# Data Analysis Project

## Data Analyst: Mark Strathie

## Client/Sponsor: Lettuce Growth Rates

## Purpose:

*Write a brief description of why this project is happening below. Why is this project happening? What are the goals?*

The goal of this project is to analyse growth rate of 70 lettuce plants to see if it can be improved. The project will take readings on the 70 plants using sensors that measure date, temperature, humidity, TDS (total dissolved solids), and pH level. The date the readings are taken and growth days (total days for plant to reach maturity) will also be recorded. Data will be taken over 2 months from 3/8/23 to 29/9/23. The project will attempt to identify any connections between the readings and growth rate. After this, the project will make recommendations for achieving optimum growth rate. The final deliverable will recommend the ideal readings for all values.

* **Specific**: Is there a connection between any of the values and rate of growth?
* **Measurable**: How much growth is normal or expected over a one-week period?
* **Action-oriented**: If “Total Dissolved Solids” is increased when growing lettuce, will it be measured more quickly growth for the lettuce?
* **Relevant**: Based on the dataset, how can predictions about growth be made given the conditions?
* **Time-bound**: What is the date range for this dataset? Do we need an understanding of this data for next season?

## Scope / Major Project Activities:

*What are the major parts of this project? List out the high-level steps, activities, or stages of the project, and give a brief description for each.*

|  |  |
| --- | --- |
| Activity | Description |
| Data Collection | Collect data from lettuce plant sensors on a daily basis and record date and growth days. |
| Identify connections | Analyse data to identify correlations between values and growth rates |
| Create recommendations for optimal values. | Create recommendations for improving growth rate by altering certain values. Estimate amount of improvement each optimised value provides. Rank suggestions by efficacy. |
| Deliver final report | Deliver final report of actionable insights to lettuce growers. |

## This project does not include:

*Specify the things that this project isn’t responsible for doing (out of scope). For instance, “this project does not involve a summation of 2019 data analysis”*

* Alteration of any other values outside those measured.
* Implementing any of the solutions or recommendations.
* No plant data outside the 2 months will be considered in the project.

## Deliverables:

*A specific list of things that your project will deliver.*

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| --- | --- |
| Deliverable | Description/ Details |
| Recommendations List | A list of recommendations based on connections found and visualisations for each. |
| Final Report | A final report detailing all connections found pertaining to growth rate and recommendations to optimise. |

## Schedule Overview / Major Milestones:

*The expected schedule for the project. This can be defined by milestones (e.g. “all data is cleaned and processed”), periods of time (“Week 1 / Week 2”), or other ways based on the needs of the project.*

|  |  |  |
| --- | --- | --- |
| Milestone | Expected Completion Date | Description/Details |
| Data Review | Week 1 | Review all data sourced from plant locations completed. |
| Data Analysis | Week 3 | Initial analysis completed. |
| Connections List | Week 4 | Connection of readings to growth rate identified. |
| Recommendations List | Week 6 | List of recommendations for values shown to be connected to growth rate. Estimated effectiveness. Accompanying visualisations. |
| Final Report | Week 8 | Final report detailing all work, analysis, methodologies, and findings. |

## \*Estimated date for completion:

*This is my “if all goes well and I have everything I need, this is when I’ll be done” date.*

28/02/2023