

Elina Landeros Rivas

**Abstract:**

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*Cyclospora cayetanensis* is a coccidian parasite which causes cyclosporiasis an enteric illness in humans that is major public health concern. *C. cayetanensis* has been implicated in outbreaks in the United States since the early 2000. In 2019, there were 2,408 laboratory-confirmed cases reported domestically from 37 states, thus, making Cyclosporiasis a nationally notifiable disease. The present study assessed the prevalence of *C. cayetanensis* in agricultural water in the Yuma Valley fresh produce growing region by collecting monthly up to 100-liter agricultural water samples for a year for a total of 196 samples. *C. cayetanensis* was collected from Envirochek high volume filters, eluded and concentrated using the EPA method 1623. The newly developed FDA BAM 19b method was used for DNA isolation, purification and quantitative PCR (qPCR) assays. A total of 3% (6/196) of samples were positive for *C. cayetanensis* and were detected during the winter months of December (2-samples), January (3-samples), and February (1-sample), all other months were negative. Four of the six positive samples were unlined canals ~ 4% (4/103) and two samples were line ~ 2% (2/93). There was no statistical difference between lined and unlined gene copies/Liter. These findings suggest that the risk of *C. cayetanensis* fresh produce contamination from agricultural water in this produce growing region seems to be relatively low risk, given that no *C. cayetanensis* outbreak has been associated with fresh produce grown in the Yuma Valley and given the volume of raw agricultural commodity irrigated with these agricultural waters. The recommendation is for irrigation districts and growers to continue to implement and practice current water quality safety measures, good agricultural practices (GAP) and good management practices (GMP) to continue to reduce the potential contamination of fresh produce with agricultural water potentially contaminated with *C. cayetanensis* oocysts.