



OTTAWA STAKEHOLDER MEETING

Susan Fitzgerald, CgFARAD™ Administrator

Since 2015, a stakeholder information session has been held every second year. Twenty people attended the half-day CgFARAD™ stakeholder information session held on November 26, 2019 in Ottawa in conjunction with the National Farmed Animal Health and Welfare Forum. Attendees saw a demonstration of the updated database and heard presentations on CgFARAD™ service activity, CgFARAD™ and food safety related research projects, and the implication of changing climate and weather patterns for animal and zoonotic diseases.

The industry stakeholder Advisory Board provides guidance and strategic advice to the CgFARAD™ co-directors on business and finance matters.

The Advisory Board is comprised of the two CgFARAD™ co-directors, three commodity association representatives, two directors from veterinarian associations, and one representative each for pharmaceutical companies, the Canadian Animal Health Institute, feed and processing industry, and the Canadian Food Inspection Agency. Below are the current members of the Advisory Board.

**CgFARAD™ responded
to 2,640 withdrawal
requests in 2018-2019**

Name	Organization	Advisory Board Seat
Ron Johnson	OVC, University of Guelph	Co-director
Trisha Dowling	WCVM, University of Sask.	Co-director
Catherine Filejski	CAHI	CAHI
Rob Bell	Bio Agri Mix	Pharmaceutical company
Chathurika Dayananda	Dairy Processors Association of Canada	Feed and processing industry
Steve Leech	Chicken Farmers of Canada	Commodity association
Corlena Patterson, Chair	Canadian Sheep Federation	Commodity association
Nicole Sillett	Dairy Farmers of Canada	Commodity association
Tom Inglis	Veterinarian	Veterinarian association
Jost AmRyn	CVMA	Veterinarian association
Anne Allen/Chris Coulis	CFIA	CFIA

The Advisory Board meets in May and November. A Board Report summarizing the discussion at these meetings is sent to stakeholders shortly after the meeting. There is also a semi-annual CgFARAD™ newsletter issued in May/June and November/December.

The 2018-2019 year-end financial statement and current year (2019-2020) budget was presented to meeting attendees as below. Some notes to the statement included:

- The Canadian Meat Council discontinued some of their external contributions this year which included CgFARAD™. This was a loss of \$5,000.
- There was a one-time donation in 2018-2019 of \$4,217.20 from the Poultry Industry Council.
- There were increases for each of the pharmacologists and the full-time veterinarian in 2019-2020.
- The stakeholder meeting increased administration and travel/conference expenses for 2019-2020.

There could be a potential deficit of expenses over revenues of up to \$19,000 this year. There is a reserve of \$77,000 however that would be depleted within three years at this rate.

Revenue - Stakeholder Contributions	Year End for 2018-2019	2019-2020 Budget
Commodity Associations	\$99,000.00	\$99,000.00
Veterinarian Associations	\$15,280.00	\$15,280.00
Pharmaceutical Industry	\$48,500.00	\$48,500.00
Processing and Feed Associations	\$23,000.00	\$18,000.00
Donation - one-time transfer	\$4,217.20	
HST Collected	\$24,151.40	\$23,501.40
HST Refund	\$3,118.53	
Total	\$217,267.13	\$204,281.40
Annual Operating Expenses		
Salaries Clinical Pharmacologists	\$60,000.00	\$66,000.00
Salaries and Benefits Veterinarian - ft	\$85,905.14	\$87,070.00
Administration - Susan	\$8,280.00	\$12,000.00
Translation	\$1,023.59	\$1,000.00
Tech support (database)		\$6,000.00
University overhead	\$12,944.77	\$13,500.00
Equipment and supplies	\$8,623.68	\$9,000.00
Travel and conference expenses	\$57.90	\$3,500.00
Year-end Financial Review	\$1,000.00	\$1,000.00
Insurance	\$750.00	\$750.00
Bank Fees	\$96.00	\$150.00
HST Paid	\$7,697.76	\$8,312.50
HST Remitted	\$19,572.17	\$15,188.90
Total Expenses	\$205,951.01	\$223,471.40
Excess of revenues over expenses (expenses over revenues)	\$11,316.12	-\$19,190.00
Opening bank balance	\$66,159.17	\$77,475.29
Year-ending account balance	\$77,475.29	\$58,285.29

The Advisory Board formed a financial sustainability working group which is exploring a number of options:

- implementing an urgent withdrawal recommendation request fee for medication errors, poisonings, and toxic substances;
- offering an option for individuals and individual companies to provide annual financial contribution;
- assessing whether there are companies and other stakeholders that do not currently contribute; and,
- exploring grant funding to support analytics relating to types of requests.

Overview of CgFARAD™ Service Activity

Dr. Trisha Dowling, Co-director, CgFARAD™

Veterinarians will notice a number of new features of the database when logging in a request. To better identify trends and residue issues that stimulate research by the co-directors, the new database captures information much more precisely by using a number of drop down menus. The reason for the extra label drug use is now divided into “treatment, accidental exposure, feed mill error, metaphylaxis, prophylaxis, and research”. Dosage regimen information and species-specific choices of diseases organized by system affected are arranged in drop down menus. The new database sends an email confirmation when the veterinarian submits the request. When CgFARAD™ personnel respond, the veterinarian receives an email containing the response in the body of the email along with a pdf file attachment.

Non-prescribing veterinarians or veterinarians with general inquiries should contact us by phone or email for assistance. The phone number and email link is featured on all of the webpages for convenience.

CgFARAD™ responded to 2,640 withdrawal requests in 2018-2019 up from 2,404 in 2017-2018. The number of requests continues to increase by approximately 200 each year.

Legitimate extra label drug use in Canada is to be on a case by case basis. That is why we require the identification of drugs used in a specific animal or herd/flock for a specific disease situation. A separate request needs to be entered for each animal or group of animals receiving the extra label treatment(s). For example, an antimicrobial and a coccidiostat may be incorporated in to one batch of feed for a poultry flock, so both drugs would be included in one request. But if in a dairy herd, one cow is going to receive an antimicrobial and another cow is going to receive an anti-inflammatory drug, then two separate requests need to be submitted. The CgFARAD™ service does not provide blanket withdrawal recommendations for routine extra label drug use.

The disease state of the animal(s) will impact the withdrawal recommendation that we provide, and our advice is specific to that situation on the day that we give it. Use of our recommendations for future similar or different cases is a veterinarian's prerogative, but we highly discourage such practice as the disease states may be different and we are always acquiring new information that may change our recommendations. This policy is shared by the US FARAD as well.

Species	2018-2019 requests	2017-2018 requests	2016-2017 requests	2015-2016 requests
Chickens/Broilers	796	756	825	801
Turkeys	380	512	482	446
Dairy Cattle	266	261	232	266
Goats	241	189	196	90
Sheep	170	164	125	61
Chickens/Layers	144	137	92	69
Broiler Breeders	259	119	79	101
Beef Cattle	82	64	88	48
Veal Calves	15	45	23	48
Swine	171	38	40	56
Rabbits	24	22	21	21
Horses	23	21	10	19
Pigeons	3	14	N/A	4
Bison	11	13	11	7
Quail	5	10	5	9
Guinea Fowl	2	8	1	0
Chukar Partridges	10	6	8	19
Pheasants	6	6	6	4
Ducks	20	5	6	13
Geese	2	5	N/A	3
Elk (Wapiti)	5	4	N/A	3
Fish	1	4	1	2
Deer	0	1	1	5
Other	4	N/A	5	10
Total	2640	2404	2257	2105

CGFARAD™ AND FOOD SAFETY RELATED RESEARCH

Dr. Ron Johnson, Co-director, CgFARAD™

Current research projects in the new lab involve the evaluation of risks of violative drug residues in poultry from extra label drug use combinations administered in feeds. The project is being funded by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) Food Safety Research Program and CgFARAD™ stakeholders. The initial objective of the project is to establish functional poultry (turkey, chicken) hepatocytes in vitro.

In the second objective, isolated hepatocytes from control (drug-free) birds will be seeded onto multi-well culture dishes. Drugs of interest determined from review of the CgFARAD™ database that are used in combination in poultry feed and are not considered compatible in the Compendium of Medicating Ingredients Brochure of the CFIA will be applied alone and in combination at varying concentrations. Drug depletion (hepatic clearance) from the media will be measured over time using validated HPLC or HPLC-MS/MS assays. Results of this project will

assist the CgFARAD™ pharmacology service with identifying combinations of drugs being requested for use in poultry feed that are at risk of violative residues from drug-drug interactions. Two MSc graduate students are working on this project.

In addition to the research being conducted in the new lab, there are several other CgFARAD™ related research studies of note:

- **Dexamethasone Depletion in Lactating Dairy Cattle and Beef Cattle**, OMAFRA-UGuelph (Alliance)-DFO-BFO-pending approval. Dr Ron Johnson is principal investigator with Dr. Dave Renaud, Population Medicine, University of Guelph, co-principal investigator. .
- **Drug depletion of injectable Trimethoprim Sulfa in lactating dairy does**; funded by the OMAFRA Food Safety Research Program, Ontario Goat, Small Ruminant Veterinarians of Ontario, and Merck Animal Health. Dr. Cathy Bauman, Population Medicine, University of Guelph is principal investigator and Dr. Ron Johnson is co-principal investigator.
- **Depletion of Injectable Meloxicam in Grain-fed Veal Calves**; funded by Veal Farmers of Ontario and a grant from the Canadian Agricultural Partnership (CAP) program. Dr. Dave Renaud, Population Medicine, University of Guelph is the principal investigator and Dr. Ron Johnson is co-principal investigator.
- **Evaluation of risks of violative drug residues in poultry from ELDU in combinations administered in feeds**; this is an OMAFRA-Food Safety Research Program and CgFARAD™ stakeholders funded project. Dr. Ron Johnson is the principal investigator.

Completed Projects

- **Depletion of the antiparasiticide Fenbendazole in turkeys**; supported by the OMAFRA Food Safety Research Program and Turkey Farmers of Ontario. Dr. Ron Johnson was the principal investigator with Dr. Michele Guerin, Population Medicine, University of Guelph, co-principal investigator. The results were published in the Canadian Veterinary Journal 2019; 60 (30): 282-286.
- **Risks of violative milk residues following topical tetracycline therapy for digital dermatitis (*Treponema spp*) in dairy cattle**; funded by the OMAFRA Food Safety Research Program, Dairy Farmers of Ontario and Vetoquinol. Dr. Ron Johnson was the principal investigator and Dr. Gerard Cramer (Veterinary Population Medicine, University of Minnesota) was the co-principal investigator. The results were published in the Journal of Dairy Science 2019; 102 (1): 883-895.
- **Evaluation of bromadiolone depletion in hogs** funded by the OMAFRA-Food Safety Research Program (FSRP) and Ontario Pork. Dr. Ron Johnson was the principal investigator. The research results were published in the Journal of Swine Health Production 2015; 23 (6): 298-305.
- **Compounding Iron dextran with NSAIDS in piglets at processing** was a project supported by the Ontario Farm Innovation Program (AAC) and Ontario Pork. Dr. Ron Johnson was the principal investigator and Dr. Terri O'Sullivan, Population Medicine, University of Guelph, the co-principal investigator. A manuscript is in preparation.

Changing Climate and Weather Patterns: Implications for animal and zoonotic diseases

Dr. Catherine Filejski, President and CEO of the Canadian Animal Health Institute gave a presentation describing how changing climate and weather patterns have the potential to affect the types of diseases we experience in Canada. Below are some highlights from her presentation.

Vector Borne Diseases

Climate change can facilitate the spread of vector-borne pathogens by prolonging the transmission season, increasing the rate of replication of pathogens in the vector and increasing the number and geographic range of mosquitoes. This is especially true for *Aedes aegypti* (species of mosquito), the major vector of dengue, Zika, chikungunya and yellow fever viruses, which is currently limited to tropical and subtropical regions because it cannot survive cold winters. However, *Aedes aegypti* has been found in the Windsor/Sarnia area in Ontario for the past three summers during mosquito surveillance.

Climate change will also affect the efficiency with which vectors transmit pathogens. Disease transmission efficiency depends on the time between a vector feeding on an infected host and the vector becoming infectious itself. At warmer temperatures, this time can be reduced substantially, providing more opportunity for transmission within the vector's lifespan.

Leishmaniasis, in both the cutaneous and visceral forms, is one of the most important vector-borne parasitic diseases of humans. Known vectors for Leishmaniasis in the Americas are *Lutzomyia* sandflies. *Lutzomyia shannoni* occurs in all Atlantic coastal states south of New Jersey and West to Louisiana. The distribution of sandflies extends northward in association with warmer weather. Climate change models predict that *Lutzomyia* species currently occurring only in the southern US will eventually have a distribution extending to southern Ontario.

Climate Change and Antimicrobial Resistance

Climate change is also predicted to increase the rate of antibiotic resistance of some human pathogens. Data from 2013–2015 suggest that an increase of the daily minimum temperature by 10 °C will lead to an increase in antibiotic resistance rates of *E. coli*, *Klebsiella pneumoniae* and *Staphylococcus aureus* by 2–4% (up to 10% for certain antibiotics).

Potential underlying mechanisms include elevated temperatures facilitating horizontal gene transfer of mobile genetic elements of resistance, and increased pathogen growth rates promoting environmental persistence, carriage and transmission. Increased temperature stress or alterations to livestock housing conditions as a result of climate change could also drive increased antimicrobial use in food-producing animals, which might increase occurrence of antimicrobial-resistant foodborne illness in humans.

Summary

Trends involving infectious diseases and climate change involve complex systems with many interacting factors. Changing climate and weather patterns will increase the risks from existing and emerging infectious diseases,

primarily through increases in extreme weather events, increases in air and water temperatures and changes to precipitation frequency and intensity.

Current Financial Supporters of CgFARAD™

Producer Organizations

Alberta Lamb Producers
Canadian Cattlemen's Association
Canadian Hatching Egg Producers
Canadian Pork Council
Canadian Sheep Federation
Chicken Farmers of Canada
Dairy Farmers of Canada
Egg Farmers of Canada
Ontario Sheep Farmers
Turkey Farmers of Canada

Canadian Animal Health Institute

Pharmaceutical Companies

Elanco Canada
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Rafter 8 Products

Processing and Feed Associations

Animal Nutrition Association of Canada
Canadian Dairy Processors
Canadian Poultry and Egg Processors Council

Veterinary Associations

Ontario Veterinary Medical Association
l'Association des médecins vétérinaires du Québec
Canadian Association of Swine Vets
Canadian Association of Poultry Veterinarians
Small Ruminants Veterinarians of Ontario
Ontario Association of Bovine Practitioners
Western Canadian Assoc. of Bovine Practitioners
Atlantic Bovine Practitioners Assoc.

If you or your company is interested in supporting CgFARAD™ through an individual annual membership, please contact the CgFARAD™ office, contact information below. All supporters are identified on the CgFARAD™ website www.cgfarad.usask.ca