

Fundamentals of Horticulture and Crop Production in 2-Year B.Ed Course: A Challenge for Prospective Teachers

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Abstract

With a vision to develop excellence in the Horticulture for Research and Development field, Nagaland University has introduced a foundational course entitled “Fundamentals of Horticulture and Crop Production” for B.Ed student teachers. The major topics covered in the course are Introduction to Horticulture, Soil and Climate requirements, methods of propagation of horticultural crops, Nursery preparations, principles of preservation, etc. The present study focused on the impact of the horticulture course in B.Ed course and explored on the activities initiated by the college related to the course through Observations and Interviews. The study revealed that the student teachers were actively engaged in various meaningful activities which enhanced their knowledge and skills and also developed their critical thinking abilities enabling them to analyze complex issues related to sustainable agriculture.

Keywords: Horticulture, Prospective Teachers.

Introduction:

With vast knowledge about the nuances involved in plantations, nurseries, orchards and other practices, a Prospective Teacher would certainly have great future endeavors if they choose to pursue horticulture courses. Prospective Teachers are the one who have greater commitment, responsible, innovative and open to change. The main objective of imparting Horticultural training to B.Ed. student teachers is to enable them to realize good practices of horticulture and will help them generate opportunities for wage employment and self-employment in urban and rural sectors. This will help in reducing a lot of socio-economic problems in rural areas. In addition to learning about plants and how to care for them, students who study the course will be able to draw connections between environmental elements and plant cultivation. The course also aims at enabling the student teachers to realize the scope of Horticulture and understand the process of horticulture that includes propagation, cropping system, and preservation. It also aims at enabling the student teachers to have an extra edge in the field of vocation after completing the program and engage themselves in encouraging vocational skills among the students and lead as a Prospective Teacher.

Objectives of the study:

1. To study the impact of horticulture paper in B.Ed. course.
2. To explore the activities initiated by the college related to the horticulture course.

What is the purpose of "Fundamentals of Horticulture and Crops Production" course in the Teacher Education College?

Today, the vocabulary surrounding teaching and learning has radically altered when discussing academic performance, and practical courses like horticulture are highly valued. The course is taught using a variety of strategies that give students who teach a thorough understanding of horticulture practices and techniques. The curriculum is developed to give prospective teachers the information and abilities they need. The course framework covers many horticultural themes, including crop production, soil management, pest and disease control, various methods of preserving fruits and vegetables, and plant propagation (cutting and crafting).

The course's value was further demonstrated by the preparation of tomato sauce, orange marmalades, and pickles (chili, eggplant, garlic, and brinjal), as well as by the cultivation of mushrooms and the field trip to several agricultural fields. Additionally, the basics of plant physiology, plant nutritional requirements, and sustainable gardening techniques will be taught to student teachers. Along with frequent theory courses, the module places a strong emphasis on practical training and hands-on experience. In addition, student teachers will be able to take part in workshops, visit nurseries and gardens for hands-on demonstrations, and participate in fieldwork activities. Finally, the course provides aspirants with a plethora of advantages and professional prospects.

Activities undertaken by the college are discussed below-

ACTIVITY 1

IDENTIFICATION AND USES OF VARIOUS GARDEN TOOLS FOR DIFFERENT OPERATIONS

PURPOSE OF THE ACTIVITY:

1. To acquire knowledge on the Horticultural Tools
2. To understand the uses of various Horticultural Tools for different operations appropriately.

The Student Teachers identified the different Horticultural tools that were available in the storeroom and explored to find out the Horticultural terms and its uses in farming. References from the Internet were allowed. The activity was followed by a Quiz session where the Student Teachers identified the names and the uses of the different Tools from the pictures (PPT Slides).

Method/Strategy/Techniques used: Activity-Based and Discussion Method. Quiz and Brainstorming techniques were incorporated.

Reflection on the activity:

‘Through this activity, I learned about the names and uses of different horticultural tools. I picked some tools and I learned about them in detail thus helping me in better retention of the horticultural names of the tools. We learned in groups which encourages equal participation. There was a revision in the form of a Quiz which was very interesting and helpful. As a teacher, I will use this activity as a way to introduce new topics and to let the students have fun learning as it is a hands-on activity’.

Results of the student teachers learning;

The student teachers learned about the technical names of the different Horticultural Tools and their appropriate uses and learned about the significance of the Horticultural Tools in farming/agriculture. Group learning encourages equal participation and cooperative learning. Revision of the names of the different Horticultural Tools in the form of a quiz was helpful.

ACTIVITY 2

PREPARATION OF MAP OF FRUIT ZONES OF NAGALAND

Purpose of the Activity:

1. To acquire knowledge on the different types of crops found in different districts of Nagaland
2. To understand the different climatic conditions required for growing different types of crops
3. To get familiarize with the different and common crops grown in Nagaland
4. To develop the skill of drawing the Map of Nagaland

The Student Teachers drew the Map of Fruit Zones of Nagaland. The names of the fruits were highlighted and labeled district wise on the Map. The Map work was attached in their practical book for further assessment.

Reflections on the activity:

‘Through this activity, I had to patiently draw the Map of Nagaland and identify the newly created Districts and the crops grown in each districts. This activity gave me the opportunity to research on the different crops grown in our state and it amazed me how we are blessed with such rich fruits, vegetables, crops, pulses etc. This activity made me realize that our state has a wide scope of horticultural crops and it also enhanced my skill of drawing’.

ACTIVITY 3

NURSERY BED PREPARATION

PURPOSE OF THE ACTIVITY:

1. To acquire knowledge on the different types of Nursery Bed and its Preparation
2. To raise healthy, vigorous, and clean seedlings that are free from pests and diseases
3. To understand the steps involved in the Nursery Bed Preparation
4. To familiarize on the different types of Sowing technique
5. To learn and understand the nature of germination patterns of the different crops selected

The Student Teachers along with the facilitator prepared the Nursery Bed in the Horticulture farm in the Campus. The Student Teachers were divided into three groups and they worked together in groups. They followed the steps in the preparation of Nursery Bed which was learned in the theory class. After the preparation of Nursery Bed, Seeds were sown by applying the different techniques of Planting.

Reflections on the activity:

‘This activity gave me exposure to the actual works carried out in the field. It gave me an opportunity to try out the different techniques involved in the production of crops. It helped me to gain insight into growing crops like the method of preparing nursery bed, techniques of sowing etc. It was a challenging but fun and interesting activity. It motivates me to learn more and apply the knowledge in practice’.

Results of the student teachers learning:

The student teachers have firsthand experience with the assembly of various types of nursery beds and learned about the many horticultural tools used in the preparation of nursery beds. They have gained a deeper grasp of gardening and seed sowing through hands-on experience, which has made learning more intensive and fruitful. They learned more about the various sowing techniques and raising seasonal crops. Applying theory to practice for efficient learning was engaging and enjoyable. Additionally, it aids in their understanding of the value of a nursery bed, the procedures needed to raise healthy saplings, how to maintain one, and how to choose a location. learned about the importance of maintaining practical records with the date and time of nursery bed preparation, seed varieties, and growth observations for future

learning, references, and improvement. Also learned about the quality of the soil and other resources needed for nursery bed preparation. developed abilities in gardening and using horticultural tools.

The student teachers have come to understand that effective farming requires careful planning, considering the plant's needs, and appreciating the patience and accuracy needed in farming. They have also established an enjoyable feeling and a lesson.

ACTIVITY 4

CULTIVATION OF OYSTER MUSHROOM

Purpose of the Activity:

1. To acquire knowledge on the Cultivation of Oyster Mushroom and its benefits
2. To understand the Procedures of the Steps of Mushroom Cultivation
3. To develop the skills involved in Mushroom cultivation

After the procedures on Mushroom Cultivation was done, it was kept in a dark room for observation and regular irrigation. The steps/procedures of the Mushroom Cultivation was recorded in their practical record book. During the practical, discussions and interactions sessions were also conducted. It was a cooperative learning activity.

Reflections on the activity:

‘The training programme on Mushroom cultivation was an enthralling event that introduced me to the intriguing world of Fungi culture. The hands-on seminar taught the participants about the complexities of Mushroom production, from substrate preparation to harvesting. I developed a greater respect for the sustainable and resource-efficient aspect of Mushroom farming as I assisted in the cultivating process. This activity not only diversified my understanding of agriculture, but also ignited my interest in researching more ecologically friendly growing processes for future pursuits. Overall, it was a productive day that blended theoretical knowledge with practical abilities in Mushroom cultivation’.

ACTIVITY 5

ONE-DAY WORKSHOP ON THE PRESERVATION OF FOOD (PICKLE MAKING)

PURPOSE OF THE ACTIVITY:

1. To acquire knowledge on Food preservation
2. To understand the different methods of Food Preservation and the steps involved
3. To develop the skills of pickling
4. To understand the different ingredients needed for food preservation

The Student Teachers along with the facilitator prepared Pickle of three items- Brinjal, Chilli, and Garlic. The steps for preparing the pickle were followed carefully. It was packed, sealed and labeled. All the Student Teachers actively participated in the practical sessions.

Reflections on the activity:

‘This workshop was indeed very fruitful. It was a hands-on experience that enriched not only my knowledge but also my practical skills. It has not only provided essential theoretical insight but also its real-life applications. After attending this workshop, I am confident that I can practice and follow the preservation of food on my own. This workshop was effective and an opportunity for skill development in food preservation.’

Results of the student teachers learning:

The student teachers experienced Practical instruction on how to prepare pickles and the procedures

involved in doing so, along with knowledge of the many ingredients and appropriate proportions for each type of pickle production, which helped to build food preservation skills. While working, developed a sense of proportion, accuracy, timing, and patience. Improved culinary skills and rekindled their passion for cooking. While making pickles, they discovered the proper use of various spices and ingredients.

ACTIVITY 5

ONE DAY EXPOSURE CUM FIELD TRIP TO ALIBA VILLAGE (HORTICULTURE FARM)

Purpose of the Field Trip:

1. To learn about the types and processes of growing winter crops.
2. To learn about the types of soil and climate requirements.
3. To learn about the different techniques of planting and growing.
4. To learn about the appropriate time of sowing and Harvesting.

Trip Activity

The Student Teachers along with the facilitator went for One day Exposure cum Field trip to Horticulture Farm, Aliba Village, Mokokchung. The farm owner shared on her personal experiences, about the various Crops cultivated, types of soil and climate requirements, importance of choosing convenient site/location of the farm, the different factors important for crops plantation etc. The Students explored the farm, had an interaction and discussions with the farm owner.

Reflections on the activity:

‘This Field trip was very refreshing and I realized that being a farmer is not an easy task, learning something theoretically and putting that into practice is quite different. It is not just about growing crops but one should possess the knowledge about different soil and climate conditions, the right season, irrigation intervals, pest control, quality of seeds, market demand, entrepreneur qualities, should also be consistent and hard working. Being a farmer is a challenging job yet very satisfying and joyful seeing the crops thriving and bearing fruits. My take away from this trip was realizing that one should be really interested in whatever one is pursuing because without the zeal and drive it will never be successful’.

‘The Exposure cum field trip was a trans-formative experience providing a unique insight into the world of agriculture and entrepreneurship. Witnessing the thriving broccoli fields was not only visually captivating but also educational, showcasing the adaptability of agriculture to changing consumer preferences. The farm with diverse crops exemplifies the harmonious coexistence of tradition and modernity in agricultural practices. This not only preserves local cultural heritage but also contributes to a more resilient and dynamic farming ecosystem. The field trip allowed me to witness the day-to-day operations of the farm, and it was not just a journey into agriculture but a revelation of the potential within unconventional farming practices’.

Learning outcomes-

- Deepened the understanding of winter crop cultivation, providing the Student Teachers a practical outlook through experience.
- Provided a comprehensive learning experience, equipping the Student Teachers with the practical knowledge of winter crops cultivation and Horticultural crops in general.
- The hands-on exposure to different aspects of farming enhanced the understanding of sustainable agricultural practices and their importance in ensuring food security.
- Recognizing the diversity of winter crops and their unique cultivation requirements.
- To understand the role of soil composition in crop health and productivity

- Appreciating the impact of climate on crop success and adaptation,
- Learning the critical role of timing in the agricultural calendar.

Conclusion:

Students enrolled in the two-year B.Ed course in Horticulture receive a thorough understanding of the concepts and procedures related to plant cultivation through this subject. The purpose of this course is to provide aspiring teachers with the information and abilities they need to integrate horticultural themes into their lesson plans. Additionally, as they hone their critical thinking skills, student teachers will be better equipped to examine intricate problems pertaining to environmental preservation and sustainable agriculture.

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