KEY AREAS
- Plant Nutrients and Disease Control

PROJECT 4 TITLE
- Optimisation of Liquid Nutrient Formulation for Ginger Cultivation in Soilless Medium

LITERATURE REVIEWS
- In addressing the farmers’ need to expand their ginger planting sites with minimal costs to the environment, soilless cultivation could be one of the solutions. Soilless cultivation uses inert materials such as cocopeat, vermiculite, LECA, etc. as growing medium.

- There are numerous success stories demonstrated by farmers in Cameron Highlands in using soilless cultivation for tomatoes, strawberries, etc. Ginger planting in soilless medium has been proven to be feasible by Suhaimi et al., 2012, 2014 from Malaysian Agriculture Research and Development Institute (MARDI). The team utilised cocopeat as the planting medium and it has shown promising results in terms of rhizome sizes and weight.

- Due to the inertness of the planting medium, nutrients (fertilisers) that are required for the growth of the ginger plant will need to be supplemented during planting.

Methodology
- Planting materials to be sought from Bukit Tinggi and planted in polybag (12" x 12").
- Planting medium → cocopeat.
- Treated with different types of water soluble fertilisers/nutrients.
- Research to be conducted in rain-sheltered areas with full sunlight.
- Microbial profiling in the soilless medium.

Expected Outcomes
1. Optimal liquid nutrients for ginger cultivation in cocopeat will be obtained.
2. Ginger growth and performance subjected to various fertilisers will be obtained.
3. A predictive model of ginger disease identification will be learnt to increase the efficiency of treatments.

REFERENCES

PROJECT DURATION
- June 2018 to May 2020 (2 years)

Funded By
- TAR UC Internal Research Grant

OBJECTIVES
- To investigate the suitability of commercially available water soluble fertilisers for ginger planting.
- To develop an optimal liquid nutrient for ginger planting on soilless culture.
- To develop early detection system for ginger diseases utilising Plant Health Imaging Analysis.

- For maximum absorption/uptake by the plant, the supplemented fertilisers will need to be in liquid form and there’s a need to find optimum nutrient solutions or formulation for ginger planting in soilless medium.

- Research outputs from this project will serve as baseline data in getting ready for upsaling of ginger production in the next phase. Mass production of ginger will involve large areas, if not multi-tiered farming. Help will be needed by farmers to monitor their plant health status.

- The Plant Health Imaging Analysis as shown in the Figure below will come in handy. This system will be able to monitor health status of the plant and alert farmers if any malignant symptoms are detected. The Plant Health Imaging Analysis tool will play a key role in helping farmers to manage plant health problems and prevent heavy losses to farmers.