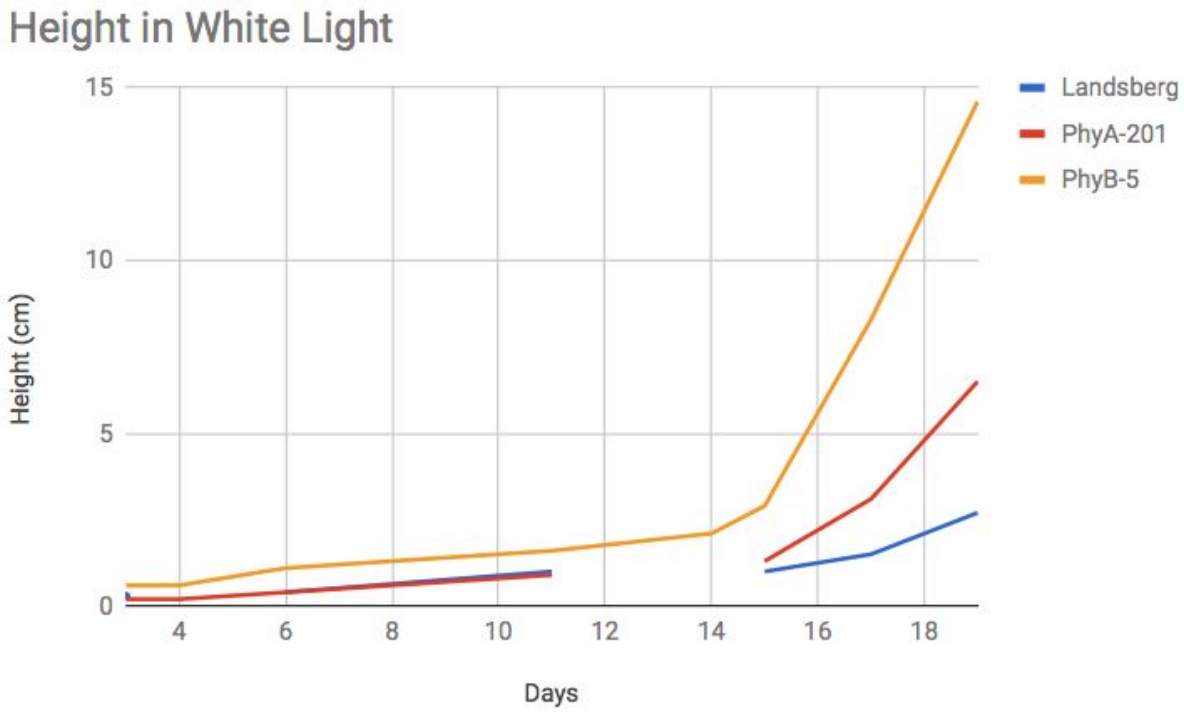
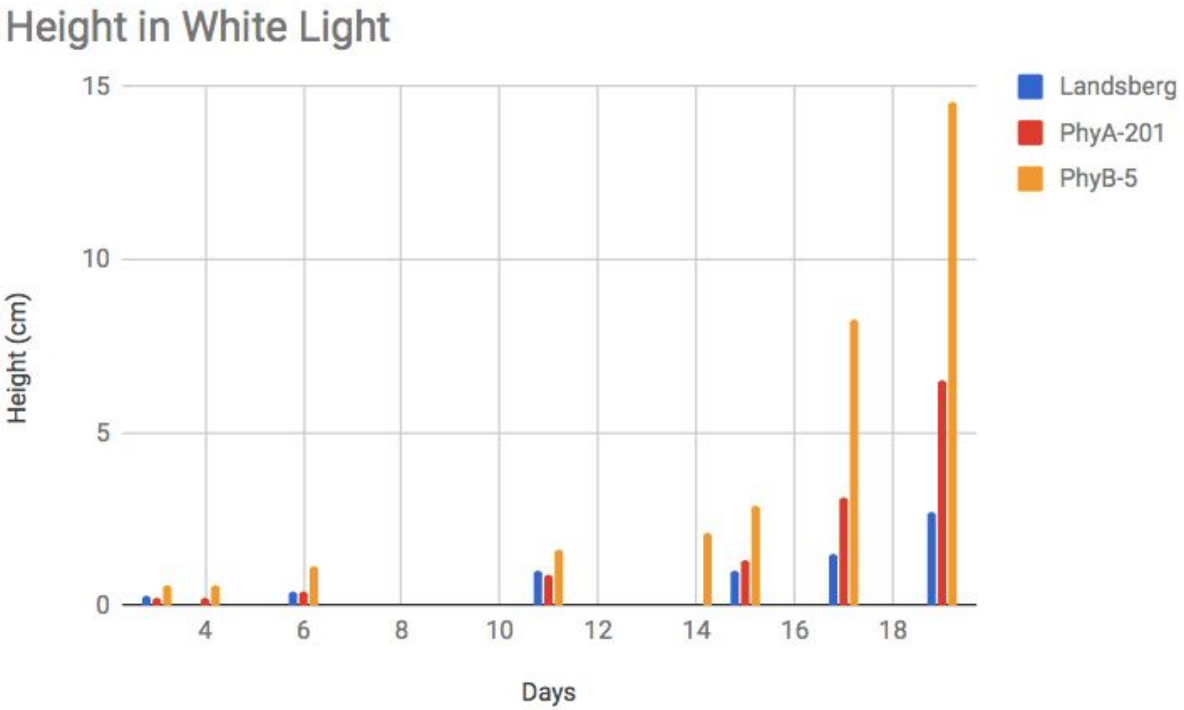
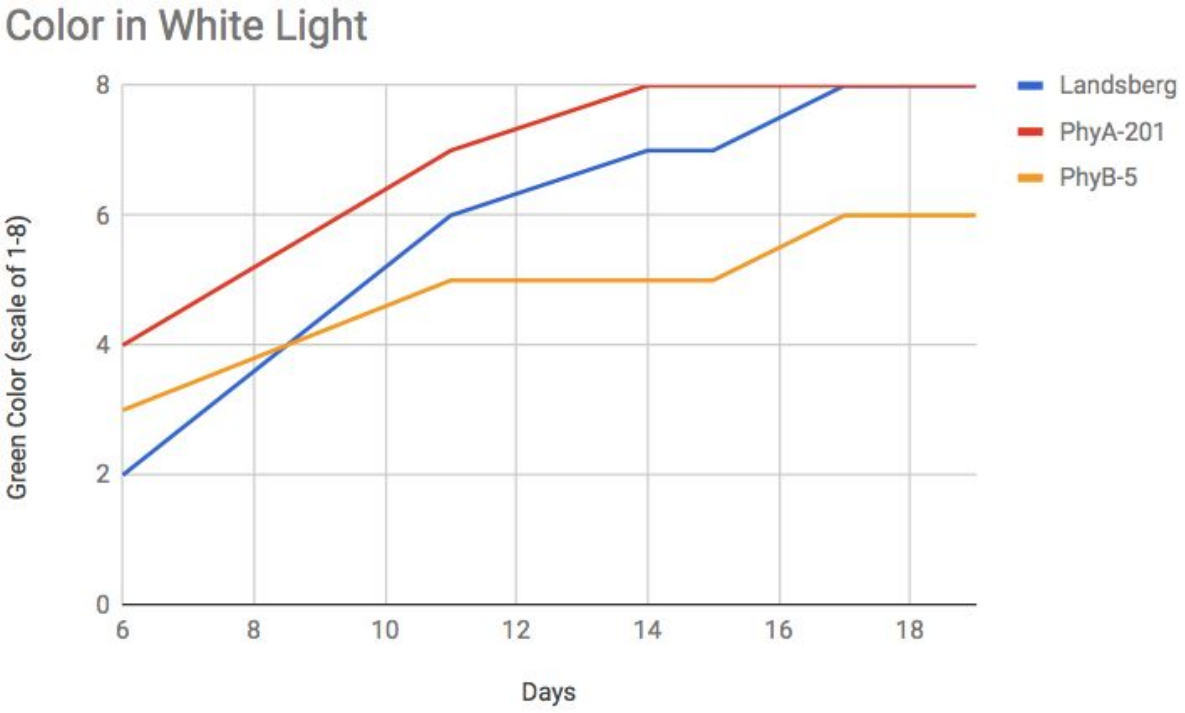
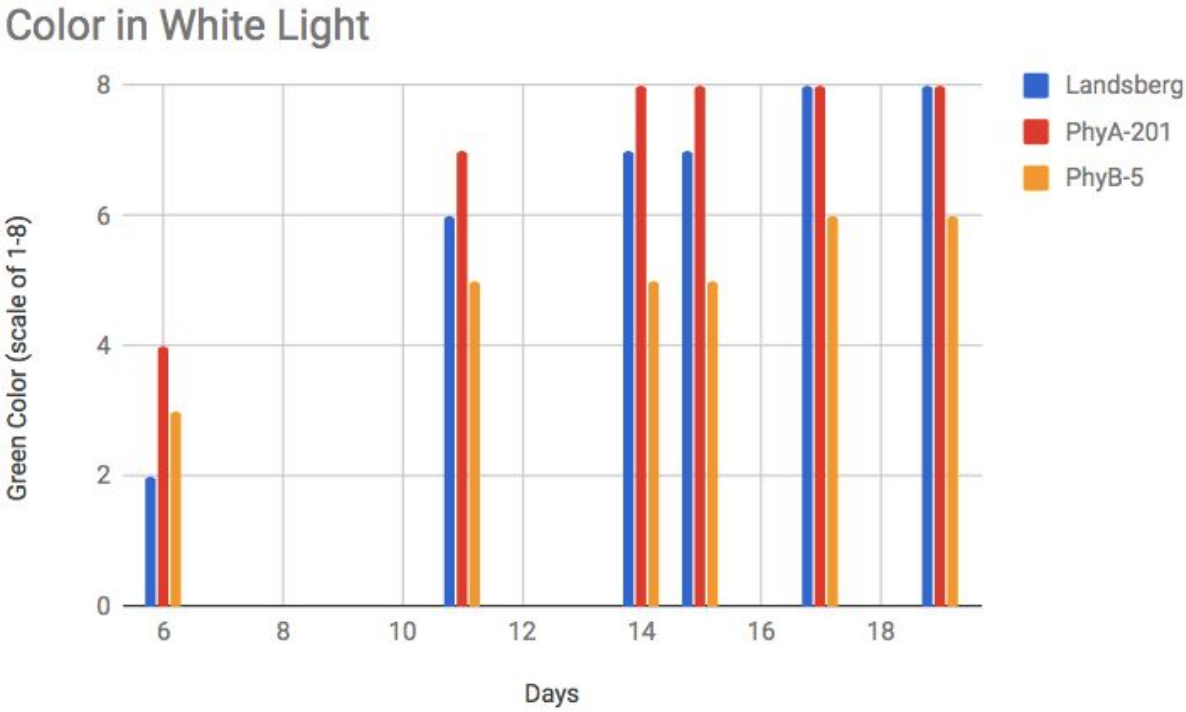
Heba, Safa, Itzel, Filip
Data Graphs:






Color in White Light
Green Color (scale of 1-8)
0
2
4
6
8
6
8
10
12
14
16
18
Days
Landsberg
PhyA-201
PhyB-5


Color in White Light
Green Color (scale of 1-8)
0
2
4
6
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6
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14
16
18
Days
Landsberg
PhyA-201
PhyB-5

Conclusion:

In conclusion, our results did not portray what we had initially predicted. Our original hypothesis was that all our plants would be able to achieve similar results to the white light plants in multiple types of light, not only white light. During our experiment, after thoroughly examining our plants, we came to a realization that our data did not support our hypothesis. Our plants in far red light died very soon but the plants in white light showed a variety of results. The tallest, but least green, plant group was phyB-5. Next, the second tallest and more green plant was phyA-201. Lastly, the greenest yet shortest plant remained the wild type, Landsberg erecta. In our data, we measured the heights and the shades of green (with a specific scale) of all our plants for numerous days. From there, we realized that each batch of plants had completely different results, comparing white and far red light. Regardless of the fact that all the far red plants died, there were drastic differentiations between each mutant type in white light. To see our data between the three types of plants, Landsberg, phyA-201, and phyB-5, we used ANOVA. The data is statistically significant because after calculating ANOVA, we had gotten a p-value that is less than <0.01% ($1.49 * 10^{-9}$). To calculate the individual data between the Landsberg and phyA-201, Landsberg and phyB-5, & phyA-201 and phyB-5 we used a two sample mean test. Between the wild type and phyA-201 the p-value had come out to being less than <0.01% ($1.83 * 10^{-4}$). For Landsberg and phyB-5, the p-value like the other was <0.01% ($1.47 * 10^{-7}$). When comparing the two mutants, phyA-201 and phyB-5 the p value was <0.01% ($6.11 * 10^{-5}$). In our experiment, there were multiple errors that we could improve on if we tried this experiment again. First of all, whenever we watered or measured the far red plants, they would be exposed to outside light. We had kept all our far red plants under a cardboard box so that they will be exposed to as little outside light as possible. Moreover, during our experiment, we realized that we did not provide enough soil for our phyB-5 plants to grow. Since we did not expect our plants to grow this much, we placed the same amount of soil for each plant. There were also times where the scheduling for the watering was inadequate/uneven. Additionally, when labeling the plants, we unknowingly placed wooden labels which unintentionally introduced viruses through the wood. If we were to do this project again, we would know how to improve thanks to these errors.