

**Board Research Initiative
Request for Proposals**

Colibacillosis in Commercial Layers

Background

Colibacillosis is one of the most common and economically significant bacterial diseases affecting commercial layer operations worldwide. The disease is caused by avian pathogenic *Escherichia coli* (APEC) and typically occurs when opportunistic bacteria invade birds compromised by environmental stressors, concurrent disease or weakened immune function. Commercial layers are particularly susceptible during periods of physiological or environmental stress, including the onset of lay, peak egg production, molting, transportation and exposure to poor air quality or elevated ammonia levels.

Research Areas

Evaluate the epidemiology, risk factors, prevention strategies and intervention methods for colibacillosis in commercial layer operations. Research should identify practical, science-based approaches to reduce the incidence and severity of disease, improve bird health and welfare, minimize mortality and production losses and support sustainable antibiotic stewardship.

Research Questions

- What are the primary sources, transmission routes and risk factors associated with colibacillosis in commercial layer flocks across different housing systems?
- Which strains of APEC are most associated with disease in commercial layers, and what virulence factors contribute to pathogenicity?
- How do environmental conditions, including air quality, ventilation, litter or manure management, dust levels and ammonia concentrations, influence the incidence and severity of colibacillosis?
- What role do concurrent viral, bacterial or parasitic infections play in increasing susceptibility to colibacillosis?
- How do pullet management practices, vaccination programs, nutrition and early-life immune development influence the risk of colibacillosis during lay?
- Which biosecurity and sanitation practices are most effective in preventing the introduction and spread of avian pathogenic *E. coli* within and between layer complexes?

Proposal Submission

Researchers should submit only a maximum two-page pre-proposal summary that describes the parts of the objectives they wish to address and what they propose to do. A title, the researcher's name, affiliation and email address should be included in the pre-proposal. Details of procedures or specifics of the budget should not be included in the pre-proposal submission. Pre-proposals should be submitted electronically at: <https://www.uspoultry.org/programs/research/>.

DEADLINE FOR PRE-PROPOSAL SUBMISSION IS NOVEMBER 2, 2026.

The outcome of the pre-proposal review will be one of three responses from USPOULTRY:

- Send a full research proposal for consideration.
- Please make specific modifications to what you are proposing and send a full proposal.
- Do not send a full research proposal.

Full proposals will follow established USPOULTRY guidelines as seen at <http://www.uspoultry.org/>. Funds can be used for graduate students, technicians, research supplies and work and meeting travel. Funds cannot be used for professional (faculty or postdoc) salaries or equipment purchase. Up to 15% overhead is allowed. No budget, including overhead, may exceed \$125,000.