



A Producer's Perspective on Managing the Environment and Improving Brooding Practices to Keep Birds Healthy

Gilles Arsenault

GILLES ARSENAULT IS AN AVICULTURAL CONSULTANT AND POULTRY FARMER IN ACTON VALE, LOCATED BETWEEN DRUMMONDVILLE AND SAINT-HYACINTHE ON MONTREAL'S SOUTH SHORE IN QUEBEC. IN 1992, HE ACQUIRED A FARM AND SUBSEQUENTLY BUILT TWO POULTRY HOUSES AND PURCHASED QUOTA FOR PRODUCING 40,000 CONVENTIONAL BIRDS WITH 6.5 FLOCKS PER YEAR. HIS OPERATION AND MANAGEMENT HAVE EVOLVED OVER THE YEARS, AND HE'S FOUND THAT PAYING ATTENTION TO THE DETAILS, ADOPTING AND ADAPTING TAILORED MONITORING STRATEGIES, AND EVIDENCE-BASED BROODING PRACTICES HAS BEEN KEY TO SUCCESS.

Leveraging Monitoring Tools & Advisors

Gilles' operation uses a Monitrol Genius system that allows for remote monitoring of the climate and measurements of feed and bird weights. While this technology has increased efficiency and oversight, Gilles still relies on in-person monitoring to fine-tune and make adjustments to things like feeding and ventilation. He also relies on the advice and expertise of technical staff from hatcheries as well as feed companies and nutrition experts. Gilles knows the key is having a tailored monitoring strategy that balances technology and outside voices, with what he sees and hears himself. This helps him learn from his past experiences to ensure each flock outperforms the last.

Setting Chicks Up for Success At Placement

Gilles makes sure to evaluate each new crop of birds at placement. He knows that not all chicks can be managed exactly the same way. Chick quality from pullets is not always the same as the quality from hens, which could be anywhere between 30-60 weeks of age. To ensure that each batch of chicks has the opportunity to reach optimal performance, Gilles ensures that certain environmental measures are in place:

- Washing and disinfecting the chicken houses and thorough drying between flocks, aiming for disinfection downtime of 10-14 days
- Disinfecting water lines 24-48 hours after the birds leave (after manure and bedding have been

removed and then flushed and disinfected again prior to chick placement)

- Disinfecting wells on an annual basis
- Using chlorine in water lines to prevent biofilms, with chlorination at 3-5 ppm, and maintaining a pH of 5.0-5.5

These environmental measures are in place to ensure that any chick arriving at the farm has a minimal risk of being exposed to any pathogen in the barn. Gilles also ensure that he is delivering quality water to his birds, which is key to maintaining gut health and has helped overcome the challenges associated with the removal of Category II antimicrobials.

Evidence-based Brooding For Optimal Chick Health. Gilles relies on the set of guidelines, **Chick Champs**, (developed as part of the University of Montreal's Faculty of Veterinary Medicine Poultry Research Chair's Antibiotic-Free Large-Scale Chicken Product testing project) to prepare housing for chick placement and determine what needs to be closely monitored to optimize performance. He prioritizes air (monitoring temperature, humidity and CO₂), water (by disinfecting water lines and wells on a routine and consistent basis and maintaining a good pH to reduce biofilms), then feed, by ensuring access to feed is conducive to chick health and growth. He pays close attention to a few aspects of the barn:

- Having a clean, dry floor
- Having a clean, dry chicken house
- Pre-spreading a base layer of litter and allowing air exposure and temperature/humidity regulation, then following up the next day with the remainder of the bedding to be added
- Appropriate ambient temperature
- High quality water from disinfected lines

Prior to the chicks' arrival, after ensuring the environment is set up properly, Gilles then puts boxes in place and paper under the lines to ensure that feed is as accessible as possible. Gilles takes the temperature on a sample of chicks (1 per 1,000 birds placed) 4 hours after their arrival and palpates their crops to ensure they have eaten. Typically, birds that have a temperature of 104-105°F will

have eaten. That procedure is repeated for the first three days. Chick weight and water consumption are checked daily in order to make sure they are growing properly. All of these management protocols and factors help chicks overcome any variations in health and performance upon arrival, and helps ensure the growing period is as productive as possible.

You Manage What You Measure

Gilles also closely monitors the humidity of the chick's litter. He goes above and beyond what is recommended in the On-Farm Food Safety Assurance Program for checking ammonia with an NH₃ gas detector (the Program recommends measuring ammonia/NH₃ starting at Day 28); instead, he checks his flocks every 7 days. Balancing humidity and ventilation to keep litter dry is always a challenge. Ideally, the barn is kept at 50%-60%, but at certain times of the year, humidity levels outside can be as high as 90%-100%. Right now, Gilles is comparing two systems that could help control humidity in his buildings, namely, a biomass heater or a heat recovery air exchanger to help reduce humidity and keep the litter dry to overcome this management challenge. He keeps an eye on CO₂ levels, and measures these levels on a weekly basis. This helps to ensure that litter stays dry to prevent health problems and reduce exposure to pathogens that thrive in damp and humid environments.

Stocking Density & Metrics for Success

With every flock of birds, Gilles utilizes zootechnics reports to get an indication of overall performance, feed conversion, profit per kilo, profit per bird, and profit per square metre in the barns. This helps to ensure that the right stocking density is maintained to balance both bird health and economics. Every operation will have its own metrics for decision-making, but Gilles finds the ideal balance to be between 30 and 32 kg/m².

Gilles has spent many years in the poultry industry. He has seen major advances in genetics, feed, housing, and management over time, and has

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changed his production style for grain-fed birds and adapted to changes in demand for bird size. He has also seen changes to the use of preventative antimicrobial use, overcoming challenges associated with the removal of Category I and II antimicrobials and is actively preparing for changes to preventative usage of Category III antimicrobials. He knows that with these changes come challenges, but with good monitoring and an emphasis on maintaining an excellent environment, he hopes that his farm can successfully reduce the use of antimicrobials without compromising, production, flock health, or welfare.

It's important to note that the Category III antimicrobials used in animal health are also used in human health. Therefore, decreasing their use is vital. Gilles wishes everyone the very best of luck!

From left to right: Samuel Arsenault, Sylvie Benoit, Gilles Arsenault, Roselyne Arsenault, and Thierry Arsenault.