**Conclusions:**

Our soybeans were inconclusive as the data provided was inconsequential due to an over watering of the seeds.

The alfalfa data collected shows a definite difference in weight per sprout, with the plants under the plant light having the greatest weight and it is thus the healthiest of the three groups. The alfalfa sprouts under the fluorescent had the second highest weight, showing the plants need ultraviolet to develop well, while a total lack of UV inhibits the growth and development somewhat.

The number of alfalfa sprouts under each condition is shown to be statistically significant, as the plant light had the most sprouts, followed by the fluorescent and then the saran. This also suggests that the plants develop best under the optimum levels of UV provided by the plant light, while the increased UV levels present under the fluorescent light are less productive, but still result in more sprouts than under the saran wrap.

While doing the statistical analysis of the oat grass measurements over time, we failed to find a significant difference between the plant light, fluorescent and saran. However, once the final data was collected, the last two-sample t-tests show that the height of the oat grass under the fluorescent light were significantly greater than those of both the plant and saran lights. This suggests that oat grass actually prefers higher levels of ultraviolet radiation. However, the plant oat did have a greater mean weight and a higher number of sprouts (though number of sprouts in the different conditions was not statistically significant). This may suggest that higher UV levels promote faster growth in oat grass.

Red winter wheat grew best consistently under the optimum UV levels provided by the plant light. With very few exceptions, all statistical tests done on growth over time and on the final data collection showed the wheat under the plant light grew better than the wheat under the fluorescent and saran lights. The roots from the saran light were much shorter than the roots of the other wheat plants, though this difference was not statistically significant. It does, however, suggest that the presence of UV aids in root development. The wheat under the fluorescent light also had a greater growth rate and a higher final height than the wheat under the saran light. This again suggests higher than normal levels of UV are preferable to a total lack of UV.

In conclusion, we find a difference between the reactions of the different types of plants to the differing levels of ultraviolet radiation. Oat grass tends to grow faster under the increased levels, while wheat and alfalfa definitely prefer the normal levels of UV. None of the plants preferred a total lack of ultraviolet emissions.

If the future does indeed lead to increased levels of ultraviolet radiation emissions through our deteriorating ozone layer, the health and viability of the world’s main crops may well be compromised. Not only will people be in danger of cancer and other health risks, but the main staples that millions and millions of people and animals depend upon will be harmed as well. The future does not bode well unless something is done to stop ozone depletion. It may also be beneficial to develop plants that are UV-tolerant.