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Valveless Pumping

The objective of this experiment was to determine at what distance from a symmetric location and at what frequency will the greatest velocity of flow of the bee-bee around the tube be created. As my hypothesis, I believed the furthest tested distance at the highest frequency would create the greatest flow of the bee-bee. To conduct the experiment, I first made an apparatus that would compress the elastic portion of a water filled tube. Then, I found the symmetric location. From this point, I measured in 1 cm increments up to 7.0 cm on the right and left of the symmetric location. A mark was placed at each increment. After measuring, I tested each measurement (1.0 cm-7.0 cm to the right and left of the symmetric location) at each frequency (8.97, 15.50, 20.13, and 29.50 compressions of the tube per second). The results of the experiment showed the greatest flow rate of the bee-bee was observed at 7.0 cm right of the symmetric location acted upon at 29.50 compressions per second. The 7.0 cm marks, along with 29.50 compressions per second, resulted in the highest flow rate on the side of the symmetric location where they occur. However, the highest frequency didn't always produce the greatest velocity of flow. Resonance was observed at multiple measurements. The test results support my hypothesis. The furthest tested distance from the symmetric location combined with the highest tested frequency resulted in the greatest flow rate of the bee-bee around the tube.