# Task 1

# Section 1

## Research Design II

# Identifying Strawberry Diseases

### By: Mariah Muscat

## Introduction

The vibrant red strawberry isn't just a summertime treat. In Malta, it has a distinct growing season, flourishing during the late winter and spring months. This unique window makes the arrival of Maltese strawberries a highly anticipated event for both residents and tourists. The popularity is further underscored by the success of the annual strawberry festival, a celebration where this delectable fruit takes centre stage. From enjoying them fresh off the vine to incorporating them into innovative culinary creations, the festival showcases the versatility of the strawberry.

However, the journey from a humble seed to a juicy, edible berry is far from simple. Cultivating strawberries requires meticulous care and expertise. Unlike other fruits, they are delicate and susceptible to overwatering. Even seemingly beneficial rain can become detrimental if it exceeds the plant's needs. This inherent fragility underscores the dedication and skill required by Maltese strawberry farmers.

## Technological Intervention in Strawberry Production

The rise of technology has permeated every aspect of our lives, and agriculture is no exception. This study aims to leverage advancements in this field to address a crucial challenge in Maltese strawberry production – identifying the optimal harvesting time. By implementing a machine learning-based solution to analyse various datasets, we propose a system that can accurately determine when a strawberry has reached its peak ripeness and is ready to be enjoyed by consumers.

## Purpose Statement

This research proposes a "smart strawberry system" powered by computer vision. By analysing digital details within strawberry images, the system goes beyond appearance to predict the ideal harvest window, minimizing waste and maximizing yield. This early detection system also identifies potential diseases lurking beneath the surface, allowing farmers to take preventative measures and ensure healthy strawberries. Similar to how image processing aids pest management, this technology offers earlier disease detection, benefiting both farmers and consumers. In essence, the study aims to develop a system that detects strawberry growth stages and diseases using computer vision, offering recommendations based on these findings.