Review of: "Assessment of Quality, Bacterial Population and Diversity of Irrigation Water in Selected Areas of Minna, Niger State, Nigeria"

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Potential competing interests: No potential competing interests to declare.

The use of irrigation water is one of the main sources of crop contamination, mainly because it comes from wastewater. This factor justifies the theme of the proposed work. However, the work, as well as the structure of the text, presents several problems. The authors propose to study the quality, diversity, and size of the bacterial population in irrigation water from 4 different locations. Water quality can be easily assessed by the parameters studied and the bacteria count. A count of thermotolerant coliforms could also have been carried out. The authors conclude that the water quality is poor, with the parameters studied above those permitted. This result was already expected as it was wastewater; no prior treatment of these waters was mentioned. The authors propose to study diversity, but they do so using selective media, nutrient agar, and a few biochemical tests that are insufficient for good taxonomic identification, mainly from strains isolated from the nutrient agar medium. The methodology leaves some doubts: Why use the pour plate technique and not the spreading technique? To obtain enterobacteria, OK, but to check diversity, the pour plate technique can hinder the growth of strict aerobes. Another point is that the transfer to the slants was done directly from the culture plates, allowing cross-contamination, when exhaustion from the culture plates should have been used to obtain pure cultures. Regarding the results, the authors do not mention how many colonies were isolated from each medium and from which medium the identified strains came. The authors suggest from the results that the water may be contaminated by domestic sewage or industrial waste. This way, it would be better to characterize the study areas in relation to possible sources of pollution in the surrounding area. Some physical-chemical parameters observed may be due to the presence of bacteria in high numbers and not the other way around (parameters determining which bacteria will be found). Finally, the text lacks updated references.