|  |  |
| --- | --- |
|  | We recognize that there are certain shortcomings in our experiment. To improve the experiment we have designed a few ways to obtain more significant data:  1. If possible, conducting the experiment in a sterile environment would ensure the purity of the kind of bacteria being tested. This can greatly eliminate contamination of all kind. It would be expedient if a way of measuring the actual extract of the juice that contains the antibacterial elements is developed. In this experiment, the percent concentration and the density of the juice are being calculated and used for comparison, regardless of the percent components of the juice itself. Since every bulb or bunch of plant is different, plus fresher vegetable tends to be more juicy, the real concentrations of the juices remained unknown. A method of measuring the actual antibacterial extract would greatly increase the accuracy of the data. Increasing the variation of concentrations tested will give a more valid conclusion on varying concentration�s effect on the antibacterial efficiencies of the juices.  2. In this experiment, only three different concentrations were tested and were too general to draw a specific conclusion out of the data. Since both this year and last year�s experiments showed that the higher was the concentration, the more efficient was the substance in acting as an antibiotic, concentration of more than 100% should be tested. Although time was not a variable in this experiment, and most of the trials� data were collected overnight, collection of trial 7 �10�s results were forced to wait over the weekend, thus increased the set time period. The data from those trial, however, appeared to be more stable. Therefore, a time variation being included in the experiment would make the data more valid.  3. The results of our garlic test were converted into unit of density for comparison to the garlic test results of the experiment of Christina and Elisa. Our garlic test data was then compared to the data of the tests of the other four substances in the original unit, due to the lack of time to mass and to convert the data. This, thus, make the pathway of comparison indirect. Direct data have better accuracy.  4. The part of the plant used for testing for garlic, shallot, and onion is the bulb part. However, because the supply of our testing substances is supermarket, we were not able to buy the undergroud part of chives and leek, but used their leaves and stalks instead. Since various parts of the plant have various properties, this aspect of the experiment is not being completely controlled.  Chives, garlic, leek, onion, and shallot have great potential medicinal value. Building on the experiment of Christina and Elisa and of ours, further investigations can be performed to obtain a better understanding of these herbs and a more definite conclusion. Here are some topics suggested for future researches:  1. Test can be perform to investigate which part of the plant is most efficient in killing bacteria, since various parts of the plants have various properties.  2. A different kind of susceptibility test can be used to determine the antibacterial properties of the substances. The broth dilution test can be used to determine the minimum inhibitory concentration of substances. |

*This Web Site is Best viewed with 256 or more colors.*

*For More Information about Creekwatch, please contact Eric Thiel at* [*ethiel@pleasanton.k12.ca.us*](mailto:ethiel@pleasanton.k12.ca.us)