Dominic Rodriguez

Dominic Rodriguez, Cesily Cirerol, Amber Notah, Chi Nguyen, Janell Kartoz, Tommy Jodie, Brawnson Myron, Gerardo Lopez

Understanding the prevalence and transmission of Cyclospora Cayetanensis in Produce Growing Regions in Southwest and Mexico

Cyclospora Cayatanensis is a protozoan parasite that is linked to the disease, cyclosporiasis which is a diarrheal disease worldwide. Symptoms of this disease include explosive watery diarrhea, weight loss, cramping, bloating, increasing gas, nausea, fatigue, and loss of appetite. Person-to-person transmission of this disease is unlikely due to the sporulation status of the parasite. The transmission route of this parasite is through fresh produce or water contaminated with oocysts that become sporulated between 1-14 days. Other modes of transmission are unknown and not identified. Fresh produce in endemic areas of many countries around the world and as of recently, produce grown in the USA, have been reported to be contaminated with the *C. Cayatanensis.* According to the CDC, as of September 31, 2021, 38 states have reported Cyclosporiasis infections with a total of 1020 individual infections. The main goal of this study is to develop a better understanding of the prevalence and transmission of *C. Cayetanensis* in produce growing regions Southwest and Mexico. To develop this understanding, this study consisted of collecting (39) samples in the produce Southwest growing regions of USA and Mexico. The samples included irrigation (15) and surface water (4), soil (6), floors and handles (10), and fresh produce (4). The samples are then sent into the lab for further investigation and presence of Cyclospora. Methods used in the lab to isolate the parasite are from the FDA and Bam 19C method which include recovery of oocysts from filters through backflushing and concentration, DNA extraction with purification, and molecular detection by real-time PCR assay that targets the *C. Cayatanensis* 18S rRNA gene.