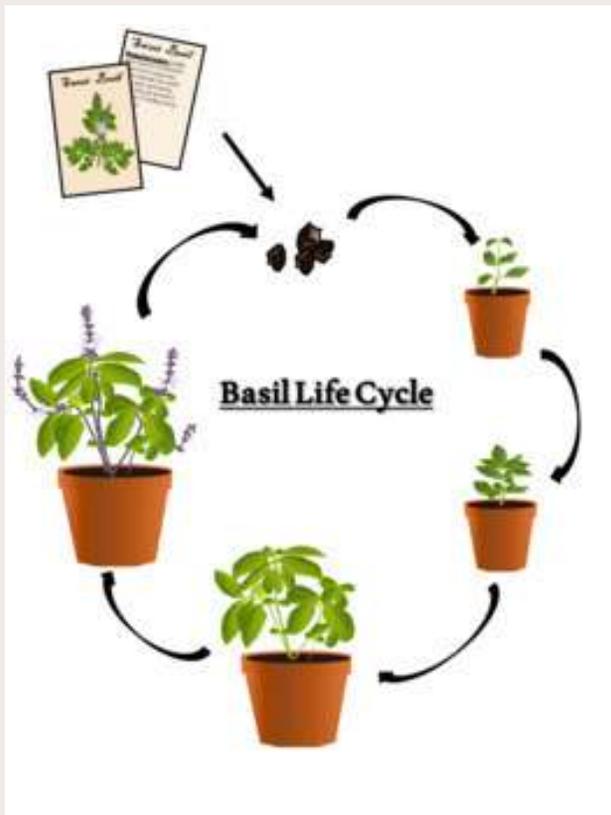


Sweet Basil Referee (*Ocimum basilicum*)



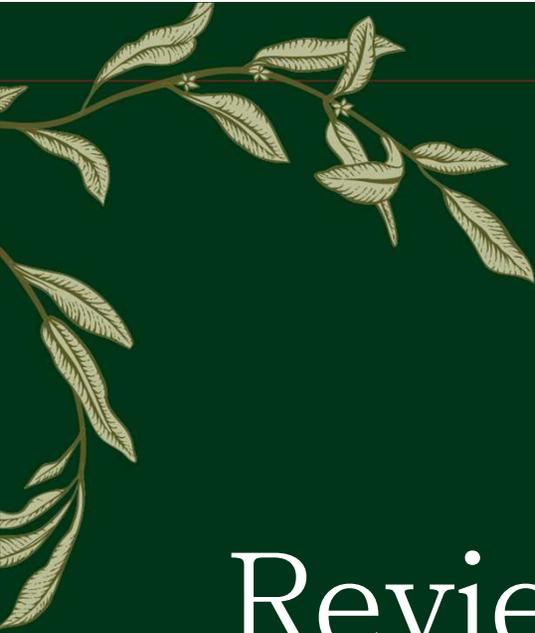
Basil Up, It's About to Get Tasty in Here!

Agenda



- Brief History of Basil
- Review of Current Methods
- Data Review and Summary
- Prospective Developments
- Questions





Review of Current Methods

AOSA, ISTA, and Canadian M&P Methods



Current Methods

- AOSA Rules:
 - Substrata: B (Between Blotters); T (Paper Toweling, used either as folded towel tests or as rolled towel tests in horizontal or vertical position.)
- ISTA Rules:
 - TP: The seeds are germinated on top of one or more layers of paper which are placed:
 - on the Jacobsen apparatus (5.5.3.1);
 - into transparent boxes or Petri dishes which may be placed in a flat or inclined position. The appropriate quantity of water is added at the beginning of the test and evaporation may be minimized by a tightly fitting lid or by enclosing the dishes in plastic bags;
 - directly on trays in germination incubators which may be placed in a flat or inclined position. The relative humidity in the incubators must then be maintained at a level that prevents tests drying out. Moistened porous paper or absorbent cotton can be used as a base for the substrates.
- Canadian Methods and Procedures:
 - This species is not listed in the Canadian M&P.



Data Review and Summary



Review of Data from the Referee



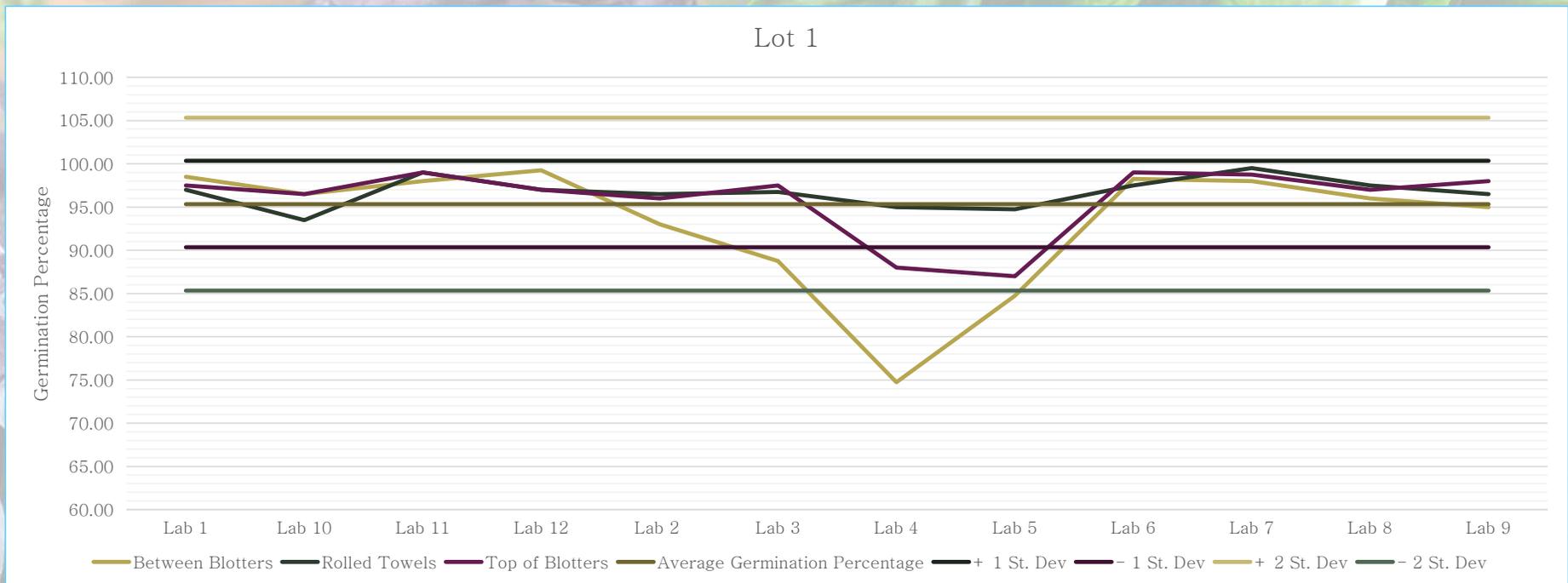
Overview of Referee Design

- 6 Lots of Basil were used for the Referee with varying degrees of germination quality.
- There were a total of 12 Labs/Participants for this Referee.
- Each participant was instructed to plant each lot using 3 different substrates.
 - Each lot was planted for a 7-Day First Count and a 14-Day Final Count.
 - It was requested to record the amount of time it took to plant and for each evaluation interval.





Substrata Comparison by Lot (Lot 1)

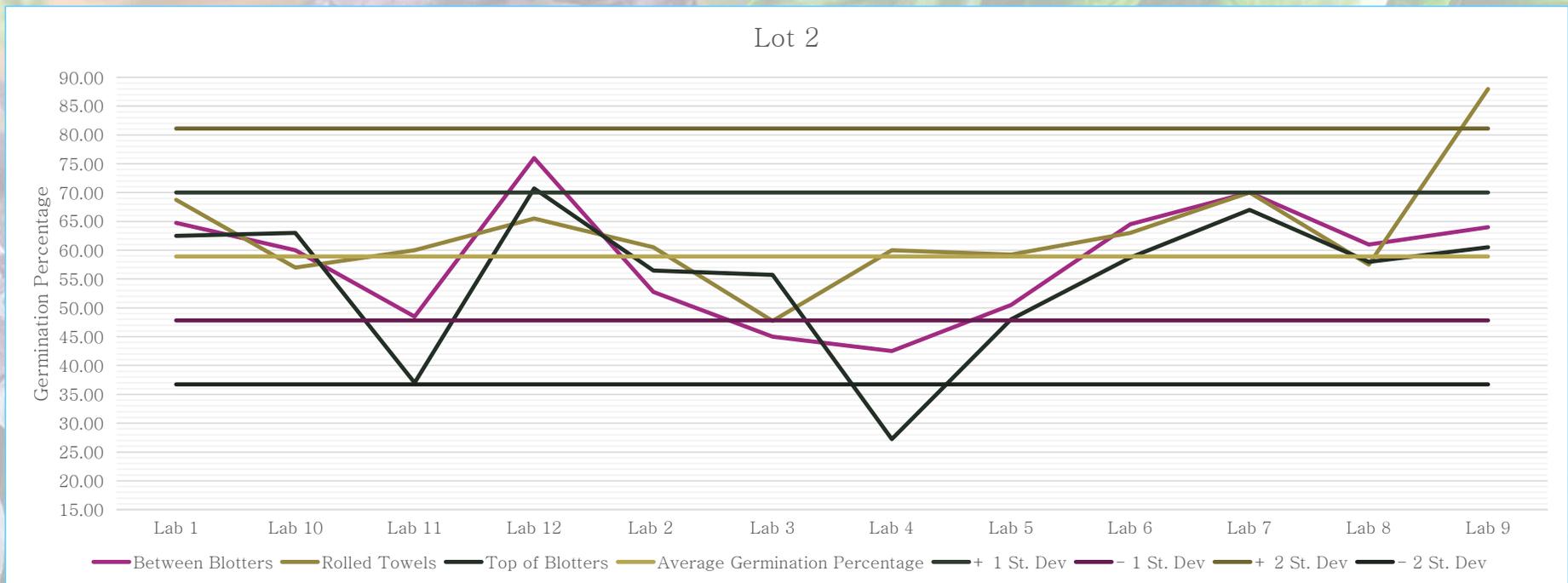


Lot 1 Pictures – Day 7





Substrata Comparison by Lot (Lot 2)

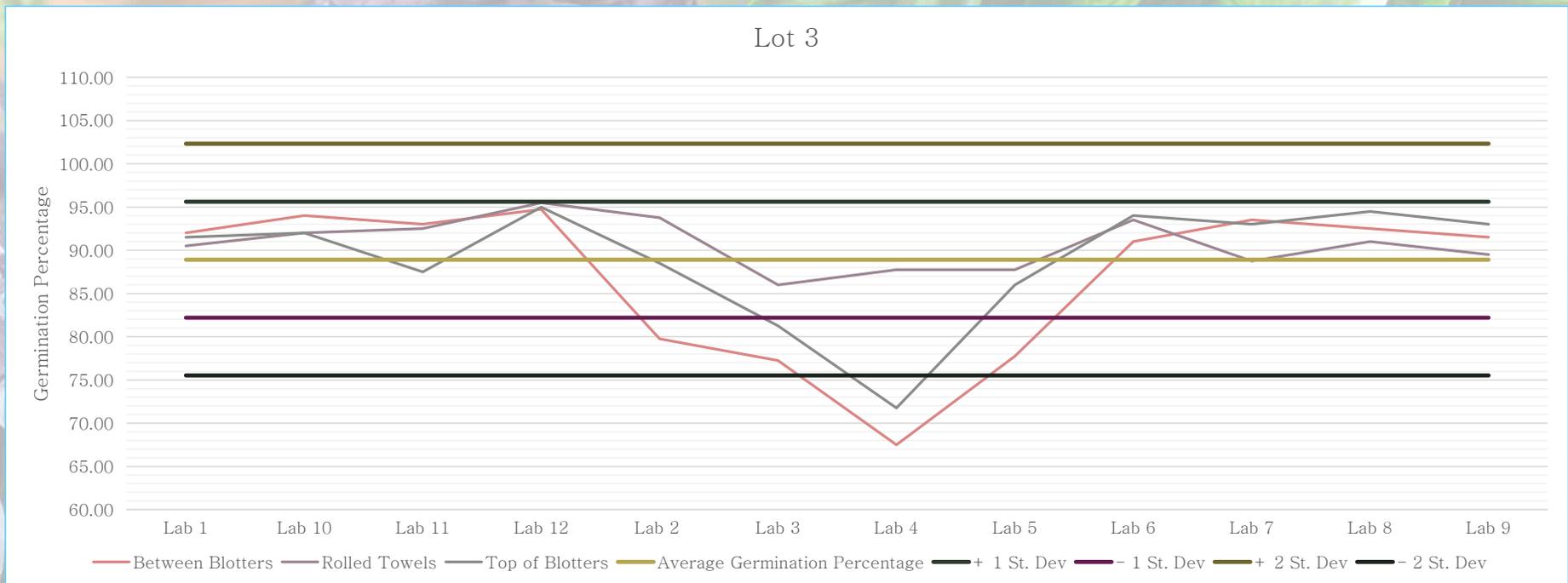


Lot 2 Pictures – Day 7

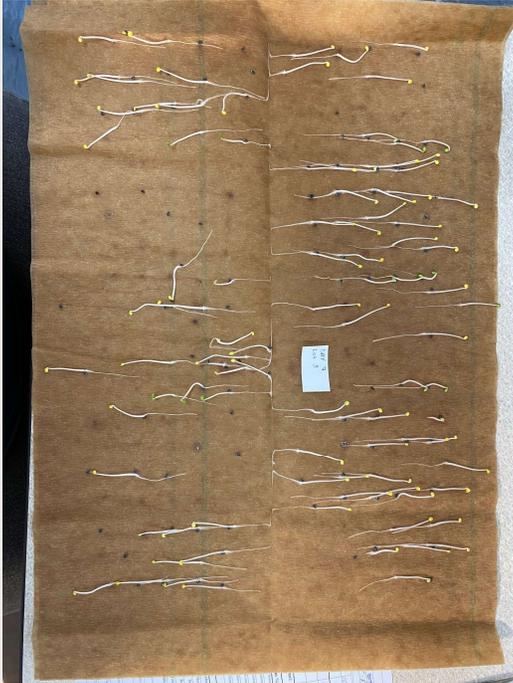




Substrata Comparison by Lot (Lot 3)

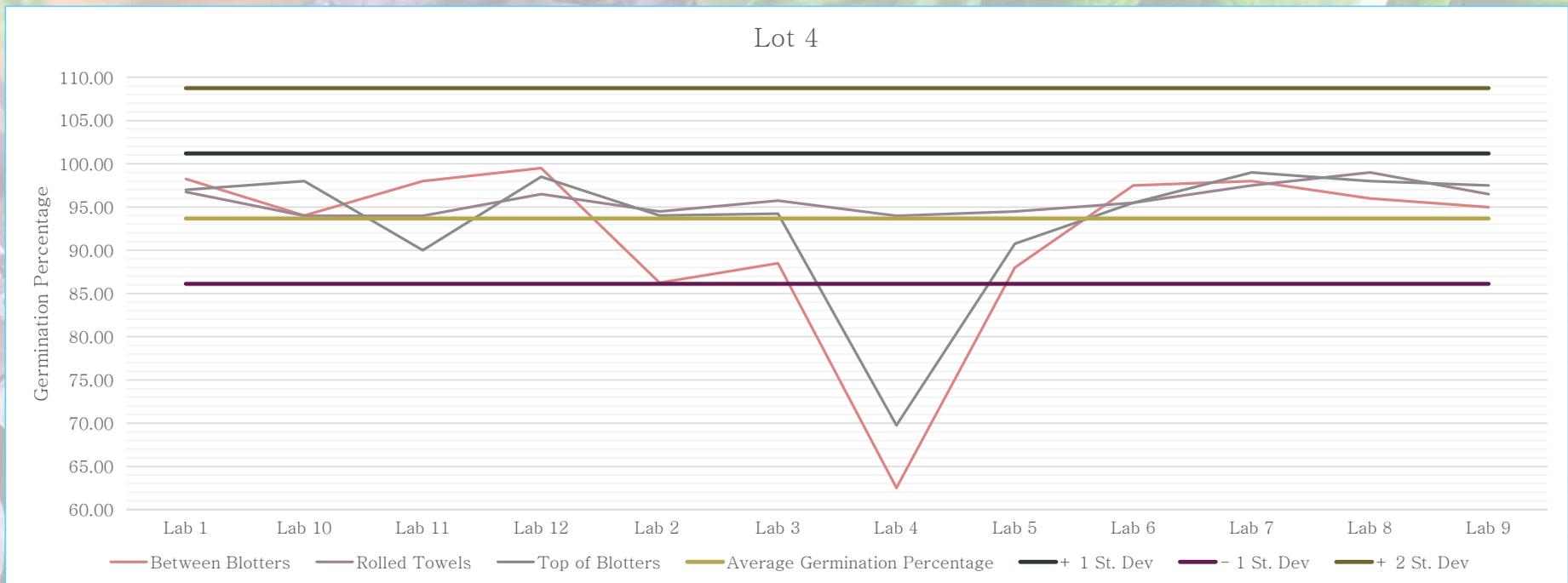


Lot 3 Pictures – Day 7





Substrata Comparison by Lot (Lot 4)

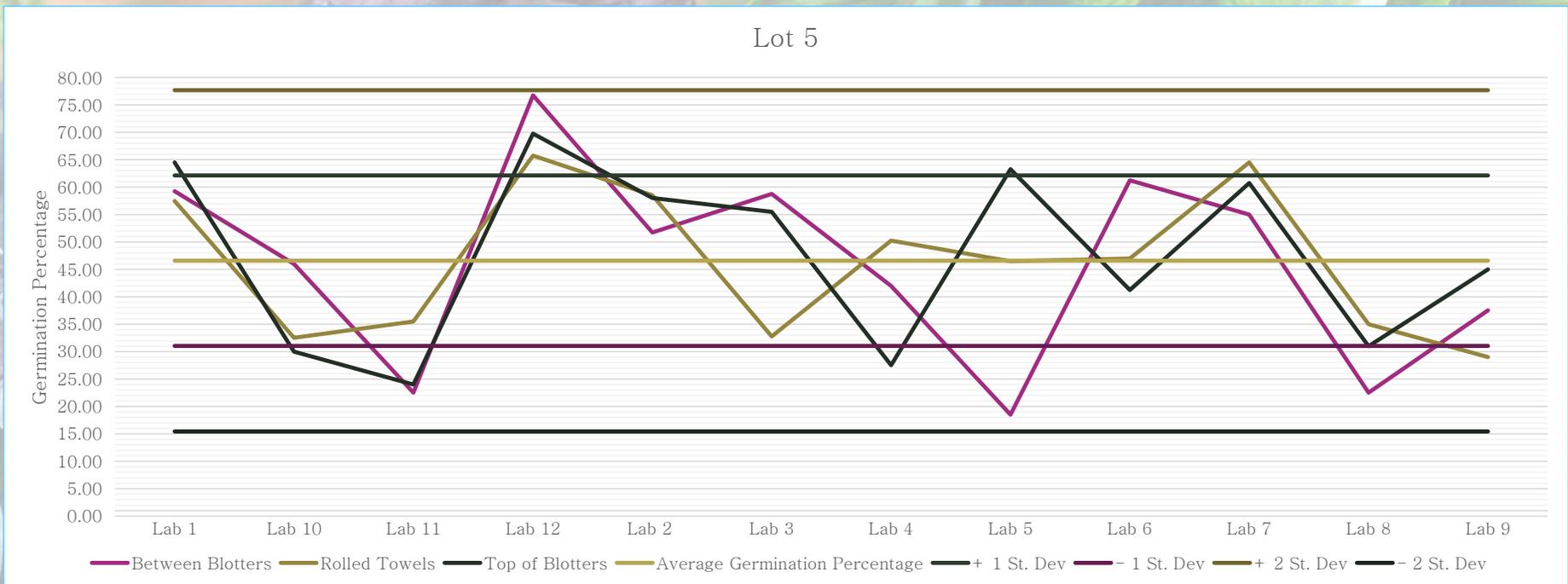


Lot 4 Pictures – Day 7

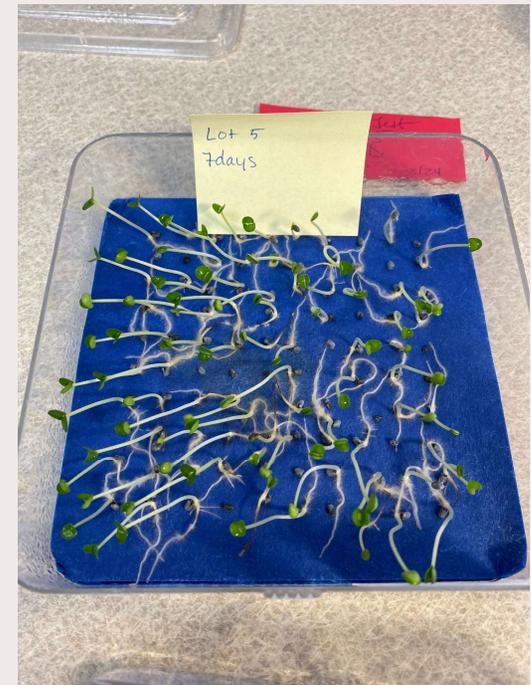
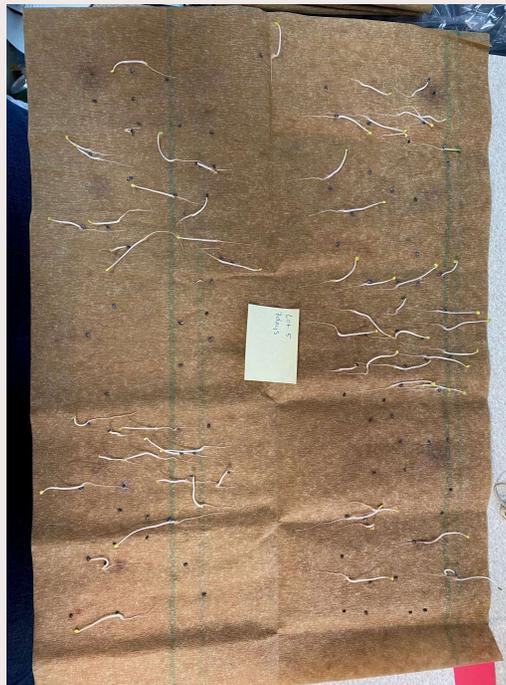




Substrata Comparison by Lot (Lot 5)



Lot 5 Pictures – Day 7





Substrata Comparison by Lot (Lot 6)

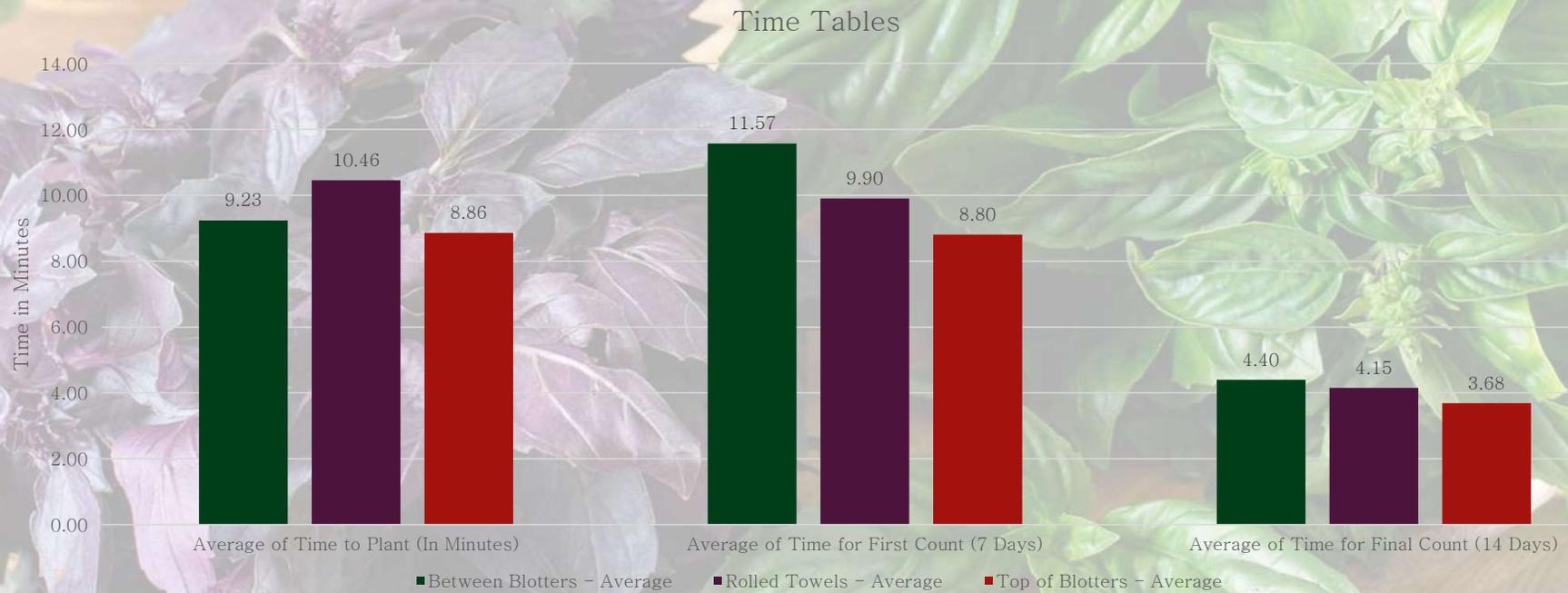


Lot 6 Pictures – Day 7





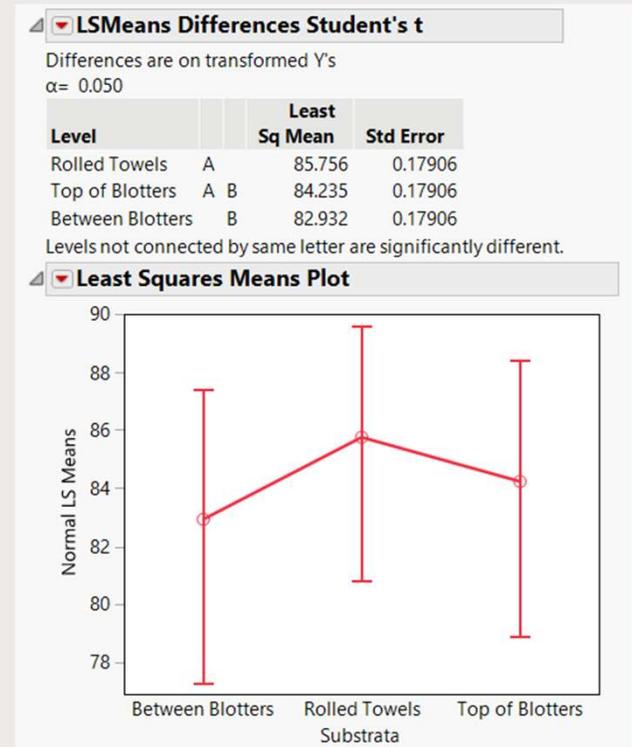
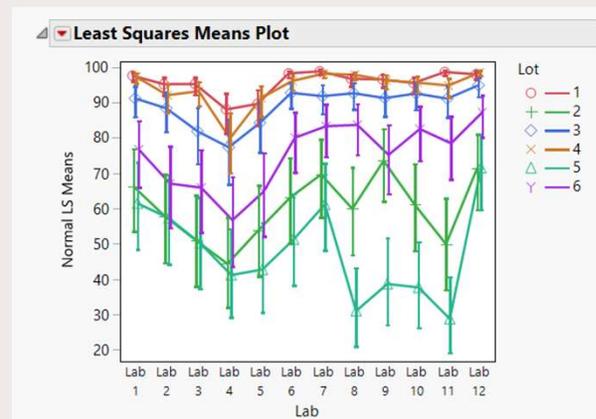
Comparison of Time Trials





Statistically Significant Difference of Normal Percent for Substrata.

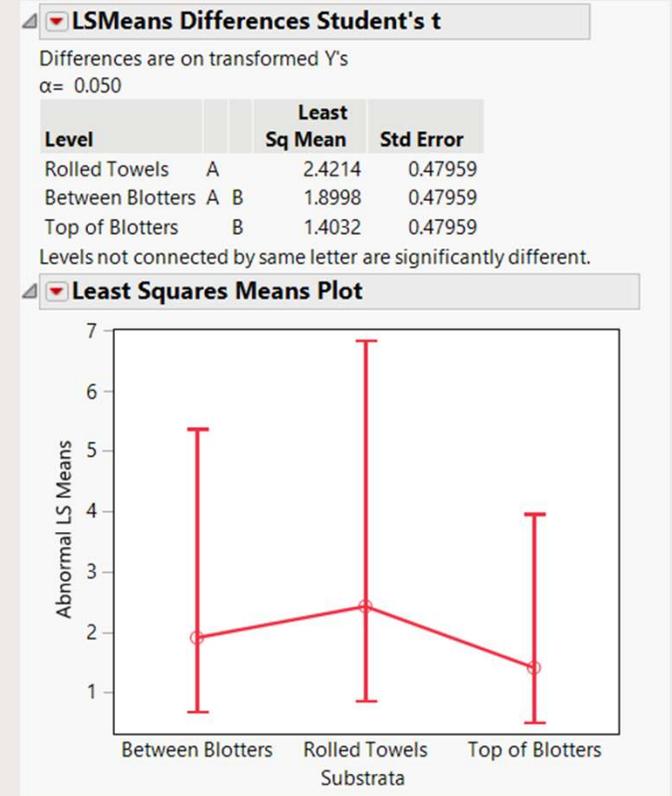
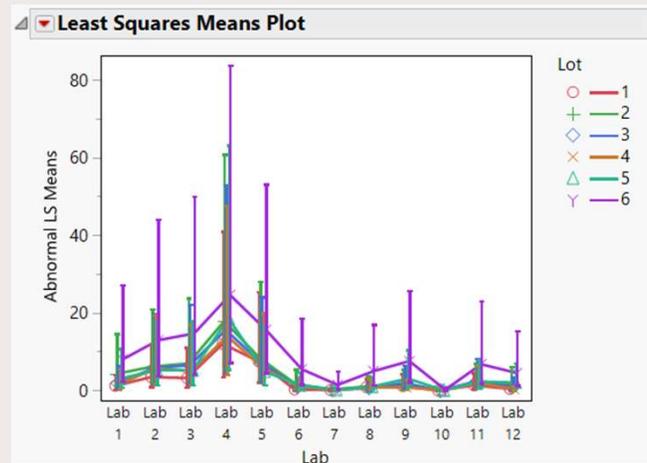
- Linear Mixed Model of Logit Transformed Response of Normal Percent with Substrata Fixed Effects and Random Effects of Lab and Lot.
- While statistically different, difference between Rolled Towel and Between Blotters may not be of practical difference.





Statistically Significant Difference of Abnormals for Substrata.

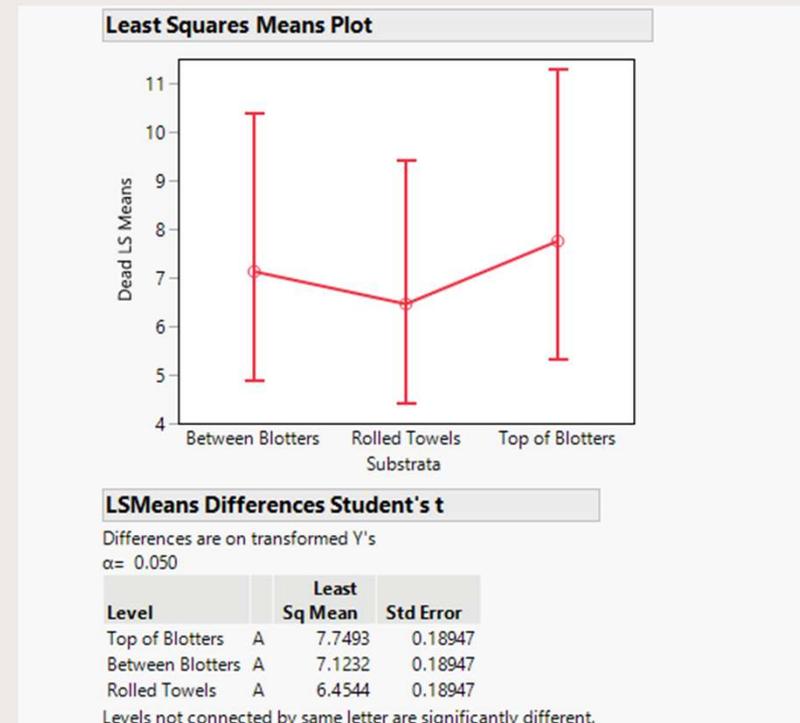
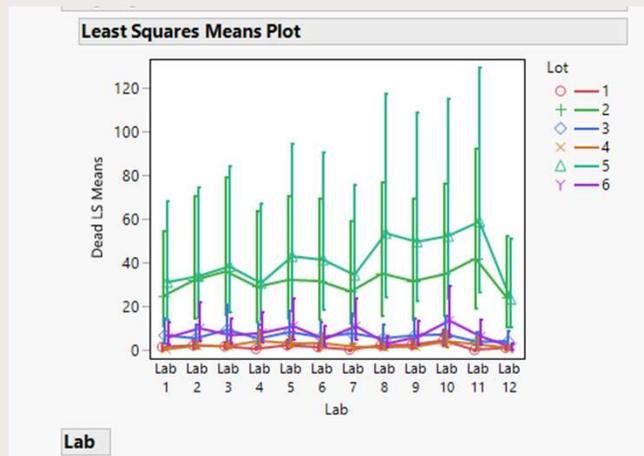
- Linear Mixed Model of Log Transformed Response of Abnormal Percent with Substrata Fixed Effects and Random Effects of Lab and Lot.
- While statistically different, difference between Rolled Towel and Top of Blotters may not be of practical difference.





No Statistical Difference Among Substrata For Dead Seedlings

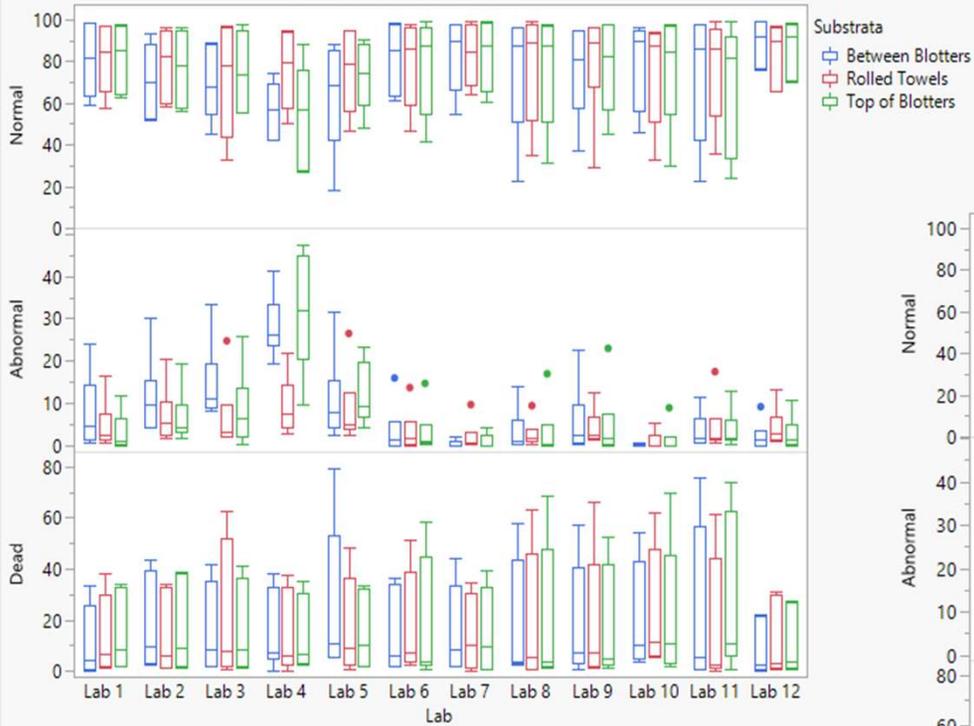
- Linear Mixed Model of Log Transformed Response of Dead Percent with Substrata Fixed Effects and Random Effects of Lab and Lot.



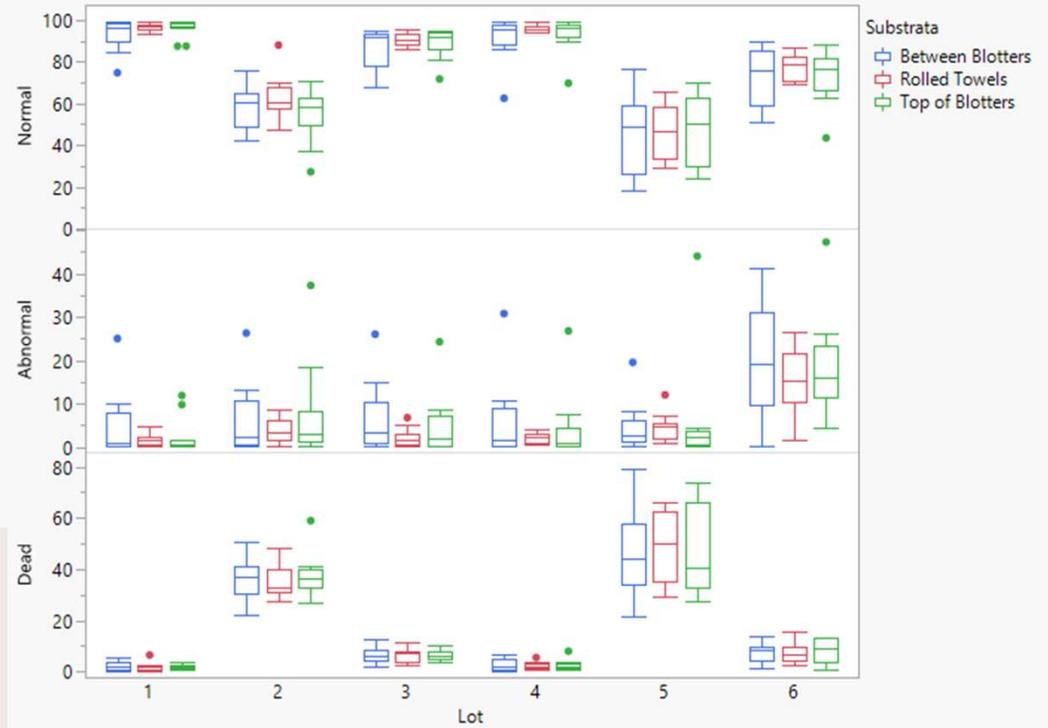


Statistical Data Analysis

Normal & 2 more vs. Lab



Normal & 2 more vs. Lot



Summary

- Data Analysis
 - There are two poorer quality lots (2 and 5) that caused variation in the data, however, when performing referees, you want a range in quality.
 - This range in quality in the lots appeared to cause some difficulties with two labs in evaluation.
- Time Factor
 - Quality is always the ultimate priority in seedling evaluation.
 - However, there is an efficiency factor that needs to be involved in our day-to-day tasks.



Upcoming Referee Projects

- India Mustard (*Brassica juncea*)
Referee
 - Review of Methods
- Ethiopian Kale (*Brassica carinata*)
Referee
 - Review of Methods



QUESTIONS?



Thank You!



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