



Sustainable Poultry Farming Group (SPFG) 2021 Annual Report for Associations

The Sustainable Poultry Farming Group (SPFG) is an industry-led organization that has representation from BC’s four supply managed poultry sectors – hatching eggs, broilers, turkeys, and table eggs. SPFG is a committee under the BC Poultry Association (BCPA). SPFG provides the coordination and the voice for the supply managed poultry sectors to promote sustainable and environmental farming practices and the implementation of innovative management technologies. SPFG is poultry farmers and industry working together to proactively address issues that affect BC’s poultry sector. The SPFG’s focus is the long-term sustainability of the BC poultry sector.

Current directors are:

Stan Thiessen, Chair	Turkey and BCPA
Kevin DeJong	Hatching eggs
Bev Whitta	Chicken
Hester Mulder	Eggs

SPFG held two virtual Zoom director meetings in 2021 and reviewed six applications for funding or letters of support. The current projects are listed below.

SPFG directors had a Zoom meeting with the Royal Danish Embassy and Linka Energy to discuss the possibilities of using biomass boilers on BC poultry farms. The project is still in the very early stages of research. Emissions and costs are two key factors that must be resolved before any in-depth analysis is carried out. Biomass boilers may be an option for when manure use regulations get even tighter. These systems are used extensively throughout Europe for heating.

Total approved funding for the year was \$30,100. several projects are on hold due to covid restrictions.

2021-01 - Poultry in Motion – design a new website and content

The Poultry in Motion Educational Mini Barn Program began in 2007 and has been running successfully for the past 14 years. The program’s goals are to educate and improve consumer confidence of BC Chicken. Students, teachers, and consumers are educated about the actual growing practices and programs, including On-farm-food-safety, Biosecurity and Animal Care programs that BC Chicken Growers are required to follow.

Until recently, the program used a fully equipped poultry mini barn with live birds and provided in-person presentations and educational materials to elementary and secondary schools and to the public at fairs. The current COVID-19 pandemic restrictions have prevented this program from continuing with onsite presentations. They do not know when we will be able to resume this program.

This project is to design and develop a new website and content for Poultry in Motion with individual web pages for fairs, elementary and secondary schools, and a teacher only page where all educational materials will be accessible in digital format. Separating the content by need and age level will make it easier for teachers and others to find and access the appropriate information. Developing the website will maintain the current program, while in-person visits are postponed, and open new opportunities to extend our reach to schools and fairs that are remotely located or for other educational purposes. The digital content will also enhance information and access to the public.

- \$5,000 funding was approved.

2021-02 - Blackhead Epidemiological Data Collection and Comparison

This project is a continuation of the Histomoniasis (blackhead) project 2020-06 that was started in 2020. Blackhead is a serious and ultimately fatal protozoal disease of turkeys, chickens, peafowl, and gamebirds. The transmission cycle of *Histomonas meleagridis* is complicated by the prolonged environmental stability enabled by physically protective vectors such as the cecal worm (*Heterakis* sp) egg and common earthworms. Earthworms are mobile, can move significant distances and are attractive to gallinaceous birds, making birds raised on range especially susceptible to infection. There is currently no approved treatment for blackhead therefore there is strong reliance on prevention through biosecurity, confined rearing, and litter management.

The BC turkey industry is currently experiencing an unprecedented multi-farm outbreak of blackhead that has serious economic consequences for the growers, the processors, and the hatchery. The entire production stream, including retailers has been negatively impacted as on-farm mortality has risen to significant levels. Farm gate losses continued in 2021.

The goal of this multi-faceted collaborative study is to gain a better understanding of the epidemiology of the current blackhead outbreak, identify on-farm reservoirs and risk factors, and to formulate an effective treatment and disease prevention strategy. A second producer seminar was held in February 2022 and the SPFG provided funding for the Zoom technical support for the producer call. This was a \$50,000 project with SPFG and the BC Turkey Marketing Board each providing \$12,500 for the initial phase and the Canadian Agriculture Partnership (CAP) providing \$25,000.

- \$1,300 Funding was approved for the second producer webinar.

2021-03 – *Sponsorship of the 20th annual meeting of the Canadian Animal Health Laboratorians Network to be held in Whistler May 30 - June 1, 2022.*

The theme of the conference is 'Partnerships in Health: Sharing Knowledge, Taking Action'. To that end, the planners are planning presentations that showcase how diagnostic laboratories can work with the poultry and dairy industries to identify health risks and to devise and execute plans to mitigate those risks. They will be focusing on Salmonella and AI on the 2nd and 3rd days of the meeting. The first day will examine Covid-19.

The BC Vet Lab is an important partner in an avian influenza outbreak. Timely diagnostics is a key initial step in AI outbreak management.

- \$500 sponsorship was approved.

Other on-going projects

2018-05 - *The Fermentation of Spent Hen Hydrolysate (from Thermal Hydrolysis) to Produce Pathogen Free Microbiological Rich Plant Nutrient Solutions, now includes animal feed and biogas uses.*

This is a \$89,000 project. SPFG provided \$5,000. Other funding was provided by the Canadian Poultry Research Council, Egg Farmers of Alberta, and Biosphere Technologies. Alberta Agriculture and Forestry are the lead researchers and are providing in-kind funding with researchers, labs, greenhouses, and equipment. The project is nearing completion.

Entire birds are cooked at 180°C for 40 minutes resulting in hydrolysate, "*liquid chicken*". Animals cannot digest feathers and bones but after thermal hydrolysis; they become digestible protein and calcium sources. Spent hen hydrolysate is a rich mixture of complex proteins, carbohydrates and fats; these compounds must be '*broken-down*' for the nutrients to be readily plant-available. Aerobic digestion is the technology used; since the pH is controlled, fermentation best describes this "*liquid composting*" process.

Thermal hydrolysis is CFIA approved to destroy "*mad cow*" diseases. With robust engineering controls, thermal hydrolysis could destroy all bird flu disease vectors; manure, potentially contaminated feed and bedding would be hydrolyzed alongside the diseased birds. Not only '*safely resolving*' a contagious outbreak, but revenue could be realized from the hydrolysate.

A significant advantage of spent hen hydrolysate for animal feed is that it comes from healthy birds thereby avoiding the stigma and cross-contamination risk of diseased biomass.

Once heated to 60°C, hydrolysate separates into three layers. Fat, the top layer, the middle protein layer (**successfully spray dried at pilot scale**) is from meat and feathers.

The calcium rich bottom solids layer is from bone and connective tissue. At room temperature, an emulsion layer traps solids.

Photograph 1. Heat Stratified (left) and Room Temperature Spent Hen Hydrolysate



The project produced and trialed plant nutrient solutions from raw and fermented spent hen hydrolysate.

2016-06 - BCAC Community Engagement Initiative (formerly Public Trust)

Despite Covid restrictions, the project continued to be active in 2021 by holding a number of virtual events. This project is now part of BCAC's on-going activities as opposed to a stand-alone special project. Poultry provides about \$23,000 through SPFG funds.