

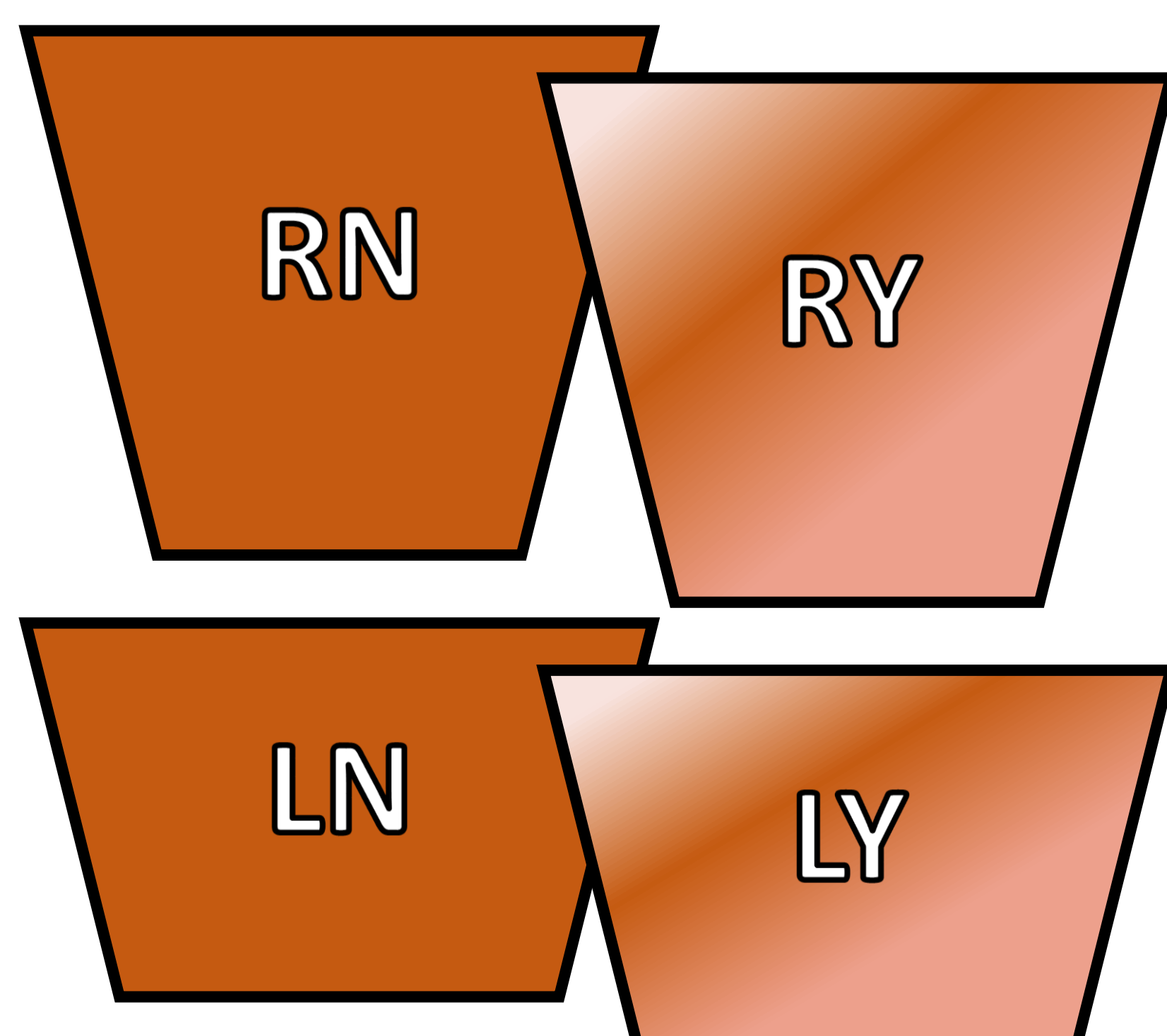
### Introduction

Plants require water for survival, in which water is taken up by the roots. The amount of water in the soil is partially dependent on the type of soil and the distribution of soil. In our experiment we examined the relationship between different soils and soil depths and the effects on plant growth. The two types of soil we used to test our plants are regular soil and vermiculite soil. Vermiculite is a mineral that improves water absorption and soil aeration. Our hypothesis was that the deeper soil depth and type of vermiculite will improve the water retention, leaf count, and root biomass.



### Methods

- We grew 10 replicate radish plants per tray.
- We watered every MWF for 5 weeks.
- Pots watered to capacity & weighed before/after.
- Plants were harvested after the 5<sup>th</sup> week.
- We measured root biomass, average leaf count, in pot weigh before and after watering



### Results

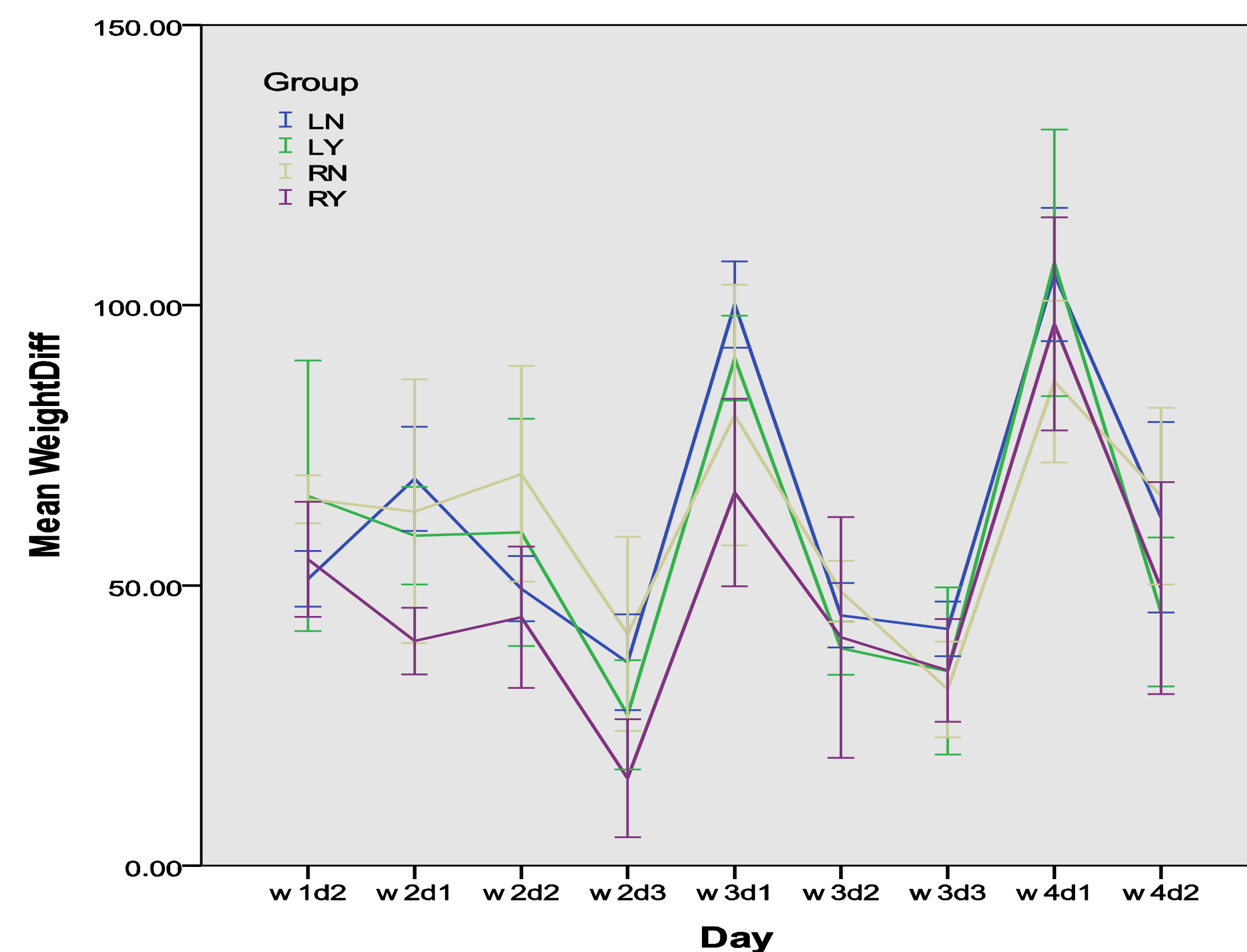


Figure 1: Differences in pot weight before and after watering over several weeks

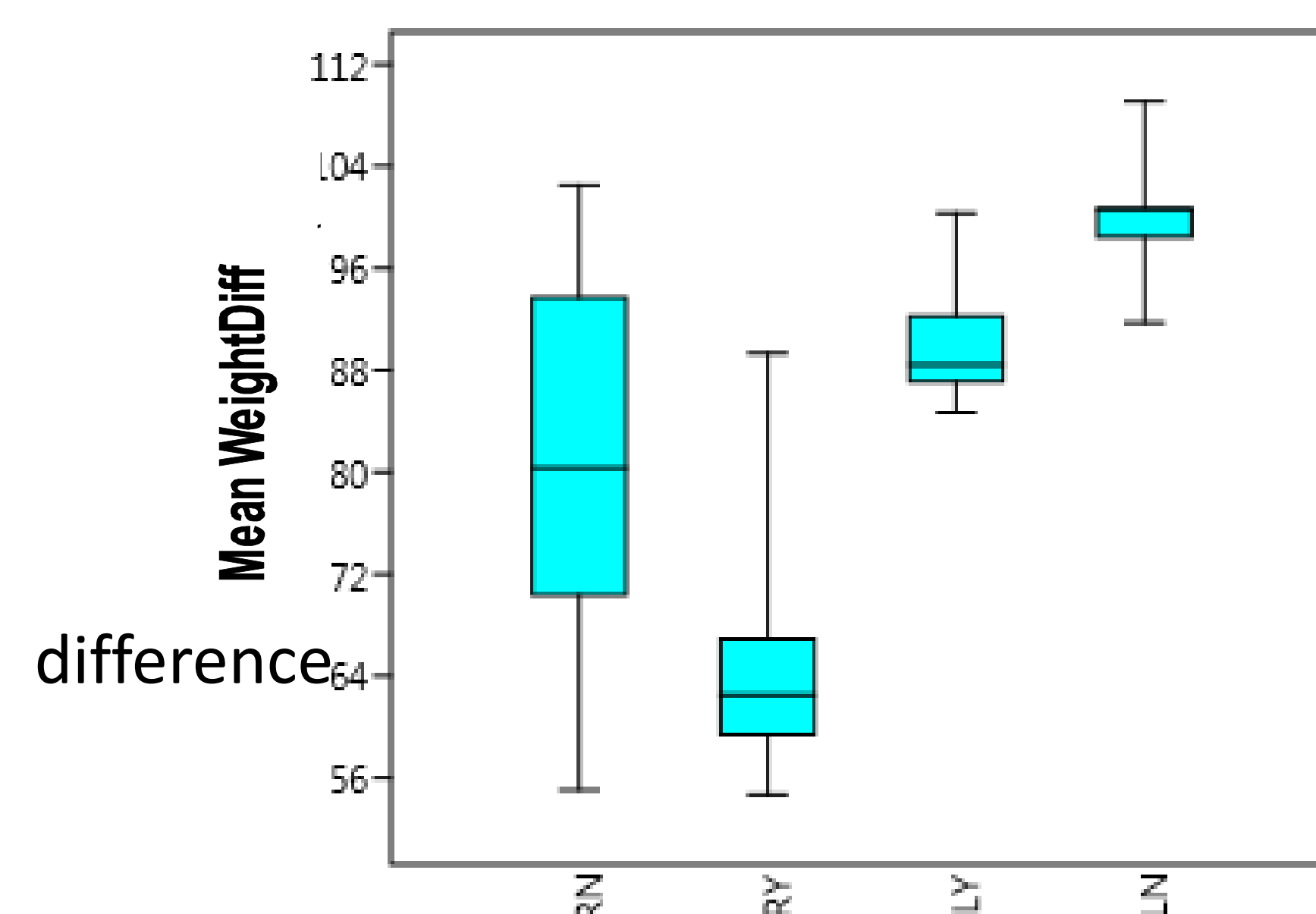


Figure 2: Difference in pot weight for Week 3 - Day 1.

Table 1: Tukey's comparisons between the groups on Week 3 - Day 1.

	RN	RY	LY	LN
RN		0.3213	0.5749	0.09343
RY	2.508		0.03309	0.002898
LY	1.841	4.349		0.6206
LN	3.574	6.082	1.733	

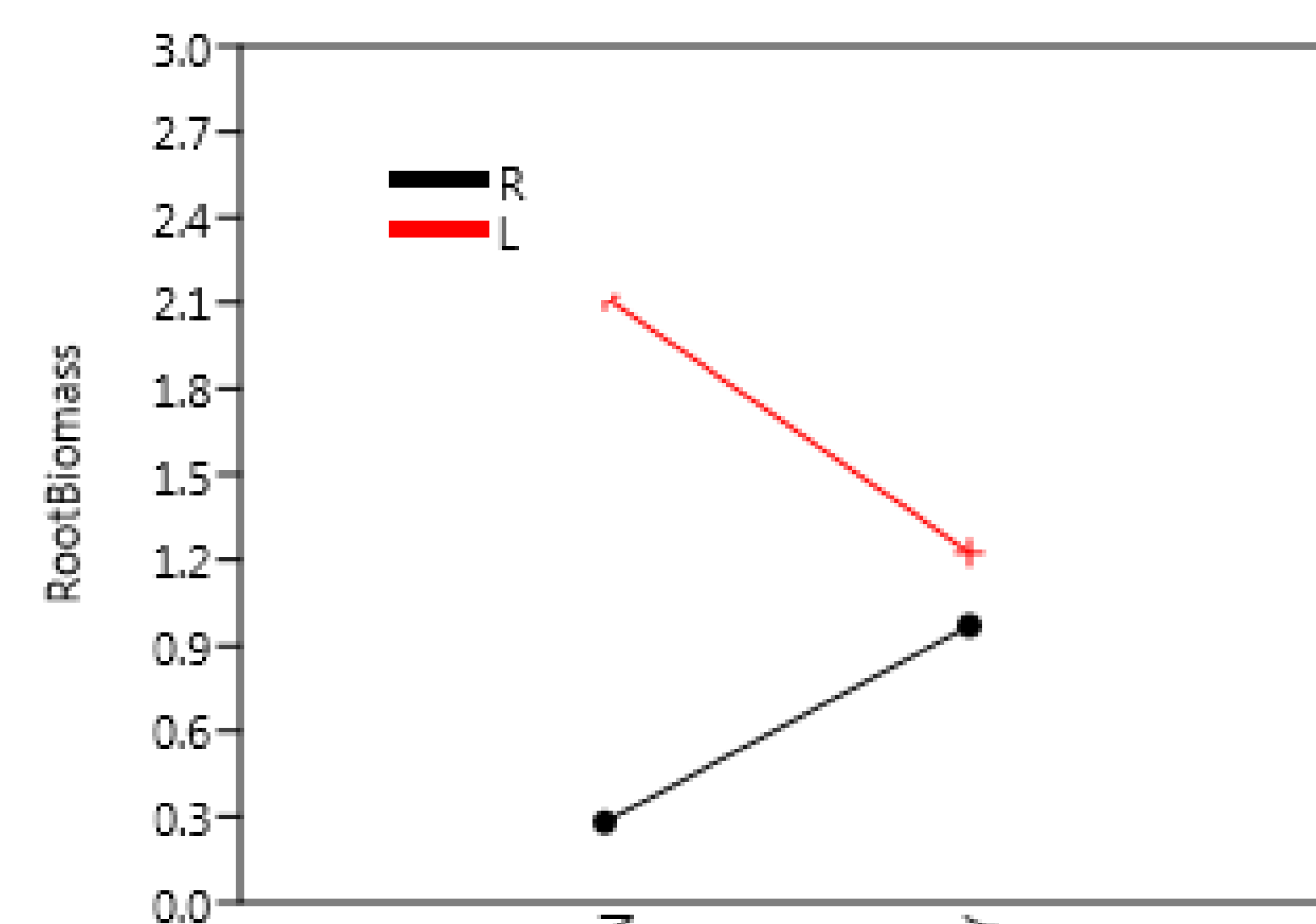


Figure 3: The effect of soil depth and vermiculite on root biomass.



### Discussion

We expected Tray 4 to do the worst to do the lack of the depth soil and vermiculite. However it had the highest average leaf count and root biomass, making our prediction false. Our results found seemed to point to that vermiculite helped more than soil for the first two weeks, and in the last two weeks the soil depth had a larger impact on water retention for the radishes. What can be taken away from this experiment is that vermiculite and deeper soil did not have a significant effect on water retention for the radishes.

### Acknowledgements

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### References

- Evert and Eichorn, 2015, Ravens' Biology of Plants. 8th Edition, WH Freeman
- Sadava et al. 2014. Life: The Science of Biology. MacMillan Press, 10<sup>th</sup> edition.