# **Lettuce Growth Analysis**

# Project Summary

# Key Insights

* The average lettuce growth time was approximately 23.14 days, with the median also being 23 days.
* Most plants matured between 1 to 48 days, with noticeable clustering around the 20 - 25 days range.
* The dataset suggests that temperature and TDS (Total Dissolved Solids) may influence the speed of lettuce maturity.
* Humidity levels between 50–70% were most common, and “Medium” humidity appeared most frequently in successful growth ranges.

# Findings

* The highest temperature recorded was 33.5°C, and the lowest was 18°C.
* TDS values ranged from 400 ppm to 800 ppm, with an average around 598 ppm.
* The Growth Days column was transformed into weeks for easier trend analysis.
* A “Humidity Flag” was created to group humidity into categories like Low, Medium, and High, helping visualize patterns in plant development.
* Scatter plots and bar charts helped reveal correlations and patterns in growth efficiency.

# Conclusions

* Growth appears optimal when TDS and humidity fall within mid-range levels.
* Temperature (converted to Fahrenheit) showed some influence on faster growth, but further statistical testing would be needed to confirm strong correlation.
* These findings can help guide future experiments or real-world application in controlled lettuce-growing environments, especially in hydroponic or greenhouse setups.