

A VISION FOR THE FUTURE

POULTRY INNOVATION PARTNERSHIP

visionary change collaboration opportunity

poultryinnovationpartnership.ca

RESEARCH & EXTENSION STRATEGY 2023-2028



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Message from the Chair

As the mandate and reach of PIP expanded in recent years, the Board began to appreciate the need for a clearer and more detailed statement of PIP's planned activities. Of course, this more detailed statement is not intended to be a substitute for PIP's overall Strategic Framework. The Framework was reviewed thoroughly by industry stakeholders in 2021 and reaffirmed as a highly relevant statement that continues to be a useful strategic guide.

The Research and Extension Strategic Plan presented in this document can be

looked upon as a deeper dive, not into what PIP is, but rather what PIP does.

It, therefore, becomes a more detailed addendum to several key strategies in our current strategic plan. We believe it will bring sharper resolution to PIP's value proposition to key funders, researchers, and the industry in general.

We view the plan as the steps in a journey towards an ideal future state we are striving to achieve. But we will need to continue to work together, as we have done so well in the past if we hope to reach our destination.

**DID
YOU
KNOW**



In 2021, Alberta Turkey farmers produced nearly 14 million kilograms of turkey!



Vision for the Future

While the plan is ambitious, it may be reflective of PIP's growing strength as an organization. We also believe it represents a positive step in our natural journey towards a possibly more formal business model.

We would be remiss if we did not thank RDAR for their ongoing support. We also thank the University of Alberta for housing the PIP team and enabling so much excellent research to take place. And finally, we thank our partner organizations for their unfailing support in undertaking this ambitious planning exercise.

As you read through the document, you will note that the graphics and pictures tell a compelling story about the industry's positive contribution to Albertans' nutritional needs, our environmental sustainability, and our economy in general. PIP looks forward to engaging with you in future. Happy reading!

Susan Schafers


Susan Schafers
Chair, Poultry Innovation Partnership
3 August 2023




Alberta Poultry Sector Value

With strong provincial population growth and changing consumption patterns, Alberta's poultry and egg sector has grown significantly in the last two decades. Almost all Alberta poultry products are processed and consumed locally and regionally within the province. This pattern of production and consumption lowers the industry's carbon footprint and generates significant economic multipliers within the Alberta economy.

A formal study remains to be undertaken on the economic impact of Alberta's vibrant and growing poultry sector. However, by piecing together studies of the



*492 family farms
proudly produce all
of Alberta's chicken,
turkey and eggs.*



individual sectors that were completed between 2015 and 2021 (see producer board websites) we can conservatively estimate the industry's total economic impact on Alberta's economy (direct, indirect and induced) at approximately \$2B - \$3B. Against this vibrant and growing industry backdrop, the industry welcomes a more detailed plan for research and extension.





“A conservative estimate of the industry’s total economic impact on Alberta’s economy is between \$2B - \$3B”





What is the Poultry Innovation Partnership?



The Poultry Innovation Partnership, commonly known within the industry as “PIP”, is an organization that helps to integrate, focus, and deliver poultry research, extension, and student training opportunities more effectively than each partner could on their own. PIP is committed to building a community that tackles industry problems through its byline, “We are better together.”



Housed at the Poultry Research Centre at the University of Alberta Farm's South Campus, PIP's staff support the delivery of poultry research and extension to the Alberta industry and more broadly to the Canadian industry. While PIP is not formally incorporated, its members pay an annual fee and collaborate on the advisory Board of Directors.

OUR MISSION



The Poultry Innovation Partnership is a partnership of the poultry industry, government and academia to foster a healthy Canadian poultry enterprise. Excellence in research and innovation, knowledge management, technology transfer and mentoring tomorrow's professionals are the Centre's hallmark."

PIP's Current Strategic Framework

PIP's current Strategic Framework was developed with considerable industry input in 2016 and re-affirmed during a major review in 2021. It contains seven key strategic directions. These strategic directions are supported by a total of 29 outcome goals which can be likened to the strategies in most strategic plans.

PIP's new Strategic Plan for Research and Extension links to Strategic Directions 3, 4, and 5 in PIP's Strategic Framework. These three strategic directions speak specifically to research, extension, and student development. The strategic statements in PIP's current Strategic Framework tend to be focused at a higher level and are more functional in nature. For example, in Strategic Direction 3, one of the outcome goals reads, "Identify gaps and potential collaborations". In Strategic Direction 5, one of the outcome goal reads, "Maintain technology transfer as integral part of culture and have research proposals include tech transfer plan".

The Alberta chicken industry supports over 8000 jobs and provides \$623 million to GDP

Source: Alberta Chicken Producers



While these statements continue to provide useful high level strategic direction for PIP as an organization, it was felt that the research and extension strategies would benefit from a next level of detail. PIP's new five-year Strategic Plan for Research and Extension can therefore be viewed as a deeper dive that provides the clarity of intent that funders, researchers, and partners would look for in a more detailed strategic plan. In this sense the new plan does not replace the current Strategic Framework. Rather, it amplifies and illustrates PIP's strategic direction.

Current PIP Partners



“Together we are better”

Financial Supporters



The Building Process



The process of building PIP's five-year Strategic Plan for Research and Extension began when the Board approved the initiative in January 2023. PIP then hired a consultant, John Knapp, to assist with building the plan. An underlying principle was that the consultant should not write the plan. Rather industry participants should write the plan by contributing its key content during their participation in focus groups and one-on-one discussions. The consultant's role was simply to organize that content into an orderly plan.

Prior to engaging the industry in the building process a review was undertaken of the plans of other relevant organizations for structure, content, and focus. During this phase, the PIP team became aware of the excellent work of the national Beef Cattle Research Council (BCRC) in developing the Canadian Beef Research and Technology Transfer Strategy. While the plan that follows is a unique creation of Alberta's poultry industry, PIP wishes to acknowledge the collegial guidance of BCRC's staff and the useful documentation of methodology that were contained in that plan.

The Alberta Hatching Egg Producers supplied over 84 million hatching eggs in 2022, supporting the production of 130 million kg of chicken in Alberta.

Step one in the building process focused on organizing PIP's plan into key program themes that might be analogous to chapters in a book. On 14 April 2023, twenty-six industry leaders met in Red Deer to undertake that process. Dividing themselves into three focus groups they undertook the heavy lifting of choosing program themes. The key elements of their discussion were recorded, analysed, and reflected back to them in a What We Heard Report that invited further commentary. This additional commentary resulted in further refinement and agreement on five key program themes:

Productivity and Business Risk Management
Environmental Sustainability
Animal Health and Welfare (One Health)
Poultry and Egg Quality/Value Added
Food Safety

SPARK 3.0

Collaborate-Incubate-Ignite
April 14, 2023 10 AM-3 PM Red Deer



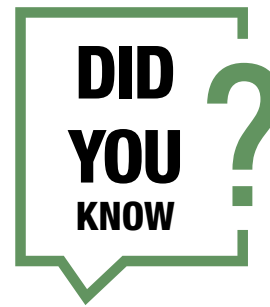
With the program themes now in place, the process moved into step two. During May, industry leaders and specialists participated in 90-minute virtual focus groups that built key strategies under these themes. The process was designed so that each of the focus groups took a deeper dive into only one program theme, thereby enabling a much more detailed discussion in that subject area. Due to their popularity, repeat focus groups were held in Productivity and Business Risk Management, Environmental Sustainability, and Animal Health and Welfare (One Health). During the focus group process, a total of 33 participants contributed 189 individual thought lines in a very rich dialogue. These thought lines were analyzed and condensed into 61 strategies that were sent back to participants for further comment.

1

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The process then moved into step three. Twenty-five industry leaders and specialists who had not participated in the focus groups were telephoned for their input and reflection on the strategies developed by the focus group participants. Each leader/specialist was asked to review and comment in detail on only one program theme. This resulted in an incredibly rich dialogue, with many calls lasting almost an hour. Most of the commentary reaffirmed the strategies developed by the focus groups. About a quarter of the comments resulted in additions, deletions, and clarifications in the wording of existing strategies. Interestingly, there was also some pushback on several entire strategies during these conversations. A typical “pushback” conversation ran like this, “I certainly agree with this strategy for the industry as a whole, but this particular one is beyond the capacity/mandate of PIP specifically.” As a result of all this input the wording in many strategies was refined and improved, and the number of strategies was consolidated to a more manageable 45.

3



Alberta's egg farms produced nearly 78,739,611 dozen eggs in 2022. That's enough for every one in Alberta to eat 200 eggs per year!

Source: 2022 EFA Annual report, Alberta.ca population statistics



The Building Process

In step four the revised strategies were sent out to a broad cross-section of industry leaders and specialists through an on-line survey process. This resulted in thirty-two detailed responses. As part of the online survey process, respondents were asked to rate the strategies developed from the work of stage three as poor, fair, good, very good, or excellent. Averaging the results led to overall industry approval ratings for the strategies as follows:

Productivity and Business Risk Management	- very good
Environmental Sustainability	- very good
Animal health and Welfare (One Health)	- very good
Poultry & Egg Quality/Value Added	- good plus
Food Safety	- very good
Plan as a whole	- very good

Participants in the on-line survey also provided extensive comments regarding further changes and improvements to the strategies. Approximately 80% of these comments were incorporated, resulting in a final total of 48 strategies.

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The fifth and final step in the process was to provide a draft of the finalized strategies to the PIP Board for discussion and possible approval. The Board moved that approval of the plan at their meeting on August 3, 2023.

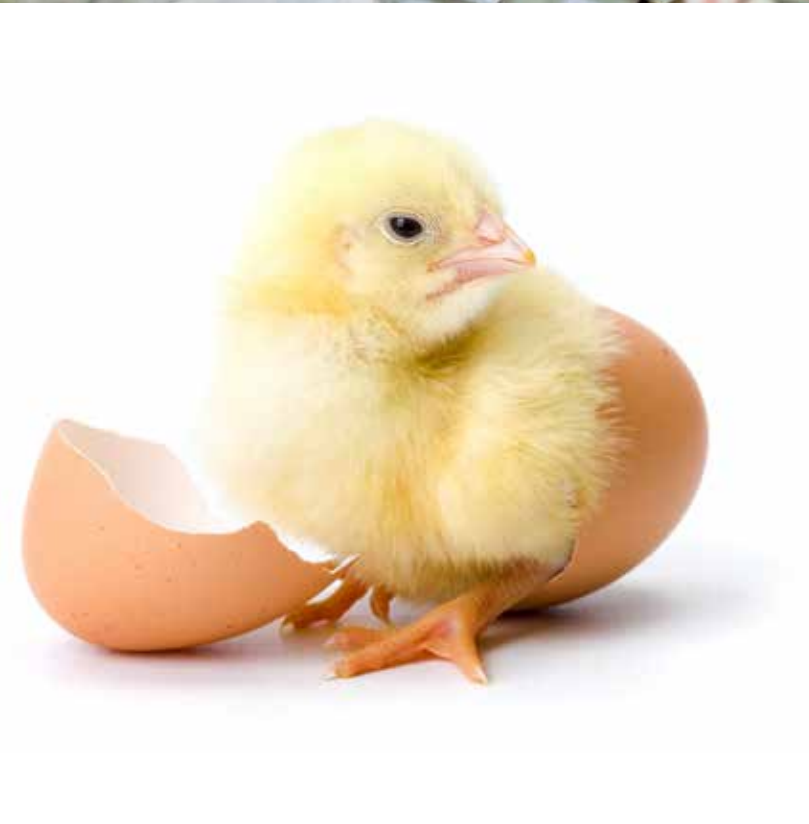
Throughout the multi-staged process, there were 136 “individual touch points” with industry resulting in over 700 “expressions of opinion”. This comprehensive input combined with the core “bottom up” approach ensured a high level of authenticity in the final plan.

5





Photo Credit: Manitoba Egg Farmers Learning and Research Centre



Eggs are one of nature's most nutrient-dense foods. One large (53g) Grade-A egg contains 6g of protein and only 70 calories!

Guiding Principles

During the focus groups and one-on-one calls participants often made “higher order” statements that could be looked on as not so much a specific strategy, but rather as a guiding principle. Several of these principles that were repeated often by participants are included below:

- PIP should employ a number of different extension methodologies to reach as large an audience as possible, recognizing that different people learn best through different approaches.
- While PIP should continue to provide direct extension in the form of webinars, short courses, conferences, newsletters, etc., it should also focus on “train the trainer” to lever maximum diffusion.
- PIP is not a policy organization. It should avoid policy lobbying/advocacy in its strategic plans.
- PIP has not historically undertaken significant work in the food safety/quality arena. It should consider expanding into this area by developing a modest set of research and extension strategies for food safety/quality.
- While PIP cannot be expert on every subject, its strength lies in its capacity to provide a platform for expert discussion and engagement that informs the industry.



**DID
YOU
KNOW**



In 2021, Canadian households consumed a total of 6.1 million whole turkeys. Per capita consumption was 3.5 kg!

Outcome 1: Improved Production Efficiency



Research Strategies

- Support development of integrated training and decision support models and tools that improve economic bottom line
- Review, revamp, and focus Heritage Flock at University of Alberta and collaborate with other heritage programs to provide genetic alternatives to a narrowing gene pool
- Analyse and consolidate global meta-analyses into best practices for Alberta poultry production
- Continue to conduct specific production efficiency research that is applicable to Alberta conditions, including feed efficiency research, recognizing that feed is the single largest input cost in poultry production



Extension Strategies

- Focus strongly on conducting webinars, podcasts, flock talks, seminars, conferences, etc. on best practice research findings with inclusion of highest cost factors (e.g. feeds)
- Continue to focus extension efforts on a mix of direct producer training, integrated value chain training, and train the trainer to generate maximum diffusion
- Host awareness discussions with poultry industry organizations to identify opportunities and strengthen integration of research priorities
- Host producer/industry discussions to uncover real issues facing producers and build networks to support development of solutions
- Extend the results of ongoing public and private sector research into the application of smart technologies to improve production efficiency and support integration of these results into research at U of A
- Develop broader industry and public awareness of value and capacity of Heritage Flock (risk mitigation, genetic diversity, social connection)
- Continue to provide on-farm and industry opportunities for student learning and development and encourage more student scholarships for industry-based learning

Flock TALK



Outcome 2: Improved Business Risk Management



Research Strategies

- Assess new and emerging global solutions and their practical application to managing crisis situations (e.g. depopulation management)
- Review global analytics to discover and document responses to the most critical existential risks to poultry production in Alberta



Extension Strategies

- Provide a platform for knowledge-based private/public discussions regarding supply chain resiliency
- Support industry organizations in creating awareness of the usefulness and importance of developing custom farm business risk management plans, including reference to transmissible diseases and extreme weather events

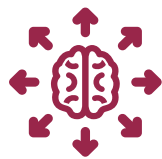


Outcome: Improved Environmental Sustainability Via Stewardship of Resources and their Impact on Air, Water, and Soil Associated with Poultry Production and Processing



Research Strategies

- Continue both institutional and on-farm research into integrated manure management, including biodigesters for small to medium sized farms, water recycling, deadstock disposal, soil health, nitrogen and micronutrient efficiency, odour, impact of barn environment on caregiver health, pathogen destruction and protection of water resources
- Support economic analysis and engage producers on new sustainability opportunities, including green energy sources, for suitability of implementation in the Alberta poultry industry context



Extension Strategies

- Transfer manure best management practices through a mix of extension methodologies, including peer exchange
- Benchmark and track adoption of environmental best management practices in poultry production & processing
- Transfer technologies that sustainably improve production efficiency, thereby reducing impact on environment (feed, phosphorous, genetics, equipment, precision feeding, water quality, density, handling, stress, litter type, etc.)
- Host networking opportunities for producers to connect with researchers across Canada who are conducting research and/or developing green technologies
- Bring together key players in related industries to resolve environmental issues (ex. alternative crops may reduce environmental impact and also reduce impact of rising feed costs)



Outcome: Industry Has the Knowledge and Tools Available to Achieve Thoughtful and Sustainable GHG Reductions



Research Strategies

- Continue to encourage research that develops and assesses viable genetics, including longer laying life cycles, local feed and energy sources, and technologies that pursue true sustainability without offsets, shorten days to market, support animal welfare, and improve efficiency thereby reducing carbon footprint
- Support the work of national organizations in developing and implementing complete life-cycle quantification protocols and benchmarks to enable industry to measure and document progress in GHG reduction



Extension Strategies

- Transfer economic analysis of new carbon-reducing technologies and management practices to producers



Outcome: Reduced Need for Antibiotics & Increased Effectiveness Through Research and Promotion of Cost-effective Animal Health Practices



Research Strategies

- Review world literature regarding full bird microbiome to assess applicability of antibiotic alternatives
- Continue research into best management practices and tools on farm and in hatcheries to reduce use of antibiotics, inhibit antimicrobial resistance, and support improved production efficiency in raised without antibiotics programs



Extension Strategies

- Support practitioners in extending antibiotic and antibiotic alternatives best management practices to producers

Outcome: Improved Bird Welfare and Productivity Through Greater Understanding and Mitigation of Poultry Welfare Issues



Research Strategies

- Continue to review world literature to update best welfare practices in support of national animal welfare committees
- Evaluate new animal welfare measures in Western Canadian context and continue to develop verifiable measures and practices that support bird welfare
- Support research into interactions of caregiver with flock in an effort to improve welfare and reduce stress and consequent use of antibiotics



Extension Strategies

- Conduct short courses, webinars and training events on animal welfare best practices, including unique Western Canadian issues such as transportation during cold weather, flock management during heat waves, wildfire smoke, etc.
- Support boards in developing producer practice guides to assist them in implementing welfare codes of practice and successfully achieving audit compliance

Outcome: Improved Bird Health and Productivity Through Surveillance, Prevention and Mitigation of Poultry Diseases and Application of the One Health Concept



Research Strategies

- Conduct research to develop and refine practical management innovations in poultry health that proactively prevent problems from occurring:
 - water quality
 - pullet health
 - stress factors
 - myopathies
 - engineering and indoor environment control
 - ammonia, litter, and particulate matter
 - gut health
- Conduct research targeting chick quality at the front end of the supply chain, and animal health and nutrition responses for evolving strains of birds including myopathy multi-factorials
- Support UCVM in participating in global research process to better understand impact of Avian Influenza on both bird and human health



Extension Strategies

- Work with producer boards to develop and host peer to peer mentorship program on animal health management to assist newer producers in the industry, with focus on key health issues such as chick quality
- Collaborate with practitioners and UCVM to extend information and provide training on best health management practices
- Support campaign amongst practitioners to strengthen awareness of UCVM's expanded diagnostic capacity and support One Health

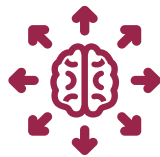


Outcome: Improved Consumer Food Quality Experience with Poultry Products



Research Strategies

- Investigate and benchmark management factors that could contribute to myopathies as poultry food quality issues, improve product quality for spent hens, and improve egg quality parameters
- Assess the suitability of new technologies for product quality and packaging improvements including freshness, reduced pinking, reduced yellow colouring, and freezing techniques
- Investigate novel feeds and feed additives that improve poultry meat quality within the Alberta production context



Extension Strategies

- Provide training for catchers, transporters and other critical staff that specifically improves food quality
- Support work of other agencies to educate consumers on poultry food product handling and cooking as it relates to food quality and educate producers on consumer trends



Outcome: Best in Class Food Safety Along the Poultry Supply Chain



Research Strategies

- Evaluate global meta analyses on specific feed ingredients that can augment/replace antibiotics in food safety pathogen reduction
- Conduct survey on barriers to implementation of on farm food safety best management practices
- Continue and expand food safety research into feed and water systems that improve/reduce food safety issues (e.g. cleaning water pipelines, recycling water in processing plants, raw material in feeds, mycotoxins, salmonella, high mineral content/alkaline water sources, reverse osmosis, immunocompromising factors, food safety in an organic environment)
- Investigate the benefits and implications of artificial intelligence as an on-farm food safety decision tool



Extension Strategies

- Work with boards to provide producer-focused food safety training and education with a focus on:
 - Food safety pathogen control measures
 - Pest vector control
 - Water system cleanliness
 - Feed borne pathogens
 - Litter quality





Conclusion

Alberta's poultry industry has historically functioned as a tightly knit community. Its successful journey of technology adoption has been based on peer contact, direct exposure to researchers, a focus on building highly qualified personnel, and innovative technologies that are featured at frequent industry extension events. This tight-knit exposure supports an ecosystem that in turn provides valuable feedback to researchers in a continuous loop that broadly engages the entire industry.

PIP's new Research and Extension Strategic Plan will help to support and drive that creative and collaborative process into the future as Alberta's vibrant poultry industry continues to grow and contribute to the health and well-being of Albertans.



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