Canadian Hatching Egg Producers | Les Producteurs d'oeufs d'incubation du Canada

2026 Research Priorities

Highly Pathogenic Avian Influenza (HPAI) – risk factors and effective ways to address HPAI, including treatment, prevention and vaccination - has been designated as a top priority by the CHEP Research Committee.

1. Production-based Research

a. Methods to increase fertility and number of saleable chicks
- Differences in fertility and paid hatch
- When is it most beneficial to add spiking roosters?
- Research on new and emerging technology to assess on-farm, real-time fertility
- Tail-end fertility
- Preincubation fertility
- Processing of hatching eggs at the barn and use of cameras to detect leaks and defects

2. Breeder Welfare

a. Ammonia control
- Developing more accurate methods to measure ammonia on-farm, and validating existing ammonia measurement equipment (such as the ammonia meters used by auditors)
- Establishing baseline ammonia levels on the farm, and once a consistent methodology is established, have CHEP compile national data to inform decisions going forward
- Validating benchmarks (such as those referenced in the code, or those determined as a result of on-farm baseline data), including the study of the impacts of different levels of ammonia concentration on the health and well-being of birds and humans in order to determine appropriate level(s) of ammonia to include in the animal care program as maximum thresholds depending on climate and temperature
- Cost-effective methods to control ammonia
- Reducing caking litter in broiler breeder and grower barns
    1. Feed additives
    2. Best management practices for ventilation

b. Strategies for feeding breeders
- Feed control

c. Density

d. Euthanasia
- Methods for birds >3kg, including low atmospheric pressure stunning (LAPS)
    - Is LAPS practical for on farm application?
- Efficient and quick way to euthanize breeder flocks in an emergency situation

e. Aggression

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- Feed energy and male aggression
- Research linking specific genetic traits with male to female aggression

f. Early mortality of breeder hens (*E. coli*, staphylococci)
- *E. coli* and staphylococci more likely to post peak mortality association

g. Physical alterations
- Toe-trimming, beak trimming: ideal methods and timing for procedures
- Cost-effective, practical management practices that can eliminate physical alterations

h. Transporting newly hatched chicks
- Length of time that newly hatched chicks are sustained by the yolk sac
- Effectiveness of hydration/nutrient products used prior to and during transit

i. Effects of vaccination programs on breeder welfare
- Current status
- Maximum thresholds – how much is too much?

3. Environmental Research

a. Disposal/valorization of mortalities
- End of cycle
- Mass depopulation

b. Effects of temperature control on egg handling and holding, and egg transfer vehicles, including egg sweating and links to rots after eggs leave the farm.

c. Effects of lighting on broiler breeder production, fertility, and bird health
- LED lighting long-term
- Light intensity, spectrum, colour temperature (K)

d. Environmental impact and effects of climate change as related to broiler hatching egg production

4. Poultry Health and Disease

a. Inclusion Body Hepatitis (IBH) – breeder vaccination and antibody retention
b. Variant bronchitis-impact on breeder production and fertility
c. White chick syndrome
d. More efficient vaccination programs
e. Effect of probiotics
f. *Mycoplasma synoviae*
g. Effective ways to deal with HPAI, including treatment, prevention and vaccination
h. Effect of water quality on bird health and performance (bacteria, hardness, mineral content, and pH)

5. Alternatives to antimicrobials

6. Control of Foodborne Pathogens/SE

a. Control of *Salmonella* by vaccination (methods and effectiveness)
- Newer *Salmonella* vaccinations or supplemental adjuvants to improve vaccine efficacy

b. Sources of infection
    - What is transferred to the chick? How does egg incubation affect *Salmonella* cells?
c. Possible barn differences, what type of construction, material, insulation, volume of air, angle to the sun (infrared radiation)
d. Prevalence
e. Population density
f. Control of *Campylobacter jejuni*
g. On-farm strategies to reduce and prevent *Salmonella* while birds are in production
    - Reduce/prevent *Salmonella* via competitive exclusion (probiotics and antagonistic bacterial species for controlling foodborne pathogens)