THE CHICKEN FARMER
Volume 24, Issue 1 | 2022

CHICKEN FARMERS OF CANADA
LES PRODUCTEURS DE POULET DU CANADA

# AVIAN INFLUENZA IN ATLANTIC CANADA

On February 11, 2022, the Canadian Food Inspection Agency (CFIA) confirmed highly pathogenic avian influenza (AI), subtype H5N1, at a mixed farm in western Nova Scotia, which includes poultry and products for local sale.

This follows confirmed detections of the same strain of AI in Newfoundland and Labrador and more recently in wild birds, a backyard flock and a commercial farm found in Nova Scotia.

To control any potential spread of the disease, the CFIA has imposed movement restrictions and is recommending enhanced biosecurity for other farms within the area.

At this time, some countries have applied temporary import restrictions with variable implications on products and regions in Canada, primarily limited to the export of some poultry products from Nova Scotia. This is normal precautionary practice during these types of detections.

CONTINUED ON PAGE 2

## in this issue



www.chicken.ca
www.chickenfarmers.ca

Editor: Marty Brett – mbrett@chicken.ca | Graphic Designer: Karen Ronayne – kronayne@chicken.ca

CONTINUED FROM PAGE 1

The CFIA continues continue to engage with international trading partners to support the resumption of trade.

Affected producers and industry associations, as well as federal and provincial departments, are cooperating in the ongoing investigation. The common goal is to protect human health, protect the health of Canadian livestock and, in the process, maintain market access.

FARMERS ACROSS THE COUNTRY SHOULD BE EVALUATING THEIR BIOSECURITY TO PREVENT INTRODUCTION INTO THE COMMERCIAL SYSTEM.

## FURTHER FINDINGS OF AI

- On February 3, 2022 the Canadian Food Inspection Agency (CFIA) confirmed the presence of highly pathogenic avian influenza (AI), subtype H5N1, in a commercial flock in western Nova Scotia.
- The CFIA has notified the World Organisation for Animal Health (OIE) of the positive AI finding.
- To control any potential spread of the disease, the CFIA has placed the premises under quarantine and are establishing a control zone with movement control measures and enhanced biosecurity for other farms within the zone.
- This situation serves as a strong reminder that AI is spreading across the globe in wild birds as they migrate to and from Canada, and that anyone with poultry or other susceptible birds should practice good biosecurity habits to protect them from animal diseases.

## QUICK FACTS

- Initial tests for the disease were conducted on January 30, 2022 by the CFIA, after the farm experienced sudden deaths of birds over several days.
- The CFIA has advised the World Organisation for Animal Health (OIE) of the outbreak.
- The CFIA reminds poultry producers to remain vigilant and to apply biosecurity measures at all times. For more information on avian influenza and measures poultry farms can take to protect their flocks, please visit the Avian influenza page on the CFIA website.

## BIOSECURITY IS THE BEST DEFENSE

The best defense against AI and other pathogens, as always, is good biosecurity. Any unexplained clinical signs or mortality should always be investigated by a poultry practitioner.

- Vigilance in implementing good biosecurity on farms, each and every day, is important for protecting not only your flocks, but those of your neighboring farms as well
- Minimize direct contact between poultry farms and prevent contact with wild birds
- Avoid non-essential personnel entries to your farm premises and barns
- Change footwear when entering the Restricted Area and prevent wearing contaminated clothing and equipment in production areas
- Closely monitor flock health, including mortalities, feed and water consumption, and abnormal bird behaviour
- Immediately consult your veterinarian in cases of unexplained mortality or flock illness; submit unexplained mortalities for testing
- Follow the requirements of the *Raised by a Canadian Farmer* On-Farm Food Safety Program for biosecurity


## THE POSITIVE CASES IN WILD BIRDS REINFORCE THE MESSAGES THAT:

- Farm workers should be staying away from wild birds
- Farm workers should not be picking up/handling dead wild birds. Report dead wild bird sightings to the Canadian Wildlife Health Cooperative at **1-866-544-4744**
- Farm workers should reinforce the biosecurity measures between wild birds and their flocks

## NORTH AMERICA'S WATERFOWL FLYWAYS

There is evidence that the north-south migration of birds in North America within these geographically-based flyways plays an important role in shaping the genetic structure of populations of avian influenza viruses[1]. These flyways overlap and also allow the transmission of AI across North America.

We have updated our website with a new page that includes more information about avian influenza, clinical signs to watch for, and what to expect if a case is confirmed on your farm or a neighbouring farm. **www.chickenfarmers.ca/avian-influenza/**

If you're interested in monitoring AI cases more closely, here are some relevant links:

**Commercial flock AI detections in Canada**

**Wild bird AI detections in Canada**

**AI detections in the US** ■

### Reference

1 Fourment et al., 2017. The impact of migratory flyways on the spread of avian influenza virus in North America. BMC Evolutionary Biology, 17: 118. Available online, **https://bmcecolevol.biomedcentral.com/articles/10.1186/s12862-017-0965-4**

# CPRC UPDATE

## CLAMPING DOWN ON CAMPYLOBACTER

One of the most common foodborne illnesses in Canada is caused by the bacterium, Campylobacter jejuni, and chickens are considered to be one reservoir of this pathogen. *C. jejuni* infections cause campylobacteriosis – a disease that often results in severe gastrointestinal discomfort and diarrhea in people. But there are knowledge gaps that are slowing the development of effective strategies to reduce the risk of *C. jejuni*.

Dr. Douglas Inglis and his colleagues have been studying *C. jejuni* for more than 20 years. He's an Agriculture and Agri-Food Canada researcher specializing in enteric microbiology and intestinal health at the Lethbridge Research and Development Centre, and is leading a five-year study to uncover more about high risk strains of *C. jejuni*. The research team has been taking a closer look at *C. jejuni* and developing diagnostic tools to control the bacterium along the broiler value chain in Canada. "We're looking to identify critical control points in the broiler production continuum, especially of *C. jejuni* strains that pose the highest risk to people," says Inglis.

"A SIGNIFICANT FINDING OF OUR RESEARCH IS THAT A RELATIVELY SMALL SUBSET OF *C. JEJUNI* STRAINS ASSOCIATED WITH CHICKENS REPRESENT A FOOD SAFETY RISK TO PEOPLE IN CANADA."

### TARGETING HIGH RISK STRAINS

Strains of *C. jejuni* are very genetically diverse, and previous work that has been looking to reduce the impact of *C. jejuni* on people has been hampered by a lack of information about the bacterium at a sub-species level, according to Inglis.

"A significant finding of our research is that a relatively small subset of *C. jejuni* strains associated with chickens represent a food safety risk to people in Canada," says Inglis. "We have to be able to distinguish high risk strains from low risk strains to detect medically-relevant *C. jejuni* strains, especially those resistant to important antibiotics."

To identify different strains, they examined the genomes of a large number of *C. jejuni* strains recovered from people and from non-human sources (e.g., chickens in barns and abattoirs) to identify and compare genetic markers present in high risk *C. jejuni* strains.

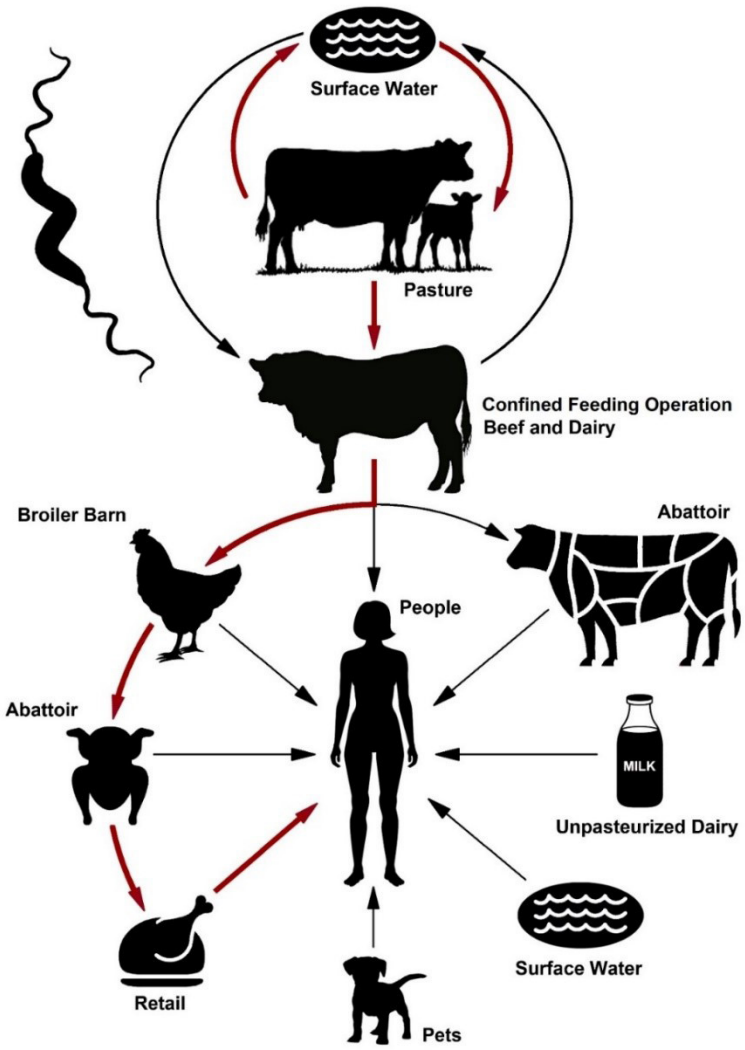
### STUDYING AN AGROECOSYSTEM

To gather key information, the team used a model agroecosystem. It's a study location in southwestern Alberta that allowed them to do a deeper dive into the troubling strains, where they are living and moving, and how to best deploy their new diagnostic tool to control *C. jejuni*.

"We used this location to understand more about how *C. jejuni* moves from livestock to people because the area naturally includes all the key elements that play a role in the movement of the bacterium," explains Inglis. The agriculturally-important area contains high densities of chicken, cattle and hog operations. There are high rates of campylobacteriosis in people living in southwestern Alberta. And the region has one public diagnostic facility that provides the research team with all the isolates of *C. jejuni* infecting people.

They conducted two large-scale studies within the agroecosystem to better understand the transmission dynamics of *C. jejuni* – how it is transmitted throughout the broiler production continuum and transmission routes of the bacterium to people. "We determined that cattle are the primary reservoir of high risk

**Illustration of Campylobacter transmission pathways**




Studying *Campylobacter jejuni* within an agroecosystem in southwestern Alberta identified primary (red arrows) and secondary (black arrows) transmission routes – that are likely similar in other parts of Canada.

Credit: Dr. Douglas Inglis

strains of *C. jejuni* that infect broiler chickens," says Inglis. "What was particularly surprising was that a single cattle-borne strain of *C. jejuni* was responsible for outbreaks of the bacterium in individual broiler barns, and that the diversity of *C. jejuni* strains originating from cattle increased within the poultry production continuum."

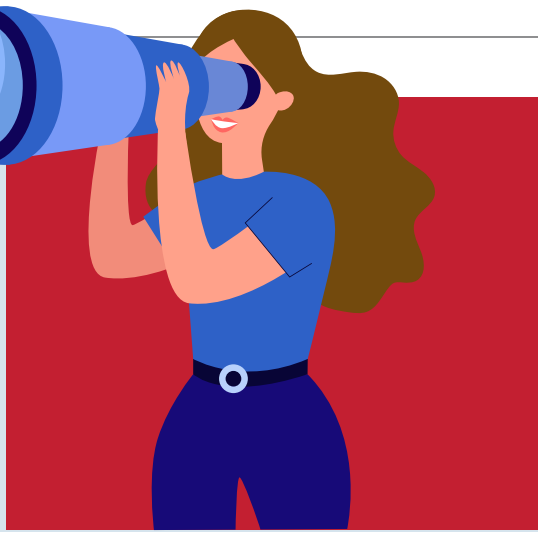
## UNDERSTANDING CATTLE-TO-BIRD-TO-PEOPLE TRANSMISSION

The exact mode of transmission of high risk *C. jejuni* strains from beef cattle to broilers is currently under investigation as part of this research. Preliminary findings indicate that wild birds and arthropods may be involved, but not air (e.g. windborne aerosols), water or rodents. "In the final year of the project we'll use our diagnostic tool to determine how high risk *C. jejuni* strains are transferred into and survive within abattoirs, and develop a risk assessment tool for the poultry sector," says Inglis. ■

## BACKGROUND

This research is funded by the Canadian Poultry Research Council as part of the Poultry Science Cluster which is supported by Agriculture and Agri-Food Canada as part of the Canadian Agricultural Partnership, a federal-provincial-territorial initiative. Additional funding was received from Alberta Chicken Producers and Genome Alberta. The project is a partnership between Agriculture and Agri-Food Canada, the National Microbiology Laboratory of the Public Health Agency of Canada and Alberta Health Services.

# HILL WATCH



## MEETING WITH AGRICULTURE MINISTER MARIE-CLAUDE BIBEAU

Representatives from the SM4, including CFC's Chair and Executive Director, met with Agriculture Minister Marie-Claude Bibeau in mid-January to discuss items included in her new mandate letter.

The letter states:

*As Minister of Agriculture and Agri-Food, as an immediate priority, you will develop a sector-specific strategy to address persistent and chronic labour shortages in farming and food processing. You will also prioritize measures to support efficiency and climate-resiliency in the agriculture and food sector to strengthen food security and significantly cut agriculture's environmental footprint, as well as working closely with provinces and territories and producers to support the sustainable growth of the agricultural and agri-food sectors, with an aim to establish Canada as a global leader in the sector. Furthermore, you will strengthen Canada's food system, with particular emphasis on developing a National School Food Policy.*

The mandate spells out some of the commitments, including:

- With the support of the Minister of Employment, Workforce Development and Disability Inclusion, and in partnership with provinces and territories, employers, unions and workers, develop a sector-specific Agricultural Labour Strategy to address persistent and chronic labour shortages in farming and food processing in the short and long term.
- As part of a green agricultural plan for Canada, increase support to farmers to develop and adopt agricultural management practices to reduce emissions, store carbon in healthy soil and enhance resiliency; triple funding for clean tech on farms, including for renewable energy, precision agriculture and energy efficiency; and work with farmers and stakeholders to reduce methane and fertilizer emissions in the agricultural sector.
- Continue to protect supply-managed agricultural sectors, our family farms and the vitality of our rural areas, working with supply-managed sectors to provide full and fair compensation with respect to the Canada-United States-Mexico Agreement (CUSMA) and making this determination within the first year of our mandate. You will be supported in this work by the Minister of International Trade, Export Promotion, Small Business and Economic Development.
- Working with provincial and territorial governments, develop the next agricultural policy framework to continue to support the sustainable economic growth of the agriculture and agri-food sector, ensuring climate action and resilience are core to the framework.

To see the rest of the mandate letter, you can find it **here**.

## VALÉRIE GRENIER COMPETES AT THE OLYMPICS!

Valérie Grenier, daughter of Gabriel and Nathalie Grenier from Grenier Poultry in eastern Ontario, competed for Canada at the 2022 Beijing Olympics! Valérie is an alpine skier and Chicken Farmers of Canada is so proud to sponsor her as she represents Canada!

CUSMA support programs were top of mind for the meeting with the Minister, as the government has committed to determining compensation within the first year of their mandate. In addition, the Chairs brought up the struggles currently faced by the agriculture supply chain and the fact that vaccine mandates and labour shortages – particularly at the processing and catching levels – are hindering our ability to get fresh food to Canadians.

We will also continue to dialogue with government on food labelling and how plant-based products are misleading consumers. The SM4 will continue to collaborate with the Minister, her office, and other Parliamentarians as we deal with the persistent impacts of the COVID-19 pandemic.

## CANADIAN FEDERATION OF AGRICULTURE UPDATE

Heading into 2022, Canadian agriculture is faced with many challenges, and the Canadian Federation of Agriculture has been taking the lead on navigating the issues and supporting farmers and farm organizations.

In recent weeks, CFA has been working on items such as the vaccine mandate's effect on the food supply chain and farmers, Temporary Foreign Workers, and consultations on border carbon adjustments, and the government's goal of net-zero emissions by 2050. CFA Chair Mary Robinson will be participating in a National Supply Chain Summit with the Hon. François-Philippe Champagne , Hon. Marie-Claude Bibeau, Hon. Mary Ng, and Hon. Carla Qualtrough (Employment, Workforce to identify the challenges facing Canada's highly-integrated national supply chains.

CFC has provided CFA feedback on a number of these issues and how our sector is responding to them, and will continue to work closely together to find solutions for farmers during this difficult time. ■

# CHICKEN FARMERS ELIGIBLE FOR ON-FARM INVESTMENT PROGRAM

The Poultry and Egg On-Farm Investment Program (PEFIP), established by Agriculture and Agri-Food Canada (AAFC) to help Canadian poultry and egg producers adjust to market access losses incurred during the negotiation of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), is now open.

The PEFIP will grant $347.3 million to chicken producers over ten years to offset qualified investments in their business. Eligible producers get a part of the program's funds depending on their provincial quota or production on January 1, 2021, as determined by their respective provincial marketing board.

Once registered with **PEFIPOS**, applicants can establish their maximum financing amount.

To participate, you must first register with PEFIPOS and create a user profile. Project applications can be completed and submitted once the participant profile has been created.

Over the ten years of the program, each applicant can decide how to use their particular funding amount as long as all project applications are received by March 31, 2030, and all project activities are completed by March 31, 2031. Applicants can also apply for financing for actions that began on or after March 19, 2019 and are still ongoing.

While AAFC's contribution to qualifying project costs will typically not exceed 70%, there are some scenarios in which AAFC may pay up to 85% of eligible project expenses to young producers aged 35 or younger on January 1, 2021.

Please consult the **PEFIP** website for all additional information regarding the program and visit the **PEFIPOS portal** to register! ■

## ON-FARM INVESTMENTS THAT ARE ELIGIBLE:

- increase efficiency or productivity
- improve on-farm food safety and biosecurity
- improve environmental sustainability

and/or

- respond to consumer preferences, such as improving animal welfare, converting to alternative housing systems, or switching to organic production

# FUTURE OF FOOD CONFERENCE **FEBRUARY 22, 2022**


What does the path towards a resilient, vibrant and innovative Canadian food industry look like? Find out by joining The Future of Food conference on February 22, 2022, held on Canada's Agriculture Day. Forward-thinking brands and experts will discuss how Canada can lead the way in creating long-term growth in agriculture and food while leaving a positive impact on our society and the environment.

The event will feature a panel with Casper Kaastra from Sollio Agriculture; Charlie Angelakos from McCain Foods; Alanna Koch from the Global Institute for Food Security at the University of Saskatchewan, and Samara Foisy from Loblaw Co. Ltd.

Special guest Terry O'Reilly, host of CBC Radio's Under the Influence, will then take you through a journey to understand how organizations and businesses can achieve outstanding results when they apply "out-of-the-box" thinking.

We'll also be joined by The Honourable Marie-Claude Bibeau, Minister of Agriculture and Food and Mary Robinson, President of the Canadian Federation of Agriculture.

**Register for this free event today!** ■

# RECAP OF 2021'S NATIONAL CHICKEN MONTH

This year, CFC celebrated National Chicken Month with chicken stories from Canadians of all cultural backgrounds. They shared their favourite chicken dish, told us why it holds a special place in their heart, and how chicken is an important part of their heritage. With videos submitted by chicken enthusiasts from across Canada, it was a smashing success!


Canadian chefs stepped up for CFC's Chicken Challenge during National Chicken Month in September.

The challenge: Create a dish that reflects your cultural heritage using Canadian chicken. Over 40 chefs accepted the challenge and created some beautiful, mouthwatering dishes that encompassed many different nationalities and countries of origin.

For this challenge, prize money was matched with a donation to the top-three winner's foodbank of choice.


**1ST PLACE**
$5,000 prize
$5,000 to charity

**Winner:**
Chef Froilan Ofiaza

**Charity:**
Harvest Manitoba


**2ND PLACE**
$2,000 prize
$2,000 to charity

**Winner:**
Chef Coralie Van De Bruinhorst

**Charity:**
Interfaith Food Bank Society of Lethbridge


**3RD PLACE**
$1,000 prize
$1,000 to charity

**Winner:**
Chef Erika Araujo

**Charity:**
Daily Bread Food Bank

# FOOD FREEDOM DAY – **FEBRUARY 8TH, 2022**

The Canadian Federation of Agriculture (CFA) has calculated that by Tuesday, February 8th, 2022, a Canadian household of average income will have earned enough to pay for their entire year's grocery bill.

Each year, CFA examines the proportion of income that Canadians spend on food as a way to explore year-over-year expenditure changes and raise consumers' understanding of Canada's food system, from Farm-Gate-to-Plate.

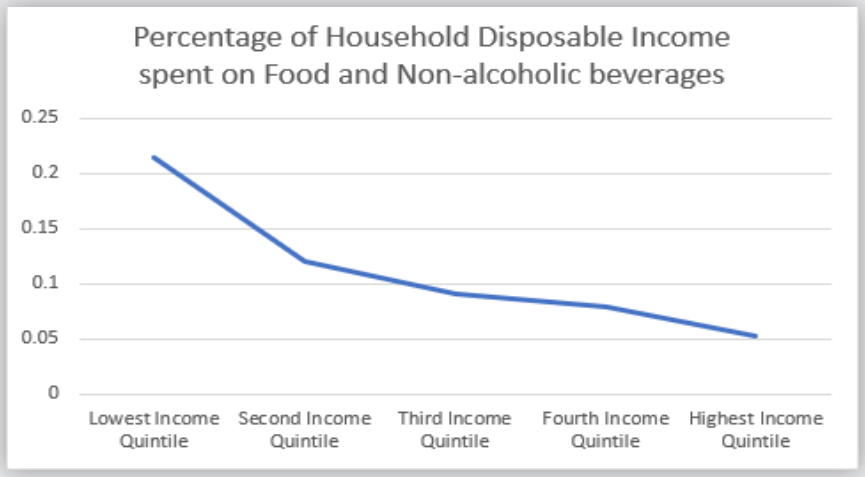
Canadians spent 10.7% of their disposable income on food in 2021, which is slightly lower than the 11% in 2020. Due to this, Food Freedom Day was one day earlier, landing on February 8th, 2022.

Food Freedom Day falling on an earlier date will come as a surprise to many, especially in the light of rising food prices and overall inflation. While Canada's food system continues to provide access to affordable food by global standards, the pandemic has affected Canadian households in drastically different ways depending on their vocation, location and a wide variety of other factors.

For some, disposable incomes have increased throughout the pandemic, particularly for those who had no disruptions to their livelihoods coupled with a lack of spending opportunities. Others have seen large drops in their disposable income due to shut-downs in their industries.

These different realities are apparent when looking at the different quintiles of income by Canadian household in Canada to show the percentage of disposable income that they spent on food over the year.

As shown in the graph above, there is a large difference between how much disposable income households in the lowest income quintile (21.3%) and the highest income quintile (5.1%) spent on food and beverages throughout the year. It should also be noted that food and beverage costs are fairly rigid. Those households in the highest income quintile only spent 30% more on food and beverages than the lowest income quintile, despite having almost 600% more disposable income.




CFA would like to note that while Canadians have seen food prices increase steadily throughout 2021 on the grocery shelves, farmers receive a small percentage of the price that consumers pay for food, and rising retail prices are not normally reflective of what is paid at the farm-gate.

As a truly essential service farmers have demonstrated their resilience throughout these trying times and weathered the worst of the pandemic while continuing to provide safe, affordable and nutritious food for Canada and the world.

"This year we recognized the challenging realities faced by many households across Canada and while we want to continue celebrating Canada's capacity to provide affordable food to many Canadians, we wanted provide more context in order to show the effects that food prices are having on different segments of the population," said Mary Robinson, CFA President."While it's always great to see the overall figure improve, it's also important to see the different realities in households across Canada and reflect on what rising food inflation means for food security across Canada." ■

THIS JUST REINFORCES THE DIVERGENT REALITIES EXPERIENCED THROUGH THE PANDEMIC, WITH MANY HARSHLY AFFECTED BY THE PANDEMIC AND STRUGGLING WITH RISING FOOD PRICES.

# **$228 MILLION** FLOOD RECOVERY PROGRAM HELPING B.C. FARMS RETURN TO PRODUCTION

**February 7, 2022 – Victoria, British Columbia**

B.C. farmers who suffered extraordinary damages in last year's devastating floods will have access to up to $228 million in federal-provincial government support to help their farms return to production and support British Columbia's food security and agricultural communities in the years ahead. Today, federal Minister of Agriculture and Agri-Food, Marie-Claude Bibeau and British Columbia Agriculture Minister Lana Popham announced the Canada-BC Flood Recovery for Food Security Program, which will be delivered by the Government of British Columbia and will leverage the federal government's AgriRecovery Framework and Disaster Financial Assistance Arrangements (DFAA).

The Canada-B.C. Flood Recovery Program for Food Security will help farmers who have incurred extraordinary expenses from uninsurable damages such as:

- Clean-up, repair and restoration of land, barns and animal shelter, water and waste systems; returning flood impacted land and buildings to a safe environment for agricultural production
- Repair of uninsurable essential farm infrastructure; reasonable repair of on-farm structures such as livestock containment fences, and the rental of temporary production facilities drainage ditches and riprap
- Animal welfare; replacement feed as well as livestock transportation, veterinary care and mortality disposal
- Loss of perennial plants not raised for resale

The response was designed following extensive consultation with agricultural organizations and individual farmers in the different disaster areas.

The governments of Canada and British Columbia have also established a committee of federal and provincial ministers who are working together and with Indigenous leadership to guide immediate and ongoing support to British Columbia families, businesses, and communities affected by the extreme weather events.

Farmers who have already undertaken any work are advised to keep their receipts, track the hours of work involved, and take pictures documenting the damage and repairs to support their application.

Program criteria and application forms are available at gov.bc.ca/agrifloodrecovery. One-on-one assistance in English and Punjabi is available to farmers requiring assistance completing the applications through agrirecovery@gov.bc.ca or 1-888-332-3352.

## QUOTES

*"The B.C. agricultural community has pulled together and demonstrated its strength and determination in the face of devastating floods. There is still a long way to go, but the Government of Canada will continue to work with the Government of British Columbia to support our farmers. We are here to help them rebuild so they can quickly get back to doing what they do best: producing high-quality food for Canadians."*

- The Honourable Marie-Claude Bibeau, Federal Minister of Agriculture and Agri-Food

*"The November flooding was the most impactful disaster ever in our province, resulting in profound losses for many B.C. farmers and food producers, and we're responding with a program that delivers the greatest amount of support of its kind in B.C.'s history. We've worked closely with farmers and farming organizations to make sure we have a comprehensive response that will help them get their farms back in production, and continue our collective efforts to build a resilient food system and economy in B.C."*

- Lana Popham, B.C., Minister of Agriculture, Food and Fisheries

*"The B.C. poultry industry is extremely pleased with the work of the Ministry of Agriculture, Food and Fisheries and the Government of Canada in listening to the industry and addressing its immediate needs during last November's Atmospheric River event. The industry welcomes the announced funding which will go a long way in supporting industry recovery from the unprecedented damage caused by last November's Atmospheric River event."*

- Harvey Sasaki, chair, B.C., Chicken Marketing Board

## QUICK FACTS

More than **1100 farms, 15,000 hectares and 2.5 million livestock** from the Sumas Prairie in Abbotsford to Merritt and Princeton were impacted by the floods.

AgriRecovery is a federal-provincial-territorial disaster relief framework to help agricultural producers with the extraordinary costs associated with recovering from natural disasters. Initiatives under the framework are cost-shared 60:40 between the federal government (Agriculture and Agri-Food Canada) and provinces/territories, as outlined under the Canadian Agricultural Partnership. ■

# WATERLINE CLEANER/ DISINFECTANT VS pH ADJUSTERS

The OFFSP manual requires that a cleaning/disinfecting process be used either in between flocks or during the grow-out period.

Some farmers may choose to go over and above this requirement – by cleaning/disinfecting both during and in-between flocks. It's also important to note that using a product to adjust the pH of the water/acidify the water is different than a cleaning/disinfecting process.

A cleaning/disinfection of the waterlines is important to remove biofilms which may have built up in the water lines. Biofilms are a layer of microorganisms that form on the inside of water pipes that come from the water itself, or from products added to the water. Biofilms are responsible for a wide range of water quality issues and can also be a food safety risk if the microorganisms are of public health significance (e.g. *Salmonella* spp., *Campylobacter* spp. etc.), as the bacterial cells from the biofilm can break off and be released into the water.

There are several methods that can be used to clean/disinfect water; examples include chemical products (e.g. chlorine, chlorine dioxide, iodine, hydrogen peroxide), UV light and reverse osmosis.

## DIFFERENTIATING BETWEEN A CLEANING/DISINFECTION PRODUCT AND A PH MODIFIER/WATER ACIDIFIER

When chemical products are being used in the water lines, there can be confusion about what products can be used to clean/disinfect water lines vs. those products which are specifically used to adjust the pH of the water.

The bottom line is that products need to be used for the purposes as described on their product label, or for the purposes as described in the directions that are being used.

Here's a list of products – based on their label claims and guidelines – that are used for cleaning/disinfecting water lines vs. those that are used to adjust pH of the water[1]. This is not a complete list of chemicals or products, but rather an example.

| Cleaners/Disinfectants | pH modifiers |
|---|---|
| The majority are chlorine or hydrogen peroxide-based products. Some examples include:<br>» AquaPrime<br>» Hyperox<br>» Oxy-Blast<br>» Proxy Clean<br>» Twin oxide<br><br>Cleaning/Disinfecting chemicals include:<br>» Chlorine/Bleach<br>» Chlorine dioxide<br>» Hydrogen peroxide<br>» Iodine<br>» Vinegar | These product labels specifically refer to water acidification. Some examples include:<br>» 4wayacid pack<br>» Agriacid<br>» AquaPrime Trigger<br>» Evolve<br>» Jefacid<br>» PWT (Poultry Water Treatment)<br>» Selko Prohydro<br>» Soluacid<br><br>Acids used for water acidification can include:<br>» Acetic, citric, hydrochloric, muriatic, sulfuric, etc. |