DECEMBER 2022 VOLUME 11, NO. 12

THE CHICK PAPERS

Georgia Poultry Laboratory Network's Monthly Newsletter

CT value: A simple explanation

By: Dr. Zavala and Len Chappell

PCR is a fantastic tool in the veterinary diagnostic laboratory. The test is done quickly, cheaply, and has excellent sensitivity and specificity. During a PCR reaction, the genetic material of the target organism is amplified through heating and cooling cycles, and copies of it are generated, so that the organism becomes detectable. A typical RT-PCR assay has a maximum of 40 thermal cycles.

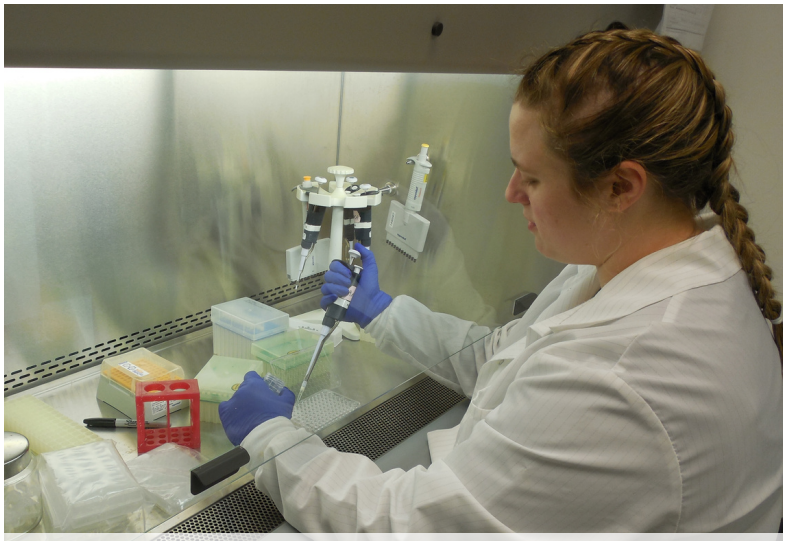
CT value stands for “Cycle Threshold value.” It is the number of amplification cycles needed to detect the organism genetic material.

If there is no organism genetic material in the sample, there will be no amplification and no detection, and the sample is negative.

If there is a lot of organism genetic material in the sample, it will take less amplification cycles (for example 23) to make them detectable (LOW CT VALUE).

If there is a small number of organisms in the sample, it will take more amplification cycles (for example 35) to make them detectable (HIGH CT VALUE).

Because Mycoplasma positive diagnoses sometimes lead to important flock decisions, and because high CT values are sometimes questioned as positives, regardless of the results, GPLN always requires a second test (a second PCR or serology) to confirm the diagnosis of Mycoplasma in a poultry flock.



Stephanie Wingo, Virology Lab Tech 4, preparing samples for PCR testing under the biosafety cabinet.

Dr. Fairchild brought by a group of UGA graduate students for a tour of the lab where they ended their tour at our Emergency Response Building.