Salmonella Enteritidis (SE) Discussion Document for Stakeholder Review and Comment
BC Broiler Hatching Egg Commission (BCBHEC)
June 2020

1. Objective

To update the BC Broiler Hatching Egg Commission's (the Commission) testing protocols in the Salmonella Enteritidis (SE) program to reduce the prevalence of SE in BC.

Stakeholder Impact Matrix:

Stakeholder	Interest	Influence	Involvement	Impact	Communication Level:
1. Producers	high	high	high	high	Regular updates and engagement
2. Hatcheries	high	high	high	high	Regular updates and engagement
3. Processors	low	high	low	high	Monitor through hatchery engagement
4. National Agency	high	low	low	high	Manage broadly
5. BC Chicken Marketing Board and Growers' Association	low	low	low	low	Manage broadly
6. Provincial government	low	low	low	low	Manage broadly

2. Background

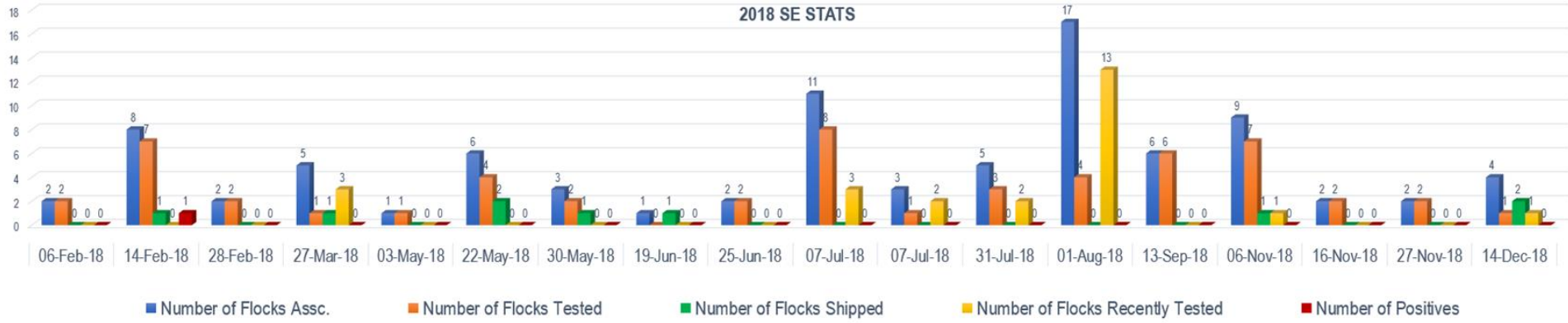
The hatching egg sector has battled SE since early 2008, when a phage-type known as PT-13 was introduced into the domestic supply chain by imported product at the hatchery level. Since that point in time, many SE prevalence challenges have arisen, and the Commission has mitigated those risks through testing and protocol development. SE follow up fluff sampling began in 2009, on-farm egg sales were banned in 2010, a third-party rodent audit of all premises took place in 2012 and a post-positive C&D protocol instituted in 2013. Hatching egg producers have paid the costs associated with these projects and the mitigation strategies necessary when a positive flock is identified. Hatcheries have reported absorbing costs for claims when SE causes high mortality on broiler farms and expenses associated with SE cleaning and disinfecting protocols at the hatchery. Overall, the sector recognizes both the costs associated with SE positive flocks and acknowledges the risks to the supply chain.

3. What is known about SE

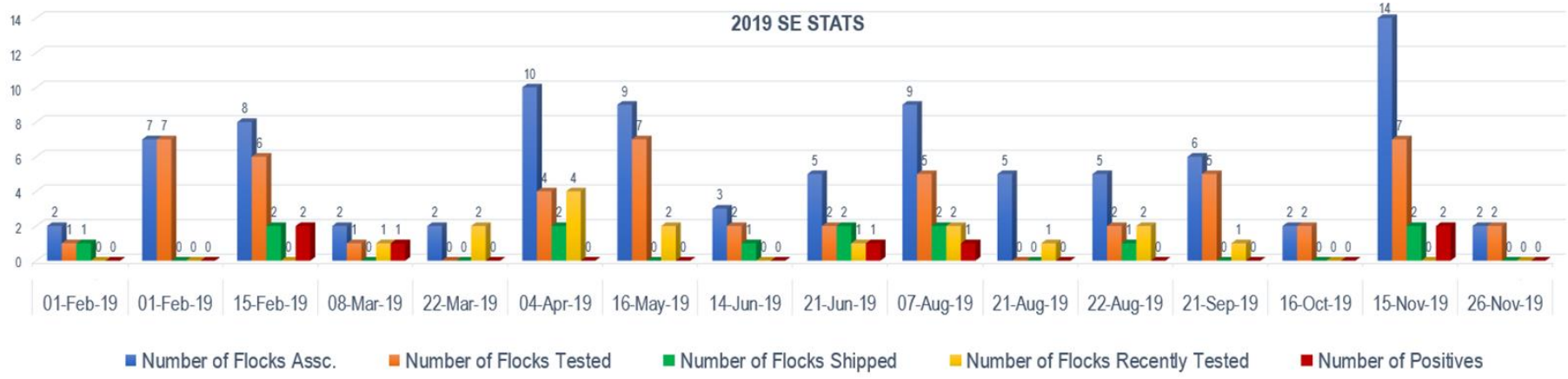
SE is vertically transmitted from the breeder bird through the egg and contaminates the progeny. SE is typically introduced to a flock through vectors such as rodents and insects. High mortality can be experienced from the grower side, and additional costs incurred to C&D post-processing of that flock. On the producer side, the broiler breeder rarely is impacted with mortality challenges; producers report that flocks are often non-symptomatic, and in most cases, flocks achieve anticipated production levels. This non-symptomatic viral behaviour and the ever-present vectors in long-life flocks make regular testing of the utmost importance. Knowing which flocks are positive and introducing mitigation strategies, appropriate product handling, increased biosecurity and post-positive cleaning and disinfection protocols to ensure limited contamination are all strategies that can be implemented once a flock is identified.

4. SE in the Hatching Egg Sector

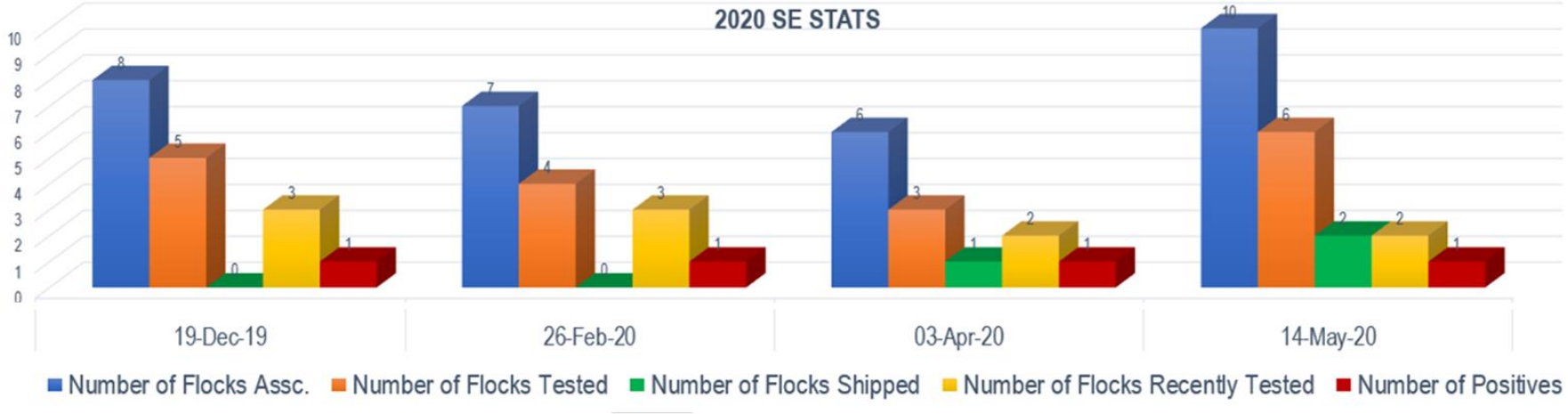
While testing has remained consistent and mitigation strategies mandatory, BC hatching eggs continue to battle SE. 2018 was a low prevalence year, 55 flocks tested, and one positive flock identified.



In 2019 SE rates increased with 53 flocks tested, and seven positive flocks identified. There is no evidence to support causation for the increase in positive flocks, only that more flocks tested positive.



2020 is on track to be another year of concern as four flocks have tested positive year to date.



5. Testing Protocol Recommendation

In researching other stakeholder groups[1] and facilitating the request for updated testing by the Egg Hatchery Association (EHA), the following testing schedule is in the Commission's recommendation process. While the prevalence issue is clear, there are several identifiable risks throughout the staff recommendation proposal that require both stakeholder feedback and Commission consideration. Additionally, the hatchery stakeholder group must also commit to mitigation strategies within the hatchery to ensure the supply chain is facilitating the objective of this recommendation.

Test 1: Day Old Testing at Breeder Chick Placement –Currently in practice
This test is currently in practice and meets the CHEP [2]and EHA[3] testing criteria.
If positive, the producer will be tested a second time to ensure the test was not contaminated. If positive a second time, engage in mitigation strategies and be tested again to ensure those strategies have been effective as the flock is no longer testing positive.
Identified Risk: Flock remains positive, and there are no available remedies to address the flock situation—this impacts both the producer and the hatchery.

Test 2: Pre-Move Testing- Additional Test
This test ensures healthy flocks are going into the lay house and is recommended by the EHA proposal. Hatchery field staff will conduct this environmental test when the bloods are taken.
If positive, producer will engage in mitigation strategies and be tested again in two weeks to ensure those strategies have been effective. The flock is no longer testing positive before birds go into full production.
Identified Risk: Flock remains positive, and there are no available remedies to address the flock situation. This impacts both the producer and the hatchery.

Test 3: Fluff Follow up in Lay House – Currently in practice
Staff had questions about the EHA proposal on the need to incorporate an in-lay environmental sample. Staff's preference is the continuance of the fluff sample testing that is currently in place. Ministry veterinarians confirmed that the fluff sample trigger to associated flocks was of better value than one test per flock.
If positive, producer will engage in mitigation strategies and be tested again to ensure those strategies have been effective, and the flock is no longer testing positive. If a second positive is found, the product will be redirected to the breaker for two weeks. After two weeks at the breaker, a final test is taken, and if found positive shackles are to be booked, subject to SE insurance framework implementation.
Identified Risk: Early flock removal is a high financial cost to the producer and hatchery, as early removal has a direct financial impact and interrupts egg flow.

[1] Appendix 1 stakeholder research
[2] CHEP DRAFT SE protocols
[3] EHA SE proposal

Test 4: Pre-Processing Date Test (4-6 weeks before processing date) – Additional test
This test ensures healthy flocks are going to the processor or that the processor is aware of the processing risk. This is an additional test and meets the EHA testing criteria.
If positive, producer will engage in mitigation strategies, and the assigned processor notified.
Post-Positive C&D testing will remain mandatory to ensure that chicks are placed into clean barns.
Identified Risk: Processor refusal to remove purchase fowl has a financial impact on the producer.

Test 5: Post Positive C&D Sampling –Currently in practice
Staff is confident that the post C&D protocols implemented in 2013 are still appropriate to ensure a barn is ready for the next flock. No evidence has been shared or identified that a post SE positive flock placed within the same airspace needs to be tested at regular intervals as per the EHA proposal.
Identified Risk: SE remains in the airspace undetected by the follow-up test.

Test 6: Spiking Male Testing –Currently in practice
Staff is confident that the current spiking male testing taken for males to be moved lay house to lay house between premises is sufficient to ensure spiking males are not contaminating the next airspace. There is no compelling information that suggests this protocol is insufficient in mitigating the risk of moving males.
Identified Risk: SE remains undetected and is vectored into another airspace.

6. Hatchery Commitment:

For this new testing criteria to be met in a meaningful way, a second key stakeholder commitment level must be addressed. There are several key responsibilities to be included for the hatcheries within the new testing protocols.

1. Hatcheries are expected to maintain proper sanitation protocols, CFIA inspects every six weeks at the hatchery to ensure compliance.
2. Hatcheries are expected to deliver clean and sanitized equipment to farms. If the equipment cleanliness is unacceptable to a producer, the hatchery will ensure that it is picked up and replaced within a reasonable timeframe.
3. Hatcheries will conduct the day-old breeder tests as is currently practiced.
4. Hatcheries will conduct test 2 at the time bloods are taken in the pullet house. Consistent material will be used to take the sample, and the Commission's protocols for collection of that sample will be used.
5. Hatcheries will use domestic production should SE positive product be directed to the breaker.