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Results draft

Results

In the Ruffner fountain, the number of colonies varied greatly. In trial one at Ruffner fountain, we observed 4 colonies. In trial two at Ruffner, we observed 3 colonies. In trial three of Ruffner, we observed 1 colony. The average number of colonies for Ruffner fountain was calculated to be 2.6 colonies (Figure 1). Our standard error of the mean for Ruffner was calculated to be 1.5 (Figure 1). This is very high, and we would want a lower standard error if we conducted more trials. At Chi fountain, trial one had 3 colonies. Trial two at Chi fountain had 0 colonies, and trial three had 2 colonies. The mean for Chi was calculated to be 1.6 colonies (Figure 1). The standard error of the mean for Chi was found to also be 1.5 (Figure 1). For our control, we had 0 colonies in all three trials. Our mean was calculated to be 0 for our control (Figure 1). Our standard error of the mean is also 0 for our control (Figure 1). Our error bars overlap on our graph in Figure 1, so it is hard to tell whether Chi or Ruffner fountain had more bacteria. However, we can conclude that the fountain water had a statistically significant number of colonies when compared to the control sample (Figure 1).

Both fountain samples displayed many different colors (Table 1). In Ruffner, several colors were recorded for each trial. These include green with a white rim, yellow with a white rim, light gray, white, dark green, and pale yellow (Table 1). At Chi fountain, there was a little more consistency. The colors included yellow, white (multiple counts), brown, and off-white (Table 1). The control group had no colonies, so no colors were recorded because there were no colonies. More research would need to be done in order to gauge the significance of the colors that we observed in each trial. No correlation between the number of colonies and the color was detected.

The shape of the bacteria in these samples were fairly consistent. The shape of Ruffner's bacteria growth in each trial was circular and appeared dull (Table 2). In trial two, we encountered one shiny colony (Table 2). In Chi, each of the colonies were circular and dull (Table 2). In trial three, we recorded one colony as fuzzy (Table 2). This consistency could mean that the types of bacteria in each fountain were the same or very similar. This would also require more research to be proven. No correlation between number of colonies and the shape was detected.

Our hypothesis was accepted because we saw a significant difference in the number of colonies in the fountain and control samples.

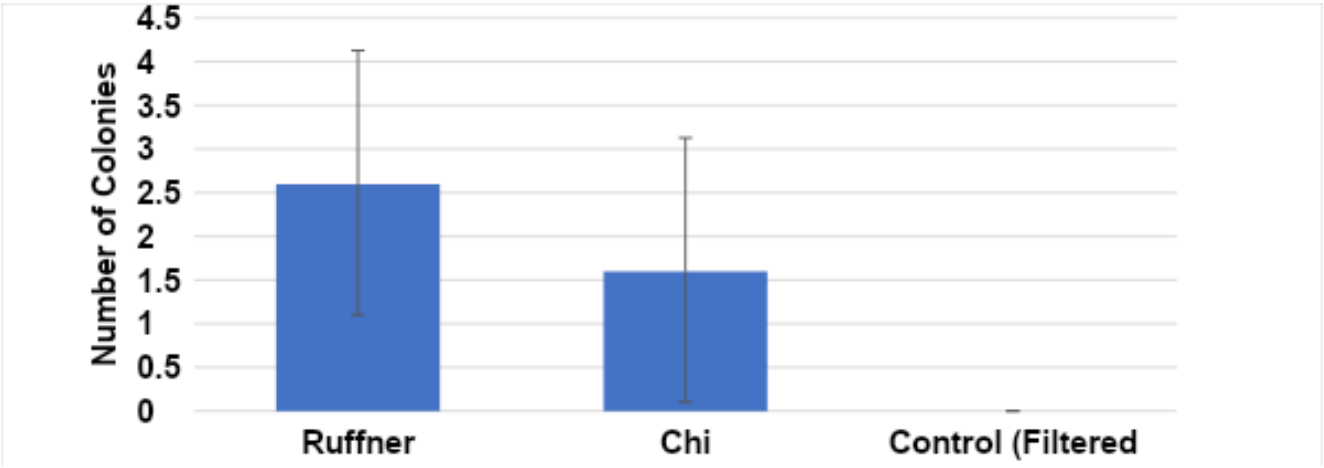

Figure 1. The number of colonies of bacteria from each water sample. Data are shown for each of the testing locations, Ruffner Fountain, Chi Fountain, and the control (filtered water from Wheeler). The highest number of bacteria was found in Ruffner, while the lowest amount was found in the control. Bar heights are the mean of the three trials and the error bars are the standard error of the mean.

Table 1. Color of bacteria observed after incubation from each water sample. Description of color of each colony of bacteria from each location in September 2018. Ruffner had the most variety of colors found in the bacteria colonies.

	Trial 1	Trial 2	Trial 3
Control	None	None	None
Ruffner	Green with white rim Yellow with white rim Light gray White	Dark Green Dark green with white rim	Pale yellow
Chi	Bright yellow White White	None	Brown with pale yellow outside Off white/cream

Table 2. Shape and form of bacteria observed after incubation from each water source. Description of the shape and form of each colony from each location in September 2018. Ruffner had the most consistency with shape, the most common one being circular.

	Trial 1	Trial 2	Trial 3
Control	None	None	None
Ruffner	Circular Dull	Circular Shiny Dull	Circular Dull
Chi	Circular Dull	none	Circular Dull Fuzzy