klara Lukas is happy and healthy, and has almost doubled her weight since she was born.

Dr. Gerald Shurson received a grant of \$ 17,300 from the Minnesota Corn Research and Promotion Council to help fund "Evaluation of Health Benefits from Feeding New Corn Distiller's Co-Products in Diets for Baby Pigs."

## Minnesota Takes First Place in the National 4-H Avian Bowl Event

The National 4-H Poultry and Egg Conference was held in Louisville, Kentucky, November 19-20, 2003. Ten 4-Hers participated in competitive events held during the conference — and did extremely well. The Avian Bowl team (Gary Borash, Kimberly Pasche, D. William Pasche and Ada Perowitz, coached by Daniel Pasche) took first place, going undefeated in the double-elimination competition! The avian bowl event encourages 4-Hers to expand their knowledge of avian science and to become more proficient in poultry management and related subjects.

The Poultry Judging Team (Kendra Van Beusekom, Megan Campbell, Eric Mattson and Sarah Murphy, coached by Jacquie Jacob) also did very well placing 6th in the market poultry classes (grading ready-to-cook chicken and turkey carcasses), 5th in the market egg classes (grading table eggs for interior and exterior quality) and 10th overall.

The Minnesota participant in the Chicken Barbecue contest (Kelsey Campbell, coached by her father, Mark Campbell) did not place in the top 10, but the competition was very tight this year. The Minnesota participant in the Egg Preparation Demonstration contest (Evan Van Beusekom, coached by Karen Campbell) placed 9th.

**Congratulations to all the Minnesota contestants!**

## BSE Hits the U.S.

*By Dr. Deb Roeber, Department of Animal Science*

As you may already know, a single case of BSE was announced by USDA on December 23, 2003. The case originated in a Washington state dairy cow. Following the announcement, the meat from the cow was recalled in a Class II recall and the rendered product was placed under a Hold Order since it had not been used at the rendering company. Since the initial announcement, USDA has traced the cow, determined to be 6½ years old, back to a herd in Alberta, Canada. The cow was among 74 animals cleared for shipment to the U.S. from Alberta. USDA has announced that 3 facilities are under hold orders during the epidemiological investigation. The first facility is the index herd; the second is a nearby facility that has the index cow's recently born bull calf; the third facility is a dairy operation in Mattawa where one animal from the original herd of 82 is located. During the investigation, USDA announced additional safeguards to bolster the U.S. protection system against BSE and to further protect public health. These points include:

- Downer cattle and specified risk material and tissues will immediately be banned from the human food chain.
- Skull, brain, trigeminal ganglia, eyes, vertebral column, spinal cord and dorsal root ganglia of cattle over 30 months of age and a portion of the small intestine of cattle of all ages are now considered specified risk materials and are prohibited from entering the human food supply.
- Any normal cattle, if they are targeted for BSE surveillance testing at slaughter, will no longer be marked as "inspected and passed" until confirmation is received that the animals have, in fact, tested negative for BSE.
- Dorsal root ganglia, clusters of nerve cells connected to the spinal cord along the vertebrae column, in addition to already-prohibited spinal cord tissue, will be prohibited in products labeled as "meat".
- The air-injection stunning of cattle will be prohibited.

- Mechanically separated meat in human food will be prohibited.

- A verifiable system of national animal identification will be immediately implemented.

Please feel free to contact me at droeber@umn.edu or 612.624.2405 with questions about BSE, the investigation, or changes in USDA regulations; if I can't provide an answer, I will be sure to point you in the right direction. Also, there is an abundance of information available on the Web; see <http://www.bseinfo.org> or <http://usda.gov>.

## Attendance Reaches Nearly 400 at 2004 Minnesota Dairy Days

Minnesota Dairy Days-2004 attracted nearly 400 dairy producers and industry representatives across 8 locations in Minnesota (Slayton, Winsted, Goodhue, Lewiston, McIntosh, Perham, Melrose and Little Falls) during the first 2 weeks of January. This year's Dairy Days was a joint educational program and forum sponsored by the University of Minnesota and the Minnesota Milk Producers Association. Educational presentations at Dairy Days focused on University research updates as well as provided current information on raising forages, forage quality, reproduction management, and the culling of dairy cattle. Minnesota Milk Producers Association conducted a dairy producers forum at each location to solicit ideas for enhancing and growing the dairy industry along with suggestions for new research and educational activities needed by dairy producers.

Speakers at Minnesota Dairy Days-2004 included Dennis Johnson (West Central ROC), Jim Linn (Department of Animal Science), Paul Peterson (Department of Agronomy and Plant Genetics), Jim Salfer and Chuck Schwartau (Regional Dairy Extension Educators), Carl Dahlen (Northwest ROC), Gary Neubauer (Pfizer Animal Health) and Bob Lefebvre (Minnesota Milk Producers Association).

## Dr. Endres Conducts Research Project in Canada

In October and November, Dr. Marcia Endres was nowhere to be found in Haecker Hall. She was invited to Canada as a visiting professor at the University of British Columbia. Marcia was there for about a month working on a research project on animal behavior. Most of the time she was in the Dairy Education and Research Centre in Agassiz, a small town about 2 hours east of Vancouver in the Fraser Valley. She also spent some time in the Animal Science Department building in Vancouver. The study investigated the effect of feedline barrier (post and rail or headlocks) on the feeding and social behavior of dairy cows. Results are forthcoming.

At the 250-cow University dairy in Agassiz, Marcia not only watched cow video recordings for hours each day and worked on other tasks related to her project along with other projects, but also brought cows to the parlor early morning and afternoon. The gates, she says "look like a maze". She now knows how it feels to be a cow pusher. Most cows moved easily, but one special cow — nicknamed Rosa by the students — was tame to the point of not wanting to move... Marcia could even sit on her. Peter, one the milkers, told her "just poke her slightly with a pen." That was the only thing that worked (of course, Marcia did not hit her hard nor did she use an electric prod... those are no-nos). Marcia said she enjoyed working with the research group at UBC... "every-one there is really fun."

## Coming Up in March: Turkey Research Review

The 2004 Turkey Research Review will be held on March 16, 2004, at River Centre in St. Paul. The program will feature results of the most current turkey research being conducted at the University of Minnesota in the areas of health, nutrition and production of turkeys. Producers, breeders and growout farm managers, veterinarians, nutritionists, and other interested individuals are encouraged to attend. The Turkey Research Review, co-sponsored by the Minnesota Turkey Research and Promotion Council, and the University of Minnesota Extension Service, will provide an excellent opportunity to meet with University of Minnesota researchers and ask detailed questions about past and current research. For further information, contact Sally Noll (612.624.4928 or nollx001@umn.edu), or David Halvorson (612.625.5292 or halv002@umn.edu).

### Program Topics and Speakers:

- Avian pneumovirus (APV) infection model - *Dr. Dave Halvorson*
- Epidemiology, modes of transmission, and investigations on APV persistence in turkey barns - *Dr. K.V. Nagaraja*
- Development of immortal turkey turbinata cell line for the propagation of high titer avian pneumovirus - *Dr. Doug Foster*
- Effect of routes of vaccination on immunity against avian pneumovirus infection - *Dr. Sagar Goyal*
- Protective immune mechanisms against avian pneumovirus - *Dr. Jagdev Sharma*
- Efficacy and safety of a goose avian pneumovirus isolate as vaccine for turkeys - *Dr. Dave Halvorson*
- Strategies for maximizing breast meat yield of turkeys: DDGs and amino acids - *Dr. Sally Noll*
- Water and nitrogen movement through turkey litter piles - *Dr. John Moncrief*
- Influence of photoperiod and wavelength on breeder hen reproductive performance - *Dr. M.E. El Halawani*
- Identification of genes involved in the immune response to avian respiratory pathogens - *Dr. V. Kapur*

## Turkey School I Emphasizes Health Care Practices

Turkey School I: Health of Turkeys, scheduled for February 2-4, 2004, is an intensive 2-day workshop featuring lecture and hands-on laboratory experience. The workshop, designed for turkey producers, flock managers, farm supervisors and veterinarians, emphasizes health care practices for commercial turkey production and will cover necropsy techniques, blood sampling, brooding and growout diseases, disease control, and biosecurity programs. The instructors represent over one century of experience in turkey health: Carl Heeder, Brian McComb and Don Roepke of Jennie-O Turkey Store; Dave Halvorson, Jacquie Jacob, Sally Noll and Andre Ziegler of the University of Minnesota; Dale Lauer, Minnesota Board of Animal Health; Gorica Spasojevic, Willmar Poultry Company; Jim Trites, Elanco; Helen Wojcinski, Hybrid; and private consultant M.C. Kumar.

Turkey School I will offer 14 continuing education credits to participants. The School, presented by the Department of Animal Science, College of Agricultural, Food and Environmental Sciences, and the Department of Veterinary Pathobiology, College of Veterinary Medicine, will be held on the University of Minnesota St. Paul campus. For further information or to register, please call Outreach Programs at 800.380.8636 or 612-624-3434.

## Animal Science Mourns the Loss of Professor Emeritus Dr. Robert M. Jordan

The Department of Animal Science lost a respected former professor and friend with the unexpected death of Dr. Robert M. Jordan at his home near Stillwater, Minnesota, on Friday, December 19, 2003.

Dr. Jordan was nationally and internationally known for his research and expertise in the feeding of lambs and sheep, and in later years was recognized for his work with horses and Angora goats. During his tenure at the University of Minnesota, he taught sheep production in the Department of Animal Science, developed a course in horse production and served as the Department's horse extension specialist, coached the Minnesota Livestock Judging Team for 14 years, and for 32 years served as superintendent of the Minnesota State Fair Sheep Show. Jordan authored over 600 articles, wrote chapters in 6 books, and was invited to speak in 16 states and Canada on various aspects of sheep production. Before retiring from the University in 1990, after 36 years of dedicated service, Jordan became an expert on fallow and red deer farming, and was frequently consulted on various aspects of deer nutrition and management.

Dr. Jordan's enthusiasm and expertise will be missed by his many friends and colleagues in the Department of Animal Science and the Minnesota livestock industry.

A *Robert M. Jordan Memorial Fund* has been established at the University of Minnesota. For further information, please contact the Department of Animal Science (Telephone: 612.624.9752; Email: mhill@umn.edu).

## Dr. Benjamin Pomeroy, Professor Emeritus, Dies at 92

University of Minnesota professor emeritus Dr. Ben Pomeroy passed away on January 16, 2004, at the age of 92 after complications from heart valve replacement surgery. Dr. Pomeroy, who retired in 1981 from the Department of Veterinary and Biomedical Sciences in the College of Veterinary Medicine, was a leader in veterinary medicine, poultry production and food safety.

Dr. Pomeroy's 47-year University career began as a veterinary diagnostician in the Extension division where he became interested in avian diseases. During his tenure, he became professor and chairman of the Department of Veterinary Microbiology, served as assistant dean and acting dean, published over 450 articles, and advised 36 M.S. and 31 Ph.D. candidates. He took on many leadership roles within the University and the state, as well as provided consultative services to those in academia, government and industry. Pomeroy had a passion for lobbying legislators on behalf of veterinary medicine, agriculture, animal health, and the University of Minnesota.

Thanks to his work with the University of Minnesota's avian disease program, Dr. Pomeroy helped to change the face of avian production. His research laid the foundation for the control and eradication of several poultry diseases and played an important role in avian medicine. Commercial poultry producers can attribute a great deal of their present-day success to his lifetime accomplishments. Dr. Pomeroy will be remembered for his dedication to his work and contributions to the poultry industry.

# Upcoming Animal Science Seminars -

## Mondays in Room 365 Haecker Hall

- Feb 2 Jie Xu - Evaluation of different mapping methods for single QTL analysis, and Jeff Knott - Evaluation of health benefits from feeding new corn distiller's co-products in diets for baby pigs (20 min each)
- Feb 9 Jamie Larson (20 min) - Estrous synchronization of suckled beef cows using GnRH, prostaglandin, and progesterone (CIDR): A multi-location study, and Beka Gill (20 min) - Title TBA
- Feb 16 TBA
- Feb 23 Thomas Bakken and Jeffrey Griggs (20 min each) - Topics TBA
- Mar 1 Joanna (Asia) Lukas and Rud Wasson (20 min each) - Topics TBA
- Mar 8 Chikako Abe and Si-Hung Wu (20 min each) - Topics TBA
- Mar 15 NO SEMINAR (Spring Break)



WinterFest, the Department's annual winter social, was held on December 16, 2003. In the photo above (left to right), Kay Loseth, Dana Souther and Jack Otis gather for conversation.

## CALENDAR OF EVENTS



**Feb 2-4: Turkey School 1: Health of Turkeys** - U of M St. Paul Campus. See article on Page 4.

### Feb 4-7 & 10-14: 2004 Minnesota Cow-Calf Days -

Feb 4 at Staples (10 am-3 pm) & Bagley (6 pm-10 pm); Feb 5 at Greenbush (6 pm-10 pm); Feb 6 at Grand Rapids (6 pm-10 pm); Feb 7 at Isle (10 am-3 pm); Feb 10 at Glenwood (10 am-3 pm); Feb 11 at Pipestone (10 am-3 pm); Feb 12 at Waterville (10 am-3 pm) & Rochester (6 pm-10 pm); Feb 14 at Rushford/Caledonia (10 am-3 pm)  
 Visit the 2004 MN Cow-Calf Days Web site at <http://www.ansci.umn.edu/beef/cow-calfdays/cow-calf2004.htm> or contact Cliff Lamb at 218-327-4345.

**Feb 8: Gopher Dairy Club Annual Banquet** - North Star Ballroom, St. Paul Campus Student Center. Contact Erik Nelson by email: [nels2051@umn.edu](mailto:nels2051@umn.edu).

**Feb 16: Carver County Dairy Expo & 4-State Dairy Conference** - Central High School, Norwood Young America. Contact Norma at 952-442-4496.

**Feb 26-28: Upper Midwest Organic Farming Conference** - LaCrosse Center, LaCrosse, WI. Contact: Midwest Organic & Sustainable Education Service at 715-772-3153.

**Mar 15-17: Midwest ADSA/ASAS Annual Meeting** - Polk County Convention Center, Des Moines, IA. Contact the Business Office at 217-356-3182 or see <http://www.asas.org/midwest/2004/>.

**Mar 16: Turkey Research Review** - River Centre, St. Paul. See article on Page 4.

## Tech Tips

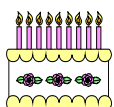
By Chris Buzzetta

### Bytes, Kilobytes, and Gigabytes! Oh My!

Truly, what is a gigabyte? What is a kilobyte or even a byte? We hear these often when looking at computers. Kilobytes (KB), megabytes (MB), and gigabytes (GB) have entered our vocabularies in this era of technology. Many of us have a basic understanding that bytes refer to memory and storage capabilities of our computers and storage media. We also know the size relationships between the different units - thousands, millions, billions. However, as we venture into the gigabyte and terabyte realms, we begin to see a problem. You may have already started to notice this in your newer computers.

When we moved over to hard drives in the gigabyte realm, we began to notice a curious phenomenon. As the hard drive grew in size - 20GB, 40GB, 120GB, etc. - we kept losing larger and larger chunks of the hard drive. If you go to your Windows Explorer and look at the properties of your hard drive, it will tell you how much space is used, how much is free, and total space. In a 40GB drive, we seemed to be missing about 2.7GB from the total space - 37.3GB instead of 40GB. This soon became 5.5GB missing from an 80GB hard drive, and 8.2GB missing from a 120GB hard drive. This phenomenon will become even worse as we approach one terabyte (68.7GB missing) and one petabyte (686.8GB missing). So, what is happening to our drive space? Who is the thief? Are the computer companies cheating us? Do I have a case of false advertisement?

*Continued on Page 6*



## Happy Birthday!

### JANUARY

- 3 - Jennifer Hartung
- 7 - Byung-Whi Kong
- 12 - Alfredo DiCostanzo
- 21 - Zsofia Sandor
- 22 - Jon Wheaton
- 28 - Ernest Kamanga-Sollo
- Jacqueline Lee
- 31 - Mohamed El Halawani

### FEBRUARY

- 1 - Claudia Ariza-Nieto
- 2 - Hugh Chester-Jones
- 4 - Michael White
- 7 - Nicolas Di Lorenzo
- 8 - Scott Fahrenkrug
- 10 - Michael Olin
- 15 - Chikako Abe
- Jerry Hawton
- Gaofeng He
- 19 - John Garbe
- 21 - Samuel Baidoo
- 25 - Rebeka Gill
- Bradley Heins
- 26 - Hans-Joachim Jung
- 28 - Jason Lundén

