

# Atlantic Poultry Research Institute



NEWSLETTER  
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## Chairman's Report

- Dr. Derek M. Anderson

You must all be getting tired of my constant reminder about the need for research funds and support for APRI. It is so important that you will need to bear with me. Funding needs for APRI fall into 2 major categories.

First are funds for research projects. With these funds, the industry contributions directly multiply to support larger projects. For example, \$5000.00 of industry support gets us \$25,000.00 of total project funding with some research funders. That multiplier works with industry support both financially and in principle. Without industry funds, we cannot access these research dollars.

Second are funds for the operations of APRI. These funds are support for the mechanism that ensures industry/researchers communications as well as the foundation upon which research can be undertaken. Tasks include clerical, financial and office coordination activities in support of research. The freedom from these activities assists researchers to focus on research and therefore be more productive. Both categories of funds are critical and in the first case, help to address regional research priorities derived from priority lists developed by the regional industry. Many of the regional or Atlantic province issues may not make the national priorities list and have little chance of attracting national funder attention.

Your contribution is required to shorten the process of priority setting to research outcome where needed. I hope we can inspire all sectors within poultry to be supportive.



## APRI Profile on Dr. Bruce Rathgeber

Bruce originally hails from Saskatchewan and has recently joined AAFC stationed at the NSAC as research scientist (in February 06). Bruce graduated from the University of Saskatchewan (87) with a BSA. Bruce returned to school and graduated from the University of Arkansas (94) with an MSc. In 2002, he then graduated from the U of S with his Phd.

Dr. Rathgeber is a food scientist with experience primarily in the area of poultry products research. Currently, he is investigating the use of yeast beta glucans in broiler diets to reduce the incidence of necrotic enteritis. Also, he has experience in using dietary ingredients in poultry diets to influence bird performance and product quality.

Bruce resides in Bible Hill with his wife of 17 years, Cheryl, and their 4 children, Magen (14), Mackenzie (11), Janessa (9), Jonah (4) and their pets, which include some fish, a water dragon, a dog and a cat. In the past, Bruce has also raised parrots. When he manages to find some spare time, he enjoys landscaping and gardening in his yard. Time is also spent biking, playing volleyball, skiing and camping.

## NSAC Poultry Professor Update

Competition for the NSAC poultry professor position has closed. Candidates were interviewed by the committee before Christmas. The NSAC selection committee consisted of Tarjei Tennessen, Steve Russell, Leslie MacLaren, Carla Hepburn and Bruce Rathgeber. Selection by the committee has been made and negotiations are underway with the chosen candidate.

Since the last reporting of published fact sheets, we have produced the following:

|                |          |  |
|----------------|----------|--|
| FACTSHEET # 23 | (Oct 05) | Primary grain source for heavy hen turkeys   |
| FACTSHEET # 24 | (Feb 06) | Plant-based diets for heavy hen turkeys  |
| FACTSHEET # 25 | (Feb 06) | Feeding turkeys a highly digestible supplement during preslaughter feed withdrawal |

These and other fact sheets are available at [www.nsac.ca/apri/](http://www.nsac.ca/apri/) or at the APRI office \*

## Upcoming

- Improving Broiler Chickens Meat Quality Through Nutritional Management of Stress
- Growth Performance and Muscle Protein Turnover of Three Broiler Chicken Strains Fed Supplemental Tryptophan
- Growth Performance and Behaviour of Toe-Trimmed Broilers
- Triticale for Broiler Chickens

## Ongoing Research Projects – Trial Component - Completed

- Yeast Beta-Glucan for Layers
- Yeast Beta-Glucan for Chickens
- Improving Shell Quality for Late-Cycle Laying Hens (Bioplex)
- Blueberry By-Product to Improve Broiler Health & Meat Quality
- Alternatives to Meat Products for Broiler Turkeys

## Trials - in Progress

- Development and evaluation of value-added poultry feed from apple by-products
- Prevention of necrotic enteritis in broilers with beta glucan and mannan extracts
- Local alternative calcium sources for laying hens
- Evaluation of marine by-products for broiler chickens
- Alternatives to antibiotics for broiler turkeys (Biomos trials complete, Lysozyme trials in progress)

## Networking

Bruce Rathgeber had made several trips again in 2006. In January, Bruce was accompanied by three undergraduates (Emily Fraser, Kari Isenor and Tara McKinnon) and three graduate students (Krista, Michelle and Natasha), all of whom gave scientific presentations at the International Poultry Scientific Forum in Atlanta, GA. This was just before the trade show held there every year. In the spring Bruce traveled to as many annual meetings of marketing boards in the region as possible. He also attended a workshop conducted by the Canadian Poultry Research Council (CPRC) in Agassiz, BC in June. The workshop brought together researchers from across the country to discuss poultry research priorities in the area of poultry welfare. In July, Bruce was again accompanied by several students (Krista, Michelle, Natasha, Clinton, and Rowena) as well as Janice who all presented at the Poultry Science Association annual meeting in Edmonton AB. Each student again gave an oral presentation. Janice and Michelle both presented posters. Last August, Janice gave two poster presentations at The Canadian Society of Animal Science annual meeting was held in conjunction with the Canadian Society of Agronomy and the Canadian Society of Horticulture in Halifax, NS. The NSAC poultry graduate students were very instrumental in making this conference a success as they were part of the host committee's efforts on the ground. In September, Bruce traveled to the University of Montreal's campus at St. Hyacinth for another Canadian Poultry Research Council workshop. This time the focus of the workshop was poultry research in food safety. This was a great opportunity to build networks among poultry researchers with a common focus.



## Atlantic Poultry Research Centre - Construction Update

**- Dr. Bruce Rathgeber**

You may notice we are no longer calling the new research facilities The Atlantic Canadian Centres for Poultry Research (ACCPR), a new facility name – Atlantic Poultry Research Centre (APRC) was chosen by the NSAC recently. The main structure of the main building was built over the last year. Equipment is soon to be installed and we are making plans for functionality this coming spring. The occupancy date has been set back from mid December to mid March, but we are very happy at the pace of construction. Plans for renewal of the NSAC feed mill facilities are back on the table and we are anticipating construction activity to resume in spring of 2007 for completion of that aspect of the project. Plans for the new NSAC hatchery will be developed over the next number of months. We will keep the Atlantic poultry industry posted for ceremonies involving this project including the grand opening of the main research facility which we hope all will be available to attend. Please watch for notices in the months to come.

### **Additional Developments**

The newly renovated area in the Haley Institute for value-added further processed product has been in use for a number of months now. This area became a licensed Meat Processing Plant in January of this year. Additionally, a level two microbiology lab for culturing organisms pathogenic to humans was finished this fall. This laboratory is equipped to culture and identify micro-organisms of importance to studying the microbiological safety of foods. This will allow researchers at the NSAC to conduct research in one of the poultry industry's high priority areas, food safety.

### **Poultry Science Activities**

The current poultry research facilities continue to be an area of constant activity on the NSAC campus. There were five undergraduates conducting research with poultry or poultry products this last fall semester as part of the requirements for the completion of their Bachelors of Science in Agriculture. These students included Krista Simonson (New Brunswick), and Sharlene Rowe (Jamaica) (who both stayed on this summer to work as summer students in the poultry unit), Sarah Haines (New Brunswick), Brian Joe (Nova Scotia) and Lindsey Steele (Nova Scotia).

Currently, there are six students enrolled in the Master of Science program with poultry related projects. Natasha McKillop is evaluating the benefits of feeding a purified carbohydrate from the cell wall of yeast on bone mineralization and egg shell quality for laying hens. Krista Budgell is feeding a combination of currently available products derived yeast to broiler chickens as an alternative to antibiotics for controlling necrotic enteritis. Clinton Ronalds is investigating the effects of bioactive molecules from the peels of apples on the health and meat quality of broiler chickens. Michelle Daniel is feeding laying hens various forms of waste from the shellfish industry to laying hens to determine the impact on product quality and appearance. Alicia Cooper is evaluating the bioavailability of various forms of copper in broiler chicken feeding trials. Rowena Currie is investigating the role of enzyme activity in the muscle of birds after death on the eating quality of broiler breast meat.



## Atlantic Poultry Conference Reminder

The Atlantic Poultry Conference will be held in Greenwich, NS in February. AgraPoint International, members of the Atlantic poultry industry and APRI has once again joined forces to coordinate this important event. We look forward to seeing you on February 15<sup>th</sup> and 16<sup>th</sup> at the Old Orchard Inn. For more information, please check their website at <http://www.agrapoint.ca/APC2007.html>



### And the Awards Go To . . .

**Clinton Ronalds**, a graduate student under the supervision of Dr. Bruce Rathgeber and Dr. Vasantha Rupasinghe, was awarded a **Certificate of Excellence** on July 19<sup>th</sup>, 2006 for his presentation at the Poultry Science Association annual meeting in Edmonton, Alberta. The work presented in the Products and Processing category and was entitled "Apple By-products as Poultry Feed Ingredients". The project was conducted to evaluate the influence of dehydrated apple peel in the finisher diet on growth and feed efficiency. Results revealed that the inclusion of dehydrated apple skin powder up to 15% of the diet did not significantly influence the broilers' growth or feed efficiency compared to control birds. Future studies will include the evaluation of incorporation of apple phenolics in broiler tissues and their influence on the oxidation of lipids found in the breast and thigh tissue.

**Michelle Daniel** a graduate student under the supervision of Dr. Anderson was awarded **second place** in the poster presentations in the graduate student research presentation at the Annual meeting of the Canadian Society of Animal Science held in Halifax August 1-4, 2006. The work presented

was entitled "Evaluating the effects of Carophyll Red®, Carophyll Yellow® and crab meal as

dietary carotenoids on egg yolk pigmentation in laying hens" and was a further development on a project initiated in 2005 by undergraduate student Tara MacKinnon. This project was conducted to investigate dietary carotenoid sources on egg yolk pigmentation and incorporated synthetic and natural pigments in laying hen diets. The addition of Carophyll Red®, Carophyll Yellow® and crab meal altered the pigmentation of yolks to the extent that may be aversive to consumers. Further research would be beneficial to determine the appropriate inclusion levels in order to meet consumer preferences.

Congratulations to these new poultry scientists for a job well done!

### New Employee . . .

Kristen Doncaster is a technician recently hired by Agriculture & Agri-Food Canada in support of Dr. Rathgeber's research program. She has a BSc (Agr) from the Nova Scotia Agricultural College and a MSc (Biology) from Dalhousie University. Kristen is experienced in variety of laboratory techniques related to food chemistry and animal nutrition. In the past, she has been involved in research with dairy, swine and fish, as well as fruits and vegetables. Kristen is new to the poultry research world, but looks forward to the challenges and opportunities her new position is sure to bring.

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This newsletter is a publication of the Atlantic Poultry Research Institute (APRI). Its role is to keep those interested in poultry research activities in Atlantic Canada informed on the Institute's plans, activities and achievements.

The purpose of the Atlantic Poultry Research Institute is to further the interests of the regional poultry industry through research. It will endeavor to do this through the following objectives: 1. To serve as a vehicle for consultation amongst all stakeholders in the Atlantic poultry industry regarding research and development needs; 2. To encourage joint participation by industry and research institutions in setting research priorities; 3. To integrate the poultry research and development activities of the Nova Scotia Agricultural College and the Atlantic Veterinary College into one strong regional program; 4. To solicit funds for poultry research development.

To be added to our Newsletter list or for comments & or suggestions please contact Lynn McNutt, PO Box 550, 58 River Road, Haley Institute, Room 203, Truro, NS B2N 5E3 Phone: (902) 893-6657 Fax: (902) 895-6734 or [lmcnutt@nsac.ca](mailto:lmcnutt@nsac.ca)