

ARABIDOPSIS GROWTH CONDITIONS OVER TIME

Hui, N. & Leach, S.; Krolkowski, K.

SOIL MICROBIOME PROJECT BIOTECHNOLOGY PROGRAM,

CONTRA COSTA COLLEGE

PROCEDURE

Plate Arabidopsis seedlings on prepared agar plates utilizing aseptic technique.

Take periodic measurements of rosette size and plant health over the 6-week growth period.

Harvest the grown Arabidopsis plants after a final series of measurements.

During the harvesting process, we also measure rosette weight and root length.



Spring 2018 Soil Microbiome Core Lab Team

Almas Amjad
Hanan Dabwan
Gabby Groff
Nicolas Hui

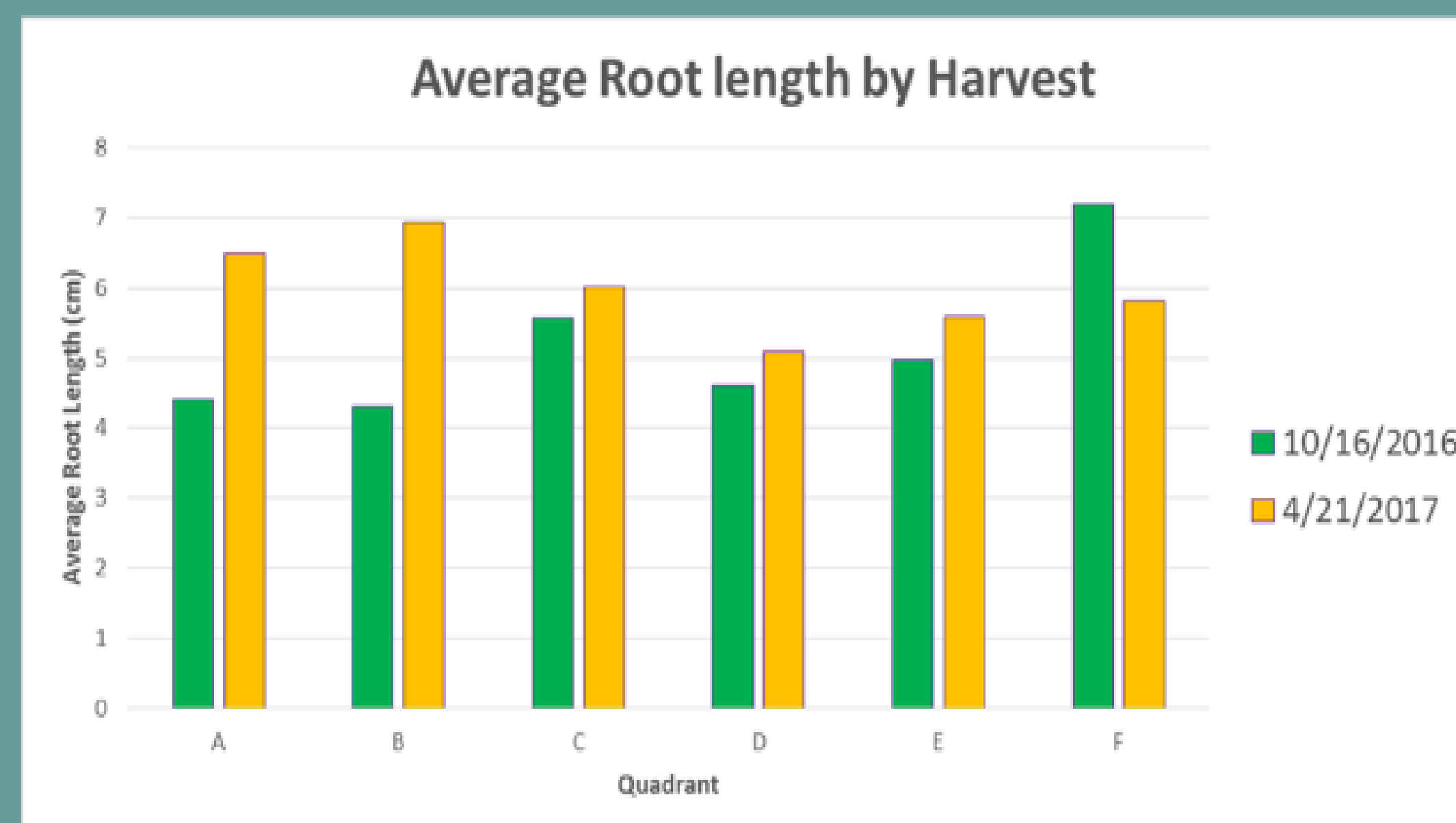
Sarah Leach
Aaron Phan
Jessica Preston
Erik Silva

Juan Solano
Katie Stewart
Albert Wong

PLANTS READY TO HARVEST



ROOT LENGTHS



According to the data collected so far, Quadrant F had the longest average root length and Quadrant B had the shortest average root length for plants grown in soil harvested on October 16, 2016.

For plants grown in soil harvested on April 21, 2017, Quadrant B had the longest average length and Quadrant D had the shortest average root length.

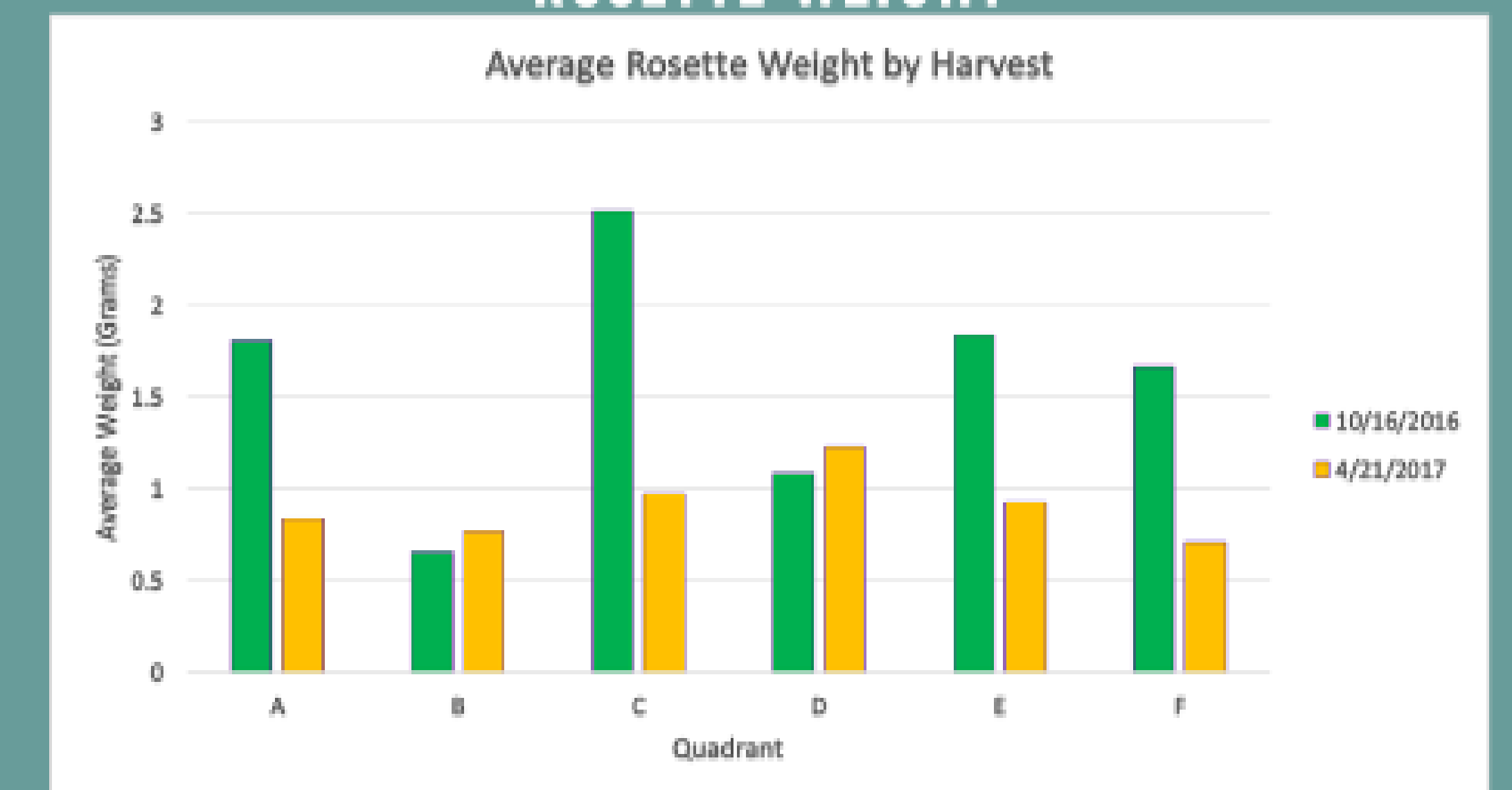
Using the overall averages from plants grown in soil from October 16, 2016 and April 21, 2017, April had longer root lengths.

CONCLUSION

While average root lengths of our Arabidopsis plants favored the 2017 harvest (~0.82 cm more length per pot), the average rosette size tended to favor the 2016 harvest (~1.19 more grams per pot in 2016). It appears that average root length does not necessarily correspond to average rosette weight.

Speculatively, there are differences in the soil microbiome depending on the season. Soil samples gathered in April, 2016 may consist of microorganisms more adept at surviving during a Spring ecosystem, while soil samples gathered October 16, 2016 may cause the soil to consist of microorganisms more adept at surviving in a Fall ecosystem.

ROSETTE WEIGHT



According to the data collected in this research, Quadrant C had the largest average weight while Quadrant B had the lowest average weight for plants grown in soil harvested on October 16, 2016.

Quadrant D had the largest average weight and Quadrant E had the lowest average for plants grown in soil harvested on April 21, 2017.

It is likely that the soil from October 16, 2016 has a microbiome that is more conducive for larger rosette weights.