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|  |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | For the entire experiment, plates 7- 12, the average number of plaques was 2.48 x 107  The standard deviation was 1.35 x 106. The percent of error was 5.44%.  From procedure #1, as noted in Table 2, the percent error is extremely high ranging from approximately forty to sixty percent. Further analysis was not done with this data. The data was discarded as statistically inaccurate.  The overall percent error for the experiment in the revised procedure was 5.44%. Further analysis was done with this data.  **PFU**  The average PFUs, plaque formation units, was 2.48 x 107 . This was obtained by finding the average PFU from all three dilutions and then averaging these numbers. The plaque formation unit is a predictor as to how many phages were in the original sample. The PFU predicts this given the number of plaques seen and at what dilution.  **Dilutions**  The 10-3 and 10-4 dilutions were concentrated too much of the virus. This was shown through the fact that there were too many plaques to count. (TMTC stands for too many to count).  The 10-7 dilution had a 47.51% error. This was the highest percent error in this experiment. This error is because of the extremely small dilution. A very limited amount of viruses where found here ranging from one to four. According to statistics, a small population is less likely to produce significant results because of randomness. The actual virus population size wasn't predicted very accurately at the 107 dilution because the five trials wasn't very likely to represent the actual amount of virus. It has been determined by scientists that thirty to three hundred plaques is the optimum range to best represent the actual number of viruses in the original sample.  The 105 dilution had the least percent error at 11.11%. This dilution's average PFU was 2.41 x 107.This was the closest to the overall average PFU.  **Best fit of the Average PFUs**  From the average PFUs of the 10-5, 10-6, and 10-7 dilutions, a least squares regression line was made. 252555556 - 0.0114x=y is the equation of this line.  After finding this, a T-test was done for the least squares regression line to see if significant results appeared. The T-test revealed that the results were statistically significant. Given the slope was zero, the probability of this sample's results coming up is 3%. Since this number is so low, there is very strong evidence that there is a slope, meaning the averages have a trend. With a 5% alpha level this is evidence to reject that there is no slope, and the results were significant.  **Plaque Formation Units as a function of Titration**  A line graph was made by plotting the 5 plaque counts in the PFU for the three dilutions. For each of these, a trend line was made. All of the trend lines intersected at the average PFU, 2.48 x 107 . By making this visual, it verified the average plaque formation unit and helped explain how the PFU was reached. |  | |  |  | | | | | | | | | | |  |
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|  | |  |  |  | | --- | --- | --- | |  | | | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | [Prediction](http://docs.google.com/page2.htm) |  | |  |  | | |  | |  | | | | |  | |  |  |  | | --- | --- | --- | |  | | | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | [Abstract](http://docs.google.com/page3.htm) |  | |  |  | | |  | |  | | | | |  |  |  | |  |  |  | | --- | --- | --- | |  | | | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | [Conclusions](http://docs.google.com/page11.htm) |  | |  |  | | |  | |  | | | | |  |  |  | | --- | --- | --- | |  | | | |  | |  |  |  | | --- | --- | --- | |  |  |  | |  | [Work](http://docs.google.com/page12.htm) [Cited](http://docs.google.com/page12.htm) |  | |  |  | | |  | |  | | | |  |