

NE 1042 Technical Committee Meeting
Department of Animal Science
Michigan State University
October 8-9, 2010
Meeting Minutes

Friday, October 8, 2010

I. The meeting was called to order at 8:30 am by Senior Executive Sheila Scheideler,

The following members were present and all briefly introduced themselves:

Heng Wei Chen, Purdue, Mike Darre, Univ of Connecticut; Angela Green, Univ of Illinois; Hong Li, Iowa State Univ; Darrin Karcher, Michigan State Univ; Ken Koelkebeck, Univ of Illinois; Roger Lein, Auburn University; Sally Noll, Univ of Minnesota; Ciro Ruiz, Texas A&M, Sheila Scheideler, Univ of Nebraska; and Janice Swanson, Michigan State Univ. On the conference call was Richard Reynnells, USDA and Cameron Faustman, Univ of Connecticut.

Sheila and the other members of the group welcomed Darrin, Roger and Ciro as new members of the committee stated that our expectations for this meeting were to come away with more collaborative opportunities, and to seek out and cooperate on new sources of funding.

II. The minutes of the October 9-10, 2009 meeting in Mystic, CT were approved as distributed.

III. Overview of the project: Ken Koelkebeck distributed some copies of the approved multistate project proposal for our five year project. Sheila suggested we look at the major headings of the project and focus on how we will accomplish the cooperative aspects stated. Ken said that although we did not get funded for the special grant last year, he will help put the grant together again this year to try to obtain the \$15,000 that could go toward funding travel and other meeting expenses of the project.

Cameron Faustman, our new Administrative Advisor called in from CT. He said that after reading our project proposal, he felt strongly that we were poised to answer many of the animal welfare issues being raised about the poultry industry. He asked if we have we ever tried to get a representative from the fast food industry on our committee, especially since they have been driven to make changes influenced by the animal welfare movement. Janice Swanson has been on committees with members of the food industry. She said she will be at a meeting coming up with some of these people and would ask the McDonalds person if he would be willing to be a part of our committee. Cameron also said we should look at the AFRI programs and see if we can get some funding for some aspects of our multi-state project. He noted that this past year the AFRI program was very focused on five areas. However, there will be less funding for this year compared to last year. He said that integration of Research, Education, and Outreach are the focus of many of these projects. He noted that very few have

an education component. Many NSF and NIH grants have added an education component. He said that federal programs are moving toward outreach and education as major components on their funded projects. For example a course on environmental stressors in poultry, where one person develops a software program that is then used by members of the committee might have a better chance for funding. However, we are still waiting to find out what would be funded under this component. Janice said they currently have an online course with an animal welfare module which might be integrated into a multi-institutional project.

Richard Reynnells, who also called in, stated that Candace Crony at Ohio State got a challenge grant to teach bio-ethics, so the precedent has been set.

Cameron said he feels that in spite of the economy that formula funds for multi-state projects are pretty safe from being robbed to fund the competitive grants and that the competitive grants must grow on their own without hurting the formula funds. Cameron said we should contact John Wraith about the \$15,000 grant. After the meeting, Cameron provided the following: While I recommended Jon Wraith, you might be better served by following up first with Dan Rossi (see contact info at <http://www.nera.umd.edu/aboutNera/officeED.cfm>); he is the exec director of the Northeast Experiment Station directors group. He's been around a while and would have solid advice on a submission for recognition.

Sheila stated that food safety also seems to be a point of emphasis and one we should look into as a group, since several are interested in this area.

IV. Committee Business:

1. We need to find a time and place that is suitable to meet next year.
2. We need to elect a new junior executive.
3. NIMMS Report is due 60 days after the meeting. Ken volunteered to put together the NIMMS report again this year. Each member must give Ken a paragraph or two summarizing their station report before November 15, 2010. He suggested we use MS Word or Rich-Text-Format when submitting the electronic copy to him. Ken will also put together the hard copy of the full annual report. One copy goes to each experiment station director and one to each person on the committee.
4. The nominating committee is Sheila, Angela and Sally.

After some discussion, Angela and Ken agreed to hold next year's meeting at the University of Illinois tentatively on October 21- 22, 2010.

Janice Swanson said that the registration fee for this meeting is \$40/person. She would take cash or check and would provide receipts.

The group took a short break at about 10:05 am.

During the break the nominating committee met and reported they nominated Darrin Karcher as the new Junior Executive office. He was elected by acclamation.

The officers for 2011 are:

Sheila Scheideler - Chair
Mike Darre- Secretary
Angela Green – Senior Executive
Darrin Karcher – Junior Executive

V. Station Reports:

CT- Mike Darre said they found some interesting results with recording vocalizations at a commercial layer farm where they had several different ages of both brown and white egg layers. Using the Hidden Markov Model they identified stress vocalizations due to the human induced stressors of walking past the cages, yelling into the cages and reaching into the cage to handling the birds. They not only indentified specific vocalizations for each of these stressors, but also could differentiate between brown and white egg laying strains of chickens.

IA – Hong Li reported about research trials designed to mitigate ammonia emission from high-rise laying houses through dietary manipulation. They looked at DDGS and EcoCal as dietary supplements to help reduce ammonia levels. EcoCal did a pretty good job of reducing ammonia, but increased hydrogen sulfide gas, although only at the mg level.

He also discussed the aviary system in which they are monitoring for indoor air quality (gaseous and particulate concentrations), thermal conditions (temperature and RH), air emissions, energy use, welfare, microbiological quality, and production performance. Since this may be one of the alternative housing types for laying hens in the future, collection of baseline information is essential for U.S. production conditions.

IL – Ken Koelkebeck and Angela Green gave reports on studying the effect of low energy diets on the Hyline W-36 hen. They looked at 5 different density diets. As expected, low density diets resulted in major drops in production. In another reported study, the looked at using spray-dried bovine plasma fed to W-98 hens during heat stress. This apparently had a positive effect on immunity of other animals, and is also a source of supplemental proteins.

Angela is studying preference chamber use with chickens and part of the preliminary work is to study what type of doors; plexiglass, chain, or freezer strips work the best between the parts of the chambers. She also studied the prevalence of salmonella and campylobacter under different housing conditions and types. They want to find environmental variables that exclude certain microbial types. Initial results indicate that how manure is handled is more important than the type of housing used.

NE - Sheila Scheideler did some feeding trials using DDG in layers for in hopes of reducing nitrogen in the manure. She also reported on an undergrad project on feather loss in open verses closed sided cages, and found less loss on closed sided cages. Another project she reported on is studying the effect of environmental enrichments in turkey pens. She is also looking at intervention strategies to lower the bacterial count and improve food safety of eggs laid in free range and aviary and cage systems. In addition they are studying keel bone deformation in laying hens in these systems. Another project is designed to determine the effects of exercise on the welfare and production of turkeys.

AL- Roger Lien said that he has been doing various poultry lighting studies one of which is looking into the effects of increasing-dim vs. bright and split –dark bright lighting on broilers. In general he reported that shorter days and dimmer light adversely affects breast meat yield.

IN- Hengwei Cheng reported on his studies of heat stress in laying hens. He has been studying KGB (kind gentle birds) a low social stress strain compared to the DeKalb XL high social stress strain. He noted that the KGB strain birds were a bit better at coping with heat stress. Another project is on oxidative damage in tissue and looking at the effect of the addition of different types of anti-oxidants. Agrado is a one test substance that shows promise. Other work is being done on prenatal modification of serotonin for controlling aggression in chickens and looking at pain resulting from beak trimming by comparing infrared vs. the traditional hot blade method.

MI - Courtney Daigle, a graduate student, is using wireless body mounted sensor technology to monitor movement within pens. They are using several cameras in each pen and the motion sensors on the birds to determine how much they move and how fast they go. They want to use the data to relate to hen behavior, health and productivity.

Darrin Karcher is studying the growth rate of broilers along with femur growth to reduce leg problems. His aim is to slow down growth and look at bone integrity. However, unexpectedly, slow growth made bones easier to fracture. There is more to study on this project.

Janice Swanson reported about the coalition for sustainable egg supply (McDonalds study) that looked at different housing systems and how they affected health and well being, economics,

etc. She is working with Joy Mench at UC-Davis, Hong Wei Xin at IA State, and people at USDA-ARS on this project.

She stated that they were hoping to build a new facility and MSU with enriched colony cages, an aviary system and conventional cages for testing welfare aspects of production in the same location at the same time.

A short discussion of the possibility that cervical dislocation may be deemed an inhumane method of killing chickens ensued after one of the graduate students reported on one of her behavior studies and nictitating membrane reflexes still being active after the procedure. Sally Noll asked Mike Darre to write a paragraph on cervical dislocation and pain for her to submit to FASS.

MN - Sally Noll is conducting research on the role of gut condition in light weight turkey syndrome. She reported that there was quite a bit of variation between different growing farms. However at this point they have not reached a conclusion about all the causative factors.

Another study was designed to characterize modified corn DDGS, oil removed, and to compare feeding the modified DDGS and separated oil on market fed turkeys. Conventional feed grade DDGS used to be about 10-12% fat, now only about 7-8% fat left because of the oil removal. This changes the energy profile of the DDGS and the diet.

TX - Ciro Ruiz is using hypobaric chambers to determine if arginine and vitamin E helps to reduce hypertension that results from low oxygen pressure environments. In particular they are studying NO (nitrous oxide) depletion at the cellular level. In addition, they are looking at the effect of Arg and Vita E supplementation on the immune response. They are also monitoring the levels of salmonella and coccidiosis relative to Arg and Vita E levels. Another study was designed to determine broiler bone strength with increased exercise by changing the distance between the feeders and waterers to 1, 3 and 6 meters. Three meters appeared to have the greatest positive effect so far.

The meeting adjourned for the day at 4:46 pm. Sheila Scheideler had to leave for home and thanked all for attending. The rest of the group met at Pizza House Restaurant for dinner. All agreed that this was an excellent choice for dinner and conversation, with both good food and convivial atmosphere.

Saturday, October 9, 2010 7:00 AM

The group had breakfast at the Kellogg Center, which again, was an excellent meal in a private setting that allowed good discussions between members of the committee.

The meeting was re-convened at 8:45 am in the Animal Science meeting room.

VI. The major business for the morning is the coordination of projects between states and identifying sources of funding in the major project areas listed below.

1. Poultry production systems to improve energy and resource use efficiency. **Who can take lead on these different projects?** Below are summaries of basic ideas and what stations will provide input.

A. Ventilation/Thermal Environment/Air Quality:

1) General work on ventilation, thermal environment and air quality

Brian Fairchild – GA

Darrin and Janice – MSU

Angela and Ken – IL

Hang Wei Cheng IN + Mike Darre CT + MSU + AL + IL Heat and Vocal

Roger Lien – AL

Ciro Ruiz – TX

Hong Li – DE (Hong will join U of DE in December)

Hongwei Xin – IA

2) Heat Stress and Vocalizations,

Purdue, MN, CT, MSU + GA tech + GA (Stewart Gage)

Auburn, IL, TX, IA

Also look at other aspects of the thermal environment on poultry: Core Temp, Background noise, Thermal Imaging, Species Differences, Current Avail Temp,

B. Nutrition and Air Quality (Ammonia and Particulate)

DE, IA, MD, MN, MS, Purdue, NE

Some in this group will also look at water consumption relative to the environment.

C. Microbial Environment /Food Safety

Production Systems

Environmental mgmt.

Diet/Feed

Other Stressors

IL, CT, MN, TX, MI, IA

D. Lighting

AL, CT, IL, MN, TX, CA, IA – Market Turkeys, LED, Lighting Schedules, Gut/Immune function, Lighting Preferences for Cage layers, Broilers, Microbial Community, Physiological.

E. Identifying Stressors:

AL, MSU, GA, CA, NE, MN, IN(ARS), IL, CT, NC, IA

Some of the aspects that will be included in this type of proposal will be to look at production systems, fearfulness under different environmental conditions, H/L ratio, bone quality, joint health, pain, behavior, corticosterone in eggs, blood Elisa studies and how this all relates back to behavior. Also try to use vocalizations to monitor stress, predict stressors, ID vocalizations with behavior and for call recognition. For pain research could we use gate scoring or the latency to lie down? What about the use of analgesics in feed for pain? There are new methods to monitor blood hormones for pain recognition that could be incorporated into new research proposals, such as Substance P. Other physical methods are the use of thermal imaging to identify possible pain, as well as measuring inflammation through its heat signature.

F. Diet Management:

1. Energy Availability

MN, NE, MD, MI, DE, IL, IN, TX, IA

Some of the aspects of research in diet manipulation and management would include: Diet and Air Quality, Production Systems, and Diet and Microbial Community, Stressors and Immunity, Vitamin E and other antioxidants and stress, DDGS, Bone health.

Janice said that we should look into the CAP grants. Possibly working with the AEB/UEP and getting a multistate approach with a focus on laying hens.

VII. The group thanked Janice Swanson for all her effort and planning in hosting the meeting. The formal part of the Technical Committee Meeting adjourned at 10:04 AM with a reminder that next years meeting at Illinois will probably be on OCT 21-22, 2011.

Many of the group also were given a tour of the new environmental chambers, currently being used for dairy cattle research and the poultry farm where we visited the remote sensing/motion sensing facility where the broiler work was being conducted. We also saw the mink research facility, but were not provided with mink coats as we left!!

Respectfully submitted by Michael J. Darre, Secretary