



## "KRISHI PATHSHALA"

### Objectives of the Practice

The Institution is located in the village **Vazhayur**. The word "**Vazha**" in Malayalam means **Banana**. The **main agriculture** in this village is cultivation of banana. Most of the farmers engage in banana cultivation for their living. Therefore buying/getting healthy saplings is always a concern that guarantees their gain.

The Institution has proposed a scheme for producing healthy, disease-free banana using tissue culture methods to supply the saplings to the farmers in a sustainable manner.

The main objectives of this practice are

- **To contribute to the economic development of needy farmers**
- **To use novel technologies for the socio-economic development of rural community**
- **To understand the problems of local community and find out solutions**

### The Context

The main idea of this scheme has been **conceived as early as in 2016**. After realizing the **scope of *in vitro* propagated saplings** using the institution's highly advanced **tissue culture lab unit**, the project has been decided to carry out as **approved by the Principal and the Management** and has come into effect from March 2017. A pilot study was carried out to standardize the protocol for establishing ***in vitro* cultures**. The institution find standardized optimum protocol for the successful propagation of banana cultures.

### The Practice

**Agriculture is the backbone of the Indian Economy"- said Mahatma Gandhi decades ago.** The major share of economy of the Nation is being sustained by agriculture. Farmers hold the backbone of the agricultural system. As it is a common knowledge that for a country to progress, the Gross Domestic Product (GDP) should be reasonable; agriculture is one of the important parts. Indian agrarian sector has always faced the issues of inconsistency in irrigation, harvesting and storage. The usage of modern technology and tools is one of the strategies that can be utilized to address the aforementioned issues. The initial thought of "**Krishi Pathshala**" has stemmed from the realization that the sustainable research going on in the institution's tissue culture lab can be a solution to aid the concerns of the local farmers. Through this initiative, the students put their effort in a scientific literature study to get the basic information on standard operating procedure for initiation of cultures from sterilized shoot tips



obtained from the intact parent banana plant, followed by shooting and rooting cultures and primary hardening in the laboratory itself. The secondary phase of hardening is done in the shades and the saplings are moved to green house and subsequently for supply.

### Evidence of Success

The disease-free tissue cultured plant sapling received by the farmers is the benchmark of success, there has been an increased demand of these plant saplings. Hence the students of Biotechnology department actively involved in the production of tissue culture plantlets and **they supplied 565 banana saplings to the local farmers in April 2017**, the count increased in the subsequent two years where the college supplied more than **750 saplings in the month of March 2018, 865 saplings in the month of May 2019** whereas **in the month of 2020 the college supplied 430 saplings due to COVID issues**. The programme creates awareness on the tissue culture plantlets among the farmers and also **benefits the students to transform themselves into a better socially responsible citizen** which ultimately celebrates the institution's mission that promotes effective learning, curiosity, creativity and innovation.

### Problems Encountered and Resources Required

- While developing the protocol the **department addressed several issues such as sterilization of explant** and sufficient supply of media /culture vessels, microbial contamination, endophytic fungal infections cause drastic problem to the culture etc.
- Fumigation of lab to reduce the contamination level in the labs.
- Uninterrupted power supply.
- Availability of man power for continuous monitoring of the process.
- The university semester system/academic schedule and exams made it difficult to find additional time for the students to work in the lab.
- Scarcity of water for irrigating the greenhouse plantlets during summer.
- Shortage of seed money to establish the systems to setup an incubation centre for Plant Tissue culture
- Collaboration required with an agency for mass production of plantlets after R&D.

The best practices established speak of the commitment and social responsibility of the institution. The institution social responsibility is not limited to production and distribution of tissue cultured banana saplings, but also extends to the **production and supply of bio-fertilizers through Azolla Cultivation, Vermiwash & Vermicompost Unit**.

As the vision states, it promotes research in multi-disciplinary subjects and through this, the institution has contributed to the holistic development of the students and the overall upliftment of the locale by lending a hand to the needy farmers as a beacon of hope.