

## **Development of a Point-of-Care PCR**

### **Diagnostic platform and assays for the poultry industry**

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The current level of screening for most pathogens in the poultry industry is PCR testing. Tests/post mortems are run at the lab and the results sent to the consulting veterinarian and the producers. If the disease is diagnosed then treatment actions are taken. In a very fast turnaround results may be available in 24 hours. The average is closer to 36-48 hours. Currently there are no on-site (Point Of Care) PCR solutions for the poultry sector and none for commercial use in animal health systems. PCR machines to run the tests cost \$30,000-\$100,000 and up. A low cost PRC machine has been developed; this project focuses on developing the PCR medium (assays).

A new system based on patented technology using PCR chemistry allows for the samples to be run directly with little or minimal preparation in a very economical machine directly on farms. It could be as simple as producers taking a swap, placing it in a test tube, shaking it and pouring the resulting solution onto a plate and then placing the cartridge into the PCR machine. It could be an important part of on-farm surveillance.

The first targets are clostridial enteritis and coccidial diseases. These have the greatest economic impact at the level of morbidity or loss of gain for the producer. The researchers believe with this technology they can develop a system that can deliver gold standard results to the consulting veterinarian within 2-3 hours. Costs to the producer should be the same as the reference lab. The overall benefit is faster diagnosis and decreased morbidity and mortality to the producer. Healthier flocks and significant improvement in conversion (gain).

Their short term targets are clostridial subtypes and coccidia. The medium term targets are E. coli and salmonella. These were basically chosen in in order of economic significance to BC flocks. They will also be developing a target test for avian Influenza to complete their panel. This test does have some regulatory red tape in front of it. However if they can prove its reliability; it could potentially be the first line test run by regulatory officials on site (and possibly producers as a screen).

**Graphic of Aquila Testing Diagnostic System**

