The purpose of our experiment was to determine the effects of antibiotics in animal feed on soil bacteria. Our experiment was intended to find potential correlations that can be elaborated on further in future, more thorough, experiments. We collected 3 different samples, one from a livestock pen from Hadley farm, one from just down hill of the farm and one from a permaculture garden as a control. We let them culture some plates with antibiotics and some plates with no antibiotics and observed the results. The first and most obvious of the results we got was a clear difference in bacterial growth between our 3 different locations as we expected. The most growth was seen in the samples taken from inside the livestock pen while the least growth was seen in the samples from the permaculture garden. What was the most strange was that the bacteria seemed to do equally well on both the plates with antibiotics and the plates without. Not only did they do just as well but they grew in the same pattern of most growth from the livestock and least growth from the garden. The uncertainty posed by our experiment makes it hard to actually judge the results and draw accurate conclusions from them. **Assuming the antibiotic plates functioned as intended, we can draw the conclusion that the bacteria from the livestock pen had a high level of antibiotic resistance.** In addition the samples from down hill and from the garden would have less resistance and very little resistance respectively which is what we had assumed going in. An interesting point of note is that the antibiotic used on the farm is an Ionophore which blocks ions from crossing the cell membrane while the antibiotic on the plate was Amoxicillin which binds to proteins and breaks down the cell walls. These antibiotics work very differently so it was unlikely that the bacteria would be resistant to the Amoxicillin. **This means that either it became resistant to Amoxicillin, there was an error in our experiment, or the farm uses antibiotics we were not told about.** The pattern shown by the bacteria on the plates lacking the antibiotic would point to an error in the experiment or some other unforeseen/unaccounted for variable. If our observations are correct than this could prove an interesting topic to delve further into seeing as Ionophores are used because they pose little medical threat to humans in the area of antibiotic resistance yet our experiment indicates that the bacteria exposed to it was resistant to Amoxicillin which is an antibiotic used in humans.