

**Report On**  
**Entrepreneurial Exposure Visit To Tynrai Hydroponic Centre, Nongpoh**  
**6<sup>th</sup> Semester Students, Department of Botany, Shillong College**



**By**  
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## Background On Entrepreneurial Hydroponic Science

With the exponential increase of the world population, the agriculture industry idealizes the need for developing new techniques to grow food in lesser space and by saving water. The hydroponic growing system is a step towards the need. Hydroponic System is a system of growing crops without soil, often called soilless farming. In the hydroponic system, the plant roots grow in a liquid nutrient solution or inside the moist inert materials like Rockwool and Vermiculite. The liquid nutrient solution is a mixture of essential plant nutrients in the water. The plant roots are suspended either in the static liquid solution or in a continuously flowing nutrient mixture. The hydroponic growing system requires continuous attention to the crops, unlike the traditional farming system. The advantages of a hydroponic system:

- Higher productivity than the traditional farming system, the plant nutrients are effectively used, and there is no wastage.
- The hydroponic system is a controlled climate system in which the crops can grow year-round.
- Water utilization is low when compared to the traditional farming method, up to 80-90 percent lower.
- The crops are grown in a closed space, which eliminates the attack of pests and insects.



As an entrepreneurial aspect, with the latest statistics, the global hydroponics market is expected to reach around \$17.9 billion by 2026. The statistics for India indicate that hydroponics farming business plans in India are still in a nascent stage, but the signs are positive and in the coming future it will be on the upswing. A February report by DataM Intelligence, a Hyderabad-based market research and business intelligence firm, predicts the Indian hydroponics market is likely to grow at a compound annual growth rate of 13.53% between 2020 and 2027.

**Objective:** The main objective of the study trip or exposure visit was to give a hands-on experience on the new soilless agricultural technology. The other aim was to expose students to the entrepreneurial aspect of hydroponics and other fields via the on site lecture of the Resource Person.

**Target audiences :** 6<sup>th</sup> semester B Sc. (Botany) students.

**Date of visit :** 21<sup>st</sup> of April 2022

**Total participants :** 27 students and 4 faculty from Dept of Botany, 2 Resource Persons, 2 ground staff

**Resource person :** Dr. Rebecca Sailo, Proprietor of Tynrai, Hydroponic company at Nongpoh.

**Study area :** Hydroponics unit of Tynrai at Deisibon nursery, Nongpoh, 52 kilometres from the Shillong.



**Faculty in charge:** Dr. Reema V. Diengdoh, Department of Botany, Shillong College.

**Faculty accompanied:** Mrs. Darina Kharshandi (HOD), Mrs M.V. Marwein, Dept. of Botany, Shillong College.

## Financial Assurances: Principal and Admin, Shillong College, Shillong

### A brief about the Exposure Visit

On the 21<sup>st</sup> of April 2022, 27 students from the 6 semester Department of Botany Shillong college, were taken for exposure visit to the hydroponics unit of Tynrai at Deisibon nursery, Nongpoh approximately 51 kilometres from the city. The Tynrai small industry is owned by Dr. Rebecca Sailo of Bethany hospital.

The journey started at 10:00 AM as the students assembled in the college campus by bus. Dr Rebecca in her introductory lecture spoke to us about healthy eating and also emphasised on sustaining an obese free lifestyle through her experience. A lot of cosmopolitan diseases are due to our unhealthy eating habits.

As we took a tour of the farm, Dr. Rebecca showed us areas under fruit plantation like dragon fruit, lemon, oranges, strawberry, pineapple and wild berries. The rearing of exotic poultry like Emu birds and turkey was also shown.



This was followed by the visit to the 3 Poly houses where the hydroponics units were set up. The students were given a brief introduction to soilless farming and hydroponics by Dr. Rebecca along with demonstration on the technical unit.



The students were very excited to see the whole setup of the hydroponics units covering an area of more than 2000 square feet. Various stages of hydroponics steps were discussed which included the initial plantlet growth on coconut chalk boxes followed by transfer to the hydroponics leans. Discussion on the mediums used in the hydroponics solution. Details about the choice of plants that can be used for hydroponics with life examples showing the various stages was also discussed. From sampling of 3 to 4 weeks until the final product was ready for marketing it takes 48 days for market consumption depending on the need of the market. Around 6 batches go for market value, selling and harvest throughout the year.

Pest free best systems were also maintained using sticky traps in yellow and blue to maintain all the Poly

houses pest free. Air circulations was maintained in each Poly houses using engineering technologies.

A large variety of plants hydroponically grown add that in Roy farm, it included varieties of parsley,pokchoi, baby spinach, curly karls, lettuce, iceberg lettuce, rosemary, basil and other varieties of economically important plants.

The students of the 6<sup>th</sup> semester interacted and asked many questions about the entrepreneurship aspect and the business of hydroponics. Dr Rebecca answered all the queries of the students and invited them over for internships as well it was a healthy discussion with all the students and the teachers who accompanied them.



The students was served with home juices from the farm fruits.A tour of the whole farm under the hospitality of Dr.Rebecca and her staff was also done. The students ate their lunch at the farm and took photographs for the report. The department of botany as a gesture of appreciation handed over the honorarium and a stole as a token of appreciation to the resource person Dr. Rebecca for her kind lecture and hospitality. The program wined up by 4:00 pm then the students were boarded back to the bus to return back to the college campus at Shillong and return home.As a concluding note, on behalf of Dept of Botany, Dr Reema thanked the Principal and the administration for supporting the visit.

