# ASSESSING AND MANAGING THE MICROBIAL HEALTH RISKS OF IRRIGATION WATER IN THE LOWER COLORADO RIVER BASIN, IN THE SOUTHWEST USA.

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## ABSTRACT

Our main goal was to identify potential risks posed to the microbial quality of the Colorado river water. The microbiological quality was evaluated on a weekly basis. We observed great variability in the population of bacteria indicators in the water (Fecal coliforms, total coliforms and E. coli), with low population coinciding with the production season of leafy green crops in Arizona. We did not find any sample containing Escherichia coli O157:H7, a pathogen of great concern in the industry. When we assessed the risk posed by the different irrigation systems used, including overhead sprinkle, furrow and drip irrigation, we determined sprinkle irrigation poses the highest risk to deliver a contaminant to consumers. However, we also observed that furrow irrigation produces the longest survival in the soil, which may eventually allow cross contamination at harvest. Overall, our findings showed that highest risk occur when last irrigation is scheduled shortly before harvest.

**PALAVRA-CHAVE: Escherichia coli, survival**