'ENLIGHTENED ROOTS'

'The Effects of Supplemental Light on the Root Growth Rate of Traminette Grapes'

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OBJECTIVE

The goal of this project was to determine if and how artificial light effects the root growth rate of Traminette vines grafted on 101- 14 rootstock grapes.

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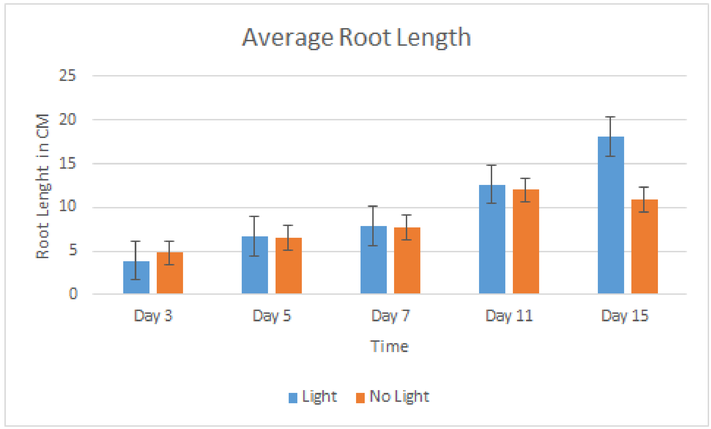
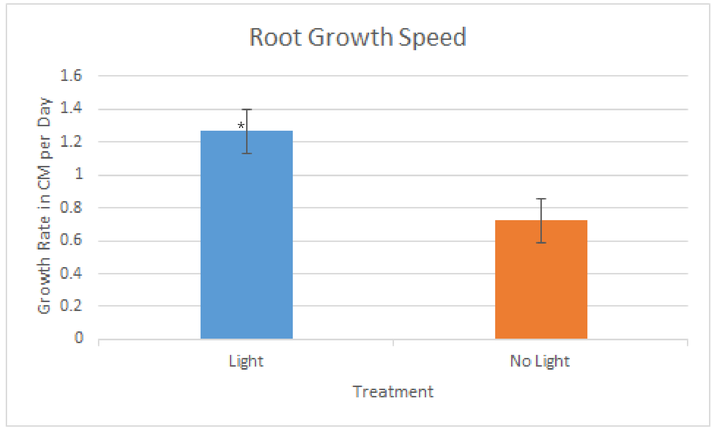


This graph shows how the average root length changes over time. Average root length was calculated by taking the average length of five roots over the time period. The bars denote the standard error mean.



This graph show the overall average root growth speed. It was calculated by taking the average of the difference between data points. The bars denote the standard error mean. P=0.003, heteroscedastic t-test.

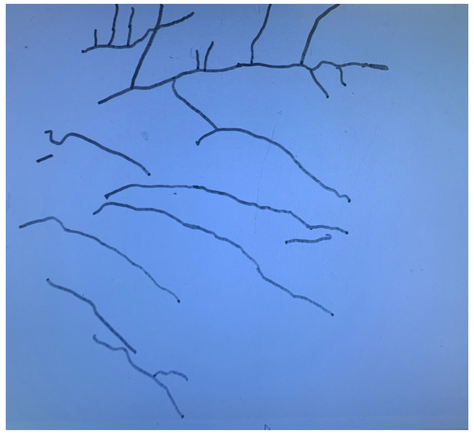
This image shows how the roots looked in the boxes and how they were measured.

	Average Internode Size (cm) ▲	Dry Weight (g)
Light	4.573684	22.84
No Light	6.910526	28.76

This table show the average internode size and the dry weight for both treatments.

CONCLUSION

As expected the results showed that the vine under light had a greater root growth rate than the vine not under light. The vine under light had an average root growth speed of 1.268 cm per day. Whereas the vine, not under light, had an average root growth rate of only .724 cm per day. Numbers also showed that vine not under light had larger internodes, leave sizes, and a higher dry weight. I was able to conclude that the extra energy the vine under light received went towards greater root development compared to that of the vine not receiving extra light. The vine not under light spent more of its energy on surface level development; leaf size, internode length, ect.



This image shows how the roots were scanned on to the computer for analysis.